STORM WATER MANAGEMENT PROGRAM (SWMP)

FOR THE

MOJAVE RIVER WATERSHED

AUGUST 2003

Table of Contents

Table of Contents

Introduction

Mojave Storm Water Management Program (SWMP)

National Pollutant Discharge Elimination System (NPDES) General Permit NO. CAS000004, Waste Discharge Requirements (WDRS) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (General Permit) requires that the Permittees develop a Storm Water Management Program (SWMP). The purpose of this SWMP is to keep the Mojave River clean to the Maximum Extent Practicable (MEP) using Best Management Practices (BMPs). These BMPs will reduce storm water runoff and non-storm water runoff flowing to the river. They will also serve to keep contamination such as sediment, non-sediment solids, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons, pesticides, herbicides and trash from entering the storm drain system.

Maximum Extent Practicable (MEP)

The concept of "Maximum Extent Practicable" (MEP) is the technology-based standard established by Congress in CWA §402(p)(3)(B)(iii) that municipal dischargers of storm water must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve. MEP is generally a result of emphasizing pollution prevention and source control BMPs as the first lines of defense in combination with structural and treatment methods, where appropriate, serving as additional lines of defense. The MEP approach is an ever 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 elucidated in the SWMP become the proposal for reducing or eliminating pollutants in discharge to the MEP. The way in which MEP is met may vary between communities.

Consistent with EPA guidance, the MEP standard in California is applied so that a first-round storm water permit requires BMPs that will be expanded or better-tailored in subsequent permits. In choosing BMPs, the major focus is on technical feasibility, but cost, effectiveness, and public acceptance are also relevant. If a Permittee employs all applicable BMPs except those that are not technically feasible in the locality, or whose cost exceeds any benefit to be derived, it would meet the MEP standard. MEP requires Permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs are not technically feasible, or the cost is prohibitive. (See, State Board Order No. 2000-11.)

Generally, in order to meet MEP, communities that have greater water quality impacts must put forth a greater level of effort. Alternatively, for similar water quality conditions, communities should put forth an equivalent level of effort. Because storm water programs are locally driven and local conditions vary, some BMPs may be more effective in one community than in another. A community that has a high growth rate would derive more benefit on focusing on construction

and post-construction programs than on an illicit connection program because illicit connections are more prevalent in older communities.

It is understood that storm water quality programs and regulations are new to the entities that will be regulated under this General Permit. Therefore, it is anticipated that this permit term will serve as a "ramping-up" period.

SWMP Implementation

Permittees will maintain, implement and enforce this SWMP and develop the legal authority to do so. Permittees will implement BMPs that reduce pollutants in storm water discharge to the technology-based standard of MEP. The SWMP will be implemented over a five-year period as allowed in the Permit. There are measurable goals associated with each of the following Minimum Control Measures:

- Public Education and Outreach on Storm Water Impacts
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Post Construction Storm Water Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations

During the first year that the Permit is in effect, the Permittees will develop a strategy for verification, performance indicators, trend analysis and feedback to determine the success of the program in each urbanized area. Each year, by September 15, the Permittees will summarize the storm water activities for each urbanized area in the previous 12 months in a report to the Board. The report will include a summary of measurable goal accomplishments, performance indicators, trend analysis, self-rating and recommended changes in the program. Based on all the experience from the previous year and with input from the Board and the Public, the Permittees will revise and refine their Measurable Goals for the remainder of the Permit.

Legal Authority

The Permit requires that the Permittees develop adequate legal authority to implement and enforce the SWMP. As part of the "ramping up " process during this first permit term, the Permittees will thoroughly review their systems to determine if existing codes, ordinances and procedures need to be modified and change them as required to comply with the Permit.

SWMP Coordinators

The following have been designated to coordinate the program in the designated areas:

- **Town of Apple Valley:** Rusty Reed, Town Engineer
- **City of Hesperia:** Mike Podegracz, Director of Development Services
- **City of Victorville:** Kimberly Cox, Sr. Management Analyst, Public Works
- **County of San Bernardino:** Dan Ilkay, Storm Water Program Manager.

Agency Certification

This SWMP is produced jointly by the four jurisdictions in the Mojave River Watershed; however, each of the undersigned is responsible for their own geographical area.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Additionally, I certify that the provisions of the permit, including the development and implementation of the Storm Water Management Program, will be complied with.

Rusty R. Reed, Town of Apple Valley	Date
Robb Quincey, City of Hesperia	Date
Guy Patterson, City of Victorville	Date
Ken A. Miller, San Bernardino County	Date

Section 1. Background

1.1 Phase II MS4 General Permit

The California State Water Resources Control Board (SWRCB or State Board) issued a National Pollution Discharge Elimination System (NPDES) General Permit (NO. CAS000004) and an accompanying Fact Sheet for regulated small Municipal Separate Storm Sewer Systems (MS4s). The State Board has elected to utilize the General Permit approach for implementing the United States Environmental Protection Agency (USEPA) Phase II Storm Water requirements for small MS4s rather than regional permits, which have been the norm for Phase I MS4 permits. With the General Permit approach, the SWRCB writes a single statewide permit and the individual Regional Boards manage and enforce the permit for agencies subject to the permit within their individual jurisdictions. Accordingly, the Lahontan Regional Water Quality Control Board will oversee the regulated small MS4s within the Mojave Watershed.

Regulated Small Municipal Separate Storm Sewer Systems (MS4)

A small MS4 is any MS4 that is not already regulated under the Phase I storm water program, i.e., not already covered by an MS4 permit. However, not all small MS4s are regulated small MS4s. A regulated small MS4 meets one of the three criteria listed below:

1. The MS4 serves an Urbanized Area (UA) as designated by the Bureau of Census (so-called "automatically designated MS4s").

   [Apple Valley, Hesperia, and Victorville fall under this category within the same urbanized area]. According to the General Permit, a city's permit area is the city boundary. A city is not responsible for urbanized areas outside its boundary. For counties, permit boundaries must at least include the urbanized areas.

2. Traditional small MS4s serves cities, counties, and unincorporated areas that the permitting authority has designated after considering the following factors:

   a. High population density - An area with greater than 1,000 residents per square mile. Also considered is a high density created by a non-residential population, such as tourists or commuters.
   High growth or growth potential - An area that has experienced more than 25 percent growth between 1990 and 2000. Also, if an area anticipates a growth rate of more than 25 percent over a 10-year period prior to the end of the first permit term. The compliance deadline designated for such MS4s is 180 days after finalization of the Phase II MS4 Permit. (The Cities of Adelanto and Barstow have been considered in the past for this category, but there are no current plans to include them.)

3. Significant contributors of pollutants to interconnected permitted MS4s. It is applicable, if the small MS4 discharges more than 10 percent of its storm water to the permitted MS4, or its discharges make up more than 10 percent of the other permitted MS4's total storm water.

4. Discharge to sensitive water bodies - Those receiving waters which are listed as impaired pursuant to the CWA section 303 (d); those used for recreation that are subject to beach closing or health warnings; or those listed as providing or known to provide habitat for threatened or endangered species.

5. Significant contributors of pollutants to waters of the U.S - Specific conditions presented by the MS4 may lead to significant pollutant loading to waters of the U.S. that are otherwise unregulated. These include non-traditional MS4s serving public campuses, military bases, prisons, and hospital complexes. These non-traditional small MS4s are anticipated to be designated by the State Board in the future. (The SWMP can be modified to accommodate these entities.)

Non-Traditional Small MS4s

Non-traditional small MS4s listed below are not currently in the Mojave Watershed group but they may choose to participate in the future. They have been and will be kept advised of the group's activities. The cities of Adelanto and Barstow will also be kept advised of the Mojave Watershed group's activities.

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The Permittees obtained coverage under the USEPA Phase II Storm Water Regulations as operators of regulated small MS4s on March 10, 2003. They submitted:

1. Completed Notice of Intent (NOI) Form
2. Storm Water Management Program
3. Requisite Fee

Notice of Intent (NOI)

Regulated MS4s have the option of submitting the NOI either individually, or as a group if working together as co-permittees. The Mojave River Watershed Permittees have elected to submit this Storm Water Management Program (SWMP) as a group.

SWMP is a plan for development and phased implementation of six minimum control measures (MCM) over the first term of the permit (5 years). These six MCMs are:

1. Public Education and Outreach on Storm Water Impacts
2. Public Involvement/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
6. Pollution Prevention/Good Housekeeping for Municipal Operations

The SWMP sets measurable goals for each MCM in a staged fashion so that by the fifth year the Permittees have in place a fully developed and implemented program. The measurable goals in each MCM program need to be integrated over time and across the programs to create a coherent and effective overall SWMP. The SWMP is a work-in-progress especially for the period of the first permit term. It will be revised to reflect emerging or changing priorities based on the experience of the permittees including the results of additional studies such as watershed mapping and characterization. While the entire document need not be revised each year as the annual report is prepared, modifications and adjustments to the selected BMPs and measurable goals can be identified. This approach is recommended in both the federal guidance for the Phase II program and the General Permit.

1.2 The Mojave River Watershed

The Mojave River Watershed encompasses approximately 4,500 square miles and is located entirely within San Bernardino County. The primary geographic and surface hydrologic feature of the watershed is the Mojave River. Elevations within the watershed range from 8,500 feet above sea level at Butler Peak in the San Bernardino Mountains to 1,400 feet above sea level at Afton Canyon near the terminus of the Mojave River. Average elevation in the Victor Valley is 2,900 feet above sea level. Temperatures ranges from as low as 15º F on some winter nights to

as high as 110º F on hot summer days. The annual rainfall in the region is about 3.9 inches and humidity is low throughout the year.

The headwaters of the Mojave River are in the San Bernardino Mountains, which annually receive greater than 40 inches of precipitation at the highest elevations. Much of the winter precipitation in the San Bernardino Mountains falls in the form of snow which subsequently provides spring recharge to the Mojave River system due to snow melt. Historical annual recharge from the headwaters has been approximately 75,000 acre-feet. The Mojave River channel transects the watershed for approximately 120 miles until it reaches Silver Dry Lake near the community of Baker. Some reaches of the Mojave River flow underground in the confined riverbed channel. The Mojave River channel is typically dry downstream of the Mojave Forks Dam except in select locations where ground water is forced to the surface by geologic structures.[1] Water quickly percolates into the porous sands of the Mojave River bed; consequently, groundwater is the primary source of water supply in most of the watershed.[1]

The total population in the Mojave River Watershed was approximately 295,000 people in 1997. Much of the existing population is concentrated in the Victor Valley, which is located north of the San Bernardino Mountains and borders the edge of the Mojave Desert. The Victor Valley includes the communities of Adelanto, Apple Valley, Hesperia, Lucerne Valley, Oak Hills, Phelan, Victorville and Wrightwood. Additional urban growth is expected throughout the watershed. The population for the entire watershed is projected to reach nearly one-half million people by the year 2015.

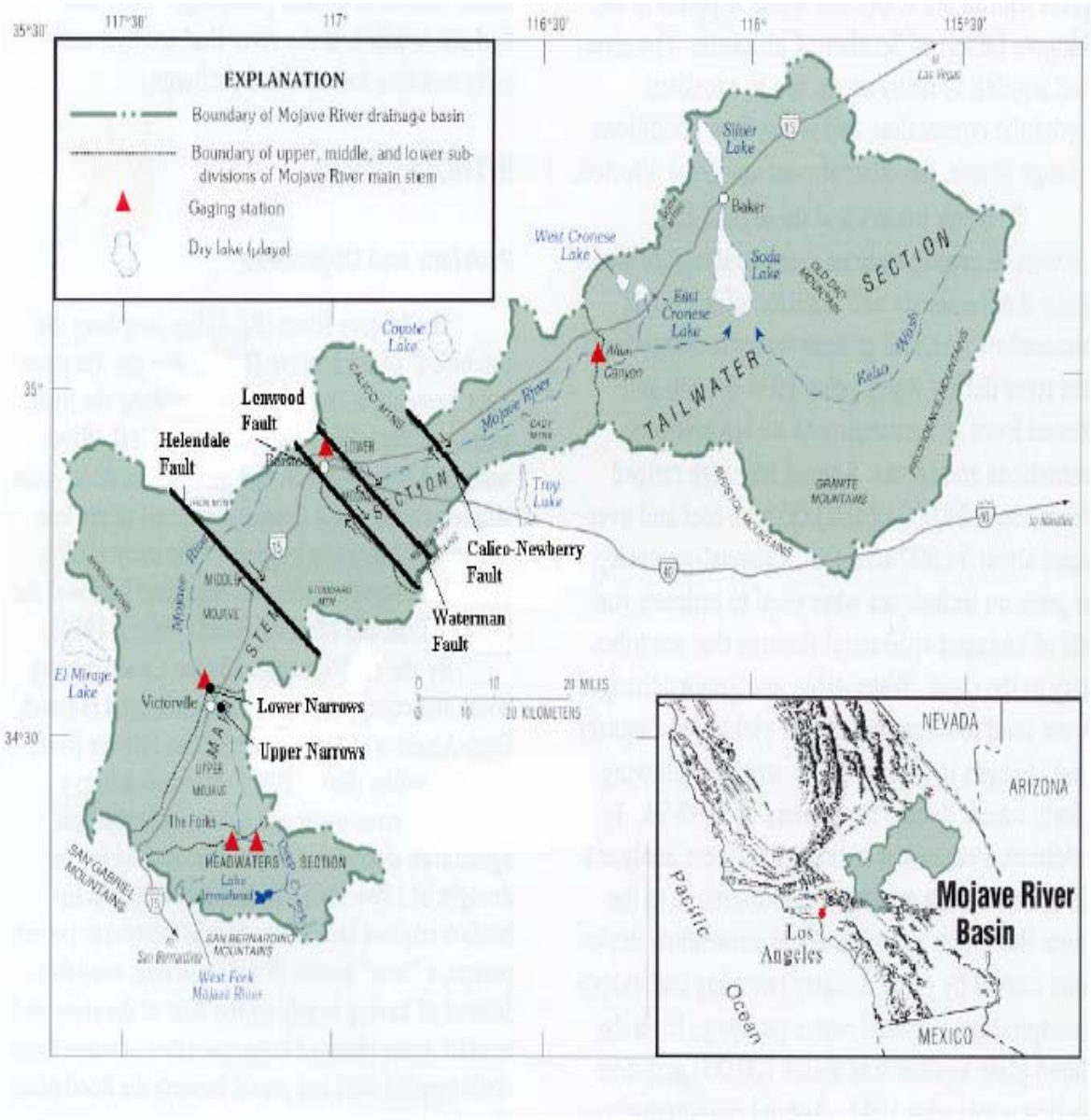
The Mojave River Watershed is divided into five sub-basins based on hydrologic features (see Fig. 1.) The USGS Report 95-4189 identified these sub-basins as: (1) Headwaters - tributaries above the Mojave Forks Dam; (2) Upper Basin - Mojave Forks Dam to the Lower Narrows at Victorville; (3) Middle Basin - Lower Narrows to the Waterman Fault at Barstow; (4) Lower Basin - Waterman Fault to Afton Canyon; and (5) Tailwater - Afton Canyon to Silver Lake. The sub-basins include an aquifer system consisting of two interconnected aquifers - floodplain aquifer and regional aquifer. The floodplain aquifer is composed of sand and gravel, which is as much as 250 feet thick, and generally follows the surface expression of the Mojave River. The regional aquifer, which is composed of sand, silt and clay, generally underlies and surrounds the floodplain aquifer.

The reliance on ground water for domestic, municipal, commercial, industrial, and agricultural use has resulted in an overdraft condition of the aquifer system (i.e. ground water discharge exceeds recharge, resulting in a net reduction in ground water stored in the aquifer). USGS Water Fact Sheet 122-01 indicated that overdraft started in the Middle and Lower basins in 1950, and was present in all sub-basins in 1960. By 1999, the cumulative amount of overdraft for the entire basin was about 2.5 million acre-feet. Overdraft has caused changes in the quantity and distribution of recharge from the Mojave River, loss of riparian habitat, and water-level decline in wells. To mitigate the effects of overdraft, the Mojave Water Agency implements artificial recharge using imported water from the California State Water Project. A USGS study (USGS Water Fact Sheet 122-01) showed that artificial recharge can benefit the ground water basin, and

[1] 02MR2-51.doc Lahontan Regional Water Quality Control Board

that artificial recharge can help mitigate the effect of overdraft, particularly when natural recharge to the ground water system is limited.

Figure 1



Source: Modified from USGS Water-Investigation Report 95-4189 (A Watershed Management Approach to Assessment of Water Quality and Development of Revised Water Quality Standards for Ground Waters of Mojave River Floodplain – Christopher R. Maxwell)

1.3 Victor Valley General Information

The Victor Valley was historically known for its agricultural, industrial, and military land uses. During the last several decades, however, Victor Valley has significantly changed into a satellite of Southern California urbanization. This change resulted in significant modification of waste discharge pattern in the valley and could potentially affect water quality.

Location

The Victor Valley is located approximately 97 miles northeast of Los Angeles and 35 miles north of San Bernardino. Known as the "high desert", it has an elevation of about 3,000 feet above sea level. It is situated in San Bernardino County just north of the San Bernardino Mountains at the edge of the Mojave Desert. Interstate 15 and State Highway 18 intersect near the heart of the Valley.

The largest towns/cities are: Apple Valley, Hesperia, and Victorville. Each is a residential community with populations exceeding 60,000 and growing. There is little heavy industry but there are the typical commercial enterprises needed to support the local residents and the people traveling on the highways.

Natural Resources

Near the turn of the century, large deposits of limestone and granite were discovered in the area. Since then the cement manufacturing industry has emerged as the single most important heavy industry of the Victor Valley. The major producers in the Valley are:

- TXI Riverside Cement , Oro Grande
- CEMEX California Cement , Victorville
- Mitsubishi Cement Corp, Lucerne Valley
- Service Rock Products, Victorville

Alfalfa has been one of the major agricultural products in the recent past. However, due to the increase in the value of water, agriculture in the Valley is in decline.

There are several Regional Joint Powers Authorities (JPA's) of which the Town/Cities are members, including:

- Victor Valley Wastewater Reclamation Authority
- Victor Valley Economic Development Authority
- Mojave Desert and Mountain Solid Waste Joint Powers Authority
- Victor Valley Transit Authority

Victor Valley Wastewater Reclamation Authority (VVWRA)

The Victor Valley Wastewater Reclamation Authority (VVWRA), a Joint Powers Authority and Public Agency, operates the largest wastewater treatment plant in the watershed. It currently serves over 100,000 residents and numerous businesses in Apple Valley, Hesperia, Victorville and unincorporated portions of San Bernardino County. In April 2002, VVWRA completed the expansion of the treatment plant to accommodate flows up to 11 million gallons per day (MGD) from the previous rated capacity of 9.5 MGD. The increase in capacity was necessary to meet the growing population in the Victor Valley area. Daily flows to the wastewater treatment plant increased by at least 4%-5% each year since 1997. The treated wastewater is discharged to percolation ponds and to the Mojave River.

VVWRA is planning to build subregional reclamation facilities, which will provide wastewater treatment for the growing community, as well as high quality reclaimed water for non-potable uses such as landscape irrigation. VVWRA currently plans to complete the construction of two subregional reclamation facilities in 2005, and another two in 2010. By 2020 the flow of wastewater from the area is expected to more than double from today's 9.1 million gallons per day to a total of 18.6 million gallons per day. Approximately 7.0-8.5 million gallons per day of the flow will be treated and reclaimed using subregional reclamation facilities.

In 2001 the VVWRA opened a septage receiving facility for the disposal of the Victor Valley's septic tank and chemical toilet waste. Each month it accepts and treats as much as 550,000 gallons of this waste. Plans are underway to develop a more permanent septage receiving facility, which will reduce dumping times and simplify handling the wastes for treatment plant employees.

Victor Valley Economic Development Authority

Southern California Logistics Airport (SCLA), the former George Air Force Base, operates under the authority of the Victor Valley Economic Development Authority. This 5,000-acre complex provides major corporations with logistics needs - a global intermodal logistics gateway to the Western United States. Located in Victorville, it provides access to major Western States and Mexico markets within 12 hours.

A fully certified part 139 commercial airport, SCLA offers logistics firms the following features:

- 2,800 acres of improved large parcels for manufacturers/distributors and e-commerce providers
- 1,500 acre air cargo/aircraft maintenance complex
- 700 acre intermodal transfer center with direct access to Burlington Northern-Santa Fe (BNSF) rail lines and Union Pacific's shared main rail line

- 1,800 acre foreign trade zone encompassing manufacturing, cargo and intermodal facilities
- Two existing 10,000 foot runways and enough geography for two 15,000 foot runways and one 10,000 foot runway
- Secured international U.S. Customs service and related agency services for scheduled flights

Mojave Desert and Mountain Solid Waste Joint Powers Authority

With the passage of AB 939 in 1989, developing an integrated approach to managing solid waste became vital for all California communities. Recognizing the rapid depletion of space in the state's landfills, this legislation required all cities and counties to make every effort to reduce trash disposal by 25% by the year 1995 and by 50% by the year 2000.

To help meet these goals on a regional level and make the best use of each individual city's resources, the Mojave Desert and Mountain Solid Waste Joint Powers Authority was formed in 1991 by Apple Valley, Barstow, Victorville, Twentynine Palms and Yucca Valley.

The County selected a new contractor in 2001, Burrtec Waste Industries, to operate all landfills within San Bernardino County. Actual tonnage of trash disposed by each city is reported to the California Integrated Waste Management Board (CIWMB). Each year, that annual disposal amount is compared with the amount of trash disposed of in the base year of 1990, to calculate "diversion," or the amount of trash that has been "diverted" from the landfill. The CIWMB uses this diversion amount to calculate compliance with AB 939 and to gauge the effectiveness of recycling efforts.

Victor Valley Transit Authority (VVTA)

The Victor Valley Transit Authority (VVTA) provides local and commuter bus service for the communities of Adelanto, Apple Valley, Hesperia, and Victorville. It has maintenance yards in Victorville and Adelanto.

The Mojave Water Agency (MWA)

The Mojave Water Agency (MWA) is not a JPA but is very important to water issues in the Victor Valley. It was founded in 1960 due to concerns over declining groundwater levels. The MWA was created for the explicit purpose of ensuring that sufficient water may be available for the inhabitants and any present or future beneficial use of the lands within its jurisdiction. The MWA's boundaries encompass approximately 4,900 square miles of the High Desert in San Bernardino County.

As a state water contractor, MWA is entitled to receive an annual allotment of 75,800 acre-feet of water from the State Water Project via the California Aqueduct. This facility extends south from the Sacramento Delta and runs locally through the communities of

Baldy Mesa and Hesperia. The imported water supply is crucial to the area's survival, because local aquifers have been in overdraft since the early 1950's, according to recent studies. For the past four decades, residents have been using more water than is replaced naturally.

The MWA's essential mission was strongly reaffirmed with the conclusion of the Mojave River Adjudication. The Court's ruling notes that the MWA area continues to be in severe overdraft. The Court ordered it to seek sources of water, including supplemental water, and to deliver that water in the most effective fashion to ensure the quality of life within its boundaries. The judgment also mandated the MWA to continue its traditional role of encouraging conservation.

References

1. January 2002 WMI - Lahontan Regional Water Quality Control Board

2. A Watershed Management Approach to Assessment of Water Quality and Development of Revised Water Quality Standards for the Ground waters of the Mojave River Floodplain; Christopher R. Maxwell; http://www.nwqmc.org/2000proceeding/papers/pap_maxwell.pdf

3. USGS Water Fact Sheet 122-01: Water Supply in the Mojave River Ground-Water Basin, 1931-99, and the Benefits of Artificial Recharge; Christina L. Stamos, Tracy Nishikawa, and Peter Martin; http://water.usgs.gov/pubs/FS/fs-122-01

Section 2. Public Education and Outreach

Minimum Control Measure 1

This section describes plans for developing and implementing a plan for Public Education and Outreach that meets the requirements of the Small MS4 General Permit:

2.1 Requirements

Permittees will implement public education programs to increase public awareness of the issues. Programs will include actions such as providing educational materials to the community and other outreach activities to teach about the impacts of pollutant discharges from storm water systems on water bodies and the steps that the public can take to reduce pollutants in storm water runoff.[1]

The Permittees plan to meet the requirements of this Minimum Control Measure with education and outreach programs for three diverse groups: students, homeowners and business people.

2.2 Student / Teacher Program

The Mojave Desert Resource Conservation District (RCD) acting as lead organization submitted a proposal for an educational outreach program to the SWRCB for a Proposition 13 grant. Cooperating entities included the Cities of Barstow, Victorville, Lancaster, Palmdale, Hesperia, and the Town of Apple Valley. In March 2003, the RCD received word that the contract package had been received and that actual Storm Water instruction would commence mid 2004. The proposal, entitled "High Desert Storm Water Phase II Awareness Impact Project", is a project that integrates three proven demonstration programs for increasing student awareness and understanding. These programs are described below.

Elementary School Children

Description

EnviroScape® models are being used in all 50 states, Central America, Asia, Australia, and Europe as a proven method of presenting environmental related concepts to people of all ages. This program provides a fun and interesting learning activity for young students. Using the various EnviroScape® models, students can learn about how water becomes polluted when it travels over land streets, yards, and through storm drains. Students then see how their personal actions can affect the health of waterways in their communities.

"Non-Point Source Model" from EnviroScape® is used as an education tool to demonstrate how pollution from many small sources can have a real impact on the quality of our shared water resources.

[1] State Water Resources Control Board Water Quality Order No. 02-XX-DWQ (draft) NPDES General Permit No. CAS00000X, Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (General Permit)

Applicability

EnviroScape® is used by schools, community associations, and government agencies in every state in the U.S. and more than a dozen other countries. EnviroScape® makes learning environmental issues easier. Visual demonstrations of pollution clearly show that we are all part of the problem, and how we can also be a part of the solution. The EnviroScape® program provides verified facts concerning a variety of environmental issues. This program will be targeted at elementary school children in grades five and six.

Implementation

Six EnviroScape® models representing the cooperating municipalities will be purchased. Handout materials, instruction manuals, and assessment forms will be developed and reproduced. A storage facility for project materials, and a vehicle for transporting materials to demonstration sites will be leased. Preliminary demonstrations will be presented to the municipalities/school districts to garner feedback from the cooperating partners and finalize the project demonstration program.

Benefits

Teaching children about storm water issues can have a great impact on the present as well as the future. Educating children about environmental issues can help get them interested and involved at an early age. By targeting the youth, the lessons they learn also have the likelihood of being passed on to their parents, other family members and friends, thus informing them as well.

Limitations

This program will compete for classroom time with other State-mandated curriculum standards. Teacher training will be key to incorporating these topics into school curricula.

Cost

This program will be funded by a Proposition 13 Grant from the SWRCB.

References

Mojave Desert Resource Conservation District (RCD) Application #3. April 2002 Proposition 13 RFP. Nonpoint Source Pollution Grant Program.

The Scientific Software Group. *EnviroScape Details*. [http://www.scisoftware.com/products/enviroscape_details/enviroscape_details.html].

USEPA. Public Education and Outreach for Storm Water Impacts: National Menu of Best Management Practices.

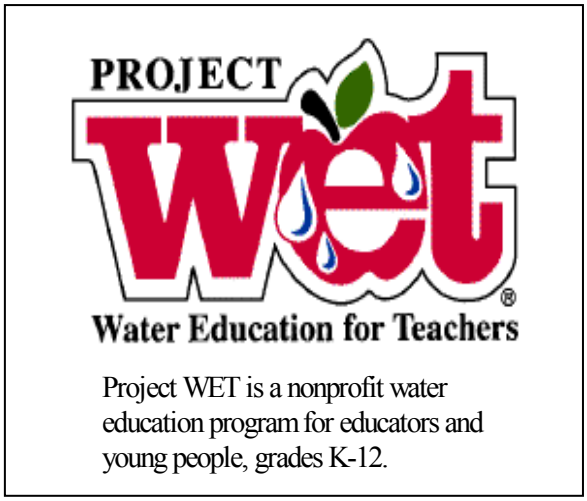
Teacher Training - California Project WET

Description

The purpose of Project WET (Wet Education for Teachers) is to facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources through the development and dissemination of classroom-ready teaching aids and the establishment of state and internationally sponsored Project WET programs.

Applicability

Project WET is a nonprofit water education program for educators and young people, grades K-12, located on the Montana State University campus in Bozeman, Montana. The North Dakota State Water Commission established the original Project WET program in 1984. The success of the pilot multi-state initiative led to a decision to develop a national Project WET program. In 1990, the Council for Environmental Education (CEE) became an official cosponsor, in partnership with The Watercourse, of Project WET.



CEE is a national leader in the field of environmental education, and its cosponsored programs, Project WILD and Project Learning Tree, are among the most long-lived and successful national efforts in environmental education.

Implementation

Meetings will be held with each cooperating municipality/school district to develop and coordinate a schedule for implementation of the California Project WET. The program includes a WET certification process for educators. Display boards, California Project WET manuals, and expendable supplies will be purchased. Also, handout materials, instruction manuals, and assessment forms will be developed and reproduced.

Effectiveness

The effectiveness of an environmental education program relies greatly on our educators. The California Project WET Program seeks to train educators and prepare them to effectively relay the information to their students within the framework of the California curriculum standards for education and hands-on science programs are an integral part of these standards. This program provides our educators with the necessary tools such as effective training, teaching-aids, and displays to learn about common environmental issues. Project WET has proven to be an effective means of teacher training nationally.

Benefits

Adequately training our educators on the topics of environmental issues prepares them to teach these important concepts to our children. Educating both the teachers and students will help to promote an increase in awareness and involvement with environmental projects.

Cost

This program will be funded by a Proposition 13 Grant from the SWRCB.

References

Mojave Desert Resource Conservation District (RCD) Application #3. April 2002 Proposition 13 RFP. Nonpoint Source Pollution Grant Program.

Montana State University. *Project WET.* [http://www.montana.edu/wwwwet/]. Accessed October 3, 2002.

USEPA. Public Education and Outreach for Storm Water Impacts: National Menu of Best Management Practices.

Automotive Fluids Disposal Program

Description

The Automotive Fluids Disposal Program provides high school students in Automotive Regional Occupation Programs (ROP) with environmental and disposal information to make them more marketable as mechanics and responsible as citizens.

Applicability

The Automotive Fluids Disposal Program has been proven as an effective method for introducing Best Management Practices (BMPs) to high school students on a career track in Automotive ROPs in San Bernardino County. The students will learn how to protect water quality, and will be provided with information on local disposal sites.

Implementation

Handout materials and assessment forms will be developed and reproduced. Meetings will be held with each cooperating school district to coordinate a schedule for implementation of the Automotive Fluids Disposal Program.

Effectiveness

This program targets students with a high likelihood of pursuing a career in automotive occupations. Introducing these students to the impacts of storm water pollution and BMPs for pollution prevention should foster greater environmental stewardship as they begin careers in the automotive industry.

Cost

This program will be funded by a Proposition 13 Grant from the SWRCB.

References

Mojave Desert Resource Conservation District (RCD) Application #3. April 2002
Proposition 13 RFP. Nonpoint Source Pollution Grant Program.

San Bernardino County Automotive Fluids Disposal Program

USEPA. Public Education and Outreach for Storm Water Impacts: National Menu of Best Management Practices.

2.3 Homeowner Outreach

The Permittees are involved in water conservation and household hazardous waste programs. They will expand these programs using brochures and web pages that are available from various Phase I MS4 programs in Southern California that describe BMPs homeowners can implement to reduce the sources of household pollutants entering MS4 systems. The Permittees plan to identify the best such public education aides in each of the categories below and adapt them for use in the Mojave Watershed.

- Landscaping and Yard Maintenance BMPs
- Household Hazardous Waste and Electronic - Waste Disposal
- Used Oil Recycling
- Pet and Equestrian Waste Management
- Pool Maintenance

2.4 Business Outreach

Brochures and web pages are available from various Phase I MS4 programs in Southern California that describe BMPs for businesses to reduce the sources of pollutants entering MS4 systems. The Permittees plan to identify the best such public education aides in each of the categories below and adapt them for use in the Mojave Watershed.

- Restaurants: Fats, Oils and Grease (FOG) BMPs
- Automotive Service and Repair BMPs

Additional information
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/pub_ed.cfm

2.5 Measurable Goals

The Public Education/Outreach Program consists of three distinct programs, each having its own set of goals and timetables for completion. See master schedule in appendix.

Section 3. Public Involvement/Participation

Minimum Control Measure 2

This section describes existing and planned opportunities for Public Involvement/Participation in the development and implementation of the Mojave River Watershed Storm Water Management Program.

3.1 Requirements

The Permittees will provide a variety of opportunities for public participation and involvement via the following organizations and activities:

- Public Notice and Comment on NOI/SWMP Development
- Lahontan WQCB Quarterly Stakeholders Meetings
- Mojave Desert Resource Conservation District
- Mojave Water Agency Technical Advisory Committee
- Publicizing the San Bernardino County Storm Water Hotline
- Litter Cleanup Projects

3.2 Public Notice and Comment on SWMP Development

On January 14, 2003, the Ninth Circuit Court of Appeals issued its decision in *Environmental Defense Center v. United States Environmental Protection Agency (USEPA)*. The Court determined that applications for general permit coverage (including NOI and SWMP) must be made available to the public, and there must be a process to accommodate public hearings.

The Permittees will provide public notice of meetings related to SWMP development at City/Town halls, libraries and municipal web sites. In addition, pertinent documents will be made available for public review.

3.3 Lahontan WQCB Quarterly Stakeholders Meetings

The Lahontan Regional Water Quality Control Board has assembled a stakeholders group that included representatives from the communities of Apple Valley, Hesperia, Victorville, Adelanto and Barstow and began holding quarterly meetings in an effort to begin to define the water quality concerns of the Mojave Watershed area. The Regional Board staff encouraged the stakeholders to prepare a regional Storm Water Quality Management Program (SWMP). During the summer of 2002, the group began planning efforts in earnest to prepare a joint SWMP to meet the Federal and State requirements for the Phase II Regulated Small MS4s. This group's meetings will be central to the development and implementation of the SWMP.

3.4 Mojave Desert Resource Conservation District

A key aspect of the winning grant proposal prepared by the Mojave Desert Resource Conservation District is the opportunity for gathering information from the communities via surveys that are to be conducted initially as a baseline, and after each public education demonstration. The initial survey includes questions regarding environmental action as part of a group (clean-ups, adopt-a-highway, and Earth Day activities) as well as individual action (household chemical reduction/proper disposal, trash recycling, and trash pickup).

These surveys will be used to evaluate an increase in involvement as a result of the Public Education Outreach Program. A GIS database will be used to record, analyze and display data from the project. The format uses Arc View 8, which will allow for integration of the results into other watershed/ecosystem programs. The trend data and demonstration photos will be displayed at each of the respective city halls and at city council meetings to demonstrate the accomplishments of the program. The municipal display boards will be updated quarterly to reflect new results as the education programs progress.

The measurable goal is to show an increase in environmental involvement over the 22-month demonstration part of the public education program.

3.5 Mojave Water Agency Technical Advisory Committee

The MWA's educational program is multi-faceted. The staff is committed to outreach to all schools within its boundaries. Staff members speak in the classroom on water conservation and also conduct tours of MWA facilities including its weather station and desert garden. The Agency has chosen the best educational materials available to provide, at no charge, to schools, youth groups and the like.

The MWA believes that a particularly effective way to reach young people with the conservation message is to teach the teachers. Accordingly, the MWA has arranged two after-school seminars for local teachers within the past year, taught by an expert in water education.

The Agency works closely throughout the year with the Technical Advisory Committee (TAC), a group made up of representatives of water purveyors, farmers and community groups. TAC meetings, held monthly, are open forums at which issues affecting local water supplies are discussed.

Each spring, the MWA participates in a major event for the community. The Desert Communities Water Awareness Expo consists of representatives of local water purveyors working together to get out the message on water conservation/awareness.

3.6 Publicizing the San Bernardino County Storm Water Hotline

The Permittees will publicize this hotline on their municipal web sites and include it on the hard copy documents that they publish which contain similar information.

3.7 Litter Cleanup Projects

Some of the Permittees have on going programs which involve community cleanup:

- Annual city clean-up programs
- Adopt-a-block programs
- Household Hazardous Waste programs

The Permittees will evaluate these on-going programs and determine which are most effective in meeting the goals of the SWMP. The most effective programs will be given increased emphasis and support.

Additional Information
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/pub_inv.cfm

3.8 Measurable Goals

The Public has been involved in producing this SWMP. The Permittees will continue to seek their involvement and input in the continuing SWMP process by holding public meetings and promoting activities that improve water quality. See master schedule in appendix.

Section 4. Illicit Discharge Detection and Elimination

Minimum Control Measure 3

Federal regulations define an illicit discharge as "any discharge to an MS4 that is not composed entirely of storm water," but with some exceptions. The exceptions include discharges from NPDES-permitted industrial sources and from fire-fighting activities. Illicit discharges include: sanitary wastewater, septic tank effluent, car wash wastewaters, improper oil disposal, radiator flushing, laundry wastewater, spills from roadway accidents, and improper disposal of toxic materials.

4.1 Requirements

The Permittees will:

1) Develop, implement and enforce a program to detect and eliminate illicit discharges into the regulated small MS4. An illicit discharge is defined in 40 CFR 122.26(b)(2) as "any discharge to a municipal storm sewer that is not composed entirely of storm water, except discharges pursuant to an NPDES Permit (other than the NPDES Permit for discharges from the MS4) and discharges resulting from fire fighting activities.

2) Develop a storm sewer system 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-storm water discharges into the MS4 and implement appropriate enforcement procedures and actions.

4) Develop and implement a plan to detect and address non-storm water 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.

6) Address the following categories of non-storm water discharges or flows (i.e., authorized non-storm water discharges) only if they are identified as significant contributors of pollutants to the small MS4:

   - Water line flushing
   - Landscape irrigation
   - Diverted stream flows
   - Rising ground waters
   - Uncontaminated ground water infiltration (as defined at 40 CFR §35.2005(20)) to separate storm sewers
   - Uncontaminated pumped ground water
   - Discharges from potable water sources
   - Foundation drains
   - Air conditioning condensation
   - Irrigation water
   - Springs
   - Water from crawl space pumps
   - Footing drains
   - Lawn watering
   - Individual residential car washing
   - Flows from riparian habitats and wetlands
   - Dechlorinated swimming pool discharges.

4.2 Regulatory Mechanisms

The jurisdictions will emphasize enforcement of existing codes, ordinances and regulations regarding illicit discharges (illegal dumping, recreational sewage, industrial/business connections, non-storm water discharges, sanitary sewer overflows) during the first year of the Permit. They have set up a process to determine the revisions required and to revise those codes, ordinances and regulations

The Permittees will also address the 17 categories of non-storm water discharges or flows (i.e., authorized non-storm water discharges) and determine if they are significant contributors of pollutants to the small MS4. At the same time the Permittees will determine if these discharges require a “discharge to land” permit.

4.3 Best Management Practices (BMPs)

When implementing the Illicit Discharge, Detection and Elimination portion of the program the Permittees will focus on BMPs in the following areas.

Failing Septic Tanks

This watershed has numerous septic systems that provide a means of treating household waste in areas that do not have access to public sewers or where sewering is not feasible. The goal of this SWMP is to prevent contamination of the Mojave River from new septic systems that fail and to detect and correct existing systems that have failed.

A failing septic system is one that discharges effluent with pollutant concentrations exceeding established water quality standards. Failure rates for septic systems typically range between 1 and 5 percent each year, but can be much higher in some regions.

Failure of these disposal systems can be due to a number of causes, including unsuitable soil conditions, improper design and installation, or inadequate maintenance practices. Improperly functioning septic systems are recognized as a significant contributor of pollutants (especially nitrogen) and microbiological pathogens.

Industrial/Business Connections

The identification and elimination of illegal or inappropriate connections of industrial and business wastewater sources to the storm drain system is an important part of this MCM. Any industrial discharge not composed entirely of storm water that is conveyed to the storm drainage system or a water body is considered to be an illicit discharge.

Many of these discharges are a result of connections to the storm drain that are unknown to the business owner and may not be evident in architectural plans. The large amount of storm and sanitary sewer pipes in a community creates a complex and often confusing system of utilities, so it is not unusual for improper connections to occur.

Recreational Sewage

Recreational sewage management measures regulate wastewater generated from outdoor activities such as boating or camping by providing alternative methods to waste disposal in place of illegal overboard discharge.

Illegal Dumping

Illegal dumping is disposal of waste in an unpermitted area, such as a back area of a yard, a stream bank, or some other off-road area. Illegal dumping can also be the pouring of liquid wastes or disposing of trash down storm drains. It is often called "open dumping," or "midnight

dumping" because materials are often dumped in open areas, from vehicles along roadsides, and late at night. Illegally dumped wastes are primarily nonhazardous materials that are dumped to avoid paying disposal fees or expending the time and effort required for proper disposal

Additional Information
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/illicit.cfm

4.4 Measurable Goals

The Permittees of the Mojave River Watershed currently have programs in place that help to minimize non-storm water discharges to the MS4. These programs will continue. The Permittees will, however, evaluate their present efforts and make the changes required to meet the requirements of the Permit. (Note: Identifying illicit connections is not considered to be a major issue in this watershed because most of the storm water systems are above ground.)

The Permittees will develop maps showing “Level of Threat” zones. The red zone will be all property within ¼ mile from the Mojave River. The yellow zone will be property within ½ mile from the river or tributaries to the river. See master schedule in appendix.

Section 5. Construction Site Storm Water Runoff Control

Minimum Control Measure 4

5.1 Requirements

The Permittees will develop implement, and enforce a program to reduce pollutants in any storm water runoff to the Small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre will 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 will include the development and implementation of:

- An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions or other effective mechanisms, to ensure compliance, to the extent allowable under State, or local law;
- Procedures for site plan review which incorporate consideration of potential water quality impacts;
- Requirements for construction site operators to implement appropriate erosion and sediment control best management practices;
- Requirements for construction site operators to control waste such as discarded building materials, concrete truck wash out, chemicals, litter, and sanitary waste at the construction sites that may cause adverse impacts to water quality;
- Procedures for site inspection and enforcement of control measures; and
- Procedures for receipt and consideration of information submitted by the public.

5.2 Ordinance and Regulatory Mechanisms to Require Erosion and Sediment Control

To control erosion and sediment runoff from construction sites, the Permittees will utilize existing ordinances to issue grading and building permits. The Permittees under their Planning Divisions, Building and Safety, Public Works, or Engineering Departments administer construction standards to safeguard life, health and property in the interest of the general public's welfare. Ordinances related to construction and grading activities already incorporate some requirements for erosion and sediment control. They will, however, be amended to meet the requirements of this Permit.

Existing ordinances for dust control, in accordance with AQMD requirements for the high desert, will continue to be implemented. Dust control measures are practices that help reduce surface and air movement of dust from disturbed soil. Dust can be carried off-site and cause

environmental degradation. It also increases the likelihood of sedimentation and pollution in the surface waters. Controlling the spread of dust is protective of storm water.
The Permittees will also require proof of coverage under the Construction General Permit by verifying Notice of Intent (NOI)/ Waste Discharge Identification Number (WDID) before issuing grading permits to operators of construction sites with land disturbance greater than or equal to one acre. This practice will ensure that adequate measures to protect the storm water system will be required from the construction operators.

5.3 Procedures for Site Plan Review

Through the Building and Safety and/or Engineering Departments, the Permittees will conduct reviews and approvals of site and building plans, subdivision plans, street improvement plans, drainage plans, hydrology reports and soil reports for new development and redevelopment projects to ensure compliance with code requirements and other municipal ordinances.

As part of the plan review process, the Permittees will require developers to implement appropriate BMPs on construction sites to control erosion and sediment in accordance with ordinances. Section 5.4 lists suggested BMPs for developers/contractors.

5.4 BMPs for Construction Site Operators

The Permittees will require construction site operators and developers to implement erosion and sediment control BMPs appropriate to their localities. The following is a list of suggested construction BMPs (*Source: USEPA-NPDES Website: National Menu of Best Management Practices for Storm Water Phase II,* http://cfpub.epa.gov/npdes/stormwater/menuofbmps/con_site.cfm).

Runoff Control

Minimize Clearing:

- Land Grading
- Preserve Natural Vegetation
- Construction Entrances

Stabilize Drainage Ways:

- Check Dams
- Filter Berms
- Riprap

Erosion Control

Stabilize Exposed Soils:

- Chemical Stabilization
- Mulching
- Permanent Seeding

Protect Steep Slopes:

- Geotextiles
- Gradient Terraces
- Soil Retention
- Temporary Slope Drain

Protect Waterways:

- Temporary Stream Crossings
- Vegetated Buffer

Phase Construction:

- Construction Sequencing
- Dust Control

Sediment Control

Install Perimeter Control:

- Temporary Diversion Dikes, Earth Dikes, and Interceptor Dikes
- Wind Fences and Sand Fences
- Brush Barrier
- Silt Fence

Install Sediment Trapping Devices

- Sediment Basins and Rock Dams
- Sediment Filters and Sediment Chambers
- Sediment Trap

Inlet Protection

- Storm Drain Inlet Protection

5.5 Good Housekeeping BMPs for Construction Sites

The Permittees will require all construction site operators to control waste. Typical construction wastes are: discarded building materials, concrete truck wash out, chemicals, litter, and sanitary waste. These may cause adverse impacts to water quality. Practices, which will assist in the prevention of prohibited discharges will be required for all construction sites. They include: General Construction Site Waste Management, Spill Prevention and Control Plan, Vehicle Maintenance and Washing Area, and BMP Inspection and Maintenance, will be required for all construction sites. The following is a brief description of these mandatory BMPs.

General Construction Site Waste Management

Building materials and construction site wastes must be properly managed and disposed of to reduce the risk of pollution from materials such as surplus or refuse building materials or hazardous wastes. Practices such as trash disposal, recycling, proper material handling, and spill prevention and cleanup measures can reduce the potential for storm water runoff to mobilize construction site wastes and contaminate surface or ground water.

The proper management and disposal of wastes should be practiced at any construction site to reduce storm water runoff. Waste management practices can be used to properly locate refuse piles, to cover materials that may be dispersed by wind, rainfall or storm water runoff, and to prevent spills and leaks from hazardous materials that are improperly stored.

The detailed description of this BMP may be found at the EPA-NPDES website on National Menu of BMPs for Storm Water Phase II:
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/site_21.cfm.

Spill Prevention and Control Plan

Spill prevention and control plans should clearly state measures to: prevent a spill, contain the spill, clean up the spill, dispose of contaminated materials, and train personnel to prevent and control future spills.

Spill prevention and control plans are also applicable to construction sites where hazardous materials are stored or used. Hazardous materials include: pesticides, paints, cleaners, petroleum products, fertilizers, and solvents.

The detailed description of this BMP may be found at the EPA-NPDES website on National Menu of BMPs for Storm Water Phase II:
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/site_34.cfm.

Vehicle Maintenance and Washing Areas

Maintenance and washing of vehicles should be conducted using environmentally responsible practices to prevent discharges of wastewater or hazardous wastes to surface or ground waters. This involves designating covered paved areas for maintenance and washing, eliminating improper connections from these areas to the storm drain system, developing a spill prevention and cleanup plan for shop areas, maintaining vehicles and other equipment that may leak hazardous chemicals, covering fuel drums and other materials that are stored outdoors, and properly handling and disposing of automotive wastes and wash water.

Environmentally friendly vehicle maintenance and washing practices are applicable for every construction site to prevent contamination of surface and ground water from wash water and spills/leaks of fuel, coolant, or antifreeze.

The detailed description of this BMP may be found at the EPA-NPDES website on National Menu of BMPs for Storm Water Phase II:
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/site_41.cfm.

BMP Inspection and Maintenance by Contractor

To maintain the effectiveness of construction site storm water control BMPs, regular inspection of control measures is essential. Generally, inspection and maintenance of BMPs can be categorized into two groups: expected routine maintenance and non-routine (repair)

maintenance. Routine maintenance refers to checks performed on a regular basis to keep the BMP in good working order and aesthetically pleasing. In addition, routine inspection and maintenance is an efficient way to prevent potential nuisance situations (odors, mosquitoes, weeds, etc.), reduce the need for repair maintenance, and reduce the chance of polluting storm water runoff by finding and correcting problems before the next rain. Non-routine maintenance refers to any activity that is not performed on a regular basis. This type of maintenance could include major repairs after a violent storm or extended rainfall, or replacement and redesign of existing control structures.

All storm water BMPs should be inspected by the general contractor for continued effectiveness and structural integrity on a regular basis for the life of the construction project. Generally, all BMPs should be inspected after each storm event in addition to the regularly scheduled inspections.

The detailed description of this BMP may be found at the EPA-NPDES website on National Menu of BMPs for Storm Water Phase II:
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/site_2.cfm.

5.6 Procedures for Site Inspection/Enforcement

The Permittees, through their Building and Safety Departments, make periodic site inspections during the course of the construction to ensure compliance with codes and ordinances. The Permittees will conduct inspections to verify that the required BMPs are properly installed once construction work is started. Inspection priorities are based on the nature and extent of the construction activity, topography, and characteristics of the soil and receiving water quality.

The Permittees will respond to citizen's complaints of code violation, city department referrals for investigation and compliance, and intergovernmental enforcement agency referrals on issues that relate to storm water quality.

Building and Safety Departments will promptly respond to complaints regarding construction sites and require prompt corrective action as appropriate.

5.7 Measurable Goals

The Permittees currently have systems in place to help minimize storm water runoff and erosion from construction sites. They will, however, reevaluate those systems and make the necessary changes to comply with this permit. See master schedule in appendix.

Section 6. Post-Construction Storm Water Management in New Development and Redevelopment

Minimum Control Measure 5

6.1 Requirements

This section describes current practices and future plans for developing and implementing Post-Construction Storm Water Management in New Development and Redevelopment that meet the requirements of the Small MS4 General Permit. The General Permit requires that:

The Permittees will:

1) Develop, implement, and enforce a program to address storm water 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 common plan of development or sale, that discharge into 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 non-structural BMPs appropriate for the high-desert communities.
3) Review existing ordinances and policies and amend as necessary to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or local law. The program will incorporate applicable design standards contained in Attachment 4 of the General Permit.
4) Ensure adequate long-term operation and maintenance of BMPs.

Under the Federal Regulations the term "redevelopment" refers to: alterations of a property that change the "footprint" of a site or building in such a way that there is a disturbance of equal to or greater than one acre of land. The term does not include such activities as exterior remodeling.

In addition, areas subject to high growth or serving a population of at least 50,000 will comply with the provisions in the appendix to this section (for counties, this threshold population applies to the population within the permit area).

6.2 Ordinances and Regulatory Mechanisms

The Permittees through their Planning Divisions, Public Works, and Engineering Departments will continue to use existing master plans, ordinances, zoning policies, and programs in the evaluation and approval of new development and redevelopment projects. Through their approval processes, the Permittees will review new development and redevelopment projects during the planning stage and impose design and development requirements in accordance with their legal authority to deal with issues associated with runoff pollution control and management. Typical permits and approvals that may be used in this process include: subdivision or tentative map approval, grading and building permits, design review, conditional use permit and use permit.

Over the course of the first three years of Permit implementation, the Permittees will jointly review existing ordinances to assess the need for amendments or new regulatory measures to promote improvement of runoff water quality in accordance with Permit requirements. Prior to the approval of a project and issuance of permits, the Permittees will require the developers and contractors to implement a combination of applicable and appropriate structural and non-structural BMPs. (See Section 6.3 for a list of potentially applicable Structural and Non-Structural BMPs.) The Permittees will work with the developers and contractors in the selection of post-construction measures that are feasible, cost-effective, appropriate to the site, and maintainable.

The Permittees will ensure that these BMP requirements are addressed in the review and approval process and will also provide measures so that adequate long-term operation and maintenance of controls are implemented. The Permittees will amend existing ordinance or adopt other regulatory mechanism to provide for building inspectors and code enforcement officers to inspect and enforce provisions of the post-construction requirements.

Flood Prevention/Flow Control Ordinances

The Permittees have enacted flood damage prevention ordinances that place requirements on new construction projects. These ordinances seek to limit peak runoff flows from new developments by retaining and infiltrating storm water on-site.

Water Conservation Plans

The Permittees have enacted ordinances to conserve the use of water in a manner that also serves to prevent excess discharges of water. These ordinances apply to both existing consumers of water and to new developments. In limiting the wasteful use of water, these ordinances far exceed requirements of the Phase II Municipal Storm Water Program. The following ordinance provisions can be applied to existing as well as new development:

- Prohibition of wasteful running of hoses, valves, faucets, sprinklers or irrigation devices;
- Prohibition of excess run-off from commercial and noncommercial irrigation, including agricultural;
- Restriction of lawn watering, landscape irrigation and watering of public and private recreation facilities to the period between the hours of 6 p.m. and 9 a.m. during the period from April through September to minimize evaporation losses;
- Agricultural users and commercial nurseries limited to watering from 6 p.m. to 11 a.m. September through April;
- Prohibition of washing down of sidewalks, driveways, parking lots and other paved surfaces; and
- BMP controls for non-commercial automobile washing.

These ordinances place additional requirements on new developments, including:

- Requirement for installation of low-flush toilets and low-flow showers and faucets;
- Water recycling systems required for commercial vehicle washing facilities;
- Suggestion and encouragement of the use of drought tolerant plant species in landscaping;
- Large water users required to submit a water conservation plan.

Water-Efficient Landscaping

Some Permittees have also adopted requirements for promoting water-efficient landscaping that have direct and important benefits to water quality. These requirements are applicable to:

- Public agency projects;
- Private developments requiring a development permit;
- Developer-installed landscaping for single-family and multi-family projects;
- Ecological restoration projects without permanent irrigation systems; and
- Mined-land reclamation projects that do not require permanent irrigation systems.

Among the many important objectives of these ordinances is the promotion of:

- Xeriscape landscaping and irrigation practices;
- Use of reclaimed water;
- Appropriate use of drip irrigation and subsurface bubblers;
- Hydrozoning;
- Limiting degree of slopes adjacent to streets to minimize runoff;
- Limiting of turf areas; and
- Ongoing maintenance of landscaping and irrigation.

Native Vegetation Preservation

Some of the Permittees have recently enacted ordinances for preservation of native vegetation that also have objectives that positively impact the quality and reduce the quantity of storm water runoff. These ordinances provide design standards for new development that are an alternative to pre-existing standards for subdivision of property and have as their objectives:

- Preserving dense stands of Joshua trees, junipers, yuccas and other native vegetation;
- Minimizing the effects of mass grading and preserving natural vegetation within suburban residential settings;
- Discouraging mass grading of large building pads;
- Providing alternatives for the design of drainage facilities to safely divert storm water flows across lots and streets; and
- Preserving views of significant native vegetation from within and without the project area.

6.3 Structural/Non-Structural BMPs

Non-structural BMPs are preventative actions that involve management and source controls such as policies and ordinances that: provide requirements and standards to direct growth to identified areas, protect sensitive areas such as native habitat and riparian areas, provide buffers along sensitive water bodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation

Structural BMPs are designed systems for storing, treating and/or infiltrating storm water. Among the structural and non-structural BMPs for the high-desert are:

Structural BMPs

Infiltration Practices

- Porous Pavement
- Infiltration Trench
- Infiltration Drainfields
- Alternative Pavers

- Infiltration Basin
- Dry Wells
- Dry Extended Detention Ponds

Filtration Practices
- Sand and Organic Filters

Runoff Pretreatment Practices
- Catch Basins/Catch Basin Insert
- In-line Storage
- Manufactured Products for Storm Water
- Hydrodynamic Separators
- Modular Treatment Systems

Non-Structural BMPs

Experimental Practices
- Alum Injection

On-lot Treatment
- On-lot Treatment

Better Site Design
- Buffer Zones
- Open Space Design
- Conservation Easements
- Infrastructure Planning

Additional Information
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post.cfm

Appendix

Areas subject to high growth or serving a population of at least 50,000 must comply with the following provisions (for counties this threshold population applies to the population within the permit area).

A. RECEIVING WATER LIMITATIONS

1. Discharges shall not cause or contribute to an exceedance of water quality standards contained in a Statewide Water Quality Control Plan, the California Toxics Rule (CTR), or in the applicable RWQCB Basin Plan.

2. The permittees shall comply with Receiving Water Limitations A.1 through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the SWMP and other

requirements of this permit including any modifications. The SWMP shall be designed to achieve compliance with Receiving Water Limitations A.1. If exceedance(s) of water quality objectives or water quality standards (collectively, WQS) persist notwithstanding implementation of the SWMP and other requirements of this permit, the permittees shall assure compliance with Receiving Water Limitations A.1 by complying with the following procedure:

a. Upon a determination by either the permittees or the RWQCB that discharges are causing or contributing to an exceedance of an applicable WQS, the permittees shall promptly notify and thereafter submit a report to the RWQCB that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of WQSs. The report may be incorporated in the annual update to the SWMP unless the RWQCB directs an earlier submittal. The report shall include an implementation schedule. The RWQCB may require modifications to the report.

b. Submit any modifications to the report required by the RWQCB within 30 days of notification.

c. Within 30 days following approval of the report described above by the RWQCB, the permittees shall revise the SWMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required.

d. Implement the revised SWMP and monitoring program in accordance with the approved schedule.

So long as the permittees have complied with the procedures set forth above and are implementing the revised SWMP, the permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the RWQCB to develop additional BMPs.

B. DESIGN STANDARDS

Regulated Small MS4s subject to this requirement must adopt an ordinance or other document to ensure implementation of the Design Standards included herein or a functionally equivalent program that is acceptable to the appropriate RWQCB. The ordinance or other document must be adopted and effective prior to the expiration of this General Permit or, for Small MS4s designated subsequent to the Permit adoption, within five years of designation as a regulated Small MS4.

All discretionary development and redevelopment projects that fall into one of the following categories are subject to these Design Standards. These categories are:

- Single-Family Hillside Residences
- 100,000 Square Foot Commercial Developments
- Automotive Repair Shops
- Retail Gasoline Outlets
- Restaurants
- Home Subdivisions with 10 or more housing units
- Parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff

1. Conflicts With Local Practices

   Where provisions of the Design Standards conflict with established local codes or other regulatory mechanism, (e.g., specific language of signage used on storm drain stenciling), the Permittee may continue the local practice and modify the Design Standards to be consistent with the code or other regulatory mechanism, except that to the extent that the standards in the Design Standards are more stringent than those under local codes or other regulatory mechanism, such more stringent standards shall apply.

2. Design Standards Applicable to All Categories

   a. Peak Storm Water Runoff Discharge Rates
   Post-development peak storm water runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge rate will result in increased potential for downstream erosion.

   b. Conserve Natural Areas
   If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

      1) Concentrate or cluster Development on portions of a site while leaving the remaining land in a natural undisturbed condition.
      2) Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
      3) Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
      4) Promote natural vegetation by using parking lot islands and other landscaped areas.
      5) Preserve riparian areas and wetlands.

c. Minimize Storm Water Pollutants of Concern

Storm water runoff from a site has the potential to contribute oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the storm water conveyance system. The development must be designed so as to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the storm water conveyance system as approved by the building official. Pollutants of concern consist of any pollutants that exhibit one or more of the following characteristics: current loadings or historic deposits of the pollutant are impacting the beneficial uses of a receiving water, elevated levels of the pollutant are found in sediments of a receiving water and/or have the potential to bioaccumulate in organisms therein, or the detectable inputs of the pollutant are at concentrations or loads considered potentially toxic to humans and/or flora and fauna.

In meeting this specific requirement, "minimization of the pollutants of concern" will require the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the Maximum Extent Practicable. Those BMPs best suited for that purpose are those listed in the *California Storm Water Best Management Practices Handbook*s; *Caltrans Storm Water Quality Handbook: Planning and Design Staff Guid*e; *Manual for Storm Water Management in Washington Stat*e; *The Maryland Stormwater Design Manua*l; *Florida Development Manual: A Guide to Sound Land and Water Managemen*t; Denver *Urban Storm Drainage Criteria Manual, Volume 3 – Best Management Practices* and *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* , USEPA Report No. EPA-840-B-92-002, as "likely to have significant impact" beneficial to water quality for targeted pollutants that are of concern at the site in question. However, it is possible that a combination of BMPs not so designated, may in a particular circumstance, be better suited to maximize the reduction of the pollutants.

d. Protect Slopes and Channels

Project plans must include BMPs consistent with local codes, ordinances, or other regulatory mechanism and the Design Standards to decrease the potential of slopes and/or channels from eroding and impacting storm water runoff:

1) Convey runoff safely from the tops of slopes and stabilize disturbed slopes.
2) Utilize natural drainage systems to the maximum extent practicable.
3) Stabilize permanent channel crossings.
4) Vegetate slopes with native or drought tolerant vegetation, as appropriate.
5) Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined

channels in accordance with applicable specifications to minimize erosion, with the approval of all agencies with jurisdiction, e.g., the U.S. Army Corps of Engineers and the California Department of Fish and Game.

e. Provide Storm Drain System Stenciling and Signage

Storm drain stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets. The stencil contains a brief statement that prohibits the dumping of improper materials into the storm water conveyance system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message. All storm drain inlets and catch basins within the project area must be stenciled with prohibitive language (such as: "NO DUMPING – DRAINS TO RIVER") and/or graphical icons to discourage illegal dumping.· Signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, must be posted at public access points along channels and creeks within the project area.· Legibility of stencils and signs must be maintained.

f. Properly Design Outdoor Material Storage Areas

Outdoor material storage areas refer to storage areas or storage facilities solely for the storage of materials. Improper storage of materials outdoors may provide an opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the storm water conveyance system. Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system, the following Structural or Treatment BMPs are required:

1.) Materials with the potential to contaminate storm water must be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the storm water conveyance system; or (2) protected by secondary containment structures such as berms, dikes, or curbs.
2.) The storage area must be paved and sufficiently impervious to contain leaks and spills.
3.) The storage area must have a roof or awning to minimize collection of storm water within the secondary containment area.

g. Properly Design Trash Storage Areas

A trash storage area refers to an area where a trash receptacle or receptacles (dumpsters) are located for use as a repository for solid wastes. Loose trash and debris can be easily transported by the forces of water or wind into nearby storm drain inlets, channels, and/or creeks. All trash container areas must meet the following Structural or Treatment Control

BMP requirements (individual single family residences are exempt from these requirements):

1.) Trash container areas must have drainage from adjoining roofs and pavement diverted around the area(s).
2.) Trash container areas must be screened or walled to prevent off-site transport of trash.

h. Provide Proof of Ongoing BMP Maintenance

Improper maintenance is one of the most common reasons why water quality controls will not function as designed or which may cause the system to fail entirely. It is important to consider who will be responsible for maintenance of a permanent BMP, and what equipment is required to perform the maintenance properly. As part of project review, if a project applicant has included or is required to include, Structural or Treatment Control BMPs in project plans, the Permittee shall require that the applicant provide verification of maintenance provisions through such means as may be appropriate, including, but not limited to legal agreements, covenants, CEQA mitigation requirements and/or Conditional Use Permits.

For all properties, the verification will include the developer's signed statement, as part of the project application, accepting responsibility for all structural and treatment control BMP maintenance until the time the property is transferred and, where applicable, a signed agreement from the public entity assuming responsibility for Structural or Treatment Control BMP maintenance. The transfer of property to a private or public owner must have conditions requiring the recipient to assume responsibility for maintenance of any Structural or Treatment Control BMP to be included in the sales or lease agreement for that property, and will be the owner's responsibility. The condition of transfer shall include a provision that the property owners conduct maintenance inspection of all Structural or Treatment Control BMPs at least once a year and retain proof of inspection. For residential properties where the Structural or Treatment Control BMPs are located within a common area which will be maintained by a homeowner's association, language regarding the responsibility for maintenance must be included in the project's conditions, covenants and restrictions (CC&Rs). Printed educational materials will be required to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what storm water management facilities are present, signs that maintenance is needed, how the necessary maintenance can be performed, and assistance that the Permittee can provide. The transfer of this information shall also be required with any subsequent sale of the property.

If Structural or Treatment Control BMPs are located within a public area proposed for transfer, they will be the responsibility of the developer until they are accepted for transfer by the County or other appropriate public agency. Structural or Treatment Control BMPs proposed for transfer must meet design standards adopted by the public entity for the BMP installed and should be approved by the County or other appropriate public agency prior to its installation.

i. Design Standards for Structural or Treatment Control BMPs

The Permittees shall require that post-construction treatment control BMPs incorporate, at a minimum, either a volumetric or flow based treatment control design standard, or both, as identified below to mitigate (infiltrate, filter or treat) storm water runoff:

1) Volumetric Treatment Control BMP

a.) The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998); or

b.) The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (2003); or

c.) The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.

2) Flow Based Treatment Control BMP

a.) The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the area; or

b.) The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

Limited Exclusion

Restaurants and Retail Gasoline Outlets, where the land area for development or redevelopment is less than 5,000 square feet, are excluded from the numerical Structural or Treatment Control BMP design standard requirement only.

3. Provisions Applicable to Individual Priority Project Categories

a. 100,000 Square Foot Commercial Developments

1) Properly Design Loading/Unloading Dock Areas

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

a) Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.
b) Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

2) Properly Design Repair/Maintenance Bays

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

a) Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water runon or contact with storm water runoff.
b) Design a repair/maintenance bay drainage system to capture all washwater, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

3) Properly Design Vehicle/Equipment Wash Areas

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. The area in the site design must be:

a) Self-contained and/ or covered, equipped with a clarifier, or other pretreatment facility, and
b) Properly connected to a sanitary sewer or other appropriately permitted disposal facility.

b. Restaurants

1) Properly Design Equipment/Accessory Wash Areas
The activity of outdoor equipment/accessory washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for the washing/steam cleaning of equipment and accessories. This area must be:

a) Self-contained, equipped with a grease trap, and properly connected to a sanitary sewer.
b) If the wash area is to be located outdoors, it must be covered, paved, have secondary containment, and be connected to the sanitary sewer or other appropriately permitted disposal facility.

c. Retail Gasoline Outlets

1) Properly Design Fueling Area
Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. The project plans must include the following BMPs:

a) The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.
b) The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.
c) The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents runon of storm water to the extent practicable.
d) At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.

d. Automotive Repair Shops

1) Properly Design Fueling Area
Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system.

Therefore, design plans, which include fueling areas, must contain the following BMPs:

a. The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.
b. The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.
c. The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents runon of storm water to the extent practicable.
d. At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.

2) Properly Design Repair/Maintenance Bays

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

a) Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water run-on or contact with storm water runoff.
b) Design a repair/maintenance bay drainage system to capture all wash-water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

3) Properly Design Vehicle/Equipment Wash Areas

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. This area must be:

a) Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or other appropriately permitted disposal facility.

4) Properly Design Loading/Unloading Dock Areas
Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

a) Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.
b) Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

e. Parking Lots

1) Properly Design Parking Area
Parking lots contain pollutants such as heavy metals, oil and grease, and polycyclic aromatic hydrocarbons that are deposited on parking lot surfaces by motor vehicles. These pollutants are directly transported to surface waters. To minimize the offsite transport of pollutants, the following design criteria are required:

a) Reduce impervious land coverage of parking areas.
b) Infiltrate or treat runoff.

2) Properly Design To Limit Oil Contamination and Perform Maintenance
Parking lots may accumulate oil, grease, and water insoluble hydrocarbons from vehicle drippings and engine system leaks:

a) Treat to remove oil and petroleum hydrocarbons at parking lots that are heavily used (e.g. fast food outlets, lots with 25 or more parking spaces, sports event parking lots, shopping malls, grocery stores, discount warehouse stores).
b) Ensure adequate operation and maintenance of treatment systems particularly sludge and oil removal, and system fouling and plugging prevention control.

4. Waiver

A Permittee may, through adoption of an ordinance, code, or other regulatory mechanism incorporating the treatment requirements of the Design Standards, provide for a waiver from the requirement if impracticability for a specific property can be established. A waiver of impracticability shall be granted only when all other Structural or Treatment Control BMPs have been considered and rejected as infeasible. Recognized situations of impracticability include, (i) extreme limitations of space for treatment on a redevelopment project, (ii) unfavorable or unstable soil conditions at a site to attempt infiltration, and (iii) risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of

drinking water is less than 10 feet from the soil surface. Any other justification for impracticability must be separately petitioned by the Permittee and submitted to the appropriate RWQCB for consideration. The RWQCB may consider approval of the waiver justification or may delegate the authority to approve a class of waiver justifications to the RWQCB EO. The supplementary waiver justification becomes recognized and effective only after approval by the RWQCB or the RWQCB EO. A waiver granted by a Permittee to any development or redevelopment project may be revoked by the RWQCB EO for cause and with proper notice upon petition.

5. Limitation on Use of Infiltration BMPs

Three factors significantly influence the potential for storm water to contaminate ground water. They are (i) pollutant mobility, (ii) pollutant abundance in storm water, (iii) and soluble fraction of pollutant. The risk of contamination of groundwater may be reduced by pretreatment of storm water. A discussion of limitations and guidance for infiltration practices is contained in, *Potential Groundwater Contamination from Intentional and Non-Intentional Stormwater Infiltration, Report No. EPA/600/R-94/051, USEPA (1994).*

In addition, the distance of the groundwater table from the infiltration BMP may also be a factor determining the risk of contamination. A water table distance separation of ten feet depth in California presumptively poses negligible risk for storm water not associated with industrial activity or high vehicular traffic.

Site-specific conditions must be evaluated when determining the most appropriate BMP. Additionally, monitoring and maintenance must be provided to ensure groundwater is protected and the infiltration BMP is not rendered ineffective by overload. This is especially important for infiltration BMPs for areas of industrial activity or areas subject to high vehicular traffic [25,000 or greater average daily traffic (ADT) on main roadway or 15,000 or more ADT on any intersecting roadway]. In some cases pretreatment may be necessary.

6. Alternative Certification for Storm Water Treatment Mitigation

In lieu of conducting detailed BMP review to verify Structural or Treatment Control BMP adequacy, a Permittee may elect to accept a signed certification from a Civil Engineer or a Licensed Architect registered in the State of California, that the plan meets the criteria established herein. The Permittee is encouraged to verify that certifying person(s) have been trained on BMP design for water quality, not more than two years prior to the signature date. Training conducted by an organization with storm water BMP design expertise (e.g., a University, American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, or the California Water Environment Association) may be considered qualifying.

6.4 Measurable Goals

The Permittees currently have systems in place to address storm water and irrigation runoff from new development and redevelopment projects. The Permittees will monitor existing systems and modify them as necessary to comply with the permit requirements under the Post-Construction Runoff Control Minimum Control Measures (MCM). See master schedule in appendix.

Section 7. Pollution Prevention/Good Housekeeping for Municipal Operations

Minimum Control Measure 6

7.1 Requirements

The Permittees will:

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 EPA, the State of California, or other organizations, include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.

7.2 The Town of Apple Valley

General Information

Government
Apple Valley is a General law town with a five member Town Council. It was incorporated on November 28, 1988. The Town has 78 square miles within its incorporated boundaries. The population of Apple Valley is approximately 60,000.

Public Services

Public Information Office
The Public Information Office is the primary communication link between the Town Hall and various public groups: the media, general population, business community, senior citizens, youth, and special interest groups. Using newsletters (six times per year), press releases, a website and other methods, the Public Information Office keeps citizens informed of events and issues that shape the community.

Police
Police services are provided under contract with the County Sheriff Department. It has a staff of 47, which includes 36 sworn officers. (This is the only major contract the Town has with the County).

Fire
Services are provided by the Apple Valley Fire Protection District which is governed by a five member Board of Directors. It provides the usual fire services including hazardous materials response. There are four fire stations. Training is done at the main station on Headquarters Drive.

Parks and Recreation
The Apple Valley Parks & Recreation Department is an agency of the Town. It is responsible for designing, operating and maintaining public facilities that include a community center, gymnasium, 13 parks and playgrounds, an equestrian center and ball fields.

Water Supply
Apple Valley water is pumped from the Upper Mojave Groundwater Basin. The three major water companies serving the town are: Apple Valley Ranchos Water Company, Rancheritos Mutual Water Company, and Southern California Water Company.

Sanitation
The Town has a contract with AVCO (a Burrtec company) to provide weekly curbside pickup of trash and recyclables. Residents can take household hazardous waste, CRTs, fluorescent tubes etc. to a designated yard. There are periodic collections of tires, appliances, mattresses etc. In addition to Community Cleanup days, the Town has graffiti removal and vehicle abatement programs.

Planning & Community Development

The Town is approximately 20% built-out and has 16,000 acres in redevelopment project areas. The typical lot size for a single-family residence is 2/5 acre. The Economic Development Department and Redevelopment Agency are charged with achieving the Town's economic development goals as established by the Town Council. With 86% of the Town zoned residential, significant effort and resources have been allocated toward balancing the Town's economy by attracting commercial and industrial enterprises.

The Planning Division, part of the Economic and Community Development Department, provides professional and technical support on all land use matters to the Town Council, Planning Commission, Town staff, and the community. The Planning Division is currently staffed with four professionals, three planners and one support person. The staff provides assistance to the public at the Public Information Counter in Town Hall. It assists other departments and agencies by providing information, analysis, and recommendations to the Planning Commission and Council on land use requests.

Aside from assisting and supporting the Town Council and Planning Commission, the staff reviews citizen requests for development permits, home occupation permits, sign permits, special event permits, temporary use permits, commercial vehicle parking permits, and special use permits.

The Engineering Division

The Engineering Division provides the staff support necessary to perform the legally required reviews and approvals of: tentative subdivision maps, final subdivision maps, street improvement plans, drainage plans, hydrology reports, traffic reports and soils reports for all new developments. Engineering staff support for the Traffic Committee is also provided by this program. In addition, staff support is provided to generate and maintain Town maps.

Code Enforcement Department

Code Enforcement is charged with assuring compliance with state and local laws relating to health and safety codes, maintenance standards and land use regulations. Its goal is to maintain consistency with the Town's General Plan and to reduce visual blight in Apple Valley's neighborhoods. The Code Enforcement Division is subdivided into three specialized groups: Reactive (respond to resident complaints), Proactive (enforce laws), Problem Oriented Policing (POP – team with Police to enforce code.).

Business License Department

The Financial Department issues business licenses.

Animal Control

The Town contracts with the Victor Valley Animal Protective League to house stray and abandoned small animals. Grahams Livestock has the contract to assist in the capture and care of stray or abandoned large animals.

Public Works

The Street Maintenance Department oversees street improvements, street sweeping, public landscaping, sign installation/ maintenance and graffiti removal from public facilities. It monitors contract crews that maintain public streets. Streets with curbs and gutters are swept at least twice a month; those with high visibility are swept once a month. Those streets without curbs and gutters (95% of streets) are swept as needed.

This division also issues permits for excavation and construction in the rights-of-way. Personnel inspect all street cuts and repairs as well as traffic control plans and the actual traffic controls that are used during construction. By the end of year 1999, 260 of the Town's 400 miles of roads will have been improved since incorporation.

The Town's storm drain system consists of streets, natural washes, retention basins, leach fields and dry wells. (The Town maintains an inventory of dry wells)

Sanitary Sewer Service

Thirty percent of the Town's population is served by the sanitary sewer system. The Wastewater Department operates and maintains approximately 100 miles of collector sewer, trunk lines and interceptors as well as eight sewer lift (pump) stations providing sewer service to over 4500 customers in Apple Valley. The Department also conducts cleaning and maintenance programs on the wastewater system and facilities. It issues permits for connections and inspects all mainline lateral connections. It reviews all proposed main lines and inspects their installation.

Education

The public school system is managed and operated by the Apple Valley Unified School District. There are three public senior high schools, two public middle schools, and eight public elementary schools.

References

1. The Town of Apple Valley website
http://www.applevalley.org

2. The Apple Valley Chamber of Commerce website
http://www.avchamber.org

7.3 City of Hesperia

General Information

Hesperia is a residential community with the requisite retail establishments to support the residents. Residential lots are typically ½ acre. The only heavy industry in the area is the cement plant in the Lucerne Valley. There is no surface mining (sand and gravel etc) in the City.

In the recent past, the City has grown by annexing areas that are mostly residential with limited commercial development: Summit Valley Ranch, Rancho Los Flores. Oak Hills is currently unincorporated but a Community Plan has recently been adopted, which provides for residential zoning.

Government

Hesperia is a general law city with a five member City Council. It was incorporated on July 1, 1988. The City's incorporated area is approximately 69 square miles. Its estimated population is 63, 000.

City functions are organized in the following areas:

- *City Manager*
    - City Clerk
    - Public Information Office
    - Recycling

- *Development Services*
    - Community Development
    - Building and Safety
    - Animal Control
    - Code Enforcement, Planning
    - Economic Development
    - Hesperia Water District
    - Engineering / Public Works
    - Management Services
        - Finance
        - Human Resources
        - Risk Management
        - Employer-Employee Relations,
        - Central Services
        - Management Information Services (MIS)
    - Police (contract with San Bernardino County Sheriff)

- *Fire District*

Police

The City contracts with the San Bernardino County Sheriff's Department for full police services. The Department consists of Field Operations, Support Operations, and Volunteer Operations. (There are no other significant contracts with the County.). Maintenance for Police and other City vehicles is provided under contract with the Hesperia School District (located within City limits).

Fire Protection District

The Hesperia Fire Department operates as a subsidiary district much like the Water District. The City Council serves as the Board of Directors but the Department receives separate funding. The Fire Department is a full service municipal department providing the community with: fire suppression, fire prevention and planning, disaster preparedness, hazardous materials management and emergency medical services. In addition they are responsible for weed abatement and vegetation management. The department has 52 firefighters/paramedics and 25 reserve firefighters. There is no fire training done that involves discharge of water to surface waters. Maintenance is provided under contract at a facility located outside City limits.

City Clerk

The City Clerk is responsible to the City Manager and provides administrative, legislative, and secretarial support to the City Council, Redevelopment Agency, Water Department, Public Facilities Corporation, Public Financing Authority, and the Fire Department. The office prepares agendas and publishes legal notices as required by California law. It records all minutes, adopted legislation, policy documents and contracts approved by the City Council, subsidiary districts and agency Boards. It maintains all original City deeds and easements; processes public information record retrieval requests; coordinates various administrative policy matters; maintains the City's legal library; and accepts and records claims, lawsuits and summons filed upon the City.

Public Information Office

The Public Information Office reports to the City Manager and is responsible for all external and internal communication programs designed to reach a wide variety of audiences. This involves:

- Development of communication plans for City services, programs and issues.
- Coordination of all media relations including press releases and public service announcements.
- Publication of the quarterly City newsletter, "Hesperia Horizon" which is delivered to all Hesperia and Oak Hills addresses.
- Acts as City liaison to the community.
- Serves as the Public Information Officer in implementing the Emergency Operation Center (EOC) in the event of a disaster.
- Provides content management of the City website.

Recreation and Parks

The Hesperia Area Recreation District Foundation, governed by a six-member board, is a registered non-profit organization.

Sanitation

The City has a contract with Advance Disposal to provide curbside service. There is regular weekly trash and recyclables pick-up. Once items are picked up curbside, Advance processes the refuse in their Materials Recovery Facility (MRF) system, which requires that all recyclable materials be removed from the waste stream.

Sanitation programs include:

- Green waste: such as separately bagged grass, leaves, branches or weeds are taken to a processing plant where they are converted to landscaping mulch.
- Household Hazardous Waste: The Household Hazardous Waste Facility located at Fire Station #304, accepts used motor oil, paint, cleaning chemicals and flammable liquids.
- Bi-annual Citywide Clean up: Each April and October, the City of Hesperia and Advance Disposal host a Citywide Clean-up Day. During this Saturday event, residents are encouraged to clean up their properties and surrounding areas. They may dispose of their rubbish and large items at two convenient drop-off locations. Volunteer groups pick up trash and items illegally dumped in City rights-of-way.

- Hesperia Adopt-a-block Program: Residents and business owners can volunteer to remove trash from designated areas on a routine basis or help in community clean-up events.

Development Services

Development Services is responsible for overseeing all aspects of land use development and enforcement. These include the divisions of Community Development, Building and Safety, Animal Control, Code Enforcement, Planning, Economic Development, Engineering, and Public Works (Water/Streets/Sewer).

Community Development

The Community Development Department coordinates all land use and development activities throughout the City and its sphere of influence. It is responsible for implementing the City's General Plan, Municipal Code, Uniform Building Code and state and federal laws.

Planning

The Planning division is responsible for administering the City's General Plan, Municipal Code and Zoning Ordinances. The Planning Division coordinates the review of land use development applications, including site plans and general use permits, general plan amendments, zone changes, specific plans and development agreements. The Planning division is also responsible for preparation of initial studies and other environmental studies. Upon approval of development applications, the Planning Division provides fast-track building plan check and grading plan review processes, as well as same day or next day final inspection scheduling.

Building & Safety and Code Enforcement Departments function under the City's Planning Division.

Animal Control

The Hesperia Animal Services Division deals with stray and aggressive animals. It provides a wide range of animal services including a fully staffed shelter, which is owned by the City.

Economic Development

The Economic Development Department administers the City's Redevelopment Agency, Economic Development, Community Development Block Grant (CDBG) and Affordable Housing Programs. These activities are directed at catalyzing private and public investment in City Economic Development and Community Development Block Grant (CDBG) project areas. The Department implements existing programs and creates/funds new programs to promote economic and housing development projects. The emphasis is on development projects that produce jobs, build infrastructure, expand the City's tax base and/ or provide affordable housing.

Public Works

The Public Works Department, a division of Development Services, operates and maintains the infrastructure and facilities of the City located on city property as well as all rights-of-way.

Engineering is responsible for processing development projects as they relate to public infrastructure, i.e. roads, water systems, sewer systems, drainage control and traffic signal systems. This includes responsibility for the engineering planning, design, and construction of all infrastructure projects included in the City's Capital Improvement Program. Engineering maintains all records of public infrastructure; maps, plans, and documents, for use by other departments, outside agencies, and the public.

The Street Division, which has its own yard, is responsible for the maintenance of the City's rights-of-way, including 475 miles of roads. Tasks include asphalt repair, grading operations (45 miles of dirt roads as well as shoulders along paved roads), weed abatement, and illegal dumping. Street sweeping is performed under contract. Streets with curbs and gutters are swept at least monthly. Main streets are swept weekly. All other streets are swept after rainstorms.

The Traffic Division's tasks include the operation/maintenance of all traffic lights and all regulatory/warning signs as well as painting street centerlines and legends. The traffic team is also responsible for the graffiti abatement program.

The Hesperia Water District

The Water District, a division of Development Services, is a subsidiary of the City of Hesperia, organized pursuant to the California Water Code. The District provides water and sewer utility service. It has its own yard.

Currently about 17% of the City is connected to the sanitary sewer system. New subdivisions will connect to the system, infill development most likely will not. The sewer division ensures the continuous unobstructed flow of sewage to the regional plant. The quality of the effluent must meet the requirements of the Victor Valley Wastewater Regional Authority (VVWRA), a Joint Powers Authority agency comprised of Hesperia and other local area entities providing sewer service.

The City's storm drain system consists of streets, natural washes, retention basins, leach fields and dry wells. The City has a policy for onsite retention of storm water. There are few, if any, public dry wells. The City maintains an inventory of privately owned drywells and believes that most of them have catch basins.

Education

The City is served by the Hesperia Unified School District. It has twelve public elementary schools, two public junior high schools and four public high schools.

References

1. The City of Hesperia website
   http://www.ci.hesperia.ca.us/city.html

2. Chamber of Commerce (760) 244-2135
   http://www.hesperiachamber.org

7.4 City of Victorville

The residential population of Victorville is approaching 71,000 (2002 estimate) and is growing rapidly. Within the city, there are 3,250 acres zoned for commercial use and nearly 60% remains available for development. Less than 50% of the land zoned residential is built out. Most of the area's employment opportunities fall into service-related businesses. Nearly 42% of businesses located in the City are in the retail sales category. Local manufacturing companies are primarily related to mining and cement production.

General Information

Government

Victorville is a general law city, governed by a five-member elected City Council. It was incorporated on September 21, 1962. The incorporated area of the City spans 74 square miles. The city government is comprised of ten departments and 250 employees, with department heads reporting directly to an appointed City Manager:

- Finance
- Human Resources
- Community Services
- Fire Department
- Sheriffs Department (contract)
- Economic Development/Redevelopment Agency
- Planning
- Building
- Engineering
- Public Works

The City Manager oversees the functions of all City departments and is responsible for carrying out the policies established by the City Council.

Public Services

Parks and Recreation

The Community Services Department provides recreational programs. This department maintains 15 parks, two municipal golf courses, and seven rental facilities. It is also

responsible for the maintaining City landscaping and the Landscaping Assessment District

Water Supply
The Victor Valley Water District is the major (about 80%) provider of water to the City. The Baldy Mesa Water District serves the southwest portion of the city.

Sanitation
The Sanitation Division, under the Finance Department, provides for refuse and recycling collection service to all residents and businesses within the City. The Town has a contract with AVCO (a Burrtec company) to provide weekly curbside pickup of trash and recyclables. Residents can take household hazardous waste, CRTs, fluorescent tubes, etc. to a designated yard. There are periodic collections of tires, appliances, mattresses etc.

Police
The City contracts with the San Bernardino County Sheriff's Department to provide police services. (This is the only significant contract with the County). The Victorville Police Department has one main facility (a Transportation Center on "D" street) and four satellite stations. Fleet maintenance is performed in the City yard.

Fire
The Victorville Fire Department, a subsidiary district of the City of Victorville is organized into three administrative divisions: Fire Prevention (Arson Investigation-Emergency Preparedness), Training-Hazardous Materials, and Operations.

The Fire Department maintains two specialized response teams: a Hazardous Materials Response Team and Technical Rescue and Procedures Team. The Hazardous Materials Response Unit consists of a Level A response vehicle and trailer equipped with an extensive compliment of spill containment, chemical identification, and spill-leak mitigation equipment. The Hazardous Materials Response Unit responds to all Haz-Mat incidents. The Technical Response and Procedures Team members respond as technical specialists to rescue incidents including confined space, high-angle, flood rescue, and collapsed buildings. Fire training is performed at the facility near the Fair Grounds and at the facility near the airport.

Planning and Community Development

The Planning Department regulates the use of land, including subdivisions. This includes the adoption and maintenance of a General Plan and California Environmental Quality Act (CEQA) which establishes land use policy for development in the city. The Department is responsible for the Zoning Ordinance and the Subdivision Ordinance, which are implementation tools for the General Plan.

Planning Department is involved in the following activities/functions:

- Serves as staff to City Council, Redevelopment Agency and Planning Commission
- Maintains/amends/administers the General Plan
- Maintains/amends/administers the Zoning Ordinance and Specific Plans
- Processes project applications (e.g. Site Plans, Conditional Use Permits, Tentative Tracts) to the Planning Commission and/or City Council
- Maintains/amends/administers the Subdivision Ordinance
- Prepares and processes environmental compliance documents for public and private projects pursuant to CEQA.

Victorville Economic Development/Redevelopment Agency

This agency promotes and implements economic development (commercial, industrial and residential) for the City of Victorville. The Agency's activities creates/retains jobs and develops affordable housing.

Building and Safety Department

This department provides operations related to development, inspection and enforcement under the building/housing codes. It provides information and a processing location for all development applications, permits, plan check, seismic inspections, and code compliance.

Code Enforcement Department

This department provides multiple services concerning housing, zoning, building codes and business licenses. It provides inspection and response to complaints of violations, deficiencies or other problems relating to the Victorville Housing Code (unsafe or unsanitary buildings which jeopardize the health and/or safety of the occupants or the neighborhood). Among its responsibilities are investigating and responding to:

- Complaints alleging violations of the zoning regulations;
- Public nuisance structures or conditions (graffiti, environmental conditions or substandard buildings which cause a blight on the neighborhood);
- Additions, alterations or repairs performed without the benefit of a permit
- Nuisance conditions.

Public Works

The Department's mission is to provide efficient, cost effective maintenance of the City's infrastructure and to promote the safe and efficient movement of pedestrians, traffic, goods, and emergency services.

The storm water system consists of streets, natural washes and dry wells (there are no designed retention basins). It is estimated that less than 1% of the system is pipe or box culvert. There are 21 public dry wells and a few private ones.

Among the duties of the Public Works Department are:

Airport Maintenance
Airport Maintenance provides general maintenance and construction for all runways, taxiways, and movement areas at Southern California Logistics Airport. The Airport is annexed to the City.

Amtrak Station Maintenance
Amtrak Station Maintenance provides maintenance of this City-owned passenger station (Note: no vehicle repair is performed at this location).

Animal Control
Three field officers and one dispatcher staff this Division. Their primary responsibility is to enforce both State and local laws concerning animals. An Apple Valley organization is contracted to provide kenneling services.

Weed Control
Weed Control provides spraying and removal of weeds and trash from the public rights-of-way.

Fleet Maintenance
Fleet Maintenance manages the maintenance, repair, and replacement of City's fleet of 780 vehicles. This includes heavy equipment and transit vehicles. Because they maintain City busses, an Industrial General Permit is required.

Graffiti Abatement
The abatement program is designed to rid the City of graffiti vandalism.

Sewer (Storm and Sanitary) Maintenance*:*
The City repairs and cleans the sanitary sewer and storm collection systems. Ninety percent of the population is connected to the sanitary sewer. The County is responsible for the larger storm channels.

Street Maintenance*:*
This department provides general maintenance services that include: street sweeping, sidewalk repair, pothole repair, shoulder grading, and crack-sealing activities. These are all performed on the streets, alleys and related facilities within the public rights-of-way. Streets with curbs and gutters (about 60% of the total) are swept by City crews approximately twice a month. The other streets are swept approximately every 3 months. The dirt collected is dried, strained and then sent to the landfill as sanitary cover.

Southern California Logistics Airport

George Air Force Base was deactivated in 1992 and the former military base was annexed to the City of Victorville in 1993. It has since been renamed Southern California Logistics Airport.

The Victor Valley Economic Development Authority (VVEDA), a joint powers authority, leases the base from the DOD and is charged with its reuse. The Airport Authority (City of Victorville) manages the base. The three surrounding cities and the county receive a property tax increment. The DOD retains liability for past environmental issues: asbestos, contaminated ground water, and landfill.

Education

The Victor Elementary School District has seventeen grade schools. There are four middle schools. The Victor Valley Union High School District is comprised of three high schools (Note: Schools perform their own vehicle maintenance, but may contract with the City in the future.)

Victor Valley Community College is located within the City of Victorville

Transportation

Victor Valley Transit Authority (VVTA) operates a fixed route schedule in Victorville. VVTA owns the busses but the City operates them and maintains them in the City yard.

References

1. The City of Victorville website
   http://ci.victorville.ca.us/

2. Chamber of Commerce
   http://www.vvchamber.com

7.5 San Bernardino County- Unincorporated

This SWMP includes unincorporated county urbanized areas. They are: Oro Grande with a population of approximately 725, Spring Valley Lake with a population of approximately 8000 and Mountain View Acres.

San Bernardino County provides services such as Police, Fire, Planning, Building and Safety, and Code Enforcement. A number of these services are available at the county office in Victorville.

7.6 Permittee Operations and Maintenance Activities

The Permittees will consider maintenance activities, maintenance schedules, and long-term inspection procedures in developing the program:

- Reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or maintenance shops with outdoor storage areas operated by the Permittee.
- Procedures for properly disposing of waste removed from the separate storm sewers and areas listed above (such as dredge spoil, accumulated sediments, floatables, and other debris);
- Ways to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporating additional water quality protection devices or practices.

The Permittees are currently implementing some of the municipal good housekeeping BMPs. As part of this SWMP they will determine if the following BMPs will improve their Storm Water Program:

Source Controls

Pet Waste Collection
Automobile Maintenance
Vehicle Washing
Illegal Dumping Control
Landscaping and Lawn Care
Pest Control
Parking Lot and Street Cleaning
Roadway and Bridge Maintenance
Septic System Controls
Storm Drain System Cleaning
Alternative Discharge Option for Chlorinated Water

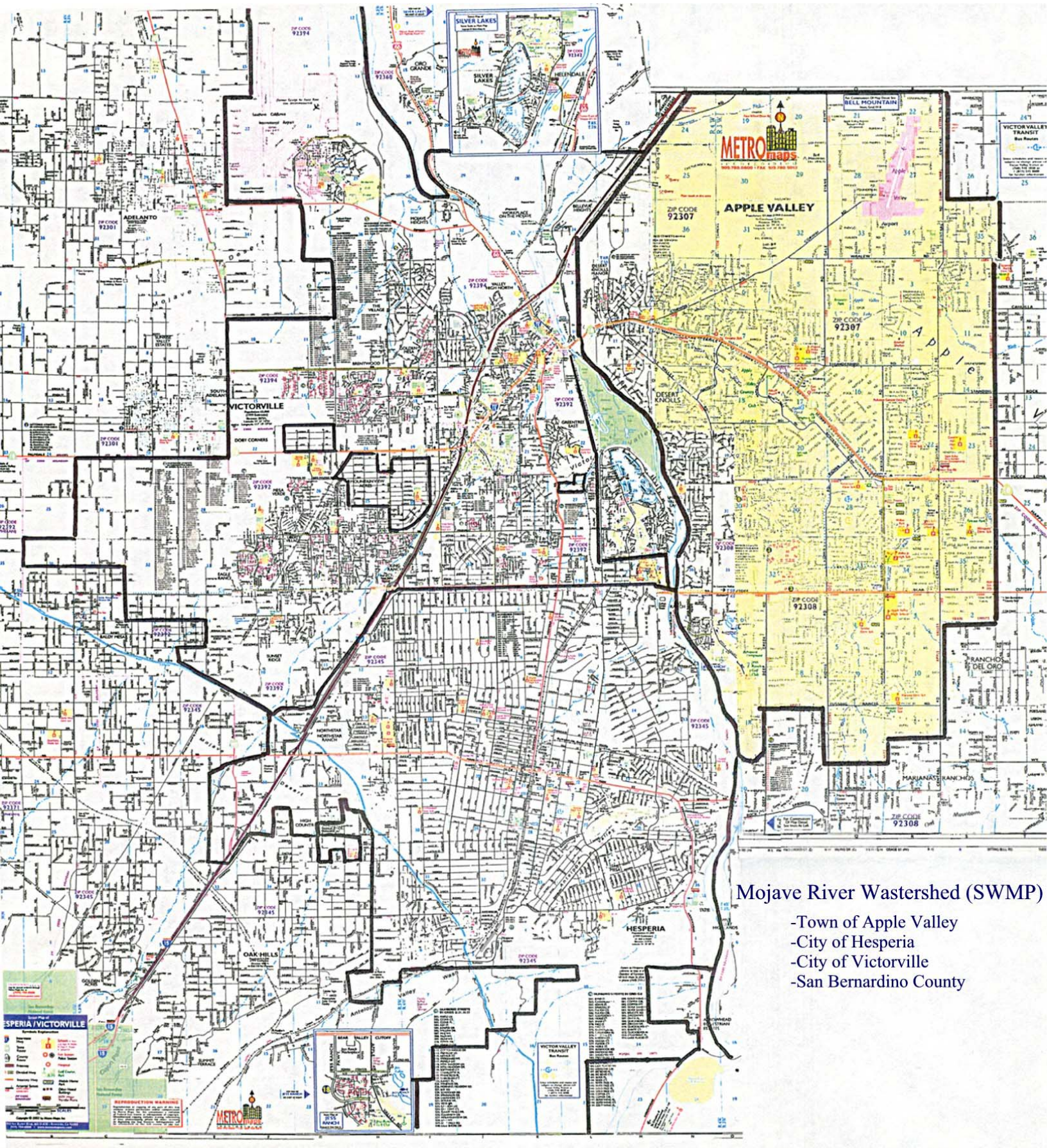
Materials Management
Alternative Products
Hazardous Materials Storage
Road and Salt Application and Storage
Spill Response and Prevention
Used Oil Recycling
Materials Management

Additional Fact Sheets
Catch Basin Cleaning
Coverings
Employee Training
Flow Diversion
Handling and Disposal of Residuals
Environmental Effects from Highway Ice and Snow Removal Operations
Internal Reporting
Materials Inventory
Preventative Maintenance

Additional information:
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll.cfm

7.7 Measurable Goals

Training is the key to successfully reducing/preventing pollution runoff and to promoting good housekeeping in municipal operations and maintenance programs. The measurable goals are based on training municipal employees to understand and implement the new storm water requirements. An inspection and monitoring program will be used to determine the ultimate effectiveness of the training. See master schedule in appendix.



Mojave River Wastershed (SWMP)

-Town of Apple Valley
-City of Hesperia
-City of Victorville
-San Bernardino County

THE TOWN OF APPLE VALLEY

SWMP INFORMATION
THE TOWN OF APPLE VALLEY

Jurisdictional Boundaries: East of the Mojave River. (See map)

Goal:
The goal is to keep the Mojave River clean to the Maximum Extent Practicable (MEP) using Best Management Practices (BMPs) in an iterative fashion over a five-year period. The process is described in the Introduction of the SWMP. Apple Valley's goal is a 5% improvement overall in applicable metrics over the five year term of the Permit.

NPDES Coordinator: Ev Butcher

Mayor: Tim Jasper
Town Manager: Bruce Williams
Town Engineer: Rusty Reed
Planning: Charles LaClaire (MCM 4)
Building Official: Claude Stewart (MCM 5)
Public Works: Dennis Cron (MCM 6)
Public Information Officer: Kathie Martin (MCM 1& 2)

Current Activities
The Town of Apple Valley currently has on going processes which improve water quality. These processes will be revaluated and modified, as required, to meet the requirements of the Permit. Some of the more significant current efforts are:

- Installation of approximately 80 large dry wells since the Town was incorporated in 1988. These drywells help limit the amount of water rushing along the roads and shoulders – improving infiltration and decreasing erosion.

- Construction permitting processes require wind and water erosion control as well as good house keeping on the construction site.

- Planning process: limits the amount of land disturbance allowed for construction on hillside lots, limits slopes for final grades, requires design consideration of natural drainage courses, calls for retention areas to compensate for increased impervious areas.

- Construction, maintenance and repair contracts (e.g. road construction, paving, park construction) specify wind and water erosion control during the work, require proper disposal of waste materials and proper storage of hazardous materials.

- Regulations promote water conservation, prohibit runoff from landscaping irrigation and prohibit discharge of swimming pool water into the storm drain system.

- Streets are swept on a regular basis with additional sweeping and cleanup as needed. There is an active program to prevent and clean-up illegal dumping.

During the five-year term of this Permit, the Town of Apple Valley will work closely with the other permittees, sharing information and lessons learned while improving water quality. This will be a mutually beneficial process because there are many common water quality issues in the watershed.

Legal Authority:
Apple Valley believes that existing codes, ordinances and regulations provide some legal authority to implement this permit. They will, however, be amended as required to provide such authority. The following codes apply to the referenced topics:

MINIMUM CONTROL MEASURE	TOPIC	MUNICIPAL CODE SECTION
MCM 3	Solid waste, Failing Septic Tanks, Recreational Sewage	6.20
MCM 4	Construction Site Erosion/Sediment Control	9.62
	Construction Site Good Housekeeping	8.20
	Procedures for Site Inspection/Enforcement	8.10.110; 8.10.120
	Grading Code	9.37.030; 9.47.030
	Hillside Subdivisions	9.71.060
	Environmental Planning/Review	9.12.110; 9.47.020
MCM 5	Water Conservation/Flood Control	6.40; 9.28.100; ORD249
	Water Efficient Landscaping	9.15.030; 9.37.050; 9.47.050; 9.75
	Native Vegetation	ORD247
	Open Space	9.55

Municipal Transportation Yard:
Apple Valley does not have a transportation yard or similar facilities within the red or yellow Threat Zones.

Master Implementation Schedule for MCM-1
Public Education & Outreach for Storm Water Impacts

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Public outreach/education for homeowners					
Issues of Concern: Landscaping/yard maintenance, household haz waste, used oil recycling, pet/equestrian waste, and pool maintenance.					
Develop web pages/brochures for 3 issues of concern.	X				
Distribute brochures/mount web pages for 3 issues of concern.		X			
Develop web pages/brochures for 2 issues of concern.			X		
Distribute brochures/mount web pages for 2 issues of concern.				X	
Business outreach/education					
Obtain BMP materials for restaurants and automotive. Develop brochures and web pages.	X				
Distribute brochures and mount web pages developed in year 1.		X			
Identify additional business targets develop brochures and web pages.		X			
Distribute brochures and mount web pages developed in year 2.			X		
Student/Teacher Programs (Mojave Desert RCD)					
Implement Water Education for Teachers.		X	X		
Implement Enviroscape demonstrations.		X	X		
Implement High School Auto Fluids Disposal.		X	X		
Establish metrics to determine effectiveness of programs.		X			
Evaluate effectiveness of Public Education and Outreach Program and refocus program as required.					X

Master Implementation Schedule for MCM-2
Public Involvement/Participation

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Identify existing groups/programs concerned with storm water issues	X				
Establish metrics to determine effectiveness of programs	X				
Evaluate effectiveness of existing groups/programs	X				
Develop plans to assist groups/programs that offer most benefit to water quality		X			
Implement plans developed in year 2			X		
Evaluate effectiveness of Public Involvement/Participation Program and refocus program as required					X

Master Implementation Schedule for MCM-3
Illicit Discharge Detection and Elimination

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Evaluate existing codes/ordinances/regulations for applicability/effectiveness in relation to storm water management.	X				
Identify Level of Threat Zones. (SWMP will focus program on high threat areas)	X				
Emphasize enforcement of existing codes /ordinances/regulations regarding illicit discharges (illegal dumping, recreational sewage, industrial/business connections, non-storm water discharges, sanitary sewer overflows).	X				
Develop/implement system to track citizen complaints and enforcement actions.	X				
Increase public awareness of illicit discharges through the Public Education/Outreach Program and Public Involvement/Participation Program	X	X	X	X	X
Establish metrics to measure effectiveness of programs.		X			
Draft revised codes/ordinances/regulations to implement appropriate BMPs for:					
• Illegal dumping		X			
• Recreational sewage		X			
• Industrial/business connections		X			
• Non-storm water discharges		X			
• Sanitary sewer overflows		X			
Conduct Public workshop on draft codes/ordinances/regulations			X		
Implement revisions in codes/ordinances/regulations (including grace period) required for Illicit Discharge Detection and Elimination Program				X	
Map storm drain system.		X			
Establish storm drain inspection/maintenance program			X		
Evaluate failing septic systems using BMP requirements			X		

Master Implementation Schedule for MCM-3 (continued)
Illicit Discharge Detection and Elimination

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
17 listed categories of non-storm water discharges					
• Survey following priority discharges: water line flushing, landscape irrigation, potable water, foundation drains, air conditioning condensate, lawn watering, swimming pool.		X			
• Evaluate discharges for effect on water quality			X		
• Determine agency and non-agency discharges that require "discharge to land" permit			X		
• Apply for permits. Update SWMP for possible SIE partners.				X	
• Evaluate any of 17 categories not previously evaluated				X	
Evaluate effectiveness of Illicit Discharge Detection and Elimination Program and refocus program as required.					X

Master Implementation Schedule for MCM-4
Construction Site Storm Water Runoff Control

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Review existing construction codes, ordinances and procedures for erosion/sediment control and construction site housekeeping requirements. Focus on the following processes:					
• Plan check (plan/grading/building)	X				
• Site inspection/monitoring/enforcement	X				
• Final permit or certificate of use/occupancy	X				
Review BMPs for: runoff control, erosion/sediment control. Determine which are most appropriate for this jurisdiction.	X				
Review BMPs for good housekeeping: General Construction Site Waste Management, Spill Prevention and Control Plan, Contractor Certification and Inspector Training and Construction Reviewer. Determine which are most appropriate for this jurisdiction.	X				
Establish complaint response procedures using BMP guidance.		X			
Establish metrics to determine effectiveness of program.		X			
Determine training needed for jurisdiction employees and the public.			X		
Change current code, ordinance and procedures to comply with permit.					
• Draft required changes, coordinating them through appropriate internal depts.		X			
• Seek Public input to draft changes			X		
• Adopt changes				X	
• Implementation program for jurisdiction employees including training				X	
• Implementation program for Public including training				X	
Evaluate effectiveness of Construction Site Storm Water Runoff Control Program and refocus program as required.					X

Master Implementation Schedule for MCM-5
Post-Construction Storm Water Management in New Development and Redevelopment

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Review existing codes, ordinances and procedures that impact storm water quality. Develop strategies to implement appropriate structural and non-structural BMPs. Focus on the following processes:					
• Plan check (plan/grading/building)	X				
• Site inspection/monitoring/enforcement	X				
• Final permit or certificate of use/occupancy	X				
Review BMPs for structural and non-structural controls. Determine which are most appropriate for this jurisdiction. Consider structural BMPs: dry extended detention ponds, infiltration basins, catch basin, in-line storage and porous pavement.	X				
Establish complaint response procedures using BMP guidance.		X			
Establish metrics to determine effectiveness of program.		X			
Determine training needed for jurisdiction employees and the public			X		
Change current code, ordinance and procedures to comply with permit.					
• Draft required changes, coordinating them through appropriate internal depts. (planning, engineering, public works etc)		X			
• Seek Public input to draft changes			X		
• Adopt changes				X	
• Implementation program for jurisdiction employees including training				X	
• Implementation program for Public including training				X	
Evaluate effectiveness of New Development/Redevelopment Program and refocus program as required.					X

Master Implementation Schedule for MCM-6
Pollution Prevention/Good Housekeeping for Municipal Operations

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Evaluate operations and maintenance activities within key agency departments for storm water issues.	X				
Select appropriate BMPs for activities with greatest impact: pet waste collection, restaurant grease traps, evaluate gas station discharge, commercial parking lot and street cleaning, storm drain system cleaning, haz material storage, spill response and prevention, used oil recycling, employee training, and record keeping.	X				
Establish metrics to determine effectiveness of program.	X				
Collect training materials for those selected BMPs	X				
Adopt training materials to local conditions.		X			
Train the appropriate employees.		X			
Develop inspection/monitoring/tracking program for municipal O&M Activities.		X			
Reevaluate Municipal program to determine additional activities with Storm water impacts.			X		
Select appropriate BMPs for these additional activities. Collect training materials for those selected BMPs.			X		
Adopt training materials to local conditions			X		
Train the appropriate employees.				X	
Evaluate effectiveness of Pollution Prevention/Good Housekeeping for Municipal Operations Program and refocus program as required.					X


APPLE VALLEY
Elementary School
Intermediate High School
High School
Private and Specialized Schools
City Limits
1 MILE
NORTH
W
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APPLE VALLEY
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2
3
4
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6
7
8

CITY OF HESPERIA

SWMP INFORMATION
CITY OF HESPERIA

Jurisdictional Boundaries:
West of the Mojave River, south of Bear Valley Road. (See map)

Goal:
The goal is to keep the Mojave River clean to the Maximum Extent Practicable (MEP) using Best Management Practices (BMPs) in an iterative fashion over a five-year period. The process is described in the Introduction of the SWMP. Hesperia's goal is a 5% improvement overall in applicable metrics over the five year term of the Permit.

NPDES Coordinator: Mike Podegracz

Mayor: Dennis Nowicki
City Manager: Robb Quincey
City Engineer: Mike Podegracz
Planning: Dave Reno (MCM 4)
Building Official: Tom Harp (MCM 5)
Public Works: Dale Burke (MCM 6)
Public Information Officer: Kim Summers (MCM 1 & 2)

Current efforts
The City of Hesperia currently has on going processes which improve storm water quality. These processes will be revaluated and modified, as required, to meet the requirements of the Permit. Some of the more significant current efforts are:

- The City Engineering and Planning Departments review new commercial and residential developments to identify drainage issues and incorporate retention/detention facilities where required. These facilities are sized to retain the initial storm flows during a rain event. The basins also retain runoff from over irrigation. Many of the facilities are landscaped and serve as local park areas.

- The City regularly monitors construction sites to ensure measures are taken to control storm runoff and eliminate potential sources of contamination. City inspectors meet with the contractors and review their storm water protection measures. Contractors are required to maintain good housekeeping on site i.e. remove fuel or oil spills immediately and insure that hazardous materials are properly stored.

- Water conservation personnel conduct regular field inspections to monitor irrigation runoff from homes, businesses and schools. City staff will meet with individual property owners or business owners to identify measures that can be taken to eliminate runoff. Staff also conducts meetings with landscape maintenance contractors to educate them on new methods of irrigation. These

measures include adjusting the time of irrigation, and adjusting and/or fixing spray heads. Water conservation staff will also conduct presentations at schools and public events to promote efficient irrigation systems.

During the five-year term of this Permit, the City of Hesperia will work closely with the other permittees, sharing information and lessons learned while improving water quality. This will be a mutually beneficial process because there are many common water quality issues in the watershed.

Legal Authority:
Hesperia believes that existing codes, ordinances and regulations provide some legal authority to implement this permit. They will, however, be amended as required to provide such authority. The following Hesperia Municipal Code and Hesperia Water District (HWD) apply to the referenced topics:

MCM 3	Illicit Discharge Detection and Elimination	HWD Ord. 25 (as amended)
	Solid Waste	8.04
	Recreational Sewage	HWD Ord. 25 (as amended)
	Failing Septic Tanks	HWD Ord. 25 (as amended)
MCM 4	Construction Site Storm Water Runoff Control	
	Construction Site Erosion/Sediment Control	16.20.150
	Construction Site Good Housekeeping	15.12
	Procedures for Site Inspection/Enforcement	15.04.190/8.32
	Grading Code	15.04.370
	Hillside Subdivisions	16.40
	Environmental Planning/Review	16.12.140
MCM 5	Post-Construction Storm Water Mgt in New Development/Redevelopment	Resolution 89-16
	Water Conservation/Flood Control	HWD 4.02/8.28
	Water Efficient Landscaping	16.16.505 16.16.550 16.16.580
	Native Vegetation	16.24
	Open Space	

Municipal Transportation Yard:
Hesperia does not have a transportation yard or similar facilities within the red or yellow Threat Zones.

Master Implementation Schedule for MCM-1
Public Education & Outreach for Storm Water Impacts

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Public outreach/education for homeowners					
Issues of Concern: Landscaping/yard maintenance, household haz waste, used oil recycling, pet/equestrian waste, and pool maintenance.					
Develop web pages/brochures for 3 issues of concern.	X				
Distribute brochures/mount web pages for 3 issues of concern.		X			
Develop web pages/brochures for 2 issues of concern.			X		
Distribute brochures/mount web pages for 2 issues of concern.				X	
Business outreach/education					
Obtain BMP materials for restaurants and automotive. Develop brochures and web pages.	X				
Distribute brochures and mount web pages developed in year 1.		X			
Identify additional business targets develop brochures and web pages.		X			
Distribute brochures and mount web pages developed in year 2.			X		
Student/Teacher Programs (Mojave Desert RCD)					
Implement Water Education for Teachers.		X	X		
Implement Enviroscape demonstrations.		X	X		
Implement High School Auto Fluids Disposal.		X	X		
Establish metrics to determine effectiveness of programs.		X			
Evaluate effectiveness of Public Education and Outreach Program and refocus program as required.					X

Master Implementation Schedule for MCM-2
Public Involvement/Participation

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Identify existing groups/programs concerned with storm water issues	X				
Establish metrics to determine effectiveness of programs	X				
Evaluate effectiveness of existing groups/programs	X				
Develop plans to assist groups/programs that offer most benefit to water quality		X			
Implement plans developed in year 2			X		
Evaluate effectiveness of Public Involvement/Participation Program and refocus program as required					X

Master Implementation Schedule for MCM-3
Illicit Discharge Detection and Elimination

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Evaluate existing codes/ordinances/regulations for applicability/effectiveness in relation to storm water management.	X				
Identify Level of Threat Zones. (SWMP will focus program on high threat areas)	X				
Emphasize enforcement of existing codes /ordinances/regulations regarding illicit discharges (illegal dumping, recreational sewage, industrial/business connections, non-storm water discharges, sanitary sewer overflows).	X				
Develop/implement system to track citizen complaints and enforcement actions.	X				
Increase public awareness of illicit discharges through the Public Education/Outreach Program and Public Involvement/Participation Program	X	X	X	X	X
Establish metrics to measure effectiveness of programs.		X			
Draft revised codes/ordinances/regulations to implement appropriate BMPs for:					
• Illegal dumping		X			
• Recreational sewage		X			
• Industrial/business connections		X			
• Non-storm water discharges		X			
• Sanitary sewer overflows		X			
Conduct Public workshop on draft codes/ordinances/regulations			X		
Implement revisions in codes/ordinances/regulations (including grace period) required for Illicit Discharge Detection and Elimination Program				X	
Map storm drain system.		X			
Establish storm drain inspection/maintenance program			X		
Evaluate failing septic systems using BMP requirements			X		

Master Implementation Schedule for MCM-3 (continued)
Illicit Discharge Detection and Elimination

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
17 listed categories of non-storm water discharges					
• Survey following priority discharges: water line flushing, landscape irrigation, potable water, foundation drains, air conditioning condensate, lawn watering, swimming pool.		X			
• Evaluate discharges for effect on water quality			X		
• Determine agency and non-agency discharges that require "discharge to land" permit			X		
• Apply for permits. Update SWMP for possible SIE partners.				X	
• Evaluate any of 17 categories not previously evaluated				X	
Evaluate effectiveness of Illicit Discharge Detection and Elimination Program and refocus program as required.					X

Master Implementation Schedule for MCM-4
Construction Site Storm Water Runoff Control

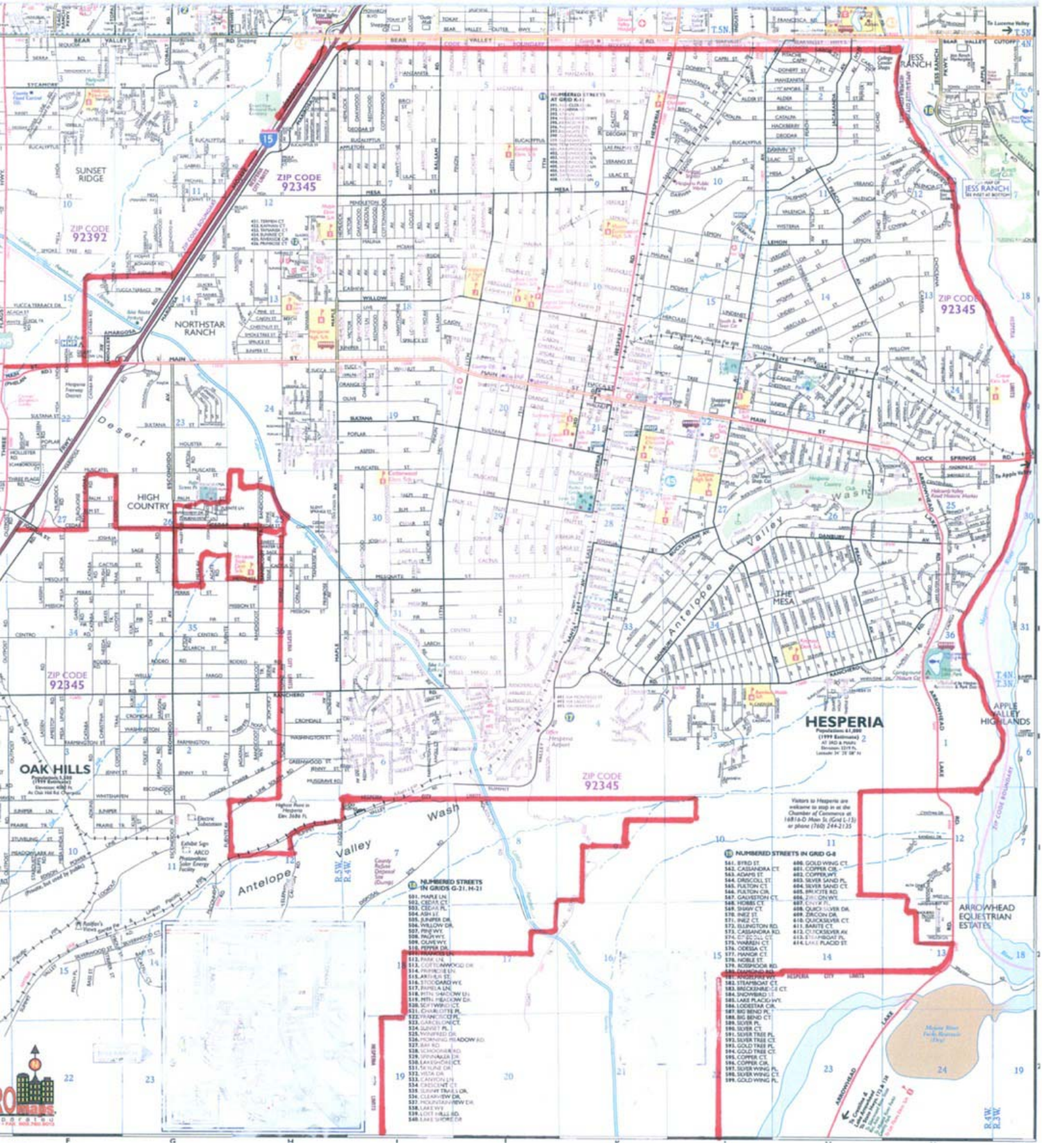
	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Review existing construction codes, ordinances and procedures for erosion/sediment control and construction site housekeeping requirements. Focus on the following processes:					
• Plan check (plan/grading/building)	X				
• Site inspection/monitoring/enforcement	X				
• Final permit or certificate of use/occupancy	X				
Review BMPs for: runoff control, erosion/sediment control. Determine which are most appropriate for this jurisdiction.	X				
Review BMPs for good housekeeping: General Construction Site Waste Management, Spill Prevention and Control Plan, Contractor Certification and Inspector Training and Construction Reviewer. Determine which are most appropriate for this jurisdiction.	X				
Establish complaint response procedures using BMP guidance.		X			
Establish metrics to determine effectiveness of program.		X			
Determine training needed for jurisdiction employees and the public.			X		
Change current code, ordinance and procedures to comply with permit.					
• Draft required changes, coordinating them through appropriate internal depts.		X			
• Seek Public input to draft changes			X		
• Adopt changes				X	
• Implementation program for jurisdiction employees including training				X	
• Implementation program for Public including training				X	
Evaluate effectiveness of Construction Site Storm Water Runoff Control Program and refocus program as required.					X

Master Implementation Schedule for MCM-5
Post-Construction Storm Water Management in New Development and Redevelopment

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Review existing codes, ordinances and procedures that impact storm water quality. Develop strategies to implement appropriate structural and non-structural BMPs. Focus on the following processes:					
• Plan check (plan/grading/building)	X				
• Site inspection/monitoring/enforcement	X				
• Final permit or certificate of use/occupancy	X				
Review BMPs for structural and non-structural controls. Determine which are most appropriate for this jurisdiction. Consider structural BMPs: dry extended detention ponds, infiltration basins, catch basin, in-line storage and porous pavement.	X				
Establish complaint response procedures using BMP guidance.		X			
Establish metrics to determine effectiveness of program.		X			
Determine training needed for jurisdiction employees and the public			X		
Change current code, ordinance and procedures to comply with permit.					
• Draft required changes, coordinating them through appropriate internal depts. (planning, engineering, public works etc)		X			
• Seek Public input to draft changes			X		
• Adopt changes				X	
• Implementation program for jurisdiction employees including training				X	
• Implementation program for Public including training				X	
Evaluate effectiveness of New Development/Redevelopment Program and refocus program as required.					X

Master Implementation Schedule for MCM-6
Pollution Prevention/Good Housekeeping for Municipal Operations

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Evaluate operations and maintenance activities within key agency departments for storm water issues.	X				
Select appropriate BMPs for activities with greatest impact: pet waste collection, restaurant grease traps, evaluate gas station discharge, commercial parking lot and street cleaning, storm drain system cleaning, haz material storage, spill response and prevention, used oil recycling, employee training, and record keeping.	X				
Establish metrics to determine effectiveness of program.	X				
Collect training materials for those selected BMPs	X				
Adopt training materials to local conditions.		X			
Train the appropriate employees.		X			
Develop inspection/monitoring/tracking program for municipal O&M Activities.		X			
Reevaluate Municipal program to determine additional activities with Storm water impacts.			X		
Select appropriate BMPs for these additional activities. Collect training materials for those selected BMPs.			X		
Adopt training materials to local conditions			X		
Train the appropriate employees.				X	
Evaluate effectiveness of Pollution Prevention/Good Housekeeping for Municipal Operations Program and refocus program as required.					X


SUNSET RIDGE
ZIP CODE 92392
ZIP CODE 92345
NORTHSTAR RANCH
HIGH COUNTRY
OAK HILLS
HESPERIA
THE MESA
JESS RANCH
APPLE VALLEY HIGHLANDS
ARROWHEAD EQUESTRIAN ESTATES
Desert
Antelope Valley Wash
NUMBERED STREETS IN GRIDS G-21, H-21
NUMBERED STREETS IN GRID G-8

CITY OF VICTORVILLE

CITY OF VICTORVILLE
SWMP INFORMATION

Jurisdictional Boundaries: See map in SWMP

NPDES Coordinator: Kimberly Cox

Mayor: Terry Caldwell
City Manager: Jon Roberts
City Engineer: Sean McGlade
Planning: John Hnatek
Building Official: George Worley
Public Works: Guy Patterson
Public Information Officer: Yvonne Hester

Legal Authority: This jurisdiction believes that existing codes, ordinances and regulations provide some legal authority to implement this permit. The existing codes, ordinances and regulations will, however, be amended as required to provide such authority. The following codes apply to the referenced topics:

MCM 1 — Public Education & Outreach for Storm Water Impacts
This component will be satisfied through a cooperative effort with the RCD. Additionally, informational material is available to the public at City Hall and other appropriate locations.

Lawn and Garden Activities (13-02-115)
Water Conservation Practices for Homeowners (13.60)
Proper Disposal of Household Hazardous Wastes (Fire Dept program)
Pet Waste Management (7.04-260)
Trash Management (6.44-010; 13.02.115)

MCM 2 — Public Involvement/Participation
Public programs and clean-up projects are coordinated through the City's PIO and the Fire Department

MCM 3 — Illicit Discharge Detection and Elimination
Failing septic systems (6.48.040; 10.04.040)
Illegal dumping (6.44.010; 13.48.030)

MCM 4 — Construction Site Storm Water Runoff Control
Runoff Control (15.06; 15.2; 17.88)
Good Housekeeping (13.48.030)

MCM 5 — Post-Construction Storm Water Mgt in New Development/Redevelopment
Water Conservation/Flood Control (13.60)

MCM 6 Pollution Prevention/Good Housekeeping for Municipal Operations

Pet Waste collection (7.04.260)
Illegal dumping control (6.44.010; 13.48.030)
Landscaping and lawn care (13.60)
Pest control (13.02.115)
Parking lot and street cleaning (13.48.030)
Septic system controls (6.44.010; 6.48.040; 10.040.040)
Hazardous materials storage (6.50; 13.02.115)
Used Oil recycling (Fire Dept Program)
Catch basin cleaning (PW BMP)

Goal: The goal is to keep the Mojave River clean to the Maximum Extent Practicable (MEP) using Best Management Practices (BMPs) in an iterative fashion over a five-year period. The process is described in the Introduction of the SWMP. This jurisdiction's goal is a 5% improvement overall in applicable metrics over the 5 year term of the Permit.

Municipal Transportation Yard: The City of Victorville's maintenance facility and Public Works' yard is located at 14177 McArt Road. Vehicle/equipment maintenance and repair is performed at this facility.

The yard utilized standard automotive repair materials including: motor oil, transmission fluid; radiator fluid and various lubricants. Maintenance functions performed include minor and major automotive work. The majority of the work is performed within the enclosed equipment maintenance structure.

The focus will be on a site-specific storm water pollution prevention plan, which addresses source minimization, education of employees and the continuance of good housekeeping practices. The pollution prevention plan will include an annual inspection to better manage BMP implementation and tracking.

Master Implementation Schedule for MCM-1
Public Education & Outreach for Storm Water Impacts

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Public outreach/education for homeowners					
Issues of Concern: Landscaping/yard maintenance, household haz waste, used oil recycling, pet/equestrian waste, and pool maintenance.					
Develop web pages/brochures for 3 issues of concern.	X				
Distribute brochures/mount web pages for 3 issues of concern.		X			
Develop web pages/brochures for 2 issues of concern.			X		
Distribute brochures/mount web pages for 2 issues of concern.				X	
Business outreach/education					
Obtain BMP materials for restaurants and automotive. Develop brochures and web pages.	X				
Distribute brochures and mount web pages developed in year 1.		X			
Identify additional business targets develop brochures and web pages.		X			
Distribute brochures and mount web pages developed in year 2.			X		
Student/Teacher Programs (Mojave Desert RCD)					
Implement Water Education for Teachers.		X	X		
Implement Enviroscape demonstrations.		X	X		
Implement High School Auto Fluids Disposal.		X	X		
Establish metrics to determine effectiveness of programs.		X			
Evaluate effectiveness of Public Education and Outreach Program and refocus program as required.					X

Master Implementation Schedule for MCM-2
Public Involvement/Participation

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Identify existing groups/programs concerned with storm water issues	X				
Establish metrics to determine effectiveness of programs	X				
Evaluate effectiveness of existing groups/programs	X				
Develop plans to assist groups/programs that offer most benefit to water quality		X			
Implement plans developed in year 2			X		
Evaluate effectiveness of Public Involvement/Participation Program and refocus program as required					X

Master Implementation Schedule for MCM-3
Illicit Discharge Detection and Elimination

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Evaluate existing codes/ordinances/regulations for applicability/effectiveness in relation to storm water management.	X				
Identify Level of Threat Zones. (SWMP will focus program on high threat areas)	X				
Emphasize enforcement of existing codes /ordinances/regulations regarding illicit discharges (illegal dumping, recreational sewage, industrial/business connections, non-storm water discharges, sanitary sewer overflows).	X				
Develop/implement system to track citizen complaints and enforcement actions.	X				
Increase public awareness of illicit discharges through the Public Education/Outreach Program and Public Involvement/Participation Program	X	X	X	X	X
Establish metrics to measure effectiveness of programs.		X			
Draft revised codes/ordinances/regulations to implement appropriate BMPs for:					
• Illegal dumping		X			
• Recreational sewage		X			
• Industrial/business connections		X			
• Non-storm water discharges		X			
• Sanitary sewer overflows		X			
Conduct Public workshop on draft codes/ordinances/regulations			X		
Implement revisions in codes/ordinances/regulations (including grace period) required for Illicit Discharge Detection and Elimination Program				X	
Map storm drain system.		X			
Establish storm drain inspection/maintenance program			X		
Evaluate failing septic systems using BMP requirements			X		

Master Implementation Schedule for MCM-3 (continued)
Illicit Discharge Detection and Elimination

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
17 listed categories of non-storm water discharges					
• Survey following priority discharges: water line flushing, landscape irrigation, potable water, foundation drains, air conditioning condensate, lawn watering, swimming pool.		X			
• Evaluate discharges for effect on water quality			X		
• Determine agency and non-agency discharges that require "discharge to land" permit			X		
• Apply for permits. Update SWMP for possible SIE partners.				X	
• Evaluate any of 17 categories not previously evaluated				X	
Evaluate effectiveness of Illicit Discharge Detection and Elimination Program and refocus program as required.					X

Master Implementation Schedule for MCM-4
Construction Site Storm Water Runoff Control

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Review existing construction codes, ordinances and procedures for erosion/sediment control and construction site housekeeping requirements. Focus on the following processes:					
• Plan check (plan/grading/building)	X				
• Site inspection/monitoring/enforcement	X				
• Final permit or certificate of use/occupancy	X				
Review BMPs for: runoff control, erosion/sediment control. Determine which are most appropriate for this jurisdiction.	X				
Review BMPs for good housekeeping: General Construction Site Waste Management, Spill Prevention and Control Plan, Contractor Certification and Inspector Training and Construction Reviewer. Determine which are most appropriate for this jurisdiction.	X				
Establish complaint response procedures using BMP guidance.		X			
Establish metrics to determine effectiveness of program.		X			
Determine training needed for jurisdiction employees and the public.			X		
Change current code, ordinance and procedures to comply with permit.					
• Draft required changes, coordinating them through appropriate internal depts.		X			
• Seek Public input to draft changes			X		
• Adopt changes				X	
• Implementation program for jurisdiction employees including training				X	
• Implementation program for Public including training				X	
Evaluate effectiveness of Construction Site Storm Water Runoff Control Program and refocus program as required.					X

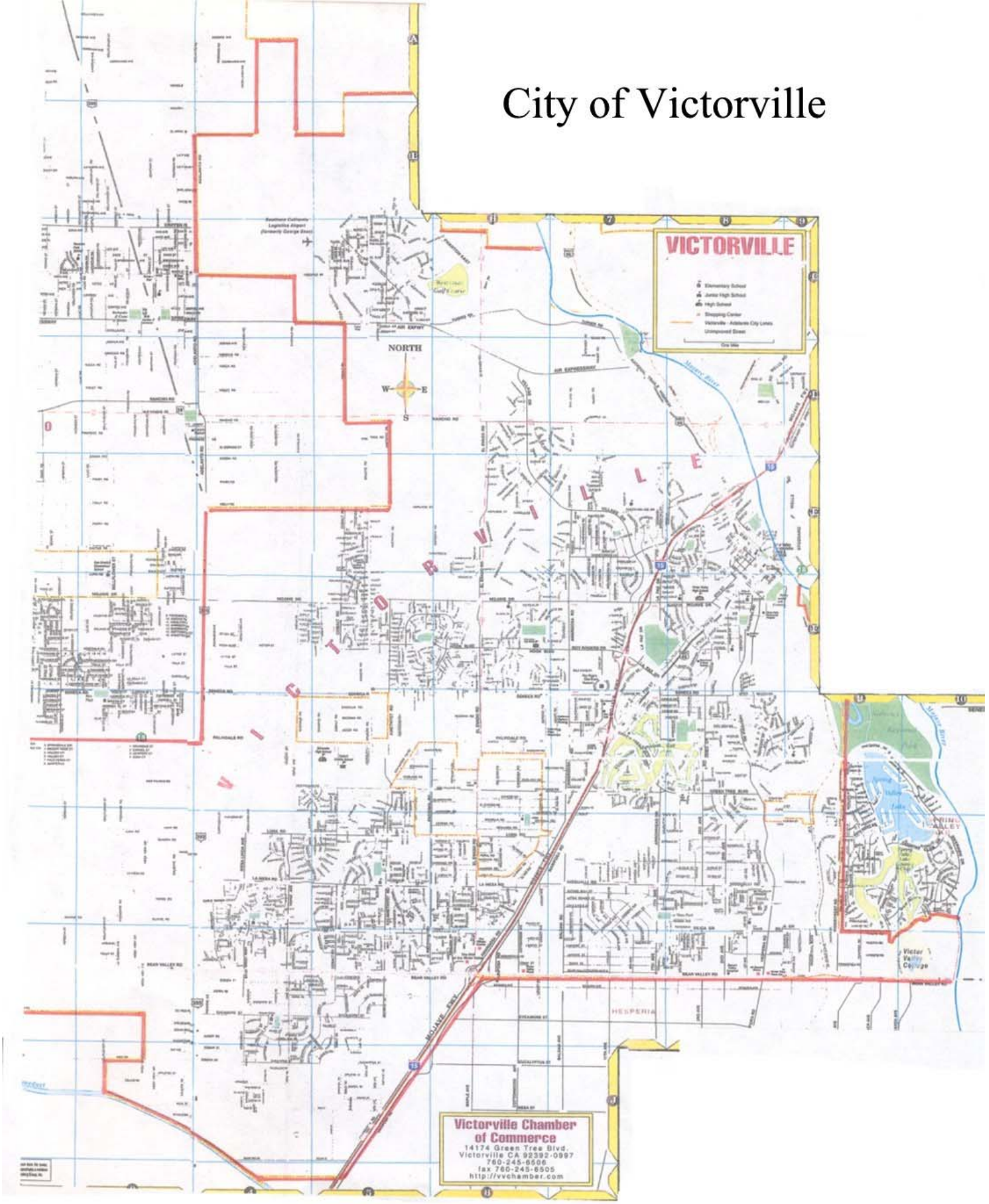
Master Implementation Schedule for MCM-5
Post-Construction Storm Water Management in New Development and Redevelopment

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Review existing codes, ordinances and procedures that impact storm water quality. Develop strategies to implement appropriate structural and non-structural BMPs. Focus on the following processes:					
• Plan check (plan/grading/building)	X				
• Site inspection/monitoring/enforcement	X				
• Final permit or certificate of use/occupancy	X				
Review BMPs for structural and non-structural controls. Determine which are most appropriate for this jurisdiction. Consider structural BMPs: dry extended detention ponds, infiltration basins, catch basin, in-line storage and porous pavement.	X				
Establish complaint response procedures using BMP guidance.		X			
Establish metrics to determine effectiveness of program.		X			
Determine training needed for jurisdiction employees and the public			X		
Change current code, ordinance and procedures to comply with permit.					
• Draft required changes, coordinating them through appropriate internal depts. (planning, engineering, public works etc)		X			
• Seek Public input to draft changes			X		
• Adopt changes				X	
• Implementation program for jurisdiction employees including training				X	
• Implementation program for Public including training				X	
Evaluate effectiveness of New Development/Redevelopment Program and refocus program as required.					X

Master Implementation Schedule for MCM-6
Pollution Prevention/Good Housekeeping for Municipal Operations

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Evaluate operations and maintenance activities within key agency departments for storm water issues.	X				
Select appropriate BMPs for activities with greatest impact: pet waste collection, restaurant grease traps, evaluate gas station discharge, commercial parking lot and street cleaning, storm drain system cleaning, haz material storage, spill response and prevention, used oil recycling, employee training, and record keeping.	X				
Establish metrics to determine effectiveness of program.	X				
Collect training materials for those selected BMPs	X				
Adopt training materials to local conditions.		X			
Train the appropriate employees.		X			
Develop inspection/monitoring/tracking program for municipal O&M Activities.		X			
Reevaluate Municipal program to determine additional activities with Storm water impacts.			X		
Select appropriate BMPs for these additional activities. Collect training materials for those selected BMPs.			X		
Adopt training materials to local conditions			X		
Train the appropriate employees.				X	
Evaluate effectiveness of Pollution Prevention/Good Housekeeping for Municipal Operations Program and refocus program as required.					X

City of Victorville



COUNTY OF SAN BERNARDINO

SWMP INFORMATION
SAN BERNARDINO COUNTY

Jurisdictional Boundaries:
Several unincorporated "islands" west of the Mojave River. (See map).

Goal:
The strategy of the County's Program is to develop and implement programs to reduce or eliminate discharge of pollutants and eliminate prohibited non-storm water discharges to the County storm drainage system to the Maximum Extent Practicable (MEP), thereby protecting local receiving waters and complying with federal and state laws and regulations. The County's goal, in those designated unincorporated "islands", is a 5% improvement overall in applicable metrics over the five year term of the Permit.

NPDES Coordinator: Dan Ilkay

County Administrator: Wally Hill
Director of Public Works: Ken Miller (MCM 6)
Current Planning, Division Chief: Julie Rynerson (MCM 4)
Building Official: Barbara Johnston (MCM 5)
Public Information Officer: Barbara Cruz (MCM 1&2)

Current efforts
The County of San Bernardino currently has on going processes which improve storm water quality. These processes will be revaluated and modified, as required, to meet the requirements of the Permit. Some of the more significant current efforts are:

- County Health, Sanitation and Animal Regulations deal with waste management and the monitoring, control and elimination of pollutants that may enter the storm drain system.
- Construction permitting processes require wind and water erosion control as well as good house keeping on the construction site.
- County Land Use Services Department reviews new commercial and residential developments to identify drainage issues and incorporate retention/detention facilities where required.
- The San Bernardino County Environmental Crimes Strike Force is a multi-agency effort which targets environmental pollution.

During the five-year term of this Permit, the County will work closely with the other permittees, sharing information and lessons learned while improving water quality. This

will be a mutually beneficial process because there are many common water quality issues in the watershed.

Legal Authority:
The County believes that existing codes, ordinances and regulations provide some legal authority to implement this permit. They will, however, be amended as required to provide such authority. The following codes apply to the referenced topics:

MCM	Topic	County Code Section
MCM 3	Solid Waste, Failing Septic Tanks, Recreational Sewage	3.3
	Prohibited Discharges	3.5.0111
	Spill Containment	3.5.0114
	Prevention of Accidental Discharges	3.5.0115
MCM 4	Construction Site Erosion/Sediment Control	8.10; 3.5
	Procedures for Site Inspection/Enforcement	6.3; 3.5
	Grading Code	8.10; 8.12
	Hillside Subdivisions	8.8
	Environmental Planning Review	8.4
	Water Conservation/Flood Control	8.10.6
	Native Vegetation	8.5.3
	Open Space	8.6.3
MCM 5	Authority to Inspect	3.5.0117
	Commercial Requirements	33.0118

County Transportation Yard:
The County does not have a transportation yard or similar facilities within the red or yellow Threat Zones.

Master Implementation Schedule for MCM-1
Public Education & Outreach for Storm Water Impacts

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Public outreach/education for homeowners					
Issues of Concern: Landscaping/yard maintenance, household haz waste, used oil recycling, pet/equestrian waste, and pool maintenance.					
Develop web pages/brochures for 3 issues of concern.	X				
Distribute brochures/mount web pages for 3 issues of concern.		X			
Develop web pages/brochures for 2 issues of concern.			X		
Distribute brochures/mount web pages for 2 issues of concern.				X	
Business outreach/education					
Obtain BMP materials for restaurants and automotive. Develop brochures and web pages.	X				
Distribute brochures and mount web pages developed in year 1.		X			
Identify additional business targets develop brochures and web pages.		X			
Distribute brochures and mount web pages developed in year 2.			X		
Student/Teacher Programs (Mojave Desert RCD)					
Implement Water Education for Teachers.		X	X		
Implement Enviroscape demonstrations.		X	X		
Implement High School Auto Fluids Disposal.		X	X		
Establish metrics to determine effectiveness of programs.		X			
Evaluate effectiveness of Public Education and Outreach Program and refocus program as required.					X

Master Implementation Schedule for MCM-2
Public Involvement/Participation

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Identify existing groups/programs concerned with storm water issues	X				
Establish metrics to determine effectiveness of programs	X				
Evaluate effectiveness of existing groups/programs	X				
Develop plans to assist groups/programs that offer most benefit to water quality		X			
Implement plans developed in year 2			X		
Evaluate effectiveness of Public Involvement/Participation Program and refocus program as required					X

Master Implementation Schedule for MCM-3
Illicit Discharge Detection and Elimination

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Evaluate existing codes/ordinances/regulations for applicability/effectiveness in relation to storm water management.	X				
Identify Level of Threat Zones. (SWMP will focus program on high threat areas)	X				
Emphasize enforcement of existing codes /ordinances/regulations regarding illicit discharges (illegal dumping, recreational sewage, industrial/business connections, non-storm water discharges, sanitary sewer overflows).	X				
Develop/implement system to track citizen complaints and enforcement actions.	X				
Increase public awareness of illicit discharges through the Public Education/Outreach Program and Public Involvement/Participation Program	X	X	X	X	X
Establish metrics to measure effectiveness of programs.		X			
Draft revised codes/ordinances/regulations to implement appropriate BMPs for:					
• Illegal dumping		X			
• Recreational sewage		X			
• Industrial/business connections		X			
• Non-storm water discharges		X			
• Sanitary sewer overflows		X			
Conduct Public workshop on draft codes/ordinances/regulations			X		
Implement revisions in codes/ordinances/regulations (including grace period) required for Illicit Discharge Detection and Elimination Program				X	
Map storm drain system.		X			
Establish storm drain inspection/maintenance program			X		
Evaluate failing septic systems using BMP requirements			X		

Master Implementation Schedule for MCM-3 (continued)
Illicit Discharge Detection and Elimination

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
17 listed categories of non-storm water discharges					
• Survey following priority discharges: water line flushing, landscape irrigation, potable water, foundation drains, air conditioning condensate, lawn watering, swimming pool.		X			
• Evaluate discharges for effect on water quality			X		
• Determine agency and non-agency discharges that require "discharge to land" permit			X		
• Apply for permits. Update SWMP for possible SIE partners.				X	
• Evaluate any of 17 categories not previously evaluated				X	
Evaluate effectiveness of Illicit Discharge Detection and Elimination Program and refocus program as required.					X

Master Implementation Schedule for MCM-4
Construction Site Storm Water Runoff Control

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Review existing construction codes, ordinances and procedures for erosion/sediment control and construction site housekeeping requirements. Focus on the following processes:					
• Plan check (plan/grading/building)	X				
• Site inspection/monitoring/enforcement	X				
• Final permit or certificate of use/occupancy	X				
Review BMPs for: runoff control, erosion/sediment control. Determine which are most appropriate for this jurisdiction.	X				
Review BMPs for good housekeeping: General Construction Site Waste Management, Spill Prevention and Control Plan, Contractor Certification and Inspector Training and Construction Reviewer. Determine which are most appropriate for this jurisdiction.	X				
Establish complaint response procedures using BMP guidance.		X			
Establish metrics to determine effectiveness of program.		X			
Determine training needed for jurisdiction employees and the public.			X		
Change current code, ordinance and procedures to comply with permit.					
• Draft required changes, coordinating them through appropriate internal depts.		X			
• Seek Public input to draft changes			X		
• Adopt changes				X	
• Implementation program for jurisdiction employees including training				X	
• Implementation program for Public including training				X	
Evaluate effectiveness of Construction Site Storm Water Runoff Control Program and refocus program as required.					X

Master Implementation Schedule for MCM-5
Post-Construction Storm Water Management in New Development and Redevelopment

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Review existing codes, ordinances and procedures that impact storm water quality. Develop strategies to implement appropriate structural and non-structural BMPs. Focus on the following processes:					
• Plan check (plan/grading/building)	X				
• Site inspection/monitoring/enforcement	X				
• Final permit or certificate of use/occupancy	X				
Review BMPs for structural and non-structural controls. Determine which are most appropriate for this jurisdiction. Consider structural BMPs: dry extended detention ponds, infiltration basins, catch basin, in-line storage and porous pavement.	X				
Establish complaint response procedures using BMP guidance.		X			
Establish metrics to determine effectiveness of program.		X			
Determine training needed for jurisdiction employees and the public			X		
Change current code, ordinance and procedures to comply with permit.					
• Draft required changes, coordinating them through appropriate internal depts. (planning, engineering, public works etc)		X			
• Seek Public input to draft changes			X		
• Adopt changes				X	
• Implementation program for jurisdiction employees including training				X	
• Implementation program for Public including training				X	
Evaluate effectiveness of New Development/Redevelopment Program and refocus program as required.					X

Master Implementation Schedule for MCM-6
Pollution Prevention/Good Housekeeping for Municipal Operations

	IMPLEMENTATION PERIOD				
	Y1	Y2	Y3	Y4	Y5
Evaluate operations and maintenance activities within key agency departments for storm water issues.	X				
Select appropriate BMPs for activities with greatest impact: pet waste collection, restaurant grease traps, evaluate gas station discharge, commercial parking lot and street cleaning, storm drain system cleaning, haz material storage, spill response and prevention, used oil recycling, employee training, and record keeping.	X				
Establish metrics to determine effectiveness of program.	X				
Collect training materials for those selected BMPs	X				
Adopt training materials to local conditions.		X			
Train the appropriate employees.		X			
Develop inspection/monitoring/tracking program for municipal O&M Activities.		X			
Reevaluate Municipal program to determine additional activities with Storm water impacts.			X		
Select appropriate BMPs for these additional activities. Collect training materials for those selected BMPs.			X		
Adopt training materials to local conditions			X		
Train the appropriate employees.				X	
Evaluate effectiveness of Pollution Prevention/Good Housekeeping for Municipal Operations Program and refocus program as required.					X