

City of Salinas

Stormwater Management Plan

(Urban Watershed Management Plan)

Prepared in Compliance with California Regional Water Quality Control Board,
Central Coast Region

Order: R3-200-0135

Permit No: CA0049981



TABLE OF CONTENTS

Element 1 Introduction.....	1-1
Purpose.....	1-1
Approach.....	1-2
NPDES Permit Requirements and Permit Area.....	1-4
Principles and Policies.....	1-4
Overview of Regulatory Requirements.....	1-6
NPDES Permit Requirements.....	1-7
Changes Affecting Program Management.....	1-7
Program Effectiveness.....	1-8
Element 2 Water Resources.....	2-1
Introduction.....	2-1
Hydrology.....	2-2
Flooding.....	2-3
Municipal Storm Water Drain System.....	2-10
Municipal Water Quality / Water Monitoring.....	2-13
Results from 1999-2004 Environmental Monitoring Program.....	2-16
Local Watershed/Creek Assessments.....	2-17
Regional Water Monitoring.....	2-18
Regional Water Quality.....	2-20
Element 3 Municipal Maintenance - Good Housekeeping.....	3-1
Introduction.....	3-1
Goals.....	3-2
Strategy.....	3-3
Source Identification.....	3-3
Activities.....	3-4
Education.....	3-4
Facility Maintenance.....	3-5
Street Maintenance.....	3-6
Park Maintenance.....	3-13
Inventories of City Facilities and Associated BMPs.....	3-17
Program Effectiveness.....	3-17
Element 4 Development Standards.....	4-1
Introduction.....	4-1
Goals and Objectives.....	4-4
Planning and Design Perspectives.....	4-6
Maximum Extent Practicable.....	4-7
Best Management Practices.....	4-8
Activities.....	4-8
General Plan.....	4-8
Specific Plans.....	4-9
Zoning Code.....	4-11
Development Design Standards.....	4-12

TABLE OF CONTENTS (continued)

Grading Ordinance.....	4-16
Storm Water Ordinance.....	4-16
Storm Water Master Plan.....	4-16
California Environmental Quality Act (CEQA).....	4-17
Engineering Standard Specifications, Design Standards and Standard Plans.....	4-17
Information Brochures.....	4-17
Development Review Process.....	4-18
BMP Selection.....	4-21
Site Planning and Development BMPs.....	4-21
Suggested Development or Post-construction BMPs.....	4-22
Outreach, Education and Training.....	4-26
Program Effectiveness.....	4-26
Element 5 Construction Site Management.....	5-1
Introduction.....	5-1
Construction Site Management Element Goal / Requirements.....	5-2
Construction Objectives.....	5-4
Activities.....	5-5
Regulations.....	5-6
Identification of Project Sites-Inventory.....	5-6
Prioritization of Project Sites.....	5-6
Inspection Schedules.....	5-7
Inspection/Monitoring Criteria and Procedures.....	5-8
Inspections.....	5-8
Performance Standards.....	5-9
Relationship between Performance Standards, Site Management Requirements and Best Management Practices.....	5-10
Minimum Best Management Practices.....	5-10
Enforcement and Construction Regulations.....	5-11
Training/ Education.....	5-12
Program Effectiveness.....	5-12
Element 6 Public Education and Outreach.....	6-1
Introduction.....	6-1
Goal.....	6-2
Public Outreach and Education Activities.....	6-3
General Public.....	6-3
Public Agency/Quasi-Governmental.....	6-3
Target Audience.....	6-4
Classroom Education.....	6-6
Stenciling and Signage.....	6-6
Public Survey.....	6-7
Program Effectiveness.....	6-7

TABLE OF CONTENTS (continued)

Element 7 Commercial and Industrial Facilities	7-1
Introduction.....	7-1
Pollutant Source Identification.....	7-2
High-risk Commercial Facilities.....	7-2
Industrial Facilities.....	7-3
Best Management Practices (BMPs).....	7-3
Recommended Strategies.....	7-4
Required BMPs for Commercial Facilities.....	7-4
Required BMPs for Industrial Facilities.....	7-4
Inspection and Enforcement.....	7-6
Inspections	7-6
Enforcement.....	7-6
Training.....	7-7
Program Effectiveness.....	7-7
 Element 8 Illicit Discharge and Illegal Connection.....	 8-1
Introduction.....	8-1
Goal.....	8-1
Activities.....	8-2
Mapping.....	8-2
Illicit Discharge Reporting System.....	8-3
Illicit Discharge Identification.....	8-3
Dry Weather Screening.....	8-3
Contain, Control, Respond.....	8-4
Facilitate Disposal of Used Oil and Toxic Materials.....	8-4
Enforcement.....	8-4
Program Effectiveness.....	8-5
 Element 9 Monitoring and Water Quality Testing.....	 9-
Introduction.....	9-1
Quality Assurance Program Plan.....	9-1
 Element 10 Budget and Administration.....	 10-1
Introduction.....	10-1
Regulatory Background.....	10-1
City of Salinas Regulatory Authority.....	10-2
Program Funding.....	10-2
 Appendices.....	 A-1
A-1 Municipal Permit, Attachment IV (Order No R-3-2004-0135).....	A-1
B-1 Municipal Maintenance BMPs.....	B-1
C-1 Statement of Legal Authority.....	C-1
C-2 Draft Storm Water Ordinance.....	C-19
C-3 Draft Grading Ordinance.....	C-41
D-1 BMPs Commercial Facilities.....	D-1

LIST OF TABLES

Table 1.1 Benefits of Watershed Planning.....	1-4
Table 2.1 Sampling Sites for Annual Environmental Monitoring.....	2-16
Table 2.2 Regional Monitoring Locations.....	2-19
Table 2.3 Beneficial Uses for Waterways Near City Limits.....	2-22
Table 2.4 2003 Section 303(d) List of Water Quality Limited Segments Within the Reclamation Ditch Watershed.....	2-23
Table 3.1 Permit Requirements – Municipal Maintenance.....	3-2
Table 3.1b Streets within 300-Feet of Open Drainage.....	3-11
Table 3.2 Roadways Within 200-Feet of a 303(d) listed Waterways.....	3-12
Table 3.3 Streets Carrying High Truck Traffic.....	3-12
Table 3.4 Municipal Parking Lots.....	3-13
Table 3.5 Municipal Parks Best Management Practices.....	3-19
Table 3.5 Municipal Parks Best Management Practices (Continued).....	3-21
Table 3.6 Municipal Facilities Best Management Practices.....	3-23
Table 4.1 Municipal Permit Requirements – Development Standards.....	4-3
Table 4.2 Treatment Control Performance.....	4-24
Table 4.2 Treatment Control Performance (Continued).....	4-25
Table 5.1 NPDES Permit Requirements – Construction Site Management Element.....	5-3
Table 5.2 Construction Inspection Frequency by Priority.....	5-9
Table 6.1 Municipal Permit Requirements – Public Education.....	6-2
Table 7.1 Municipal Permit – Commercial/Industrial Element Summary of Requirements.....	7-2
Table 8.1 Permit Requirements – Illicit Discharge and Illegal Connections.....	8-2
Table 9.1 Constituents to be Monitored: 2005-20009.....	9-2
Table 9.2 Summary of Sampling Sites, Frequency and General Class of Parameters..	9-3

LIST OF FIGURES

Figure 1-1 City of Salinas Locations.....1-5

Figure 2-0 Regional Surface Hydrology.....2-2

Figure 2-1 Reclamation Ditch Sub-Watershed and City Location.....2-5

Figure 2-2 Watersheds and Water bodies within Municipal Limits.....2-7

Figure 2-3 Lower Salinas Valley Historic Wetland and 7Lake System.....2-9

Figure 2-4 25-Year Flood Plain For Carr Lake Area.....2-10

Figure 2-5 100-Year Flood Plain for Carr Lake Area..... 2-11

Figure 2-6 Location of Salinas Monitoring Sites - 1999-2004.....2-15

Figure 2-7 Reclamation Ditch Watershed Monitoring Locations.....2-22

Figure 3-1 Streets and Freeways Within 300 feet of Open Drainage.....3-9

Figure 4-1 Changes in Stream Form4-2

Figure 4-2 Urbanization’s Effect Upon the Hydrologic Cycle.....4-3

Figure 4-3 Design Outcomes from Different Development Values.....4-7

Figure 4-4 Future Growth Areas and Surface Drainage.....4-11

Figure 4.5 Neo-traditional (Smart Growth) Street Design As A BMP.....4-12

Figure 4-6 Typical Vegetated Swale Design Element (to Convey Water).....4-13

Figure 4-7 Typical Low Impact Design Techniques for Residential
Development.....4-14

Figure 4-8 LID Site Design Ideas for Multi-Family Housing.....4-15

Figure 4-9 Zoning Concept that Reduce Water Pollution and
Erosion.....4-16

Figure 4-10 Conceptual Development Review Process.....4-20

Introduction



Make no little plans, they have no magic to stir men's blood and probably will themselves not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will not die.

- Daniel Burnham

1.1 Purpose

This plan describes the City of Salinas' (City) comprehensive approach to improving watershed conditions and water quality. The City has prepared its Stormwater Management Plan (Plan) to effect a reduction in the discharge of pollutants to the maximum extent practicable to protect watershed health. The Plan seeks to link proposed management practices with identified watershed and water quality issues to reduce adverse impacts and enhance watershed health.

This Plan is arranged into ten elements and their organizational relationship to the eight required elements from the City's NPDES Municipal Permit (Municipal Permit) is provided below. In addition, within each element Municipal Permit requirements are summarized and cross-referenced to the section of the element where they are addressed.

Stormwater Management Plan	Municipal Permit
Element 1: Introduction	
Element 2: Water Resources	
Element 3: Municipal Maintenance	Municipal Maintenance
Element 4: Development Standards.	Development Standards
Element 5: Construction Site Management	Construction Site Management
Element 6: Public Education and Outreach	Public Education and Participation
Element 7: Commercial and Industrial Facilities	Commercial/industrial Facilities
Element 8: Illicit Discharge and Illegal Connection	Illicit Discharge Detection and Elimination
Element 9: Monitoring and Water Quality Testing	Attachment 5, D
Element 10: Budget and Legal Authority	Legal Authority Program Effectiveness ¹

¹ A discussion on program effectiveness is provided within each element.

1.2 Approach

“The significant problems we face cannot be solved at the same level of thinking we were at when we created them.”

---Albert Einstein

Several key events have influenced the City’s approach to preparing this Plan. First, the City’s Municipal Permit is substantially different from the one issued to the City in 1999. Second, the City has substantially grown. Third, society’s understanding of issues, impacts, environment and appropriate management practices has grown since the initial permit term. Therefore, this Plan is a departure from past efforts in terms of approach and goals.

The Plan is an implementation strategy to guide public activities and direct private sector actions for the years 2005 through 2009. It extends and builds upon the successful City programs began in 1999 when the State Regional Water Quality Control Board issued the City its first NPDES permit.

This Plan lays out Salinas’ comprehensive, strategic and integrated approach to improving watershed health. By identifying goals, objectives, strategies and best management practices, the City aims to protect the best remaining watershed resources, protect water quality, and improve conditions citywide.

Moving Toward a Watershed Approach

Simply stated, a watershed can be defined as a geographic area that drains to a creek or river. Activities on the land affect not only what happens on upland areas but on waterways and adjacent riparian areas. That is, watersheds function as a single ecological unit; what happens in one area affects other areas. To ensure that water flowing in creeks and rivers is clean, the watershed itself must function in a healthy manner. Ecological processes and natural systems at work within the watershed must be healthy. Disruption to one aspect of the natural system, such as clear-cutting of vegetation, affects other functional areas, such as erosion, habitat, and drinking water quality. It is this broad context that permeates this Plan.

A healthy watershed fosters achievement of many of Salinas’ goals and objectives,² such as providing for the community’s economic vitality and conservation of its natural resources; enhancing the community’s quality of life; and meeting citizen’s health and safety needs. Further, fostering a healthy watershed enables the City to meet its obligations under the federal and state regulations, such as the Clean Water Act, Safe Drinking Water Act, Endangered Species Act and the Basin Management Plan.

A watershed plan is a comprehensive framework for applying management tools. It is an approach to integrate factors and positions that affect water quality with an emphasis on sustainable solutions produced through collaborative problem solving. Some of these factors include:

² City of Salinas, 2002 General Plan

1. Identification and review of existing regulations and Salinas' planning and water quality management documents.
2. Literature review of other communities with advanced programs.
3. Identification of stormwater BMPs that have a proven success rate.
4. Review of new and upcoming BMP technologies and approaches.
5. Development of practical Low Impact Development design standards and guidelines.
6. Adoption of an adaptive management process to respond to changing circumstance.

Watersheds don't commonly follow corporate boundaries. Water that falls in one jurisdiction may flow through several more jurisdictions and numerous environmental ecosystems before it reaches its final destination. This is especially true in the Salinas area. Water that begins its journey in the relatively undisturbed Gabilan and Santa Lucia Mountains drains farmlands and other cities and developed areas before entering Salinas. Once in the City, water passes through municipal neighborhoods before re-entering farmlands, then flows on to more urban uses. Water flows out of Salinas to re-enter more farmland before draining ultimately to Monterey Bay. On its journey, water flows through several different land uses, some more than once, and often through several different jurisdictions.

Water flowing into the City is as much a concern for Salinas as water flowing downstream from the City. This is especially true for stakeholders furthest downstream who inherit the effects of the good, as well as the poor watershed management practices of their upstream neighbors. The interrelatedness of upstream and downstream stakeholders is the principal reason why this Plan's approach is watershed in nature. It is also the reason behind the Plan's collaborative approach to watershed management. Benefits of planning at a watershed scale are listed in Table 1.1.

While the Plan moves Salinas towards regional watershed planning, the City's formal responsibility under its NPDES permit is confined within its municipal boundaries. Indeed, the City has no authority outside of its boundaries.

Stakeholders

Regional solutions can only be obtained when regional stakeholders collaborate and cooperate. Without cooperation, the regional approach will not succeed. Agency stakeholders include other entities that have influence, policy control, and regulatory authority. Among others, principal agency stakeholders include: City departments, the Regional Water Quality Control Board, County of Monterey Environmental Health Department, County of Monterey Water Resources Agency, Association of Monterey Bay Area Governments, Federal Natural Resources Conservation Service, National Oceanic Atmospheric Administration, Monterey Bay National Marine Sanctuary, agriculture (and the Agricultural Waiver Program administered by the RWQCB), and the Watershed Institute of California State University, Monterey Bay. Special interest groups from the environmental, developmental, and business communities and the general public round out key stakeholders.

Table 1.1 Benefits of Watershed Planning

<i>Local Government Benefits</i>	<i>Administrative Benefits</i>
<ul style="list-style-type: none"> • Enables analyses that are most meaningful at a watershed or subwatershed scale (e.g., nutrient loadings, impervious cover estimates, etc.) • Enables management at a scale necessary to ensure consistency with TMDLs • Provides a framework for prioritizing resources (staff, conservation dollars, etc.) • Provides educational opportunities for citizens to understand how natural resources management interacts with existing and future development • Gives citizens an active voice in protecting and restoring natural resources that are important to the community 	<ul style="list-style-type: none"> • Provides a structure for communities to target geographic areas for land conservation and development to maximize the efficiency of community planning efforts • Enables more efficient management of permitting programs • Focuses data collection and analysis for environmental assessments • Provides benchmarks for measuring the success of management efforts
<i>Environmental Benefits</i>	<i>Financial Benefits</i>
<ul style="list-style-type: none"> • Improves quality of water for drinking and recreational use • Enhances water supply • Protects wildlife habitat and improves natural resources • Controls flooding by restoring riparian and wetland areas 	<ul style="list-style-type: none"> • Avoids development in sensitive areas and can help minimize compliance and mitigation costs • Improves water supply protection to reduce the need for costly drinking water treatment • Provides a framework and rationale to pursue various funding opportunities • Prevention and planning is less costly than restoration
<p>Source: Modified from CBP, 2004 TMDL: Total Maximum Daily Loads</p>	

Source: Clean Water Program, State of Maryland, as modified from CBP, 2004

1.3 NPDES Permit Requirements and Permit Area

The City’s Municipal Permit requirements are contained in Appendix B. Requirements are also listed by subject matter at the beginning of each element of this Plan.

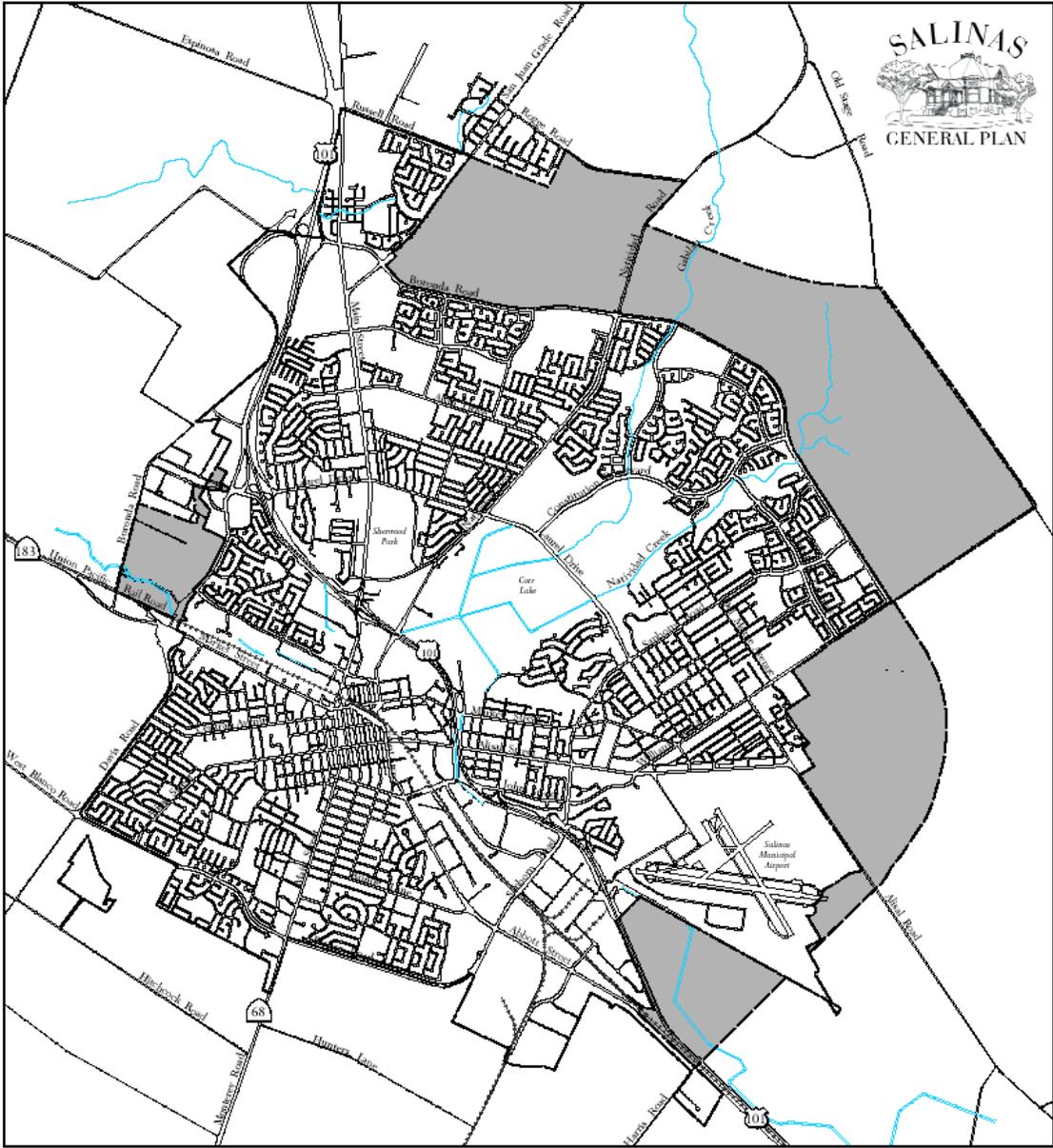
Permit requirements apply to the area within the City of Salinas’ municipal boundaries (Figure 1-1). Areas within City limits are shown by greater density urban street patterns. Creeks that drain northern and southeastern outlying areas and flow into Salinas are shown as blue (lightweight) lines. Future growth areas are shown as a shaded tone. Development plans for the Future Growth Areas are being designed consistent with the City’s Municipal Permit requirements and the Salinas General Plan.

1.4 Principles and Policies

The Regional Water Quality Control Board’s *Storm Water Management Program Revision Requirements* are contained within the City’s Municipal Permit (NPDES NO CA 0049981 and Order R3-200400135). These have been termed “principles and policies” and included in this Plan by reference. In addition to these principles and policies, several municipal goals shape this Plan. These goals are listed below:

- Goal 1:** Ensure that water quality meets the need for all beneficial uses by reducing stormwater pollution to the maximum extent practicable.

Figure 1.1 City of Salinas



Sources: City of Salinas, CBA.

- City Boundary
- Future Growth Area

Strategies: Fully Implement this Plan
Secure a stable source of revenue for Clean Water Program
Secure stakeholder participation and implement collaboratively

Protection of water quality has been identified as an important goal in the *2002 Salinas General Plan*, and is addressed in several City documents, such as the *Storm Drain Master Plan*, *Storm Drain Ordinance* and the *Salinas Zoning Code*. In a region where sustained, adequate water supply has been a half-century concern for domestic and agricultural viability, protection of water quality is essential. Water supply and water quality are inextricable; quality affects supply. Just as inextricable are the links between the various municipal disciplines and regional stakeholders.

Goal 2: Meet the City of Salinas 2005 NPDES Permit

Strategies: Fully implement this Plan.

Continue to use the progress reports, workplans and annual monitoring reports to communicate City program activities to stakeholders.

Requirements contained within the 2005 Municipal Permit are intended to decrease the adverse impacts of stormwater discharge from Salinas' municipal separate storm sewer system (MS4). The Permit identifies binding provisions and penalty clauses for failure to comply. Further, it requires Salinas to assertively address the problems caused by polluters and pollutants in its waterways. State stream standards help to determine whether receiving waters in Salinas meet designated beneficial uses, such as supply, recreation, and aquatic life. In the event that streams receiving stormwater discharges from Salinas fail to meet state standards, Salinas may be required to enter into a more comprehensive regulatory process with additional requirements under the Total Maximum Daily Load (TMDL) process.

1.5 Overview of Regulatory Requirements

The need to protect the water quality and the environment has resulted in a number of laws, regulations and policies. The principal regulations affecting the City of Salinas are the Federal Clean Water Act and the State of California Porter-Cologne Act.

In response to the nation's concerns about the condition of the nation's waterways, Congress amended the Federal Water Pollution Control Act. The intent of this legislation was to restore the nation's waterways to "fishable and swimmable" conditions. The 1972 Clean Water Act (CWA) prohibits discharges of pollutants into waters of the United States from any point source, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit. As a first priority, the CWA requires controls for point sources such as wastewater outfalls. In addition, it also authorizes studies to determine impacts from other pollutant sources, such as urban and agricultural runoff.

In 1987, Congress added Section 402 to the Clean Water Act. These amendments established a framework for regulating municipal, industrial and construction stormwater discharges under the requirements of the NPDES program. Further, on November 16, 1990, the U.S. Environmental Protection Agency (EPA) published regulations³

³ November 16, 1990, U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Permit Application Regulations for Stormwater Discharges; Final Rule 40 CFR par 122.26

establishing application requirements for municipalities with a population of over 100,000 to obtain an NPDES stormwater permit for discharges from municipal separate storm drain systems.

Section 402(p) of the Clean Water Act requires municipalities to prohibit non-stormwater discharges to municipal storm drain systems, and to reduce the discharge of pollutants from their storm drain system to the *maximum extent practicable (MEP)* using “management practices, control techniques and system, [d]esign and engineering methods, and such other provisions...appropriate for the control of such pollutants.”

The California State Water Resources Control Board (SWRCB) through its nine Regional Water Quality Control Boards (RWQCB) administers the NPDES stormwater management program in California. The City lies within the Central Coast Regional Water Quality Control Board (Region 3). Salinas, with a population of over 100,000 people, is considered a Phase I community.

In addition to the City preparing this comprehensive management Plan, other operators within the City also have permit requirements. For industrial facilities and construction activities, the SWRCB has issued a statewide general permit that applies to all stormwater discharges requiring an NPDES permit. These operators must submit a Stormwater Pollution Prevention Plan.

1.6 NPDES Permit Requirements

On February 11, 2005, the State Water Resources Control Board adopted Waste Discharge Requirements (Permit) Order No. R3-2004-0135. Issuance of this Permit superceded the City’s initial permit issued in 1999. This permit will be in effect until 2009. Through Attachment 4 to the Municipal Permit, the RWQCB gave specific guidance as to what topics must be addressed in the City’s Storm Water Management Plan (SWMP). A copy of the Permit is attached as Appendix B-1.⁴

1.7 Changes Affecting Program Management

New requirements affecting the City’s SWMP are one of several significant changes from the 1999 Order/Permit. The 2005 Permit includes a requirement that the City implement best management practices (BMPs) to the maximum extent practicable (MEP). Program development and implementation of BMPs to the maximum extent practicable raises the standard over past requirements and necessitates that the City undertake a more ambitious effort.

Another significant change contained within the 2005 Permit has to do with the City’s Monitoring and Reporting Program (MRP). The City is required to prepare a Quality Assurance Program Plan (QAPP) as part of its MRP. During the City’s first permit term, 21 sites were monitored. Results from these monitoring locations have been factored-in to the revised reporting and monitoring program. In sum, language contained within the 2005 Order reflects analysis of the past five-years of water sampling, changes in the Federal Storm Water Program, precedential orders issued by the State Water

⁴ Permit is also available on-line at: <http://www.ci.salinas.ca.us/PubWrks/MtcSvc/StormWater-NPDES/StormWaterRegulations.html>.

Resources Control Board, case law, and lessons learned from implementation of the initial permit.

Since 1999, the City has experienced other significant changes. The City has grown 17.6%, from a population of 129,800⁵ to over 152,677 in 2005. Much of this growth has occurred in the northern portion of the City on what formerly was agricultural land. That pace of growth is indicative of longer-term trends. Over the past 30-years, the population of the City has more than doubled. In 1970, the City's population was 58,896. By the year 2000, it grew to 143,776; this is a 3% growth rate.⁶ The City's population is projected to continue to grow at a similar pace over the new permit term and into the next twenty to thirty-years.⁷ For example, in the next five years, the City projects that 385-acres of farmland to the North and East of the City will be converted to residential use, and City boundaries will be expanded. Conversion of this land is projected to approximately add an additional 44,000 residents⁸, or almost 30 percent over existing levels. When the RWQCB issued the City its NPDES permit, it expressed particular interest and concern over the potential for adverse impacts of planned growth if it was not managed well.

While the City's population has grown over the past 5-years, the City's financial assets have shrunk. Since April 2003, the City's General Fund budget has been reduced 24%, or \$15.3 million. In response to this crisis, the City has eliminated 123.25 positions (33% of its total workforce), authorized the closure of its libraries, recreation centers, and reduced service provisions. Loss of one-half of the Parks Maintenance staff and other maintenance personnel in the City's Maintenance Services Department has compromised municipal stormwater management capabilities. While revenues have been decreasing, the need for services has steadily increased.

1.8 Program Effectiveness

The City will assess program effectiveness through water quality sampling and program effectiveness. Results from water quality sampling will be used to measure success. Sampling results will also be used to modify programs and alter municipal actions. Salinas will also measure this Plan's success by measuring program performance against established benchmarks. The most significant benchmark is the City's Municipal Permit. Other benchmarks include the City's ability to successfully collaborate with watershed stakeholders, train its staff to faithfully implement the intent and meet Municipal Permit requirements, educate the public such that their newfound knowledge motivates them and lead to behavioral changes. The City also looks to develop a funding source that ensures long-term viability of the City's Urban Watershed Management Program. Program effectiveness measurements are discussed in detail in each of the elements that follow.

⁵ State Department of Finance

⁶ City of Salinas 2002 General Plan

⁷ Ibid.

⁸ Based upon 12,000 dwelling units and the 2000 US Census Salinas Household Size of 3.66 people per dwelling unit.



Water Resources

“Any river is really the summation of the whole valley. To think of it as nothing but the water is to ignore the greater part.”

--Hal Borland

2.1 Introduction

Once a small agricultural community of 14,000¹ people, Salinas today is the largest city within California’s Central Coast and the seat of county government. Within it’s approximately 12,000 acres, the City has become a residential, suburban community within an agricultural setting. The City’s population is now a growing 152, 677 people.² Salinas is also Monterey County’s workforce center, supporting approximately one-third of all jobs.

In 2005, agricultural production within Monterey County accounted for nearly \$3.3 billion in sales.³ Agricultural production, and the City’s economy and quality of life, rely upon a steady supply of clean water. Waterways in the Salinas Valley are conjunctive, that is, surface water flows recharge groundwater. Groundwater supplies most of the region’s water. Runoff from the Gabilan and Santa Lucia Mountain Ranges are tributary to Salinas River flows. Runoff from local mountains, farms and developed areas can carry with it more than merely water. Runoff can also carry a mix of pollutants.

This element provides a brief summary of hydrologic conditions within the City of Salinas and nearby watersheds.

¹ 1950

² State Department of Finance, 2004

³ County of Monterey Agricultural Commissioner’s Office, *Monterey County Crop Report, 2005*

2.2 Hydrology

The River itself has no beginning or end. In its beginning, it is not yet the River; in its end, it is no longer the River. What we call the headwaters is on a section from among the innumerable sources which flow together to compose it. At what point in its course does the Mississippi become what the Mississippi means?"

--T.S. Eliot

The City of Salinas is located in California's central coast within Monterey County. It lies within the northern portion of the Salinas Valley flanked by the Gabilan Mountains to the northeast and Santa Lucia Mountains to the southwest---thirteen miles from the coast. Waterways run ribbons through the City (Figure 2.0). Four creeks drain the Gabilan range. These include the Santa Rita, Gabilan, Natividad, and Alisal Creeks. The lower reach of Alisal Creek has been channelized and is know as Reclamation Ditch 1665 (Rec. Ditch). Water from these creeks flow through portions of the City and ultimately empty into Monterey Bay. Together, these waterbodies and their watersheds

Figure 2-0 Regional Surface Hydrology of the Lower Salinas Valley Sub-Watershed



Source: 606 Studio Department of Landscape Architecture, California State Polytechnic University, Pomona Vision Plan for Carr Lake Regional Park, June 2003.

form the hydrologic backbone of the Reclamation Ditch Watershed.⁴ Except for Santa Rita Creek (See Figure 2-2), each creek is tributary to Carr Lake.⁵

From their headlands, each of the four creeks makes several passes through farmlands between intermittent trips through urban development. Unlike the rest of the City that is tributary to the Reclamation Ditch, the City's most southern area drains into the Lower Salinas River Sub-Watershed. Runoff here flows to the Salinas River.

Within City limits, the Lower Salinas Sub-Watershed is confined to a relatively small area--2.5 square miles. Outside of the City limits, this is not the case. The Salinas River is the major waterway within Monterey County, and the nation's longest submerged river.⁶ It travels 155 miles northwest from San Luis Obispo County through the Salinas Valley into Monterey Bay.

The City's location relative to the Reclamation Ditch Sub-Watershed is depicted in Figure 2-1. Salinas can be identified lower center by the maze of streets. The Salinas River and the portion of the City that is outside of the Reclamation Ditch Watershed, and within the Lower Salinas Valley Sub-watershed can be seen in the lower left-hand portion of the map. The City of Marina lies in the figure's southwest corner.

A closer look at the Reclamation Ditch Sub-Watershed reveals several smaller watersheds. Each of these smaller areas drains to creeks, detention basins and/or other water bodies as shown in Figure 2-2. Carr Lake and the Reclamation Ditch collect flows from upstream creeks. During heavy storms, Carr Lake serves as a detention basin.

Outside of the Carr Lake drainage basin lays a small watershed (approximately 2 square miles) called Markeley Swamp. Water from this drainage system also empties into the Reclamation Ditch northwest of City limits. Farther north, and within the City's northwestern border, lies Santa Rita Creek. This small creek drains its own minor sub-watershed (0.5 square miles) and flows through a small portion of the City before reaching the Reclamation Ditch below City limits. Santa Rita Creek is maintained by Monterey County Water Resources Agency.

Most urban runoff within the City drains into the Reclamation Ditch and follows a path through the Tembladero Slough, Old Salinas River, Moss Landing Harbor, and the Protrero Tide Gates. The total incorporated area that drains to the Reclamation Ditch system is approximately 13 square miles.

⁴ Naming conventions of watersheds have not been consistent. Salinas chose "Reclamation Ditch" to be consistent with regional watershed planning efforts.

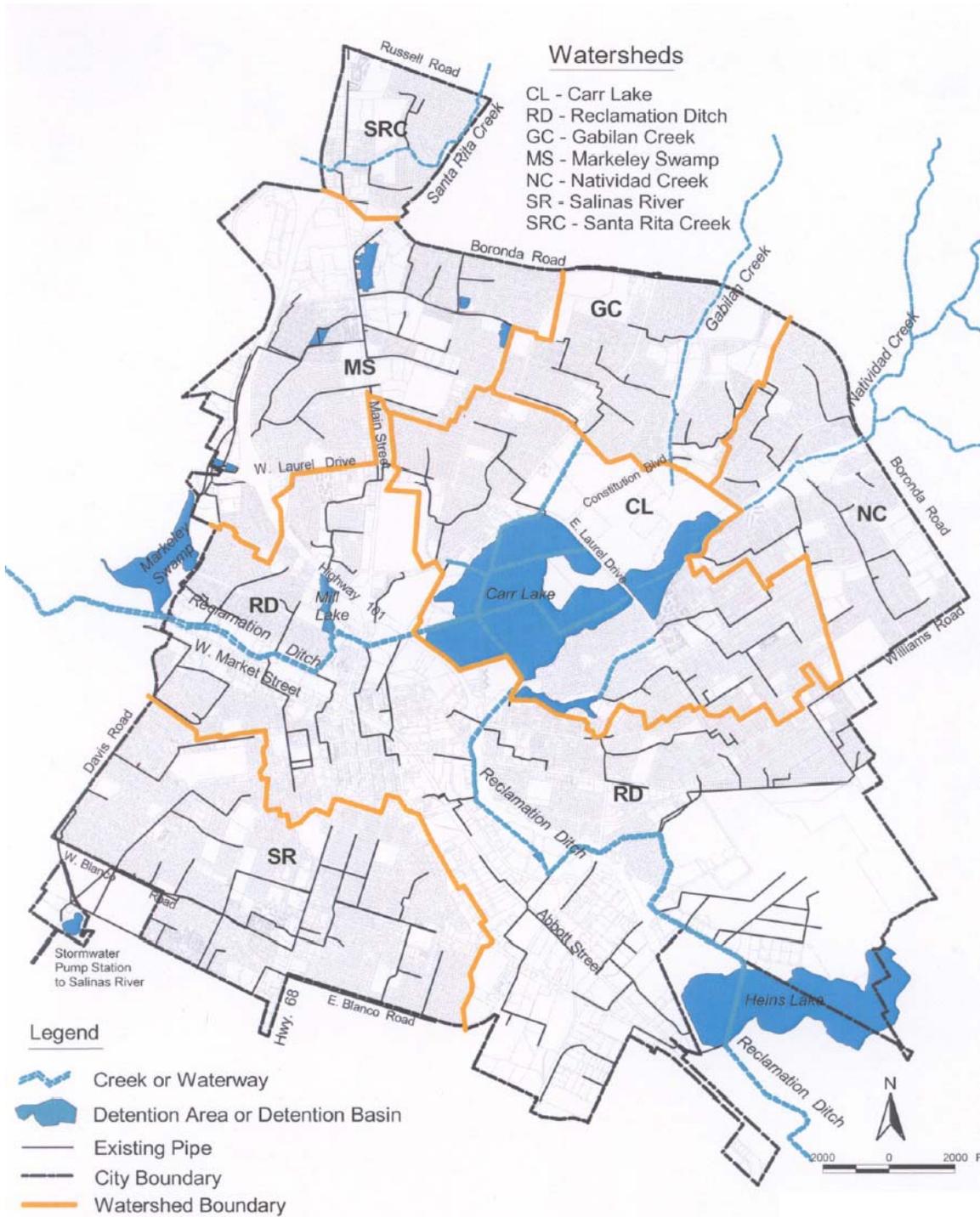
⁵ Today Carr Lake is a dry lakebed; it was drained and has been extensively farmed since the turn of the 20th Century. It also serves as a detention basin during flood events.

⁶ Soil Survey of Monterey County, Natural Resources Conservation Services, 1978.

This page intentionally left blank

This page intentionally left blank

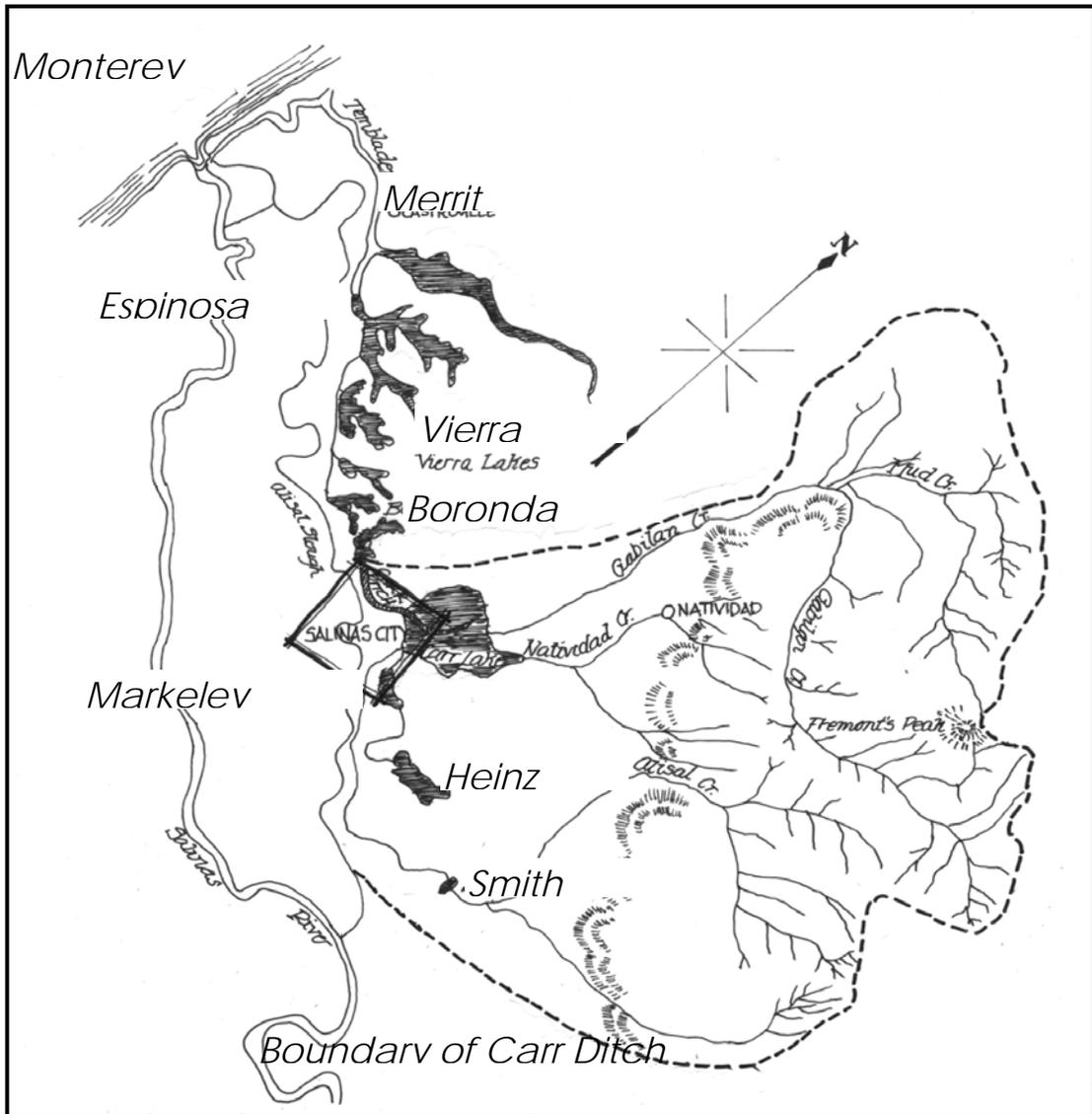
Figure 2-2 Watersheds and Waterbodies within Municipal Limits



Source: Camp, Dresser and McKee, City of Salinas Stormwater Master Plan, May 2004

This page intentionally left blank

Figure 2-3 Lower Salinas Valley Historic Wetlands and 7 Lake System



2.3 Flooding

"The (Salinas) river tore the edges off the farm lands and washed whole acres down; it toppled barns and houses into itself, to go floating and bobbing away. It trapped cows and pigs and sheep and drowned them in its muddy brown water and carried them to the sea."

--John Steinbeck

Stormwater runoff from the Gabilan Mountains poses one of the greatest flood risks to Salinas. Overflows from Salinas River pose a lesser risk due to its distance from City limits. Runoff from the Gabilan Mountains can pass quickly through cultivated farmlands, picking up sediments and exacerbating risks. The flood path from upstream areas draining the Gabilan Range goes through Carr Lake. For decades, Carr Lake has protected Salinas from flooding. However, extreme rainfall events will overtop lake banks.

Carr Lake substantially contains flood events smaller than the 25-year flood. For larger storms this is not the case. In 1998, Salinas experienced a 33-year flood event. Areas immediately surrounding Carr Lake, such as Sherwood Lake Mobile Home Park, experienced flooding. During the 1988 storm, waters breached Highway 101 and Natividad Creek. During a 100-year flood, these areas would also be inundated. Figure 2-4 shows the extent of the 100-year floodplain at Carr Lake. The 100-year flood would significantly affect areas southeast and west of Carr Lake. Businesses, and apartments neighboring the mobile home park would also be severely affected by the 100-year flood.

2.4 Municipal Storm Water Drain System

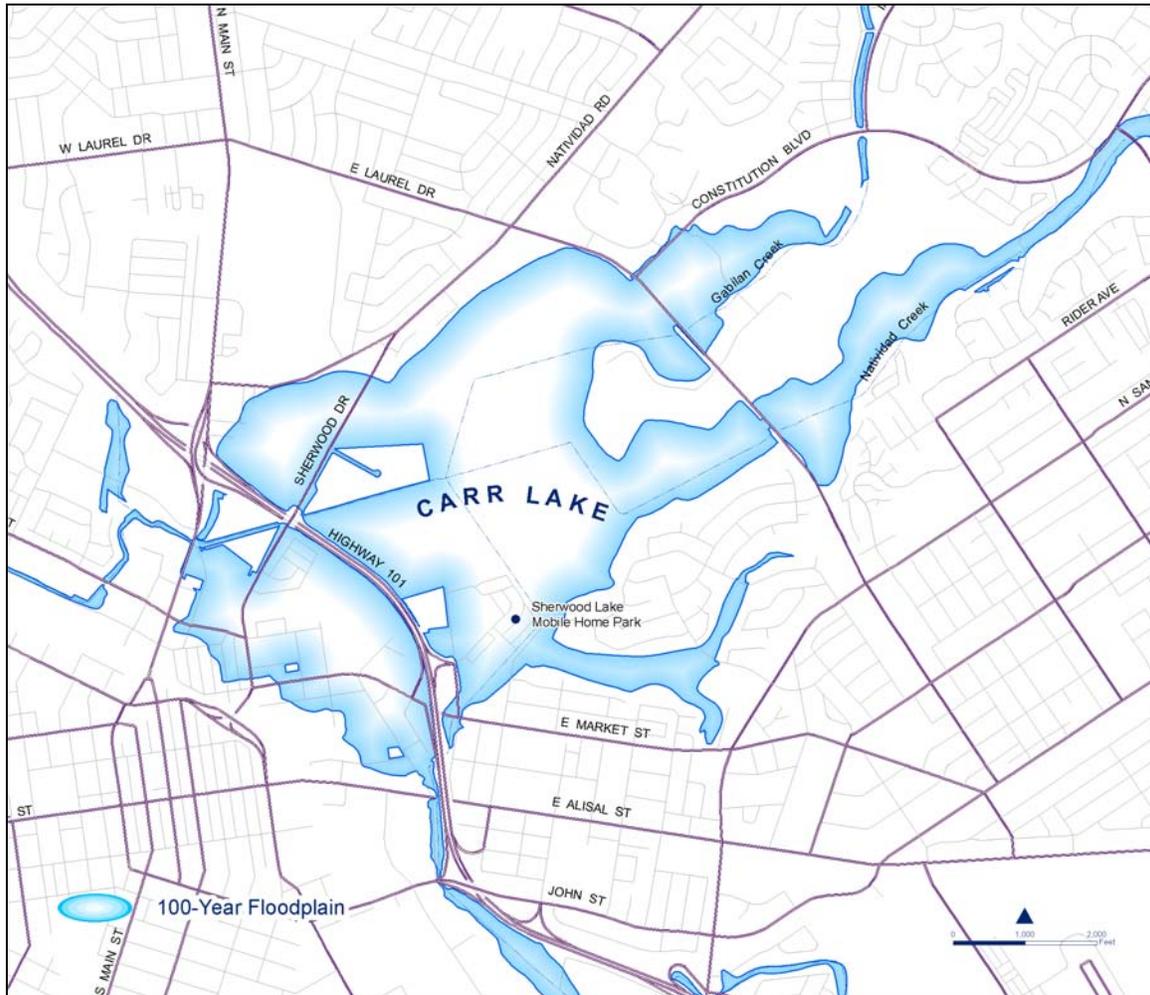
The City of Salinas operates a man-made municipal storm drainage system to manage runoff within the City. This system consists of a series of gravity-drained pipes that flow to nearby receiving waters and detention basins (Figure 2-3). The one exception to this system lies at the southwest City boundary. Here, at the site of the former City wastewater treatment plant, lie the Salinas River Storm Drain Pump Station and Blanco Detention Basin. Stormwater from the southerly portion of the City is diverted here and then mechanically pumped into the Salinas River via a 66-inch corrugated metal outfall pipe. A detention basin provides temporary storage when inflow amounts exceed pump capacity.

Detention basins are employed throughout the City as part of its flood control and storm drain system. Many of these basins are contained within City parks. Detention basins also provide limited water quality benefits. Since most municipal detention basins drain into the county's Reclamation Ditch, basins are designed to meet county requirements. Studies throughout California have shown that basins yield greater water quality benefits when designed to meet 2-year storms, at minimum.⁷ Monterey County Water Resources Agency requires that detention basins handle 10-year storms.

City detention basins primarily function to ameliorate flows and reduce the cost and size of downstream stormwater infrastructure. This intent is consistent with county design requirements and reflects the county's historic past when the present Water Resources Agency was called the Monterey County Flood Control and Water Conservation District.

In 2004, the City commissioned an update to its *Storm Water Master Plan*. That study analyzed the capability of over 74-miles of larger storm drain lines to handle 5- and 20-year storms. City consultants concluded that the City's existing drainage infrastructure operated at capacity. This is because the primary receiving body for the City's

⁷ Camp, Dresser, McKee, City of Salinas *Storm Water Master Plan*, May 2004

Figure 2-4 100-Year Flood Plain Carr Lake Area

Source: Federal Emergency Management Agency, City of Salinas

stormwater flow, the Reclamation Ditch, lacks the capacity to handle additional runoff.

One of the most common reasons for drain line obstruction is sedimentation. The plan noted City maintenance personnel have reported that the most significant major drainage flow problems within the City occur at the northern municipal boundary where adjacent agricultural fields drain into municipal operations.

“At these locations, agricultural fields can overtop the tailwater ditches and either enter the City’s storm drain system at inlets at the boundary or flow in City streets to an inlet

with capacity. The agricultural runoff has a very high sediment load and mud is deposited in the City storm drain system and City streets.”⁸

In 2004, the City spent \$270,000 to dredge sediment from the reach of Gabilan Creek nearest the City boundary at Boronda Road.⁹ This is the third large-scale sediment removal project in Gabilan Creek. Land use immediately upstream of Boronda Road is cultivated agriculture.

While exact causes of sedimentation have yet to be formally identified, sediment transport and deposition of pollutants from upstream sources into the City are a significant issue for the City of Salinas. In 1994, in a report prepared by the California Department of Fish and Game, Marine Pollution Lab and the Moss Landing Marine Laboratory, authors concluded:

“Agricultural lands receive higher levels of known poisons than any other landscape in the state. Year after year, farm chemicals drain into a ditch system which empties directly into the Monterey Bay Marine Sanctuary. Urban runoff is less important in the Salinas Valley than farm sources.”

Sediment transport has been partially addressed through the use of detention basins. While detention basins have been primarily used for flood control purposes, they also provide some stormwater quality benefits. Sediments, particularly larger sizes, may settle out when water is retained. Pollutants that adhere to sediment may settle as well. Plastics and other floatable trash, as well as water-soluble pollutants, and certain chemicals typically do not settle and consequently flow downstream through the basin. Other chemicals may be filtered through bio-remediation (see Table 4.2 of this Plan). Chemicals of concern include fertilizers, pesticides and herbicides. Elevated concentrations of nitrates, orthophosphates and sediments are conveyed from upstream agricultural sources by area creeks through the City of Salinas to the Reclamation Ditch and ultimately to the ocean.

One intended purpose of the City’s 2002 Natividad Creek Detention basin project was the mitigation of these contaminants via natural wetland basin habitat restoration. The basin design feature removes most of the sediments from creek flows while nitrates and orthophosphates are bioremediated in the wetland/basin environment. Bioremediation via wetland restoration is a well-proven means for water treatment. Denitrification is accomplished in the shallow wetland area via maximum soil-water interface. Pesticide reduction is accomplished via open water sunlight exposure (photolysis) and vegetation for sorption. Other upstream contaminants, which are not listed but still carry downstream concerns, are similarly treated in the new basin.

In 2004, Salinas prepared an assessment of its stormwater infrastructure; the result was *The Storm Water Master Plan*.¹⁰ This plan focused primarily on managing flow

⁸ Ibid

⁹ Personal communication, Development and Engineering Services Department, City of Salinas

¹⁰ Camp, Dresser and McKee, City of Salinas Storm Water Master Plan, 2004

and flooding. The 2004 Master Plan included the following findings and recommendations:

1. City system typically operates in a surcharged condition.
2. There were a few locations where significant overflows occurred with the City's system.
3. Major drainage problems occur at the City boundary between agricultural fields where agricultural tailwater runoff overtops ditches and flows into the City. The area around Williams Road has been most adversely affected.
4. Detention of upstream agricultural runoff will be needed.
5. Hydraulic analysis revealed several locations where overflows from the drainage system would occur in a 5-year or 20-year storm: three locations in the Salinas River watershed, and several locations in the City's industrial area of the Reclamation Ditch Watershed. High backwater condition at these sites is the reason given for overflows, rather than inadequate pipe size.
6. Carr Lake is a critical detention basin for the proper functioning of the Reclamation Ditch system. "The detention function should be considered as the highest priority relative to other intended uses."¹¹

In addition to tracking water flow and trash, Salinas has also been monitoring water quality.

2.5 Municipal Water Quality / Water Monitoring

Since the mid-1990s, the City has performed regular environmental water quality monitoring. Early efforts were part of the Baseline Monitoring Program of major outfalls, screened for illicit discharges. Beginning with the issuance of the City's first NPDES permit in 1999, the City began a systematic environmental water quality monitoring program. Under the permit, the City began taking samples in December of 1999. First year efforts were conducted in collaboration with the State Regional Water Quality Control Board's Central Coast Ambient Monitoring Program (CCAMP). That initial program contained three elements: 1) surface water quality sampling, 2) stream sediment sampling, and 3) aquatic biology and habitat surveys. At the end of the first permit term in 2004, the City commissioned a report on the principal findings.¹² This element draws heavily from the findings in that report. Conclusions from this report drew upon CCAMP and the California State University at Monterey Bay Watershed Institutes' Central Coast Watershed Studies (CCoWs) information as well as the City's monitoring program results.

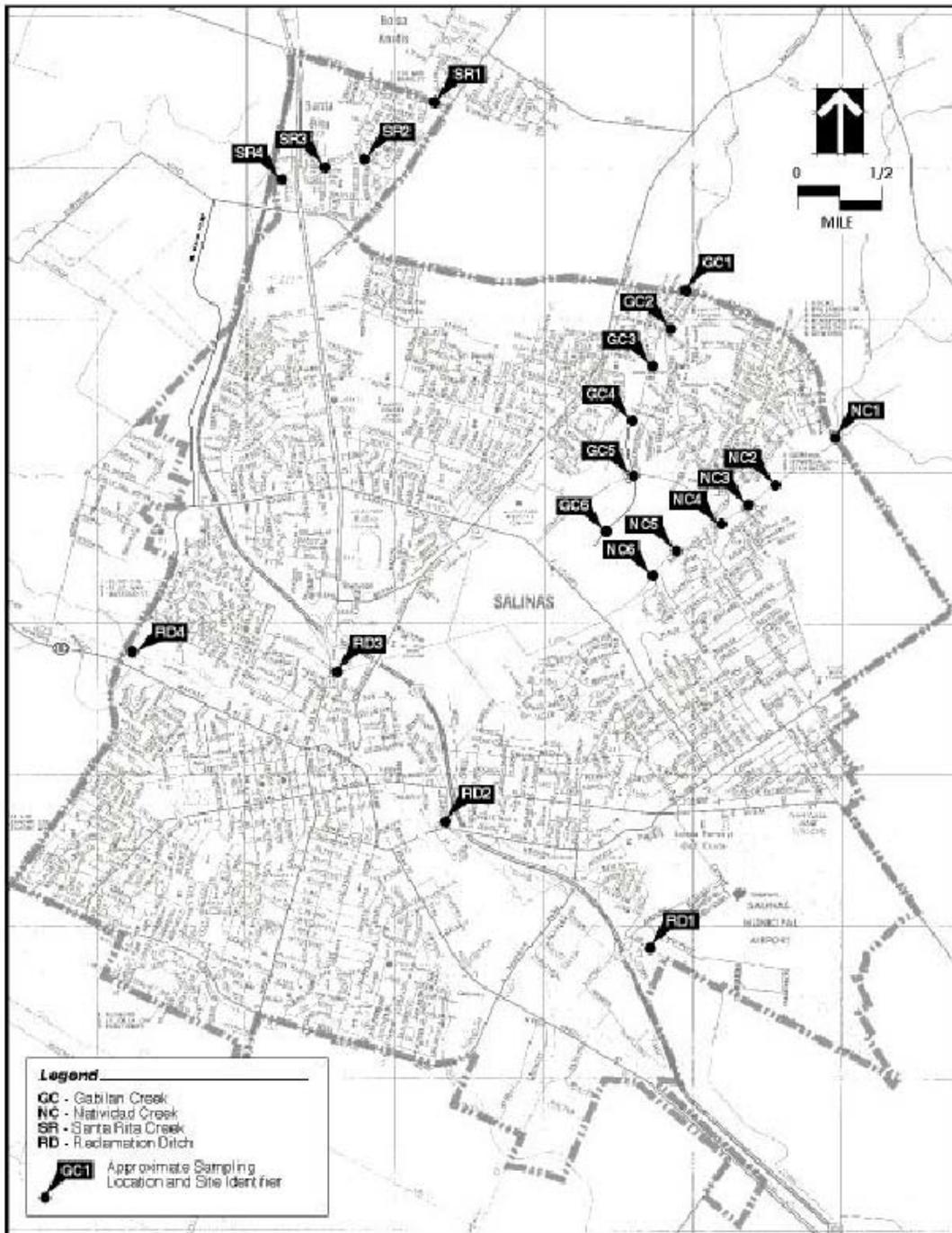
First permit term water quality monitoring focused solely on the Reclamation Ditch watershed and the four creeks that drain it: Gabilan Creek, Natividad Creek, Santa Rita Creek, and the Reclamation Ditch. During the first permit term, the City monitored twenty-one stations. Monitoring efforts included multiple stations at each of the four

¹¹ Ibid.

¹² Camp, Dresser, McKee, *City of Salinas Evaluation of Annual Environmental Monitoring Program Results*, Technical Memorandum, June, 2004

waterways, including a reference station at the upstream limit of the City boundary at each of the four creeks. Figure 2-5 displays the location of the 20 monitoring stations employed during the City's first permit term (1999-2004). Environmental monitoring sampling sites are listed by waterbody in Table 2.1.

Figure 2-5 Location of Salinas Monitoring Sites 1999-2004



Source: Camp, Dresser, McKee, Evaluation of Annual Environmental Monitoring Program Results, June, 2004 Technical Memorandum.

Table 2.1 Sampling Sites for Annual Environmental Monitoring

<i>Site ID</i>	<i>Site Location</i>
Santa Rita Creek	
SR1	Just south of bridge at Russell Road
SR2	At upstream end of Santa Rita Park (at Van Buren & Bolivar Sts)
SR3	At downstream end of Santa Rita Park (at Bolivar & Santa Rita Sts)
SR4	At dead-end of Brutus St (off west end of Bolivar St)
Gabilan Creek	
GC1	Just south of bridge at Boronda Road - at Boronda & Independence
GC2	At Independence and Danbury Streets
GC3	At end of Hyannis off Coventry St (near Independence & Nantucket)
GC4	At Little River Dr (near Independence & Lexington)
GC5	At Independence & Constitution
GC6	Downstream of GC5 in open space area
Natividad Creek	
NC1	Just south of bridge at Boronda Road - just east of Constitution
NC2	In Natividad Creek Park upstream of bridge at Freedom Parkway (off Constitution Avenue)
NC3	In Natividad Creek Park about midway between Freedom Parkway and Las Casitas Drive (adjacent to basketball court)
NC4	Downstream end of Natividad Creek Park – upstream of bridge at Las Casitas Dr
NC5	Midway between Las Casitas and Garner – off Rancho Drive (accessway adjacent to 1113 Rancho Drive)
NC6	At dead-end of Garner Avenue (north end)
Reclamation Ditch 1665	
RD1	At end of De La Torre Street
RD2	North side of bridge at Griffin & John Streets
RD3	At Bridge Street east of Main Street
RD4	East side of Davis Road
Reference Station on Gabilan Creek	
GC-RF2	Gabilan Creek at crossing of Crazy Horse Road

Source: Camp, Dresser, McKee, Evaluation of Annual Environmental Monitoring Program Results, June, 2004 Technical Memorandum.

A. Results from 1999-2004 Environmental Monitoring Program

Two principal conclusions from the 1999 through 2004 environmental monitoring effort included primary identified pollutant loads were those influent into Salinas and the lack of clear identifiable trends. “The primary pollutant sources that could be identified under the City’s monitoring program were the loads coming from the agricultural fields and rangeland located upstream of the City. Currently any impact to the instream concentrations with the City is masked by the quality that enters from upstream.”¹³ 2.) There was a lack of identifiable trends. Quoting from the report, “This lack of identifiable trends is a reflection of the quality of the water entering the City.” CDM further cited a conclusion from a California State University Monterey Bay’s Central Coast Watershed Studies (CoWS) nutrient study that found that the significant areas of agricultural and grazing land upstream from the City appear to negatively impact water quality. “When the waterways enter the City, the levels

¹³ Camp, Dresser, McKee, Evaluation of Annual Environmental Monitoring Program Results, June, 2004 Draft Technical Memorandum

of nutrients, bacteria, and solids are already elevated and any additional load from the City does not result in any consistent change in the water quality concentrations.”¹⁴

A. Local Watershed / Creek Assessments

Within seasons, water quality parameters were fairly consistent in all four waterways. Data collected from the first permit term failed to yield a single location that could be classified as a hot spot where consistently higher, or poorer levels were detected.

Total coliform levels were relatively high in all waterways. Wet season data was, in general, similar to data collected during the dry seasons. As might be expected, water temperatures were generally higher during spring and summer months when compared to fall and winter recordings. Chlorophyll-a and conductivity levels appeared higher in all waterways during spring months. Higher conductivity levels were most notable in the Reclamation Ditch. Water quality for individual creeks is summarized in the following paragraphs.

Gabilan Creek: First year data revealed slight upstream to downstream trends among some water quality parameters. Conductivity, ammonia (total N) levels, and total Kjeldahl nitrogen levels were slightly decreased at downstream sites when compared with upstream. Total suspended solids (TSS) and visible suspended solids (VSS) levels were considerably higher upstream. During the course of the first permit term, there were no notable changes over time in any of the water quality parameters.¹⁵ When compared with other waterways, Gabilan Creek showed consistently higher levels of nitrate.

Natividad Creek: For most parameters data was fairly variable and inconsistent. However, several parameters showed upstream to downstream trends. Nitrate and TSS levels were the most distinctive in this trending. Conductivity levels also showed a distinct trend upstream to downstream. Over the course of the first permit term's monitoring period all parameters remained fairly consistent year to year within Natividad Creek.

Santa Rita Creek: Monterey County Water Resources Agency is and has been responsible for managing the Santa Rita Creek watershed. Over the monitoring period, water quality levels varied more in Santa Rita Creek than in the other three creeks. The majority of water quality parameters were fairly consistent downstream to upstream. However most parameters were at higher levels relative to the reference site. Turbidity, conductivity and total dissolved solids (TDS) levels showed the largest increases. Higher nitrite, ammonia and total Kjeldahl nitrogen levels were found in Santa Rita Creek relative to Gabilan and Natividad Creeks.

¹⁴ The Watershed Institute California State University Monterey Bay, Central Coast Watershed Studies

¹⁵ Camp, Dresser, McKee, Evaluation of Annual Environmental Monitoring Program Results, June, 2004 Technical Memorandum

Reclamation Ditch / Alisal Creek: Consistent with the creeks that are tributary to it, Reclamation Ditch parameters showed upstream to downstream trends. There were decreases in turbidity levels as water flowed through the City. Similarly, nitrate (as N and as NO₃) phosphorus and orthophosphate levels also decreased as water flowed downstream through the City. Reclamation Ditch parameters were generally higher for phosphorus and orthophosphate, as well as nitrite, ammonia and total Kjeldahl nitrogen levels when compared to the other creeks.

2.6 Regional Water Quality Monitoring

In addition to conducting independent monitoring within municipal limits, the City's environmental monitoring program integrates data collected by others in the watershed. This included data collected primarily by three other groups: the Regional Water Quality Control Board, and its Central Coast Ambient Water Program (CCAMP); the Watershed Institute of California State University Monterey Bay in its Central Coast Watershed Studies (CCoWS);¹⁶ and the agricultural community as part of the RWQCB's Agricultural Waiver Program. Data from this latter effort was not available for inclusion in this Plan. However, beginning with the winter of 2006, municipal and agricultural monitoring efforts will be integrated. A more complete discussion of how the City will integrate water quality monitoring with agricultural programs is contained within Element 9—the City's Monitoring and Water Quality Testing and the Quality Assurance Program Plan.

Analysis of the CCAMP mean data for the 15 streams within the Salinas River Watershed revealed, "the Reclamation Ditch has some of the poorest water quality in the watershed, particularly in terms of ammonia, coliform bacteria, nitrite, and low dissolved oxygen."¹⁷ In the CCoWS report, scientist studied stations along Gabilan Creek and the Reclamation Ditch system. Results revealed that the upper reaches of the Gabilan Creek watershed to be relatively nutrient free. This changed as waters flowed through rangeland and agricultural fields. Levels of orthophosphate increased to extreme levels and nitrate and ammonia levels rose to moderate.¹⁸ Monitoring locations by the principal groups within the watershed are listed in Table 2.2 and displayed in Figure 2-6.

¹⁶ In 2004, The Watershed Institute prepared the *Draft Reclamation Ditch Watershed Assessment and Management Plan*. Information in this section relied upon data and analysis from that report. The City wishes to acknowledge Monterey County Water Resources Agency for granting permission to use this data.

¹⁷ Camp, Dresser, McKee, Evaluation of Annual Environmental Monitoring Program Results, June, 2004 Technical Memorandum

¹⁸ Ibid.

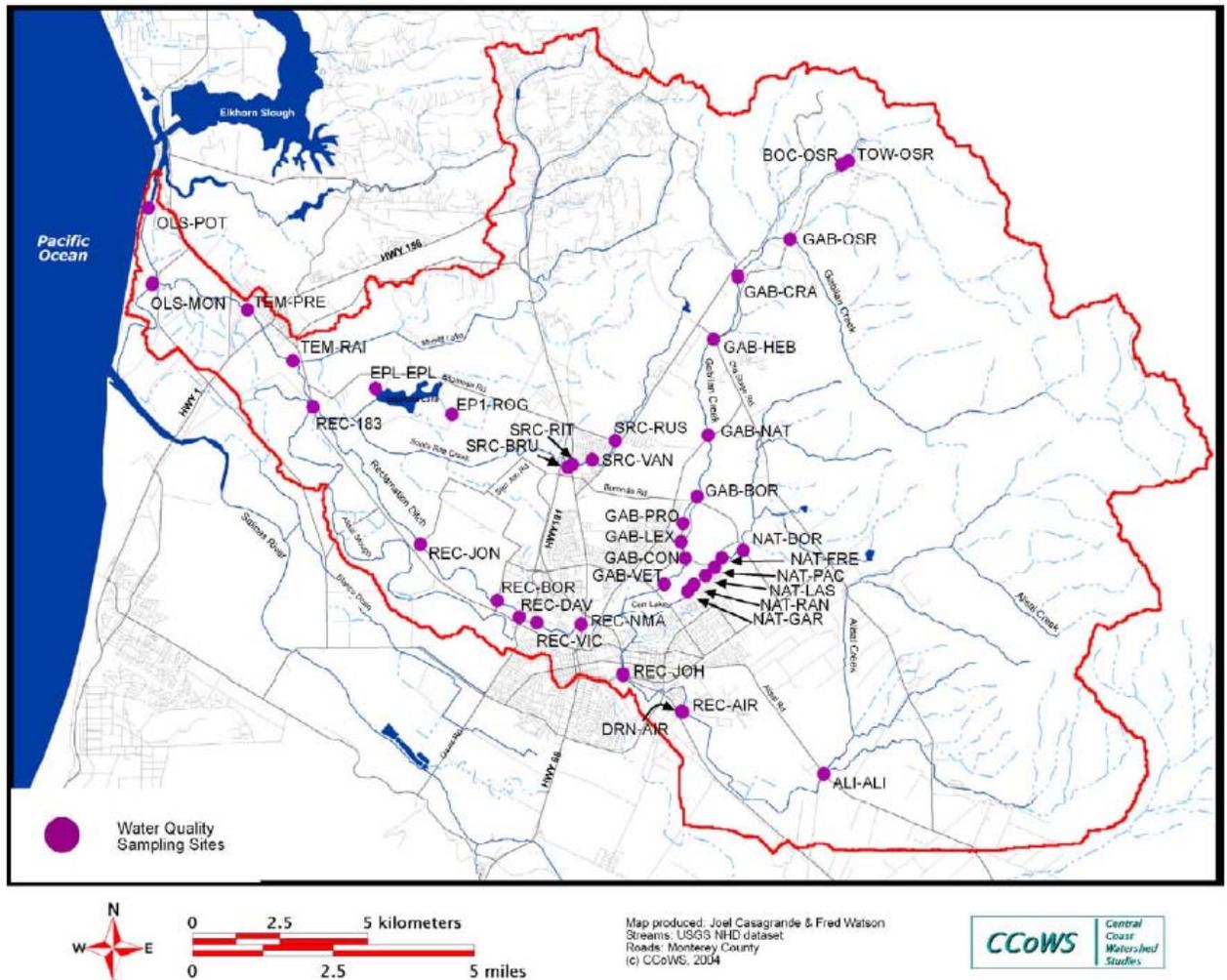
Table 2.2 Regional Monitoring Locations

CCoWS ID	CCAMP ID	UCSC ID	City of Salinas ID	Waterway Name	Bridge/Road	Easting	Northing	Datum
ALI-ALI	309UAL			Alisal Creek	Alisal Rd.	627189	4056491	NAD83
BOC-OSR				Unnamed tributary to Towne Creek	Old Stage Rd.	627694	4073554	NAD83
DRN-ALI	309AXX			Urban drain at Airport road	nr Airport Rd.	623162	4058237	NAD83
EPI-ROG				Tributary to Espinosa Lake	Rodgers Rd.	616573	4066568	NAD83
EPL-EPL				Espinosa Lake	Northeast corner of lake	614388	4067301	NAD83
GAB-BOR	309GAB		GC1-A	Gabilan Creek	Boronda Rd.	623579	4064256	NAD83
GAB-CON			GC5	Gabilan Creek	Constitution Blvd.	623240	4062520	NAD83
GAB-CRA		GA-CHR	GC-RF2	Gabilan Creek	Crazy Horse Rd.	624740	4070421	NAD83
GAB-HEB		GA-HEB		Gabilan Creek	Hebert Rd.	624041	4068678	NAD83
GAB-LEX			GC4	Gabilan Creek	Lexington Dr.	623240	4062520	NAD83
GAB-NAT				Gabilan Creek	Natividad Rd.	623895	4065983	NAD83
GAB-OSR		GA-OSC		Gabilan Creek	Old Stage Rd.	626227	4071459	NAD83
GAB-PRO			GC3	Gabilan Creek	Provincetown St.	623183	4063503	NAD83
GAB-VET			GC6	Gabilan Creek	Veteran's Park	622630	4061795	NAD83
NAT-BOR			NC1-A	Natividad Creek	Boronda Rd.	624889	4062742	NAD83
NAT-FRE				Natividad Creek	Freedom Way	624279	4062535	NAD83
NAT-GAR			NC6	Natividad Creek	nr Garner Ave.	623312	4061593	NAD83
NAT-LAS			NC4	Natividad Creek	Las Casitas Dr.	623829	4062030	NAD83
NAT-PAC			NC3	Natividad Creek	nr Pacana Cir.	624085	4062263	NAD83
NAT-RAN			NC5	Natividad Creek	Ranchero Dr. (nr Rocca Barton School)	623488	4061779	NAD83
OLS-MON	309OLD			Old Salinas River	Monterey Dunes Colony	608014	4070228	NAD83
OLS-POT	309POT			Old Salinas River	Potrero Rd.	607911	4072333	NAD83
REC-183				Reclamation Ditch	HWY 183	612604	4066775	NAD83
REC-AIR	309ALU		RD1-A	Reclamation Ditch	Airport Rd.	623129	4058253	NAD83
REC-BOR	309ALD			Reclamation Ditch	Boronda Rd.	617873	4061331	NAD83
REC-DAV			RD4-A	Reclamation Ditch	Davis Rd.	618505	4060856	NAD83
REC-JOH			RD2	Reclamation Ditch	John St.	621464	4059263	NAD83
REC-JON				Reclamation Ditch	San Jon Rd.	615668	4062916	NAD83
REC-NMA			RD3	Reclamation Ditch	North Main St.	620269	4060658	NAD83
REC-VIC				Reclamation Ditch	Victor Way	618999	4060710	NAD83
SRC-BRU			SR4	Santa Rita Creek	Brutus St.*	619889	4065078	NAD83
SRC-RIT			SR3	Santa Rita Creek	Santa Rita St.*	620002	4065150	NAD83
SRC-RUS			SR1-A	Santa Rita Creek	Russell Rd.*	621244	4065834	NAD83
SRC-VAN			SR2	Santa Rita Creek	Van Buren Ave.*	620580	4065293	NAD83
TEM-PRE	309TEM			Tembladero Slough	Preston Road	610737	4069512	NAD83
TEM-RAI				Tembladero Slough	Railroad Crossing	612031	4068079	NAD83
TOW-OSR				Towne Creek	Old Stage Rd.	627897	4073659	NAD83

* Approximate locations based on the city of Salinas Storm Water Sampling Sites Map.

Source: The Watershed Institute, Draft Reclamation Ditch Watershed Assessment and Management Plan, 2004

Figure 2-6 Reclamation Ditch Watershed Monitoring Locations



Source: The Watershed Institute, Draft Reclamation Ditch Watershed Assessment and Management Plan, 2004.

2.7 Regional Water Quality

Within the greater watershed, the City sits in a south central location of the Reclamation Ditch Watershed. It inherits water from the Gabilan Mountain Range after agricultural uses and discharges runoff to agricultural, environmental, recreational, industrial and other downstream uses. Several entities are involved with water resources management at the regional level. Most significant is the work performed by the California Regional Water Quality Control Board. In 1994, the RWQCB adopted the Central Coast Water Quality Control Plan (Basin Plan). The Basin Plan identifies beneficial uses of waterbodies, requires monitoring, and sets associated water quality objectives to protect these uses.

Beneficial uses are activities that are supportable by a specific water quality. Federal Clean Water Act Section 303(d) requires the Basin Plan to list as “non-attainment” water bodies or segments of water bodies that fail to meet water quality objectives for specific uses. Among others, beneficial uses include: municipal (MUN), domestic (DOM), agricultural (AGR) and industrial water supplies. Recreational activities are divided into “contact recreation”, such as swimming (REC-1), and “non-contact Recreation” (Rec-2) and wildlife habitat (Wild). Water bodies may also be listed for environmental beneficial uses, such as cold-water fish communities (COLD), warm-water fish communities (WARM), shellfish harvesting (SHELL), spawning habitat (SPWN), and estuarine uses (EST). In total, the Basin Plan identifies 24 such beneficial uses within the Central Coast region, and classifies waterbodies or water body segments based upon the data collected at the time of the listing.¹⁹ RWQCB beneficial use designations for creeks, lakes and other waterbodies within and near municipal limits are summarized in Table 2.3.

Within municipal limits, the Basin Plan does not list any waterbodies as non-attainment. However, within the Reclamation Ditch Watershed, upper Alisal Creek /the Reclamation Ditch and Gabilan Creek are both listed under the 303(d) program. Gabilan Creek is listed for high levels of fecal coliform bacteria for a segment prior to City. Alisal Creek/the Reclamation Ditch is listed for fecal coliform and nitrates for segments prior to City limits and again after it leaves the City for high levels of fecal coliform, nitrate, pesticides, and priority organics, and low levels of dissolved oxygen. Locations of 303(d) listed waterbodies within the Reclamation Ditch Watershed are shown listed in Table 2.4 and displayed in Figure 2-7. Pollutant stressors include widespread existence of pesticides, fecal coliform, nutrients, low dissolved oxygen, and sedimentation. Stressors and potential sources listed in Table 2.4 point to agriculture’s heavy influence in the region.

¹⁹ A complete list of Basin Plan (1994) Beneficial Uses and their definitions is available at: http://www.swrcb.ca.gov/rwqcb3/BasinPla/BP_text/chapter_2/Chapter2.html

Table 2.3 Beneficial Uses Within and Near City Limits

Waterway	Objective Code	Objective	Possible additions (see text)
Gabilan Creek	REC-1	Water contact recreation	COLD
	REC-2	Non-contact water recreation	
	MUN	Municipal or domestic supply	
	AGR	Agricultural supply	
	GWR	Groundwater recharge	
	WILD	Wildlife habitat	
	WARM	Warm fresh water habitat	
	SPWN	Spawning, reproduction, and/or early development	
	COMM	Commercial and sport fishing	
Alisal Creek	REC-1	Water contact recreation	
	REC-2	Non-contact water recreation	
	MUN	Municipal or domestic supply	
	AGR	Agricultural supply	
	GWR	Groundwater recharge	
	WILD	Wildlife habitat	
	WARM	Warm fresh water habitat	
	COLD	Cold fresh water habitat	
	SPWN	Spawning, reproduction, and/or early development	
	COMM	Commercial and sport fishing	
Reclamation Ditch (a.k.a Salinas Reclamation Ditch)	REC-1	Water contact recreation	SPWN
	REC-2	Non-contact water recreation	
	WILD	Wildlife habitat	
	WARM	Warm fresh water habitat	
	COMM	Commercial and sport fishing	

Source: Adapted from *Draft Reclamation Ditch Watershed Assessment and Management Plan*, The Watershed Institute, California State University, Monterey Bay, 2004

Table 2.4 2002 Section 303 (d) List of Water Quality Limited Segment Within Reclamation Ditch Watershed

Name	Pollutant Stressor	Potential Sources	TMDL Priority	Estimated Size Affected
Alisal Creek	Fecal Coliform	Agriculture Range Grazing- Riparian and/or Upland Natural Sources	Low	5.8 Miles
Elkhorn Slough	Pathogens	Natural Sources Nonpoint Source	Low	2034 Acres
	Pesticides	Agriculture Irrigated Crop Production Agriculture-storm runoff Agricultural Return Flows Erosion/Siltation Contaminated Sediments Nonpoint Source	Low	2034 Acres
	Sedimentation/ Siltation	Agriculture Irrigated Crop Production Agriculture-storm runoff Channel Erosion Nonpoint Source	Low	2034 Acres
Espinosa Slough	Nutrients	Agriculture Storm sewers	Low	1.5 Miles
	Pesticides	Agriculture Urban Runoff/Storm Sewers	Medium	1.5 Miles
Gabilan Creek	Fecal Coliform	Urban Runoff/Storm Sewers Natural Sources Nonpoint Source	Low	6.4
Monterey Bay South (Coastline)	Metals	Surface Mining	Low	12 miles
	Pesticides	Agriculture	Low	12 miles
Moro Cojo Slough	Low Dissolved Oxygen	Source Unknown	Low	62 acres
	Pesticides	Agriculture Irrigated Crop- Production Agricultural storm runoff Agricultural Return Flows Nonpoint Source	Medium	62 acres
	Sedimentation / Siltation	Agriculture Irrigated Crop		

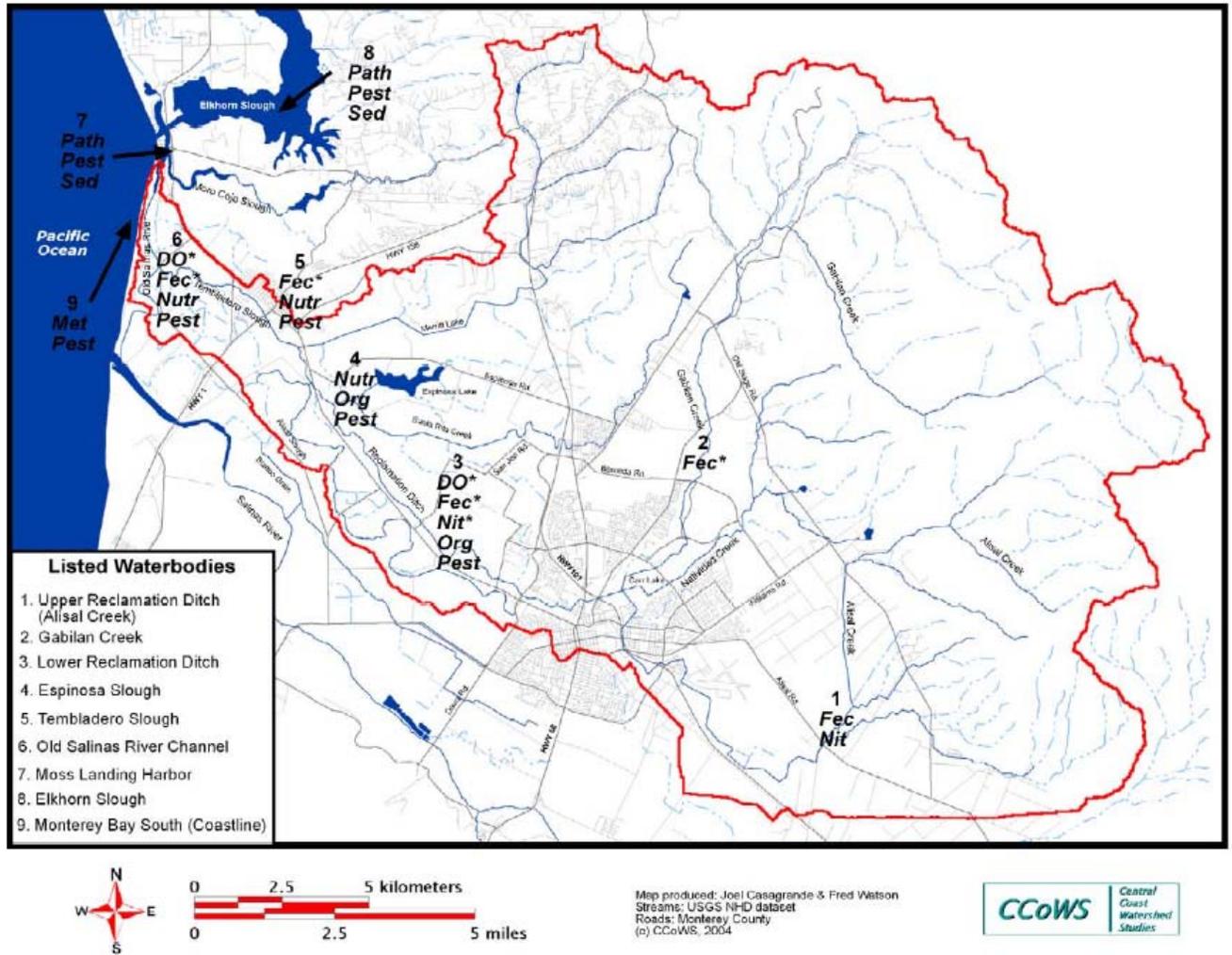
Stormwater Management Plan

Name	Pollutant Stressor	Potential Sources	TMDL Priority	Estimated Size Affected
		Production Agricultural storm runoff Construction / Land Development Nonpoint Source	Low	62 acres
Moss Landing Harbor	Pathogens	Agriculture Nonpoint Boat Discharge	Low	79 acres
	Pesticides	Agriculture Irrigated Crops Specialty Crops	Low	79 acres
	Sedimentation/ Siltation	Agriculture Irrigated Crops Agriculture storm runoff Hydromodification Dredging Channel Erosion Erosion/Siltation Nonpoint source	Low	79 acres
Old Salinas River Estuary	Fecal Coliform	Source Unknown]	Low	74 acres
	Low Dissolved Solids	Source Unknown	Low	74 acres
	Nutrients	Agriculture Irrigated Crops Agriculture- irrigation tailwater Nonpoint source	Medium	74 acres
	Pesticides	Agriculture Irrigated Crops Agriculture storm runoff Agriculture-irrigated tailwater Agriculture tailwater Agriculture Return Flows Nonpoint source	Medium	74 acres

Name	Pollutant Stressor	Potential Sources	TMDL Priority	Estimated Size Affected	
Salinas Reclamation Canal	Fecal Coliform	Agriculture Pasture Grazing- Riparian and/or Upland Urban Runoff/Storm Sewers Natural Sources Source Unknown	Low	5.9 miles	
	Low Dissolved Oxygen	Source Unknown	Low	5.9 miles	
	Nitrate				
	Pesticides	Minor Industrial Point Source		Low	5.9 miles
		Agriculture Irrigated Crops Agriculture storm runoff Agricultural irrigation tailwater Agricultural Return Flows Nonpoint Source		Medium	5.9 miles
	Priority Organics	Minor Industrial Point Source Agriculture Irrigated Crops Agriculture storm runoff Agricultural Return Flows Urban Runoff/Storm Sewers Source Unknown Nonpoint Source	Medium	5.9 miles	
Salinas River (lower estuary to near Gonzales Rd crossing, south of Salinas-watersheds 30910 and 30920	Fecal Coliform	Source Unknown	Low	31 miles	
	Nutrients	Agriculture	Medium	31 miles	
Salinas River Lagoon (north)	Nutrients	Nonpoint Source	Medium	197 acres	
	Pesticides	Agriculture	Medium	197 acres	
	Sedimentation/ Siltation	Nonpoint Source	Medium	197 acres	

Source: Central Coast Regional Water Quality Control Board, *Approved by USEPA: July 2003*

Figure 2-7 303(d) Listed Waterbodies within the Reclamation Ditch Watershed



- DO = Low dissolved oxygen
- Fec = Fecal Coliform
- Nit = Nitrate
- Nutr = Nutrients
- Org = Priority Organics
- Pest = Pesticides
- Sed = Sedimentation/Siltation
- Met = Metals

* Listings added in 2002 (approved by EPA, 2003). All others were included in the 1998 listing.

Source: The Watershed Institute, Draft Reclamation Ditch Watershed Assessment and Management Plan, 2004.

Municipal Maintenance

Element

3

“And the dry years would come, and sometimes there would be only seven inches or eight inches of rain. The land dried up...Some families would sell out for nearly nothing and move away. And it never failed that during the dry years the people forgot about the rich years, and during the wet years they lost all memory of the dry years. It was always that way.”

--John Steinbeck

3.1 Introduction

The City of Salinas is responsible for providing for the health, safety and welfare of its residents and business community, and for protecting its natural resources. Moreover, it is responsible for providing a platform that enables the community to achieve a high quality of life.

City departments have responsibilities that affect natural resource management. The City's Maintenance Services Department's (Department) primary role is to maintain municipal facilities. These include parks, buildings, streets, vehicles, and sewage and stormwater facilities. The Department maintains over 60 properties. It provides sewage conveyance and stormwater drainage maintenance services to the more than 150,000 people in an area that covers 12,000 acres.

This program element describes the City's municipal maintenance program to protect water quality through its maintenance activities. This element is prepared in compliance with Section V. of Attachment 4 to the City's National Pollutant Discharge Elimination System Permit (Municipal Permit). See Table 3.1.

3.2 Goals

Three goals guide this element:

1. Protect local water resources by reducing pollutants from municipal activities and operations to the maximum extent practicable (MEP).
2. Lead the community by example: showcase best management practices that could also be implemented in the community at-large.
3. Develop and implement management activities that use municipal resources effectively and efficiently.

Table 3.1 Permit Requirements – Municipal Maintenance

Section	Requirement (Summary)	Municipal Permit Section
3.3	Develop a municipal maintenance program	V
3.4	Prepare an inventory and map of all inlets and outfalls to MS4	V a
3.5	Ensure storm drain system is properly operated and maintained.	V b
3.5	Inventory and establish maintenance requirements/schedules for all municipal facilities—roads, buildings, parking lots, etc.	V c
3.5	Implement BMPs within 1 year	V d i
3.5	Sweep all roads quarterly	V c ii
3.5	Designate and ensure BMP implementation for municipal maintenance activities. Include in a manual	V d
3.5	Implement BMPs to reduce the effects of pesticides/herbicides/fertilizers.	V e
3.5	BMPs shall include 5 components, including education, IPM, etc. By end of 5 th year, eliminate all use of pesticides on SWRCB 303(d) list for the lower Salinas River. Annually train employees using non-registered pesticides, herbicides, or fertilizers.	V e
3.5 B	Develop and implement SWPPPs within 18 months of Permit	V f
3.5 B	Annually inspect all municipal facilities. Record results; begin by 2/07	V g
3.5 A	Annually review maintenance procedures and management practices. Make revisions < 90 days and report in annual report.	V h
3.5	Provide annual training	V i

3.3 Strategy

The fundamental strategy embedded in this and all elements of this Plan is that the City will identify and seek partners within the watershed to achieve stated goals. Activities will be based upon a collaborative approach with stakeholders within the watershed and cooperative work within departments and the private sector to achieve mutual watershed management/water quality protection goals. Additionally for this and all of this Plan's elements, the City will work to implement practices and programs for their proven benefits and their success in reducing pollutants of concern.

As municipal water sampling during the first permit term evidenced a lack of identifiable trends¹ and did not reveal specific municipal practices that were a source of pollution,

¹ Camp, Dresser, McKee, Technical Memo, *Evaluation of the Annual Environmental Monitoring Program Results, June 2004*

activities contained within this Plan are based upon industry standards and local knowledge of conditions. For this permit term, this element primarily focuses on abating trash and eliminating adverse impacts from the use of chemical pesticides. If littering and widespread application of pesticides and fertilizers can be substantially reduced, then pollutants entering the water system can also be reduced.

This element also addresses the following pollutants of concern: sediment, metals, nutrients, vehicle waste products, organic carbon, oil and grease, coliform, paints, concrete, fuels, automotive fluids, and other non-stormwater discharges. The objectives of this element include:

- Conducting maintenance and operations of City of Salinas owned properties in a manner that protects water quality in the City of Salinas region;
- Inspecting City owned and leased properties annually for compliance with this Plan and the City's Municipal Permit;
- Moving towards an Integrated Pest Management (IPM) approach to landscape maintenance and control pollution from pesticides, herbicides and fertilizers;
- Educating Maintenance Services Department staff and contractors regarding Municipal Permit requirements and City goals and objectives;
- Creating a phased schedule to implement this element along with an associated budget through the five-year term of the Municipal Permit; and
- Documenting water quality protection activities conducted by Maintenance Services Department staff as a means to better understand water quality inputs and outputs.

In addition, based upon the recent monitoring program results where upstream sources were suggested as possible dominant influences on local water quality², the City will pursue watershed solutions with upstream stakeholders.

3.4 Source Identification

The City has developed a watershed-based inventory of land use activities within the Reclamation Ditch watershed. This includes land uses within and outside of municipal corporate boundaries. For areas outside of the municipal jurisdiction, information was obtained from Monterey County. For this permit term, this information is contained within City and County land use maps and aerial photographs. In the long term, a shared geographical information system (GIS) database is desired. In addition to the data contained on maps and photographs, much of the source information contained within this section was obtained from the men and women who routinely maintain City facilities. City staff have first-hand knowledge of operational and management issues. The list of areas that were researched, analyzed and inventoried include:

- Roads, streets and parking facilities;
- Flood management projects and flood control devices;
- Parks;
- Areas and activities tributary to a Clean Water Act (CWA) section 303(d)-impaired water bodies, where an area or activity generates pollutants that are included within the listing;
- Municipal Golf Course; and
- Municipal waste facilities, including:

² Ibid.

- Sewage collection systems
- Municipal separate storm systems
- Corporate yards

City facilities are organized into three main groups: 1) parks, 2) streets and highways, and 3) municipal sites, including sanitary sewage collection and municipal separate storm water systems.

In addition to a review of first term monitoring results and literature review, City staff performed an urban water runoff reconnaissance of each site. These site assessments included an inventory of existing operations and management practices, a basic assessment of localized pollutants of concerns, and a review of drainage patterns. This last step included a visual assessment of drainage offsite and downstream environments. During visits, municipal employees noted the site's proximity to natural waterways and sensitive ecological habitats. These surveys and site assessments were completed in 2005 and have been included as part of the new Municipal Management Manuals and adjusted maintenance program.

3.5 Activities

A. Education

Education is the foundation of each of the City's programmatic elements. Educational efforts begin with linking maintenance activities with watershed management and water quality goals contained with the City's Permit.

The focus of education during this permit term will be initiation of an annual training and education program geared to municipal maintenance staff. Maintenance Services will present a summary of watershed issues and train staff on BMPs. Annual training and implementation of BMPs will be incorporated into each maintenance division's annual work program and budgetary request. Division managers will work with crew supervisors and others to prepare and conduct annual training.

B. Facility Maintenance

Facility maintenance is an integral part of the City's urban runoff and watershed protection efforts. Poorly maintained facilities add pollutants to downstream water bodies. Sanitary sewer overflows are a particular concern. Sanitary sewer overflows can occur when sewer collection lines designed to only conduct sanitary sewage become conduits for stormwater. These sewer lines either back up and discharge from manholes or other outlets or backup into homes, or through specially designed diversion structures intended to limit the amount of flow. Excessive intrusions into the sewer system result in sanitary sewer overflows.

Inflows and infiltration into the sanitary sewer system are the two principle sources of overflows. Inflows can come from design defects, such as locating manholes or other features below grade where they serve as conduits for stormwater. Gaps or breaks in the collection system are another potential source. These breaks can admit stream flow from residences. Infiltration can come from the portion of the sewer line on private property (laterals) and collector pipes. Under the Clean Water Act, sanitary sewer overflows are unlawful discharges for which a permit cannot be obtained.

In the City, sanitary sewer systems are a responsibility of the City, property owners and the Monterey Regional Water Pollution Control Agency (MRWPCA). The City is responsible for the sanitary sewer lines, and the MRWPCA is responsible for wastewater treatment. Homeowners are responsible for maintaining their house laterals. City wastewater crews maintain the City's sanitary sewer main lines, as well as the City's storm drain system. Homeowners seldom maintained their lateral lines and as a consequence these lines deteriorate. Typically, they are not replaced until a serious failure.

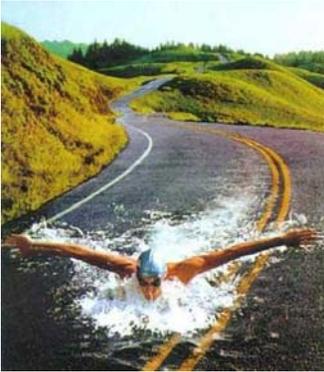
The City of Salinas has not had a history of significant sanitary sewer overflows. Preventative maintenance may be one reason for the safe record. Since 1998, Salinas has spent over \$31 million in improving its sewer system. The City's sanitary sewer and storm drain maintenance program has proven effective in limiting overflows. Program success is, in part, also due to a well-trained responsive wastewater maintenance team. Beginning in 2005, the City has expanded its efforts and initiated a more comprehensive management approach to maintaining its sanitary and storm drain systems.

Maintenance staff has developed a comprehensive inventory keyed to a map to manage its stormwater sanitary sewer system (MS4). Ad hoc mapping has been part of past municipal practices, but these have not been integrated into a management practice. The new method will help systematize maintenance. The City has inventoried and mapped all inlets to and outfalls from the system that discharge into creeks and other receiving water bodies. Inventories of these facilities include: 1) types of facilities, 2) maintenance requirements, and 3) maintenance schedules. Location of facilities is keyed to a map. Together, this information will serve as a management tool to ensure maintenance is performed on a time-schedule basis. As part of this effort, City investigated use of geo-spatial databases. Geographical Information Systems (GIS) is an ideal technology to meet this need. Use of GIS's would enhance maintenance operations by providing more accurate information at the ready and would enable staff members to track conditions visually and systematically. It would also provide a means to share data between departments. GIS was the desired approach, but its high cost relative to municipal budgets prevented the City from purchasing it during the initial period of the City's permit.³ Therefore, while purchase of a GIS system has been deferred, mapping and inventory work has been completed. Further, the City has developed Stormwater Pollution Prevention Plans (SWPPPs) for all of its facilities. SWPPPs are contained in a management manual. To ensure compliance with SWPPPs, City staff members will conduct annual inspection of facilities beginning by the end of 2006, results will be noted and a follow-up record kept.

The City has also refined mapping of sanitary and stormwater systems. The collection system of pipes previously mapped as part of the City's *2004 Storm Water Master Plan* have been integrated into maintenance department activities. Work on this effort will be completed in 2007.

³ Costs started at \$11,000 to \$22,000 for a sub-meter accuracy system to as high as \$50,000 for survey-grade equipment.

C. Street Maintenance



The City maintains approximately 270 centerline miles of streets. This includes a total of 24 major arterial miles, 23.5 miles of minor arterials and 222.5 miles of residential streets. Several roads and streets within municipal boundaries are state roads and are under the jurisdiction of the California State Department of Transportation (Caltrans). State roads include: State Route 68A, South Main Street between John Street and Blanco Road, State Route 68B--John Street from South Main Street to Wood Street, State Route 183--Market Street between Monterey Street and Davis Road, and N. Main Street from Market Street to U.S. 101.

Whether owned by the City or Caltrans, activities occurring on roads and streets affect water quality. This includes car and truck vehicle use, minor and major street repairs, repaving activities and debris carried from adjacent properties. Constituents of concern include heavy metals from brake linings; oil and grease from leaking vehicles; herbicides and pesticides from vegetation and animal control; paints and solvents from pavement painting and spills; battery acid; anti-freeze from leaking radiators and other spills from vehicles. This could include petroleum products as well as litter and vegetation from construction and earth-moving activities. Since roads are impervious, pollutants discharged onto them have the potential to collect and concentrate until runoff from a rain event conveys contaminants directly into nearby creeks or other receiving waters. Roads within 300 feet of an open waterway are shown on Figure 3-1; and listed on Table 3.1.

To protect downstream waterways, the City employs the following BMPs:

- 1) visual inspection,
- 2) regular street sweeping,
- 3) annual storm drain inspection and cleaning,
- 4) maintenance during dry weather, and
- 5) a trained spill clean-up response team.

Throughout the year, Street Division personnel perform a visual inspection of roads, streets and highways to assess roadway conditions. In addition, street sweeping crews note roadway conditions and report potential issues to street division personnel. The City also maintains a hotline for residents to call in concerns. The Street Division Manager records this information in a database. This database is used to develop work programs and modify maintenance schedules. Roadway maintenance is performed consistent with BMPS SC-70 and NS-3 (Appendix A-2).

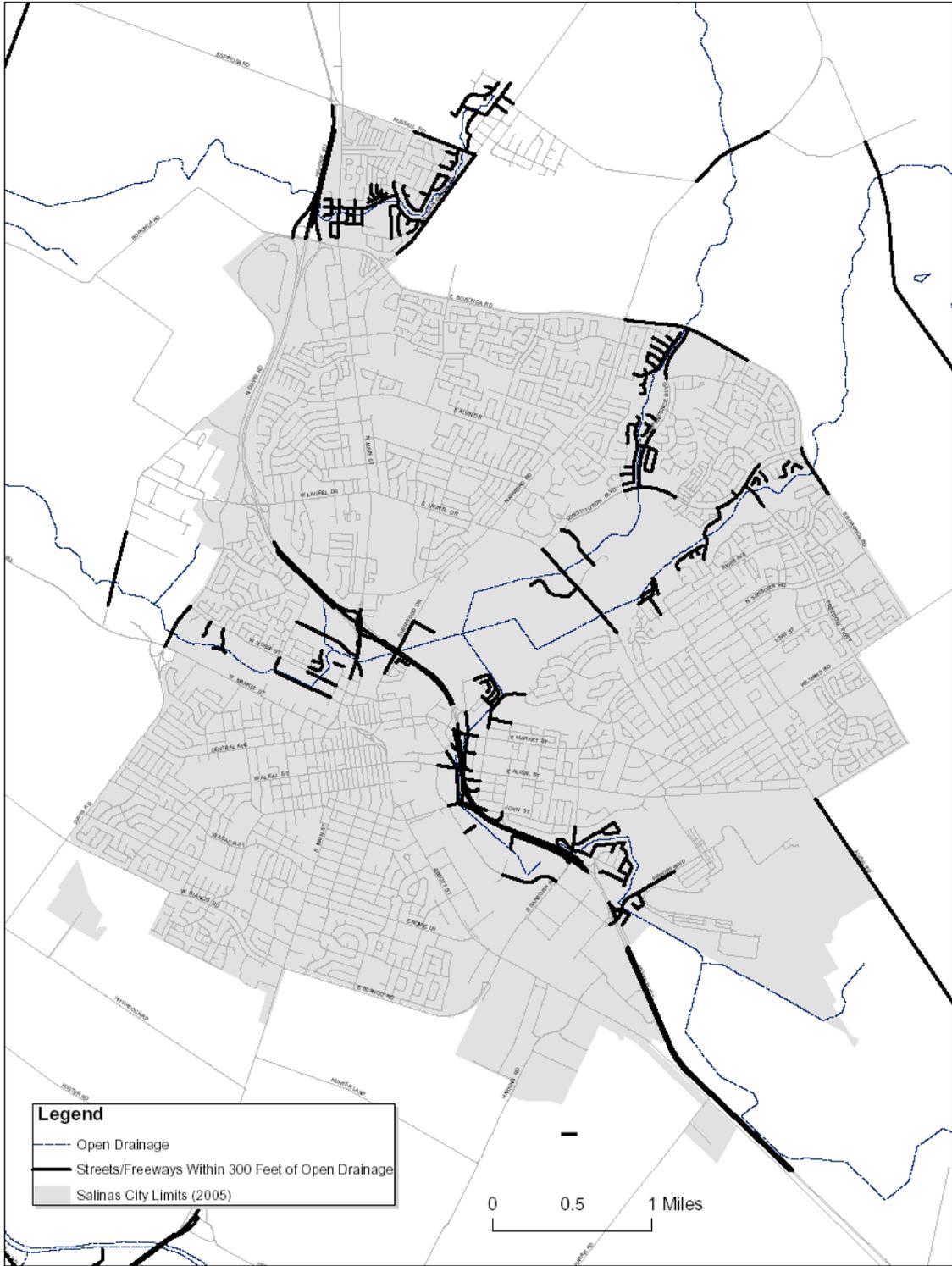
In addition to the semi-independent work that the Streets Division performs on street maintenance, all Maintenance Services Department division managers (facilities/fleet, parks, wastewater, and streets) will meet monthly to review potential issues that might affect more than one division and establish management plans. This includes development of training programs.

Roadways that carry high volume traffic, heavy truck traffic or drain to sensitive areas, such as 303(d) listed waterways are a concern. As shown in Figure 3-1, many City

roadways and Caltrans owned streets are proximate to open drains. These roadways have also been identified as a high priority. Roadways within 200 feet of a 303(d) listed waterway or sensitive area are listed in Table 3.1b that follows. A comprehensive list of all roads within the City is contained within a separate stormwater inventory document.

This page intentionally left blank

Figure 3-1 Streets and Freeways Within 300 Feet of Open Drainage



This page intentionally left blank

**Table 3.1b
Streets Within
300 Feet of
Open Drainage**

AIRPORT BLVD	FAIRVIEW AVE	HIGHWAY 68	TICINO CIR
ALISAL RD	FIELDGATE DR	N U.S. HIGHWAY 101	VAN BUREN AVE
ALP CIR	FLORENCE PL	NATIVIDAD RD	VERMONT CIR
APACHE ST	FOOTHILL DR	NEW HAMPSHIRE CT	VICTOR ST
ARMSTRONG RD	FREEDOM PKY	NEWPORT CT	VICTOR WAY
ASCONA WAY	FRESA PL	NORTHRIDGE DR	W BOLIVAR ST
BARBARA PL	GARNER AVE	OLD STAGE RD	W LAKE ST
BELLINZONA AVE	GREENBRIAR WAY	PAUL AVE	W LAMAR ST
BEVERLY DR	GRIFFIN ST	PEACEFUL COVE WAY	W ROSSI ST
BORONDA RD	HARRYETTE DR	PEREZ ST	WENTWORTH CIR
BRIDGE ST	HARTFORD ST	PORTOLA DR	WORK CIR
BRUTUS ST	HARTNELL RD	PORTSMOUTH WAY	WORK ST
CAPE COD WAY	HEBERT RD	PRESTON ST	ZABALA RD
CAROL DR	HIDDEN CREEK CIR	PROVINCETOWN DR	
CASENTINI ST	HIGHWAY 183	QUAIL RUN CIR	
CASTLETON ST	HILLTOWN DR	RANCH VIEW LN	
CASTRO ST	HOLLY ST	RANCHERO DR	
CLEVELAND AVE	HOOVER ST	RESERVATION RD	
CONSTITUTION BLVD	HYANNIS CIR	RHODE ISLAND CIR	
COOPER RD	INDEPENDENCE BLVD	RHODE ISLAND ST	
CORNWALL ST	INGLEWOOD ST	RICO ST	
CORNWALL ST	JACKSON ST	RIVERTON WAY	
COVENTRY ST	JEAN AVE	RODGERS RD	
CRAZY HORSE RD	JOHN ST	ROGGE RD	
CREEKBRIDGE CIR	KERN ST	ROOSEVELT ST	
CREEKSIDE TER	LAS CASITAS DR	ROUNDTREE DR	
DANBURY ST	LENNY ST	S DAVIS RD	
DE LA TORRE	LEXINGTON DR	S FREEWAY OFF RAMP	
DENNER RD	LITTLE RIVER DR	S MONTEREY SALINAS	
E ALISAL ST	LOHMAN ST	HIGHWAY 68	
E BOLIVAR ST	LONDONDERRY WAY	S SANBORN RD	
E BORONDA RD	LOUISE CT	S U.S. HIGHWAY 101	
E LAMAR ST	MASSA ST	SAN BENITO ST	
E LAUREL DR	MASSACHUSETTS CIR	SAN JON RD	
E MARKET ST	MAYFAIR DR	SAN JUAN GRADE RD	
EBANO PL	MCFADDEN RD	SANTA RITA ST	
EISENHOWER CIR	MERCED ST	SEMINOLE DR	
ELVEE DR	MILL WAY	SHERWOOD DR	
ENGLAND AVE	MOFFETT ST	SOTO PL	
ESPINOZA RD	N DAVIS RD	SOUZA WAY	
	N FREEWAY ON RAMP	STARLIGHT LN	
	N HIGHWAY 68	STONY BROOK DR	
	N HIGHWAY OFF RAMP	SUCRE CT	
	N MADEIRA AVE	SUNVIEW DR	
	N MADEIRA AVE	SWANER AVE	
	N MAIN ST	TAFT CIR	
	N MONTEREY SALINAS	TERRACE ST	

I:\InfoSys\GIS_Projects\Maintenance\Services\StreetDrainage\Streets Within 300 Feet of Open Drainage.doc

Table 3.2
Roadways within 200 Feet of a 303(d) listed waterway

Street Name (by water body)	Daily Traffic Volume (Trips per day)	Orientation (To Creek)
GABILAN CREEK		
LAUREL DR	24,662	Perpendicular
INDEPENDENCE DR	9,721	Parallel
BORONDA RD	18,080	Perpendicular
CONSTITUION	22,101	Perpendicular
NATIVIDAD CREEK		
RIDER AVE	7522	Parallel
FREEDOM PARKWAY	9,012	Perpendicular
BORONDA RD	18,080	Perpendicular
REC DITCH		
W. MARKET	24,984	Parallel
SHERWOOD DR	24,977	Perpendicular
N. MAIN	33,346	Perpendicular
ROSSI ST	23,881	PAR/PER
SANTA RITA CREEK		
RUSSEL RD	8,492	Perpendicular
SAN JUAN GD	10,072	Parallel
N. MAIN	7,547	Perpendicular
BORONDA	45,096	Parallel

The following roadways (Table 3.3) have also been designated as a possible risk to waterways due to their location in the City's industrial section and high truck traffic volumes.

Table 3.3
Streets Carrying High Truck Traffic

Street Name	Daily Traffic Volume
Abbott Street (Between John St. and City Limit)	27,129
Sanborn Road (Between John Street and Abbott Street)	28,850
John Street (Between Work Street and Sanborn Road)	26,755
Work Street (Between John and Sanborn Road)	11,427
Airport Blvd. (Between Hansen Road and Del La Torre)	19,534

While all roads have been designated as a high priority, roads that carry heavy truck traffic, or roads that drain into open waterways or sensitive areas as shown in Tables 3.1 to 3.3 above will receive the City's focus over the 5-year permit term.

In addition to roads, other paved areas also contribute to downstream water contaminants. The 20 public parking facilities (some as adjunct to other facilities) located throughout the City pose a concern if not managed adequately. Potential pollutants of concern include: heavy metals, petroleum products, battery acid and anti-freeze, and herbicides and/or pesticides. To reduce these potential impacts to the MEP, the City employs the following BMPs at its parking lots: (1) seasonal visual inspections, (2) weekly sweeping, (3) annual storm drain cleaning, and (4) routine maintenance during dry weather. Additional steps are performed based upon need, such as spill clean-ups. When performing repairs to parking lots, the City employs BMP SC-43. Table 3.4 lists City owned and maintained parking facilities.

Table 3.4
Municipal Parking Lots

LOT NO	LOT SIZE (Sq. Ft.)	LOCATION
1	18,760	219 Salinas St
2	26,520	345 Salinas St
3	38,240	222 Monterey St
5	54,000	300 Monterey St
6	40,470	101 W. Alisal St
8	26,892	204 Salinas St
10	6,574	128 Salinas St
11	5,400	106 Salinas St
12	26,532	112 Lincoln Ave
13	16,900	111 Salinas St
14	28,210	138 Monterey St
15	3,162	321 Church St
16	6,630	30 Lincoln Ave
17	12,411	101 W. Alisal St
Salinas St. Garage	104,145	320 Salinas St
Monterey St. Garage	143,884	20 E Monterey St ^{1/}
Airport	27,405	30 Mortenson Ave
Steinbeck Library	14,325	350 Lincoln Ave
C. Chavez Library	25,612	615 Williams Rd
Gabilan Library	7,800	1400 N. Main St
City Corporation Yard	115,722	426 Work St ^{1/}
City Animal Shelter	6,708	144 Hitchcock Rd
Train Station	53,417	26 Station Pl

^{1/} Parking garages with an oil grease separator built into the storm drain system.

D. Park Maintenance

The City of Salinas has 47 sites designated as park facilities. This element includes an inventory of park facilities and the management practices employed at each site (Table 3.5). All parks share certain characteristics that generate or have the potential to generate pollutants that affect environmentally sensitive bodies of water. Rainfall runoff, irrigation surface drainage, or

debris and sediment flow from activities at City park sites discharge into storm water systems that flow into one of five waterways:

1. Alisal Creek (becomes Reclamation Ditch 1665)
2. Gabilan Creek
3. Natividad Creek
4. Salinas Reclamation Ditch
5. Santa Rita Creek (also known as Little Bear Creek)

These five waterways flow on through several sloughs including the Tembladero, Alisal, and Espinosa, before they enter the Monterey Bay at the Salinas Lagoon, Moss Landing Harbor, and Elkhorn Slough.

Potential pollutants to these watersheds include trash and pesticides and fertilizers. Trash including garbage, litter, plastics and trash from general park misuse, offsite activities, and picnics and barbeques is also a potential source of pollutants. Pesticides are used to control landscape pests, including gophers, ground squirrels, weeds, and insects and prevent risks to public health and safety associated with such pests. Fertilizers are used to ensure the health and viability of turf and landscape materials, many of which provide buffers and filters to reduce runoff pollutants and to control erosion. Budget shortfalls over the past several years have resulted in substantial reductions to Parks Division budgets. These cutbacks have diminished the number of staff and the availability of supplies needed to maintain parks. One such affect is a reduction in chemical usage. Less use of fertilizers and herbicides has reduced the potential for downstream pollution.

Park maintenance staff members remove litter and empty garbage cans daily, including weekends and holidays. The City provides garbage cans at all picnic and barbeque sites, playgrounds, parking areas, and various other accessible areas to prevent littering. However, park litter remains a prime concern. Peak use days can generate vast quantities of litter not always deposited into trash receptacles.

I. Pesticide Management:

Integrated Pest Management (IPM) is an approach to pest control that seeks to limit use of harmful chemicals. IPM has been proven as a means to protect water resource ecosystems through integrated practices. Reduced use of potentially harmful chemicals is now common practice at municipal parks, as the City has moved away from extensive use of chemicals to manage pests. Use of pre-emergent herbicides to control weeds is now replaced by use of more environmentally friendly practices such as increased hand-weeding; use of rodenticides have been replaced by the use of traps whenever possible. Pesticides are applied when there are no viable alternatives. When chemicals are applied, the City follows labels and manufacturer safety data sheet (MSDS) requirements to ensure safety. In addition, pesticides are kept from entering and negatively impacting stormwater drainage systems.

Pesticides are applied under proper conditions. This includes applying chemicals when winds are not present, irrigation systems are turned off, and rainfall is not expected. Chemicals are allowed to dry on targeted plants before irrigation is again resumed; chemicals are absorbed and bound by the target to prevent contamination of offsite facilities or water systems. Three Park Division staff members hold Pesticide Advisor Licenses and are required to attend 40-hours of continuing education every two years to maintain their licenses. Staff holding a Qualified Applicator Certificate (PAC) train and supervise other staff members. Those holding

certificates are required to attend 20 hours of continuing education over a two-year period to maintain their license. All City applicators are trained annually consistent with the California Pesticide Regulatory Association (CPRA) in laws, regulations, safety, and proper application techniques, including spill control.

Fertilizers are applied on an ad-hoc and as needed basis to ensure plant health and are immediately watered in order to prevent burning of the target plants and the possibility of movement off the target. Fertilizers that remain on hardscape areas are swept up or blown onto target areas to prevent runoff carrying them to storm drains.

The following additional measures will be implemented to prevent potential fertilizer or pesticide contamination of storm drain systems. When applying broadcast fertilizers to turf or landscape areas that contain storm drains, staff will cover the drains to prevent materials from entering the system directly, and when applying pesticides those drains will be clearly marked to prevent spray from entering into drains. Further, the City will expand its IPM program with principals identified within the Pesticide Hazard and Exposure Reduction (PHAER) Zone concept. Resource limitations will limit the City's ability to implement all of the concepts contained within PHAER. Nonetheless, landscape pest management using a zone principle is another tool that the City will employ to reduce environmental risk. In the second year of the permit term, City staff will be trained on PHAER principles, and 20 percent of maintenance crews will attend an all-day IMP training session. Crew supervisors will be responsible for training and ensuring that IPM /PHAER and other management practices are implemented in day-to-day maintenance activities. Annually, crew supervisors will conduct training sessions in conjunction with the Water Resources staff.

II. Oil /Grease/Metals and Sediment Management:

Oil, grease, metals, and sediments are usually generated from two areas within the City's parks: parking lots and hardscape areas. Both receive windblown or water-carried materials from buildings, vehicles, landscapes, sports fields, or offsite areas. These can include sediments, dust, landscape soils, playground sand, and baseball field materials (clay/cinder), as well as, oils, greases, metals, and other fluids from vehicles.

The majority of the park hardscape surfaces drain to landscape beds, turf, or playgrounds, where the runoff percolates through the plant material, mulch, and soil to filter pollutants before reaching groundwater. Some parks have storm drains in turf or landscape areas. Runoff to these drains is from clean irrigation or rainwater that the turf filters, preventing pollutants from entering the storm water system.

Park staff clean hardscape surfaces including paths and sidewalks, barbeque and picnic pads, and building foundation pads with brooms, blowers, rakes, and shovels, to remove the materials and provide clean, safe surfaces. Staff also picks up garbage and landscape debris, and cleans obvious spills or vehicle parts in parking lots and drives. When runoff from cleaning operations cannot be directed to permeable surfaces and flows into storm drains, those drains will be covered or surrounded with filtration media. This cleaning combined with the drainage of most areas to permeable surfaces minimizes or eliminates the potential pollutants to the storm water system in most facilities; however, budget and manpower reductions, and lack of large sweeping equipment restrict the City's ability to thoroughly and frequently clean parking lots.

Parking lots will be swept monthly to ensure that trash and pollutants are minimized and controlled. Three options for meeting this commitment are scheduling under current municipal

street division operations with their equipment and manpower, training of park personnel in sweeper use and scheduling of sweeping when equipment is available or contracting sweeping services.

Staff will also provide filtration barriers or covers for any drains that receive runoff from surface cleaning in City facilities such as the Sherwood Tennis Center. This practice will also be employed for picnic and barbeque areas that generate cooking oils, grease, and ashes that stain tables and concrete pads. Park personnel wash these areas with water pressure and/or baking soda or citrus degreasers to remove heavy deposits. The runoff is directed to turf areas for filtration. Ashes are cooled and disposed of with other garbage.

III. Biological and oxygen demanding substances:

These substances result from landscape maintenance and normal plant activity including leaf drop, as well as animal or human waste products.

Landscape materials include lawn clippings from mowing, leaves, bark, and fruit from normal plant lifecycles, and plant material from maintenance activities such as pruning, edging, trimming, or removal. Lawn clippings are left on the turf to recycle and provide soil nutrients. Landscape debris from maintenance activities is recycled as mulch when possible, disposed of through recycle waste disposal programs when available, or collected and removed of through normal waste disposal operations. These methods prevent landscape materials from having a negative affect on runoff from park facilities.

Animal waste present in park areas is minimal due to enforcement of City policies prohibiting the presence of animals in the park. The only exceptions to this policy are the two dog walk areas at Rossi-Rico Park and Natividad Creek Park. Both facilities have dog-waste disposal systems that have been effective in controlling the problem. Animal feces in other parks are removed when observed. Remaining waste materials are usually in turf or landscape areas and remain on the site to decompose and filter through the soil. The only other area of concern for animal wastes is the Sherwood parking lot used annually by the Rodeo Association as a living area for rodeo participants and their animals for the duration of the event. Horse and pet waste products are present on the asphalt surfaces until the post event cleanup and could enter storm drains in the parking lot. Additional precautions will be taken during future events to prevent this, for example by placing filtration media at all parking lot storm drains during the event.

In summary, the majority of rain or irrigation water that enters park facilities remains on the site to percolate into the ground, or, is filtered by turf and landscape material before leaving the site. Most of the remaining runoff flows on regularly cleaned surfaces and presents no threat of pollution to off site systems.

Park division staff are trained regularly in facility and landscape maintenance to ensure best efforts are implemented with available resources and manpower to provide safe, clean, and well maintained park facilities for public use. While training on landscape management has been sufficient, expanded educational efforts discussed elsewhere in this section are needed. Park's division staff will be educated regarding the Clean Water Act, NPDES program goals, and linkages between park maintenance and BMPs necessary for success. Training and performance will be incorporated into personnel performance evaluations.

E. Inventory of City Facilities and Associated BMPs

Non-park municipal facilities are inventoried in Table 3.6. Table 3.6 also lists BMPs that are being employed at each facility. Summary discussions of each BMP are included in Appendix A-2. In a separate document (Management Manual) the City has prepared Stormwater Pollution Prevention Plans (SWPPP) for City facilities. SWPPPs include an inventory of facilities, including streets and a description of facility location, size and amenities. Activities that could affect downstream water quality are summarized, as are pollutants of concern. Management practices (BMPs) to mitigate these potential concerns are also discussed.

F. Program Effectiveness

Measurable goals and measures of effectiveness include meeting the intent and requirements of the City's Municipal Permit. Facility inventories, stormwater pollution prevention plans, best management practices for operations and training have all been prepared and completed consistent with the Municipal Permit. Further, the City substantially remodeled the one facility with the greatest potential to threaten runoff quality (corporation yard) and installed BMPs that improved runoff protection. All of these actions are dynamic. Inventories, pollution prevention plans and Plan implementation are all designed to evolve as information and resources becomes available.

For example, the City's inventory of storm drain inlets and outfalls has been completed using conventional technology. Over the permit term, the City will revisit the feasibility of incorporating GIS as a management tool. Further, continual training of staff members is a key measure of performance for this element. Staff will attend training sessions and incorporate lessons learned into daily practices. Division managers will meet to discuss operations and best management practices. Park's Division staff will continue to train their staff on and implement IPM practices.

This page intentionally left blank

Table 3.5 Municipal Facilities Best Management Practices

ID No.	Name	BMP											
		SC-10	SC-11	SC-34	SC-41	SC-43	SC-60	SC-70	SC-71	SC-73	SC-74	SC-75	SC-76
M001	Acacia Corners	X		X	X				X	X			
M002	Bataan Memorial Park	X		X	X				X	X		X	
M003	Breadbox Recreation Center	X	X	X	X	X			X	X			
M004	Carmel Corner	X		X	X				X	X			
M005	Central Park	X		X	X		X		X	X		X	
M006	Cesar Chavez Community Park	X		X	X				X	X		X	
M007	Claremont Manor Park	X		X	X	X			X	X		X	
M008	Clay Street Park	X		X	X				X	X			
M009	Closter Community Park	X		X	X	X			X	X		X	
M010	Constitution Soccer Complex	X	X	X	X	X	X	X	X	X	X	X	X
M011	Cornell Corner	X		X						X			
M012	Creekbridge Neighborhood Park	X	X	X	X				X	X		X	
M013	East Laurel Pocket Park	X		X	X				X	X		X	
M014	El Dorado Community Park	X		X	X				X	X		X	
M015	El Gabilan Library	X	X	X	X	X	X		X	X		X	
M016A	Exposition Park / PGE Site												
M016B	Exposition Park / PGE Site	X	X	X	X	X	X	X	X	X	X	X	X
M017	Frank Paul Park	X		X	X	X			X	X		X	
M018	Fremont School Softball Field	X		X	X	X			X	X		X	
M019	Gabilan Play Lot	X		X	X				X	X		X	
M020	Greenbriar Open Space	X		X	X				X	X		X	
M021	Harden Ranch Neighborhood Park	X		X	X				X	X		X	
M022	Hebbron Heights Community Center	X		X	X	X			X	X		X	
M023	Jaycee Tot Lot	X	X	X	X				X	X		X	
M024	La Paz Neighborhood Park	X		X	X				X	X		X	

This page intentionally left blank

Table 3.5 Municipal Facilities Best Management Practices (Continued)

ID No.	Name	BMP SC-10	BMP SC-11	BMP SC-34	BMP SC-41	BMP SC-43	BMP SC-60	BMP SC-70	BMP SC-71	BMP SC-73	BMP SC-74	BMP SC-75	BMP SC-76
M025	Laurel Neighborhood Park	X		X	X		X		X	X		X	
M026	Laurel Heights Neighborhood Park	X		X	X				X	X		X	
M027	Laurelwood Neighborhood Park	X		X	X				X	X		X	
M028	Los Padres Neighborhood Park	X		X	X				X	X		X	
M029	Maple Play Tot Park	X		X	X				X	X		X	
M030	McKinnon Neighborhood Park	X	X	X	X	X		X	X	X	X	X	X
M031	Mission Neighborhood Park	X		X	X				X	X		X	
M032	Myrtle Court Play Tot	X		X	X				X	X		X	
M033A	Natividad Creek Park (North)	X	X	X	X	X	X		X	X		X	
M033B	Natividad Creek (South)	X	X	X	X	X	X		X	X		X	
M034	Natividad Neighborhood Park	X		X	X	X			X	X		X	
M035	Northgate Tot Lot	X		X	X				X	X		X	
M036	Northgate Neighborhood Park	X		X	X	X			X	X		X	
M037	Rossi Rico Linear Parkway	X		X	X	X			X	X		X	
M038	Municipal Stadium Sports Complex	X	X	X	X	X	X		X	X		X	
M039	Santa Lucia Tot Lot	X		X	X				X	X		X	
M040	Santa Rita Neighborhood Park	X	X	X	X	X			X	X		X	
M041	Sherwood Community Park	X		X	X	X	X		X	X		X	
M042	Soberanes Neighborhood Park	X		X	X				X	X	X	X	
M043	Soto Square Tot Lot	X		X	X				X	X		X	
M044	Steinbeck Neighborhood Park	X		X	X				X	X		X	
M045	Veteran's Memorial Park	X		X	X		X		X	X		X	
M046	Williams Ranch Neighborhood Park	X		X	X	X			X	X		X	
M047	Woodside Neighborhood Park	X		X	X				X	X		X	
M048	Salinas Fairways Golf Course	X	X	X	X	X	X		X	X		X	

This page intentionally left blank

Table 3.6 Municipal Facilities Best Management Practices														
ID No.	Name	BMP	BMP	BMP	BMP									
		SC-10	SC-11	SC-21	SC-22	SC-31	SC-34	SC-41	SC-60	SC-74	SC-76	SE-3	SE-7	SE-10
M049	City Hall and Employee Parking Lot							X						
M050	Salinas Maintenance Services Yard	X	X	X	X	X	X	X	X	X		X	X	
M051	Steinbeck Library							X		X				
M052	El Gabilan Library							X		X				
M053	Cesar Chavez Library							X		X				
M054	Salinas Recreation Center							X	X	X				
M055	Salinas Street Parking Garage	X	X											
M056	Women's Club Building													
M057	Salinas Sunrise House							X		X				
M058	Salinas Train Station	X						X						
M059	Salinas Old Fire Station (non-operational)							X		X	X			
M060	Salinas Fire Station #1		X		X			X		X				X
M061	Salinas Fire Station #2		X					X		X				X
M062	Salinas "Firehouse" Recreation Center							X						
M063	Fire Station #4		X					X		X				X
M064	Fire Station #5		X					X		X				X
M065	Fire Station #6		X					X		X				X
M066	Permit Center	X						X						
M067	Industrial Wastewater Treatment Facility	X	X			X				X				
M068	Sanitary Sewer Collection System	X	X							X	X			
M069	Salinas Animal Shelter	X						X	X	X				

Development Standards

Element

4

"Form follows function."

--Louis Henry Sullivan

4.1 Introduction

How Salinas develops directly affects the quality of life it affords its citizens. Development practices can, potentially, affect water quality. Increased urban water runoff generated by development can begin a chain of events that includes erosion, flooding, stream channel alteration and the introduction of man made pollutants leading to ecological degradation. The goal of this element is to provide guidance for sustainable development to protect environmental resources while meeting economic development interests. The bases for this process are the City's land use policies and its Municipal Permit.

The City's General Plan recognizes the dynamic interrelationship between development and resource management. The General Plan contains goals and policies to promote economic development and to protect natural resources.

Conversion of open space and farmland to urban uses has the potential to fundamentally change the water cycle. When development occurs, the resultant alteration to the land can lead to dramatic changes to the hydrology, or the way water is transported and stored. Impervious surfaces and compacted soils associated with development have the potential to increase water runoff and decrease ground- water infiltration. This disruption of the natural water cycle leads to a number of changes.

Historically, the process of urbanization has modified natural watershed and stream ecology by altering the terrain, modifying soil and vegetative characteristics, replacing pervious surfaces with pavement and buildings and converting multi-functioning natural drainage ecosystems with single-functioning man-made ones. Natural stream channels were often replaced with flood control systems that altered stream channels through straightening, deepening, and paving (Figure 4-1).

Figure 4-1 Changes in Stream Form



Storms that previously under non-urbanized conditions did not produce runoff can produce significant erosive flows. Increased flow volume and velocity, along with the increased duration of flows exacerbate sediment transport. This condition is, however, not exclusive to urban conditions. Agricultural practices associated with irrigated row crop production often mimic urbanized conditions and produce similar spikes in runoff and sediment transport.

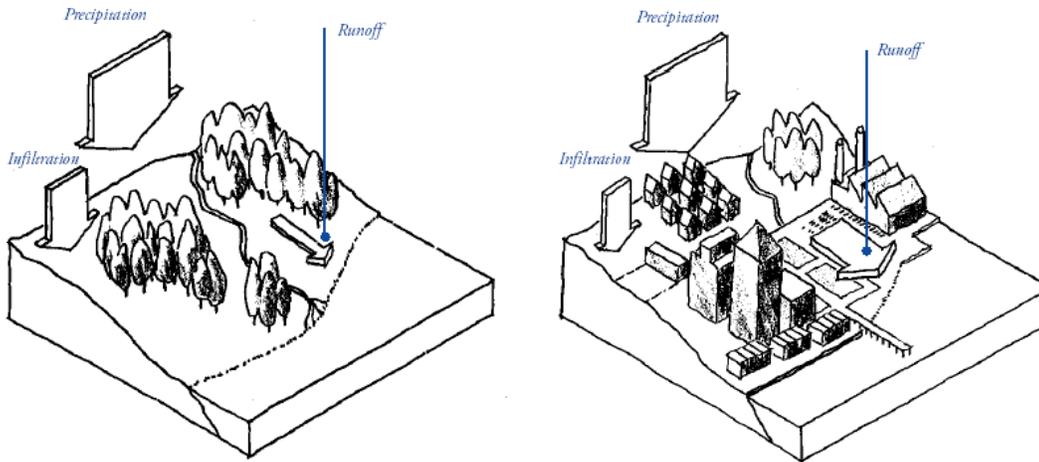
These spikes in hydrology and associated urban impacts have the potential to modify the stream's ecology negatively impacting habitat.

Conversely, urbanization can also lower stream flows. With development, water that could otherwise percolate and/or run off from unaltered lands and recharge stream flows are commonly redirected to man-made storm systems thereby altering habitat areas within the natural watershed

Runoff from urban uses carries with it pollutants from rooftops, roadways, parking areas and other impervious surfaces. Prior to development these either did not exist, or in some cases infiltrated into the soil. As runoff moves over large impervious surfaces, it collects and concentrates nonpoint source pollutants, such as petroleum distillates, heavy metals, and rubber from cars, and roadways. Pollutants carried from these sources enter the waterway further degrading it. Basic urbanization's effects upon the hydrologic cycle from urbanization are further illustrated in Figure 4-2.

Once altered, natural waterways and associated ecosystems cannot be fully restored. However, the past practice towards declining habitat can be stopped, and partially reversed to preserve ecosystems for the benefit for future generations. This requires a significant and long-term effort dedicated to the preservation and enhancement of existing riparian ecosystems.

Protection of water resources has become more complex. The multitude of stakeholder interests and the variety of regulatory agencies involved make watershed management and land use planning highly challenging. Recognizing this challenge, establishing a consistent, easily comprehensible approach to watershed management is paramount.

Figure 4-2 Urbanization's Effects Upon the Hydrologic Cycle**The hydrologic cycle**

In **pre-development** landforms, a large percentage of precipitation infiltrates into the soil. A small percentage remains on the surface as runoff.

In **Post-development**, opportunities for infiltration are typically reduced, and a larger proportion of total precipitation becomes surface runoff.

The City's Storm Water Management Plan must meet the requirements of the City's NPDES Municipal Storm Water Permit, as summarized by Table 4.1 below.

Table 4.1 Municipal Permit Requirements – Development Standards

Plan Section	Requirement Summary	Municipal Permit Section
Entire	Minimize short and long-term impacts on receiving water quality from development	III a
4.6 D	Incorporate watershed protection principles into planning procedures and policies, e.g. General Plan and Specific Plans	III a I
4.6 A	Minimize amount of impervious surfaces and directly connected impervious surfaces; use on-site infiltration in areas with appropriate soils.	III a 1
4.3	Implement pollution prevention methods supplemented by source controls; use strategies that control sources to minimize their transportation offsite.	III a 2
4.6 A	Preserve, and where possible, create/restore areas important to water quality, such as riparian corridors, wetlands, etc.	III a 3
4.6 A	Limit disturbances to natural drainage systems caused by development	III a 4
4.6 C	Require submittal of pre- and post project pollutant load and flow analyses. Require BMPs to mitigate projected increases in pollutant load runoff	III a 5
4.6 E	Identify, minimize and regulate development in areas particularly	III a 6

Stormwater Management Plan

	susceptible to erosion and sediment loss; or establish development guidance to protect areas	
4.6 E	Implement source/treatment controls to protect receiving waters from increased pollutant loads from runoff.	III a 7
4.6 I	Control post-development peak storm runoff rates and velocities to protect stream habitat and prevent/reduce erosion.	III a 8
4.6 I	Review and require that all proposed development is in compliance with City codes, regulations, and policies prior to issuing a permit.	III a ii
4.6 D	Prepare and submit for public review a Development Standards Plan (DSP) within 1 year of permit adoption. DSP must be consistent with WQ 2000-11 ¹	III b
4.6 D	Adopt DSP within 1 year of approval	III b
4.6 L	Ensure that all development meeting Municipal Permit criterion are reviewed and conditioned to comply with the DSP.	III c
4.6 O	DSP shall include a list of recommended source and/or structural treatment control BMPs.	III c ii
4.6 D	Ensure that municipal sizing criteria are comparable to Volume- or Flow-based criteria (24-hr, 85 th percentile storm event); flow by 85 th percentile hourly rainfall intensity.	III c iii
4.6 O	May develop or use equivalent numeric sizing criteria to above	III c iv
4.6 D	DSP shall identify roles and responsibilities of municipal departments.	
4.6 N	Restrict structural BMPs to protect groundwater quality	III c vii
4.6 D	DSP process shall consider measures to control peak storm volumes and rates to protect downstream habitat.	III c ix
4.6 F	DSP shall include a description of necessary modifications to existing codes, etc.	III c x
4.7	May consider a waiver program	III c e
4.6 L	Require all development subject to DSP provide verification of maintenance provisions.	III f
4.6 I	Incorporate stormwater quality impacts into CEQA processing	III g
4.6 A	Evaluate and amend as necessary General Plan to include watershed quality and quantity management considerations when relevant elements are amended.	III h i
4.6 A	Provide Regional Water Quality Control Board with draft General Plan amendments	III h ii
4.6 P	Annually train City employees engaged in planning and development.	III h i
4.6 D	Make DSP standards available as they are adopted.	III j
4.6 D	Within 1 year of adopting DSP make hardcopy available to development community.	III j ii
4.6 O	Development Standards shall include: a) source and treatment control design criteria BMPs; b) peak flow control criteria; c) expected pollutant removal performance ranges from BMPs; and d) maintenance factors.	III j ii 2, 3, 4

4.2 Goals and Objectives

¹ Order WQ 2000-11 is a State Water Resources Control Board precedential action regarding Los Angeles' Standard Urban Storm Water Mitigation Plan (SUSMP). SUSMPs are plans designating BMPs for development projects.

Salinas' goal is to reduce, to the maximum extent practicable, the impacts of new development and redevelopment on storm water and urban runoff through the integration of watershed management principles into the City's land use planning and development activities. To achieve this goal the City will take the following actions:

1. Incorporate watershed management and water quality protection principles into its planning processes and development review functions by minimizing impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies.
2. Work with the development community to maximize, to the extent practicable, the development's percentage of pervious surfaces to allow percolation of stormwater and runoff into the ground;
3. Work with the development community to minimize the quantity of untreated stormwater directed to impervious surfaces and the City's storm sewer system;
4. Work with the development community to implement pollution prevention methods as a first approach supplemented by pollutant source controls. If source controls are not practicable then treatment controls will be employed.
5. Preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.
6. Limit disturbances of natural water bodies and natural drainage systems caused by development, including development of roads, highways and bridges.
7. Except where noted, the City will conduct the following within the first year of its Municipal Permit:
 - a. Prepare a phased implementation schedule and associated costs needed to implement the Municipal Permit and Land Use Development / Element through the five-year Permit period for all planning and development review related functions.
 - b. Revise land use planning and development review processes and fees, including its CEQA review--Initial Study Procedure to protect water resources and implement the Municipal Permit (2nd year).
 - c. Annually train all staff involved with planning and development review operations with provisions and goals contained within the City's Municipal Permit, such as watershed management principles, as well as new municipal procedures required to implement them.
 - d. Ensure that the City's Zoning Code is consistent with the NPDES permit.
 - e. Conduct outreach/education sessions/workshops for decision-makers (Planning Commissioners, Design Review Board Members, and City Council, et al) and the development community regarding Municipal Permit requirements, municipal procedures and associated development fees. Prepare and distribute educational materials explaining the City's NPDES permit requirements.
 - f. Adopt Development Design Standards in compliance with Municipal Permit's requirements.
8. Annually document stormwater, urban runoff pollution prevention activities conducted by the City for inclusion in the City's annual activities report.
9. Collaborate with watershed stakeholders in preparing and implementing land use plans.
10. Monitor the effectiveness of implemented runoff controls and stormwater management strategies to provide for the most effective and efficient storm water management program.

4.3 Planning and Design Perspectives

Over the past several decades, conventional engineering practice viewed urban runoff and stormwater as a flood control issue. Accordingly, drainage design has focused on concentrating runoff at the site, collecting it, and removing it as quickly as possible. Runoff was typically routed into a pipe and sent to an outfall downstream. This single purpose “end of pipe” approach often did not adequately consider other effects. Broad ecosystem management concerns such as water quality, water supply, habitat protection, sustainability, and/or community character and aesthetics were often overlooked.

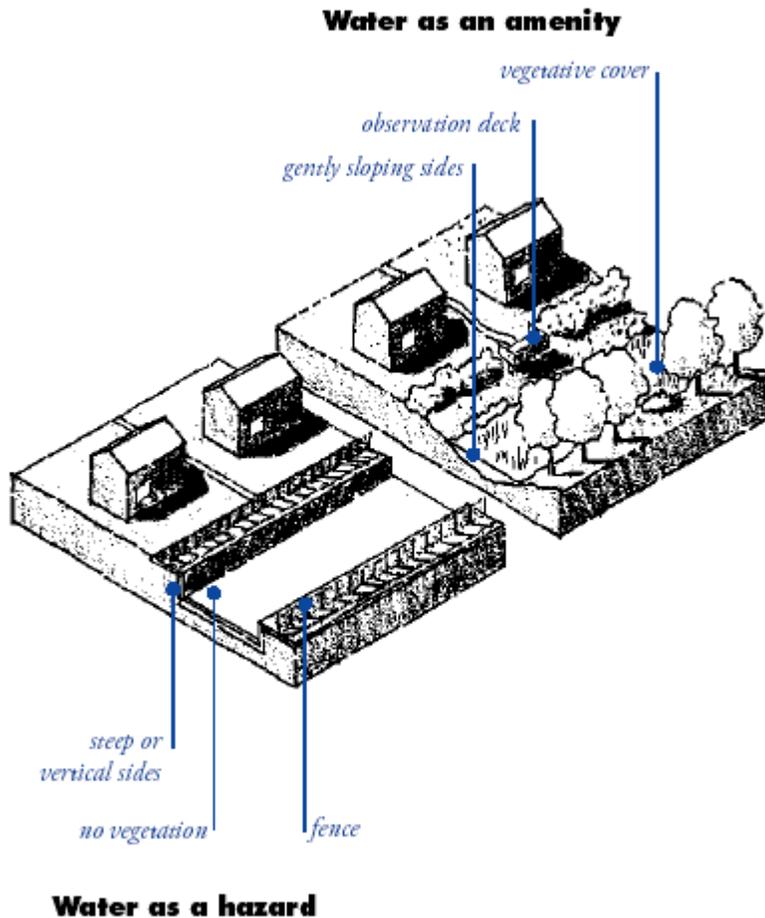
End of pipe drainage solutions tend to transfer what is essentially a private responsibility to a public one. Runoff generated by an individual property owner or developer becomes a public responsibility once it enters the public storm drain system. This “end of pipe” design transfers both the risk and the cost of storm water management to the public. Another consideration not adequately addressed by the end of pipe approach is water supply. In the Salinas Valley where water supply has been an issue for over half a century, and where limited water supplies have the potential to constrain municipal goals, discarding water that falls freely from the sky is a practice that bears reconsideration.

Growing awareness in professional fields, along with changes to state and Federal regulations offer new solutions and new management practices. Rather than view rainwater and runoff as a hazard, planners and engineers now see rainwater as a resource. Management solutions now avoid end of pipe solutions for source control and low impact development (LID) designs. Source control and LID designs attempt to mimic pre-development hydrologic conditions by managing water runoff on-site, and percolating it into the soil when possible. This results in several benefits: volume and velocity issues are addressed as before and now other beneficial uses: water supply, water quality, habitat preservation, resource management, and community aesthetic and cost concerns are all factored-in.

There is a closer relationship between benefit and responsibility--those that benefit bear the responsibility rather than transferring the responsibility directly to the public. The result is a very different development pattern. Figure 4-3 presents a very generalized representation of development under the old and new paradigms.

Municipal Permit provisions (see Table 4.1) require Salinas to apply watershed protection principles (an integrated, sustainable solution that considers ecosystems and resource protection) and reduce the amount of impervious surfaces. The provisions in this element are consistent with Municipal Permit requirements.

Figure 4-3 Design Outcomes from Different Development Values



Source: BASMAA, Start at the Source (1999)

4.4 Maximum Extent Practicable

In 1987, when it amended the Clean Water Act, Congress recognized that it was not technically feasible to establish similar limits on stormwater pollutants discharged from municipal storm drains. Rather, Clean Water Act Section 402(p)(3)(iii) says that each state “...shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.”

“Maximum extent practicable” has been defined by the RWQCB. The Central Coast RWQCB has defined MEP for the City as follows:

“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. For purposes of this Permit, the Regional Board will determine compliance with MEP standards based on the terms of the Permit, including Attachment 4; and State Board decisions or guidance, EPA regulations and guidance and applicable case law defining MEP.” (Salinas Order, Finding 16, emphasis added by Regional Board 12/23/05 letter to City.

Salinas’ Stormwater Management Plan incorporates the above understanding of MEP and progressive professional practices (Best Management Practices) to ensure that land use development occurs consistent with NPDES Municipal Permit requirements. Further, this Plan includes the value of continuous improvement to ensure that pollution-prevention efforts achieve maximum extent practicable standard over time.

4.5 Best Management Practices

Best management practice (BMP) refers to any procedure or device designed to minimize the quantity of pollutants that enter the storm drain system, including receiving water bodies. Clean Water Act Section 402(p) and USEPA regulations (40 CFR 122.6) specify a municipal program of “management practices” to control stormwater pollutants. Throughout this Plan, BMPs are included to address the pollutants commonly generated by land use development. Primarily, these BMPs can be viewed three ways: 1) Type (structural or operational), 2) Longevity (permanent or temporary), and 3) Mode (source control versus treatment controls).

In most development, one classification of BMP will not be sufficient to meet Municipal Permit requirements or protect water quality. Rather, an integrated approach employing more than one class, and a variety of BMPs developed in response to the potential pollutants of concern, site characteristics, project design and regulations will be necessary. Selection of BMPs is therefore flexible based upon several factors. Selection is first up to the project design team’s professional judgment. Second, staff members also have a role to ensure that requirements are met. At minimum, the suite of BMPs selected must meet the criteria established in the City’s NPDES Municipal Permit, this element and other municipal, state and Federal regulations. How the collection of factors are integrated into a project’s design will be described within the development project’s Stormwater Control Plan (see section 4.6).

4.6 Activities

The activities section directs the City to develop, adopt, amend, and/or enforce City policies and practices, regulations and programs to decrease pollution from water and urban runoff. The activities that follow address this objective.

A. General Plan

Salinas’ General Plan is the City’s fundamental policy for land use development. The City’s General Plan is not self-implementing. For the City to realize its goals,

implementing strategies must also be enacted. Foremost among these strategies are: 1) zoning regulations, 2) specific plans, 3) subdivision map regulations, and 4) the design standards incorporated into these regulations.

Various elements of Salinas' General Plan guide development to protect natural resources. The land use plan incorporates a number of site and street design policies that relate to water quality and watershed management principles. Indeed, the City's fundamental tenet that shapes the General Plan supports protection of natural resources. This philosophical foundation upon which the City's General Plan is based are the principles of traditional neighborhood development, or "Smart Growth". At its root, Smart Growth principles call for the efficient use of land, and the creation of livable communities. The United States Environmental Protection Agency's Office of Wastewater Management has cited one Smart Growth principle, infill development, as a strategy for mitigating stormwater runoff impacts. Other smart growth principles also serve to protect natural resources.

Smart Growth principles value pedestrians while accommodating automobiles and alternative transportation modes to establish the sense of community that one might have found in pre-World War II America. Neighborhoods are organized so many of the residents' daily needs can be accomplished within walking distance from one's home. The goal is to make the community livable through urban design. Streets are lined with stores, rather than the sea of parking that envelope strip malls. Development uses the land efficiently; infill of vacant land is valued, and development is compact. Open space is provided in the form of squares and parks as well as protected watershed resources. To calm traffic speeds, streets are narrower. Residents have multiple choices to navigate the community, including walking, bicycling, public transit, as well as driving. Indeed, development is designed upon multiple transit opportunities.

Many Smart Growth values can be realized through techniques that are directed at protecting water quality and watersheds. Efficient use of land, compact development, emphasis on pedestrian over vehicular travel, proximity of housing to jobs and transit and the integration of open space in land use plans are all designs that integrate well with watershed management, including LID principles.

Salinas reviewed its General Plan for its effectiveness in fostering or impeding the Municipal Permit. Based upon that analysis, the City concludes that its General Plan supports the intent and criteria of its Municipal Permit. A summary of General Plan goals and policies that support the City's NPDES permit is located in Appendix D-1.

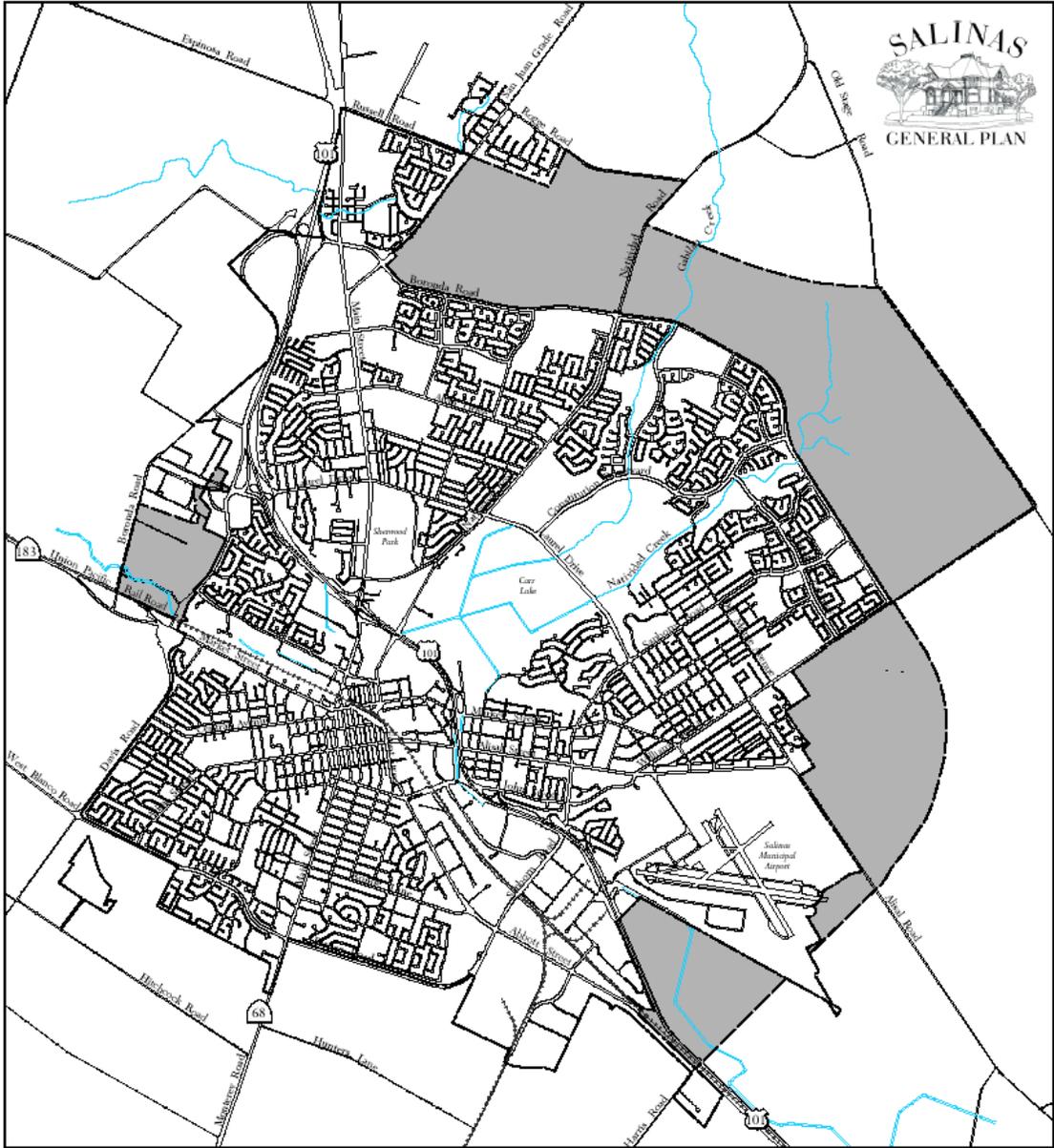
B. Specific Plans

Specific plans implement a community's general plan and provide more detailed project information. Prior to approval of development within the Future Growth Area, a Specific Plan, to include an annexation plan, will be completed. As part of this process, plans for providing and financing public services and public facilities will be prepared to demonstrate how adequate levels of public services and facilities will be provided to serve the new development without impacting service levels for the existing community. The City's General Plan, its NPDES Municipal Permit, and provisions of state law guide the preparation of specific plans. The City's Future Growth Areas and existing creeks and waterways are shown in Figure 4-4.

In addition to implementing General Plan policies, specific plans will also address the City's NPDES Municipal Permit requirements to include watershed protection principles and eliminating pollutant discharges to the maximum extent practicable. Drainage conditions in the proposed development area make plan preparation challenging. These conditions also offer opportunities for innovation. To meet these challenges, Salinas is preparing LID Development Standards.

In accord with Salinas' NPDES Municipal Permit, the new LID Development Standards will provide guidance to enable the Specific Plans to meet the requirements of the City's storm water management program requirements. As envisioned, each Specific Plan will feature a variety of LID stormwater management techniques applicable to the proposed development and the environmental conditions present.

Figure 4-4 Future Growth Areas



Sources: City of Salinas, CBA.

C. Zoning Code

The Zoning Code will include language to complement the implementation of the City's Municipal Permit requirements.

D. Development Design Standards

Development design standards are another common tool used by communities to implement land use and development policies. The City is required to prepare Low Impact Development (LID) Design Standards to ensure that its watershed protection goals are achieved and that its water quality objectives are met.

The preparation of the LID design standards began in the first year of the permit term. A consulting firm through a funding agreement administered by the SRWQCB is preparing the LID standards. The development design standards are being presented to the community through a public participation process. As LID is still a relatively new approach, outreach and education are essential steps.

Stormwater management designs as well as LID techniques are most successful if they are incorporated at the first planning opportunity. In accordance with its Municipal Permit, Salinas' new LID Development Standards will do that. Urban design changes in relation to many trends. Salinas' General Plan seeks to implement sustainable "smart growth" solutions to address its persistent housing shortage and establish neighborhoods having the characteristics of traditional neighborhood development. These neighborhood characteristics have been called "neo-traditional designs" or "Smart Growth". Among others, neo-traditional design values include reducing the dominance of the automobile. The City will achieve multiple goals as it implements the General Plan. For example, building neighborhoods with narrower streets will result in: slower traffic, foster a more pedestrian community, and result in less impervious surfacing which positively influence water quality (Figure 4-5).

Narrower streets and street trees reduce runoff volumes and lower water temperature. In one study, planners found that neo-traditional design resulted in less than 1/3 of the amount of paved street surface per dwelling unit when compared with conventional street designs.² Salinas will apply sustainable Smart Growth features when preparing its new Low Impact Development Standards. These LID standards are to be completed in the second year of the permit-term.

Figure 4-5 Neo-traditional (Smart Growth) Street Design as a BMP



A typical pre-war residential street



A typical post-war residential street

² North Carolina Department of Transportation, Street Design Guidelines for Traditional Neighborhood Design

Salinas will adopt development design standards that will protect water resources to the maximum extent practicable. Techniques to be considered include slowing flow rate and volume to foster percolation; and reducing the amount of impervious surfacing through creative site design. Figures 4-6 through 4-8 provide examples of LID design techniques. Other techniques include: 1) innovative site design that provides multiple functions (mixed use); 2) clustering of buildings to protect sensitive areas; 3) use of concave lawn areas to decrease runoff; and, 5) use of landscaping to disperse roof runoff.

Figure 4-6 Typical Vegetated Swale Design to Convey Water

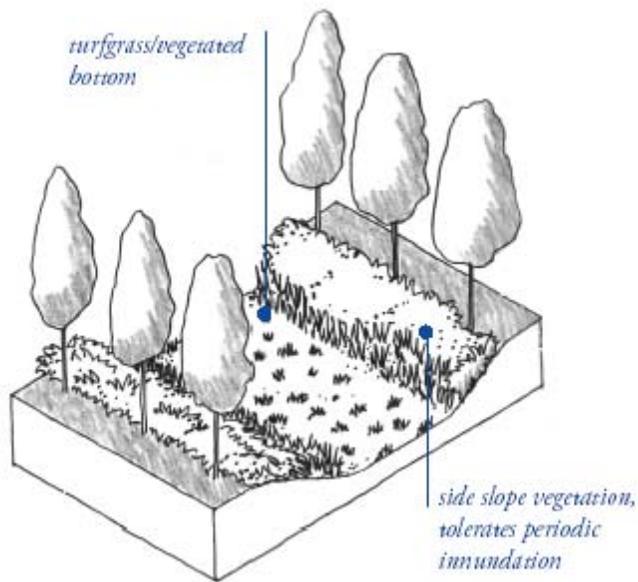


Figure 4-7 Typical Low Impact Design Techniques for Residential Development

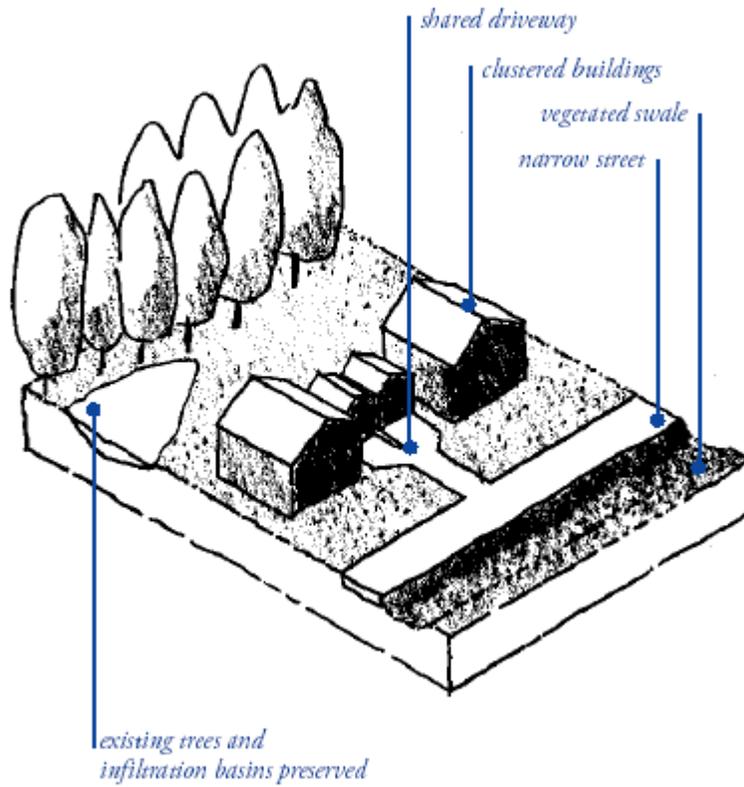


Figure 4-8 LID Site Design Ideas for Multi-Family Housing

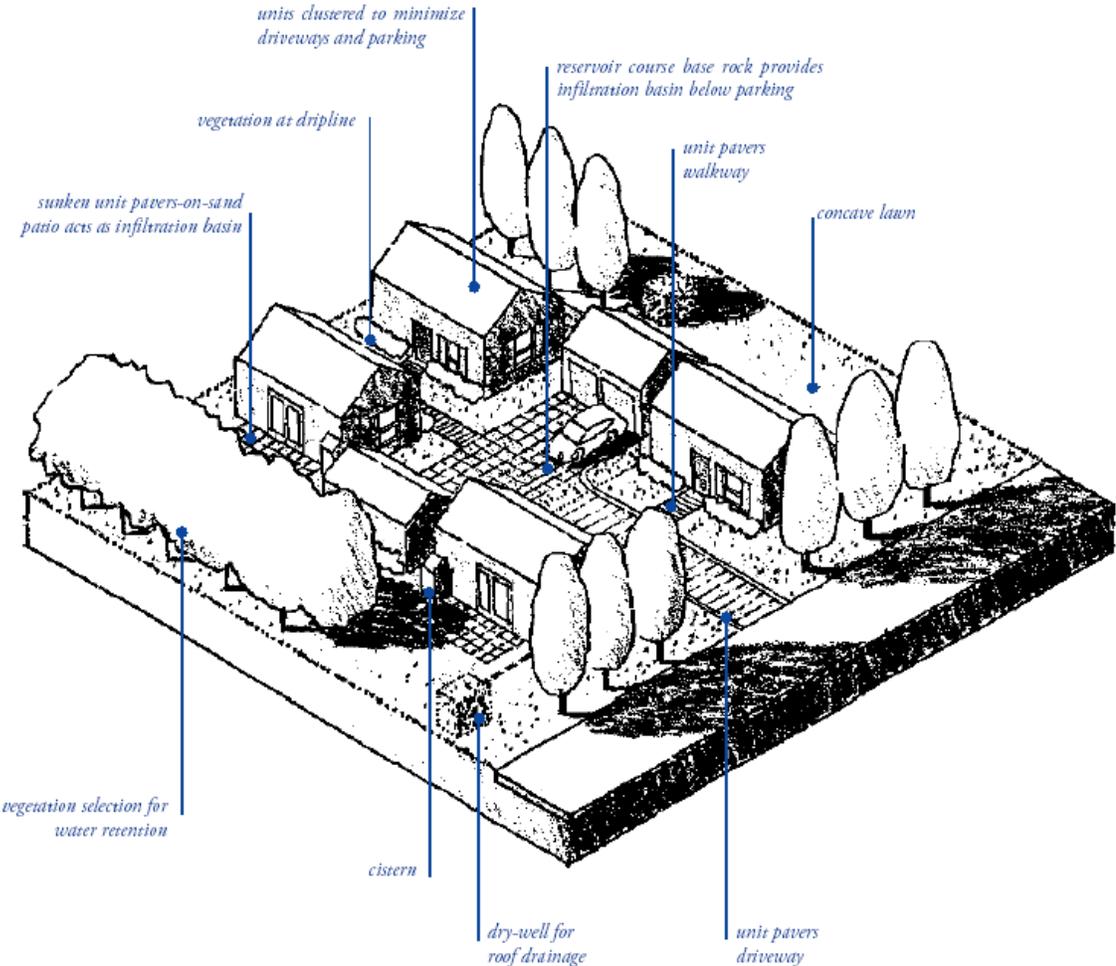
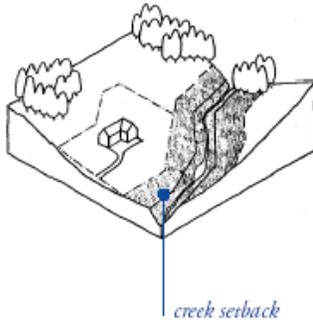
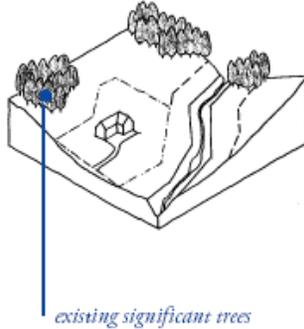


Figure 4-9 Site Design Concepts that Reduce Water Pollution and Erosion

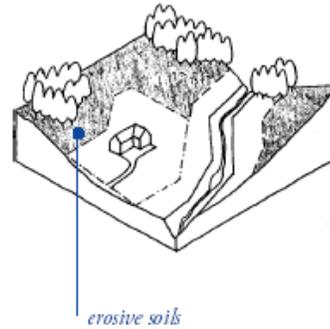
Set back development from creeks, wetlands, and riparian habitats.



Preserve significant trees. Trees protect soil structure, aid in soil permeability, and provide aesthetics.



Avoid erosive soils and slopes. These include steep or long continuous slopes, soils high in silt or fine sand, or soils lacking vegetative cover.



Source: Start at the Source: BASMAA, 1999

F. Grading Ordinance

By the end of second year of the permit term, the City will complete the update to its Grading Ordinance and incorporate Municipal Permit requirements.

G. Storm Water Ordinance

Salinas' *Storm Water Ordinance* regulates the City's stormwater infrastructure and management approach to new development. It is also the basis for other related documents such as the City's *Storm Water Master Plan*. Salinas is updating its Storm Water Ordinance to reflect its NPDES Municipal Permit requirements. Adoption of an updated Storm Water Ordinance is anticipated in the second year of the permit term.

H. Storm Water Master Plan

The City's *Storm Water Master Plan* is a comprehensive engineering plan based upon the City's *Storm Water Ordinance*. It includes an assessment of infrastructure and surface storm drainage and provides recommendations. This plan is separate and distinct from the City's *Stormwater Management Plan*. The *Master Plan* was last updated in May 2004--before adoption of the City's Municipal Permit. As part of the process to review the *Storm Water Ordinance* and other municipal documents, the City's consultant (Kennedy/Jenks) shall also review the *Master Plan*. By October 2006, the consultant will submit their review and recommendations for staff's consideration.

I. California Environmental Quality Act (CEQA)

Under California law, applications for proposed land use projects must be reviewed and a determination established if the proposal is subject to the California Environmental Quality Act (CEQA). If a project requires review under CEQA City staff will typically prepare an environmental assessment called an "Initial Study". Staff completes a checklist that identifies the project's potential for affecting environmental resources. Through the Initial Study process, issues having the potential to degrade the environment, including water quality are identified as are potential mitigation measures. Mitigation measures to address water quality may include: minimizing impervious surfaces, controlling pollutant sources and incorporating BMPs that retain, detain and or treat runoff. Staff will complete revisions to the City's Initial Study process in the first year of the permit term, to incorporate NPDES Municipal Permit requirements. Specifically, the revised *Initial Study Check* list will consider the following potential impacts:

1. Project construction on stormwater runoff;
2. Project post-construction activity on stormwater runoff;
3. Discharge of stormwater from material storage areas, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas;
4. Discharge of stormwater that impairs the beneficial uses of the receiving waters or areas that provide water quality benefit;
5. Discharge of stormwater that might cause significant harm on the biological integrity of waterways and water bodies;
6. Significant changes in the flow velocity and/or flow volume of stormwater runoff that might cause environmental harm; and
7. Significant increases in erosion of the project site or surrounding areas.

J. Engineering Standard Specifications, Design Standards and Standard Plans

The City's *Standard Specifications, Design Standards and Standard Plans* document provides specific design requirements for development. A RWQCB consultant has reviewed and made recommendations regarding this document's consistency with the Municipal Permit. Drainage design best management practices, project planning guidance, design specifications and technical requirements for construction and post-construction standards will be added as appropriate. Within the second year of the permit term, revisions will be completed and adopted as necessary.

K. Information Brochures

The City will prepare a series of urban runoff pollution prevention information brochures. Brochures will summarize relevant RWQCB and City stormwater requirements and reference web sites for additional information. Further, the City will produce and provide an urban water runoff BMP checklist that will guide applicants in selecting BMPs. Lastly, brochures will guide applicants by describing the various steps in the development process. Information contained in the brochures will be made available at the City's Permit Center, City Hall and through the City's web site.

L. Development Review Process

The City's NPDES Municipal Permit requires new development and significant redevelopment³ to meet specific standards. These include incorporation of stormwater BMPs to protect receiving water bodies. Practices relate to project design, environmental review, permit conditions, and construction management. The first three steps are addressed within this element. Construction BMPs are addressed in element 5 of this Plan. While all development will be required to incorporate BMPs to protect receiving water bodies, certain priority development types (as identified within the NPDES Municipal Permit) will be required to meet design standards as described in item #4 previously. These projects will meet specific design standards and include best management practices to control flow volume, velocity and water quality prior to issuance of any applicable discretionary or ministerial permits.

As defined within the Municipal Permit priority project categories include:

1. All residential developments of 10 units or more;
2. Commercial developments;
3. Redevelopment projects creating 5,000 square feet or more of impervious surfaces;
4. Automotive repair businesses;
5. Restaurants;
6. Hillside development of 5,000 square- feet or more of impervious surface⁴ ;
7. Certain Parking lots⁵;
8. Streets, roads, highways, and freeways—any paved surface equal to or greater than 5-acres; and,
9. Retail Gasoline Outlets⁶

Project BMPs are site and project specific. Therefore, they will vary based upon the project's design and potential impact to urban runoff and receiving water quality. Stormwater BMPs will be implemented through the development review process.

To determine the most applicable BMPs, applicants proposing "priority projects" shall prepare and submit studies analyzing pre- and post- project pollutant loads (including sediment) and flows resulting from the projected future development. These stormwater studies shall include the implementation of measures to control stormwater runoff to reduce pollutants to the maximum extent practicable standard.

The stormwater studies and development plans shall specify and document permanent site features and proposed BMPs designed to meet minimum sizing criteria to minimize impervious surfaces, retain or detain stormwater, slow runoff rates, and control

³ The RWQCB Municipal Permit defines the term "redevelopment" to mean additions or expansions of 5,000 square-feet or more of impervious surface, rather than the more common municipal use of the term "redevelopment."

⁴ Hillside is defined as an area with known erosive soil located in areas with a natural grade of 25 percent or greater slope. At present, there are no areas within the City that meet that criterion.

⁵ Any impervious area exposed to rainfall with 25 or more parking spaces, or with 5,000 square-foot or more of area.

⁶ Any facility engaged in selling gasoline with 5,000 square-feet or more of impervious surface area.

pollutants for the life of the project. If structural treatment controls are proposed, sizing calculations shall be included. The analysis shall also address the responsibility for the maintenance of treatment controls and other BMPs in perpetuity. For large projects a maintenance district may be required.

The following steps list the generalized process for the stormwater analysis and plan preparation:

1. Define site characteristics, features, topography, etc.;
2. Identify opportunities and constraints;
3. Design to minimize impervious surfaces;
4. Select treatment BMPs;
5. Design BMPs;
6. Specify source control BMPs;
7. Integrate BMPs into other site designs for landscape and drainage plans;
8. Check/resolve permitting code and compliance issues;
9. Plan for BMP maintenance; and,
10. Prepare stormwater control analysis.

A more thorough discussion regarding numeric sizing is being prepared as part of the City's Low Impact Development Design Standards.

Development processing begins with development review. Submittal of an application for planning and zoning approval begins the first step. Figure 4-10 displays a conceptual process for discretionary projects—those that require discretionary action. For most (ministerial) projects, that is, projects that conform to the City's land use and development regulations, the process is much simplified. These projects are exempt from CEQA processing.

Step I—Staff conduct optional pre-application meeting. This step is advisable for those new to the City's NPDES requirements, or for those with large, complex projects. Staff will review necessary BMPs and discuss design options with applicants.

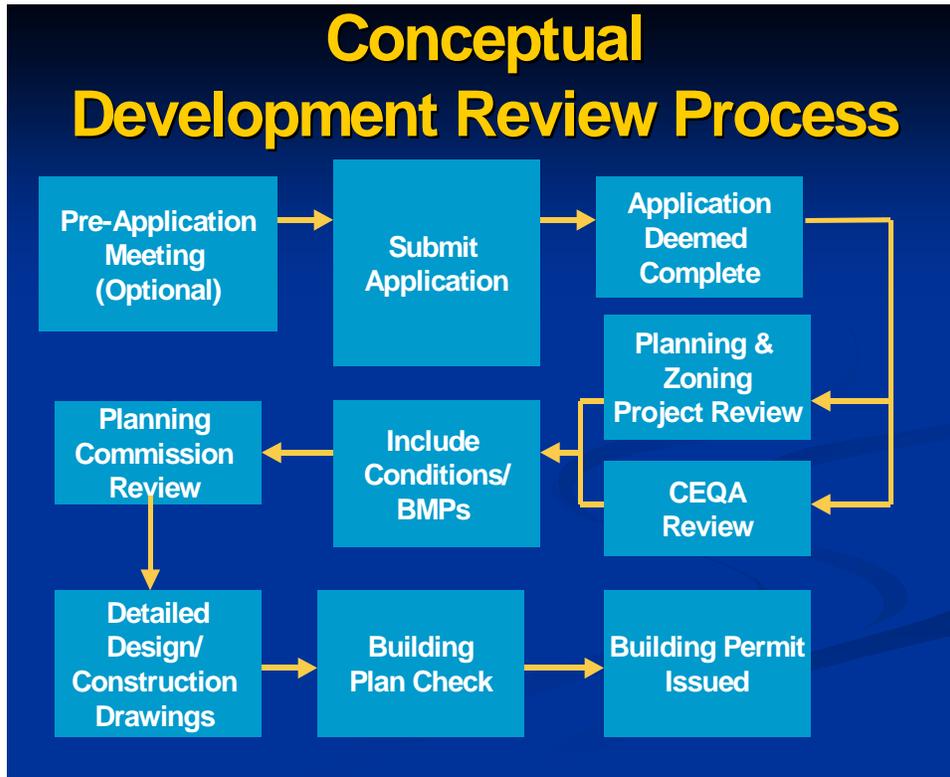
Step II—Applicant submits Development Review Application including plans and stormwater analysis.

Step III—Staff determines whether application is complete, including verifying submittal of a stormwater control analysis.

Step IV— Staff reviews proposed development for conformity with applicable regulations. Staff will review the applicant's stormwater analysis as part of the project review.

Step V— Staff are responsible for reviewing proposed development for conformity with local, state and Federal regulations. Staff review of the applicant's stormwater control analysis/plan is conducted at this step.

Figure 4-10 Conceptual Development Review Process



During the review process, staff will solicit comments from other City divisions and departments. Comments from these various municipal disciplines will be considered at a City Development Review Committee (DRC) meeting. BMPs may be incorporated into the project as specifications, project design modifications, conditions of approval or other requirements as appropriate to reduce stormwater impacts to the MEP.

Project applicants will assure the adequacy of the maintenance of stormwater BMPs during construction and throughout the life of the project. Maintenance of treatment and other urban runoff controls will be the responsibility of the applicant, unless included in a maintenance district. Maintenance methods must be identified in writing and approved as part of the permit prior to permit issuance.

Step VI –During the building plan and construction permit review process staff will ensure that BMPs are carried forth and incorporated into construction drawings and plan specifications.

Step VII – Where substantive revisions to a project have been proposed; staff will re-initiate Step II to ensure revisions meet stormwater requirements. If proposed changes are determined to potentially materially affect surface runoff, further changes to the project design, or amendments to the previously approved permit such as different or additional BMPs may be necessary.

M. BMP Selection

Land development design and review must consider many factors: environmental, economic, temporal and other factors in context of the individual project. There is no universal solution to stormwater pollution prevention. Consequently, stipulated conditions, project designs and required BMPs will be established on a project-by-project basis. However, there are categories of BMPs that should be considered given certain shared project traits, or environmental circumstances. This “menu” of BMPs will be incorporated into the City’s Standard Specifications, Design Standards and Standard Plans. As part of the development review process consideration shall be given to watershed protection. While each project will be reviewed individually, project processing will be standardized and uniform water protection principles employed.

Plan review will be conducted consistent with watershed protection values contained with the NPDES Municipal Permit and *Salinas Stormwater Management Plan*. Further, plan processing will be performed using the development design standards prepared under the NPDES Municipal Permit as the required benchmark. Until the development design standard requirements are adopted (second year of permit term), requirements contained within the NPDES Municipal Permit shall be employed. For example, at minimum, retail gasoline projects shall be required to use BMPs listed in the *California Storm Water Quality Task Force, March 1977 BMP Guide for Retail Gasoline Outlets*. In addition, projects will meet numeric sizing criteria contained within the NPDES Municipal Permit. Upon adoption of the City’s LID development design standards, these will replace the interim standards referenced within the Municipal Permit.

City staff will employ the following methodology when advising developers and during plan review. The following discussion includes a list of BMPs that may be employed to meet Municipal Permit requirements and minimize the introduction of pollutants of concern.

The City’s focus for protecting water quality will be pollution prevention and site/architectural designs will incorporate pollution prevention BMPs as their cornerstone. Project review will also include the provision of source control BMPs, such as Low Impact Development techniques. Where site design and source control management practices fail to bring the project into conformity with Municipal Permit pollution prevention (quality, volume and velocity) MEP requirements, structural treatment control techniques will be employed.

N. Site Planning and Development BMPs

The section that follows lists BMPs by type—site design, rainfall infiltration, etc. Depending upon the project and site location, these BMPs may provide utility in meeting Municipal Permit requirements.

1. Pollution Prevention / Site Design:

The City’s Municipal Permit requires specific development categories to reduce pollutant runoff to the maximum extent practicable. In many cases, this requires inclusion of site design techniques that result in post-development runoff mimicking the pre-development site hydrologic response. That is, development should not result in an increase in flow volume, velocity, or pollutant load over pre-development peak amounts. Site design BMPs include any project design feature

that prevents the creation of pollution sources, or reduces the severity of impacts to downstream receiving water bodies to the maximum extent practicable.

The BMPs listed below should be selected, and/or considered in new development. Selection of site design BMPs will be project, site and performance driven. Proponents may select whichever BMPs they determine best meets municipal and state standards, as well as project needs. In cases where certain prescriptive BMPs prove impracticable, other BMPs that similarly meet the Municipal Permit standard of removing project pollutants to the MEP must be substituted.

In addition to the BMPs that follow, goals, objectives and policies from the City's General Plan that protect water resources will also be considered BMPs.

2. The following Smart Growth principles will be considered BMPs:

- a. For projects identified within the City's NPDES Municipal Permit as *priority development projects*, developers will prepare and submit a stormwater control plan that analyzes pre-and post-development project pollutant loads, including sediment, and flows (volume and velocity) resulting from proposed development, and explain how the design will reduce urban runoff to MEP. A licensed engineer or other trained and licensed professional capable of conducting this study shall prepare this analysis. For all other projects, a simpler Stormwater Control Plan will be required. For some projects, one page identifying pollutants of concern, summarizing the proposed BMPs and their maintenance schedules, and including them on the plans and specifications may suffice. These less rigorous documents may not require preparation by a licensed professional.
- b. The following planning principles will be considered during the preparation of the Development Design Standards:
 - i. Reducing street width areas as authorized by the City's Traffic Engineer and Fire Chief.
 - ii. Include sunken landscaped islands in street designs.
 - iii. Reduce future parking lot sizes/requirements by encouraging shared parking as appropriate and as provided for in the Zoning Code Update.
 - iv. Providing incentives for opportunities for structured parking (multi-level) rather than surface parking.
 - v. Include porous pavers and/or porous pavement in parking overflow areas.

O. Suggested Development or Post-construction BMPs

Site Design BMPs:

Minimize Impervious Areas

- Incorporate Smart Growth (traditional neighborhood development) principles and design concepts that implement Salinas' General Plan;
- Develop streetscapes that minimize impervious surfaces and maximize tree canopy;
- Incorporate landscape buffer areas between sidewalks and streets;
- Avoid residential cul-de-sacs and incorporate landscape areas;
- Increase building density while decreasing building footprints;
- Use cluster development that incorporates smaller lot sizes and maximizes open space; and,

- Reduce overall lot imperviousness by promoting alternative driveway and parking lots surfaces and designs.

Increase Rainfall Infiltration

- Encourage sustainable building design;
- Direct runoff from rooftops and hardscape to landscape areas; avoid routing runoff to the roadway or the urban runoff conveyance system;
- Use permeable materials for private sidewalks, driveways, parking lots, and interior roadway surfaces, while ensuring compliance with ADA/Title 24 access requirements; and,
- Where soils percolate freely, consider dry wells or other infiltration designs.

Maximize Rainfall Interception

- Maximize canopy interception and water conservation by preserving native and existing vegetation, especially trees, and by planting low water using street trees, and large shrubs;
- Encourage the use of cisterns to retain rainfall for later landscape irrigation; and,
- Design landscape areas to receive roof and surface drainage.

Minimize Directly Connected Impervious Areas

- Drain rooftops into adjacent/nearby landscape areas prior to discharge into storm drain;
- Drain parking lots into landscape areas that serve also as bio-filtration areas; and
- Drain roads, sidewalks and paths into adjacent landscaped areas rather than directly into the street.

Slope and Channel Protection

- Use natural drainage systems to maximum extent practicable;
- Stabilize permanent channel crossings;
- Select native, indigenous or water-thrifty plants appropriate for the local ecosystem with deep root structures for slopes; and
- Use energy dissipaters, such as river stones or riprap, at drain outfalls of new storm drains, culverts, conduits, or channels that enter other unlined channels.

Source Control BMPs

- Use/encourage sustainable building design, including low impact development (LID)
- Use water-thrifty landscape designs with efficient irrigation systems, such as drip systems, rather than spray, to eliminate runoff.

Treatment Controls BMPs

Bio-filters

- Grass swales;
 - Grass strips;
 - Vegetated swale; and
 - Bio-retention.
-

Table 4-2 displays a comparison of the effectiveness of various treatments at removing common pollutants of concern. More detailed information is available from these resources:

- 1) Caltrans *Treatment BMP Technology Report, April 2006*
(<http://www.mastep.net/documents/caltrans%20treatment%20bmp%20technology%20report.pdf>).
- 2) National Pollutant Removal Performance Database for Stormwater Treatment Practices, June 2000, Center for Watershed Protection (<http://www.cwp.org>).
- 3) BMP National Stormwater Database, American Society of Civil Engineers (<http://www.bmpdatabase.org/>), 4) CSUS Office of Water Programs: Storm Water Monitoring (<http://www.stormwater.water-programs.com>)

Table 4.2 Treatment Control Performance

BMP Performance												
Constituent Performance												
BMP Type	BMP	Coarse Sed.	Fine Sed.	N03	TN	TP	Pb (T)	Zn (T)	Cu (T)	Pathogens	Oil and Grease	Trash and Debris
Detention Basins	Wetponds	X	X	#	○	○	X	X	○	○	NR	X
	Extended Wetponds	X	X	○	○	X	X	X	X	○	NR	X
	Extended Drypond	X	○	#	○	#	○	○	○	#	NR	X
Water Quality Wetlands	Shallow Wetland	X	X	○	#	○	○	X	○	X	NR	X
	Extended Detention Wetpond	X	X	○	#	○	○	X	○	X	NR	X

Good X **Fair** ○ **Poor** #
 NR: Not recommended for treating this parameter without pretreatment due to high probability of system impairment

Source: GeoSyntec Consultants, 2002; Santa Clara Valley Urban Runoff Pollution Prevention Program

Table 4.2 Treatment Control Performance (Continued)

BMP Performance												
BMP Type	BMP	Constituent Performance										
		Coarse Sed.	Fine Sed.	N03	TN	TP	Pb (T)	Zn (T)	Cu (T)	Pathogens	Oil and Grease	Trash and Debris
Biofilters (horizontal)	Bioswale	X	○	#	○	○	X	○	○	#	○	○
	Filter	X	○	#	○	○	X	○	○	#	○	○
	Strip											
Filters (vertical)	Sand Filter	X	X	#	○	○	X	X	○	○	X	X
	Media Filter	X	X	#	○	○	X	X	X	○	○	NR
	Bioretention	X	X	#	X	X	X	X	X	#	X	NR
Solids Separator	Rotational Flow	X	○	#	○	○	○	○	○	#	X*	X
	Multi-Chamber	○	#	#	○	#	○	○	#	#	○	X
Inserts	Catch Basin Insert **	X	○	#	○	○	○	○	○	#	X*	X
Good X Fair ○ Poor # NR: Not recommended for treating this parameter without pretreatment due to high probability of system impairment. * Assumes that sorbent is placed in sedimentation chamber ** The San Francisco Regional Board staff does not recommend the use of this BMP as it feels that it is ineffective.												

Source: GeoSyntec Consultants, 2002; Santa Clara Valley Urban Runoff Pollution Prevention Program

Detention / Retention Basins

- Extended/dry detention basins with drought tolerant grass linings as part of larger system that infiltrates water, such as source control and green site design;
- Retention basin; and
- Catch basin screens.

Infiltration Basins

- Infiltration basin;
- Infiltration trench;
- Porous concrete;
- Porous modulate concrete block; and
- Wet ponds.

Drainage Inserts (lower priority)

- Oil/Water separators;
- Catch basin inserts; and,
- Storm drain inserts.

Filtration Systems

- Media filtration; and,
- Sand Filtration.

Continuous Flow Deflection/Separation Systems

- Swirl Concentrator;
- Vortex-type inlet use at final site discharge point.

P. Outreach, Education and Training

Consistent with its Municipal Permit, Salinas will annually conduct a multi-faceted education program. The program will include staff training, targeted education and community outreach. Training will include broad-based topics, such as Municipal Permit requirements and the Clean Water Act, as well as specific information about procedures and BMPs. For the first two years of the Municipal Permit the City will focus on training staff and educating the development community. During the third year of the permit term, City staff will continue to conduct broad outreach to the general public.

Outreach, training, and educational efforts will be conducted and managed by an interdisciplinary team. Topics will include basic watershed management theory, potential environmental/water quality impacts regarding development, and an overview of the City's Municipal Permit.

All staff involved with aspects of project management, project and/or environmental review, or development policy formulation/implementation will be provided annual training on existing and emerging designs and techniques to protect water quality and limit impacts. Among other practices, smart growth principles, sustainable development, low impact development techniques, and proven BMPs will be presented. Training will range from formal workshop presentations and guest speakers, to informal "brown-bag" sessions, web-based presentations and individual research. As knowledge of BMPs evolve, municipal divisions and individual staff will keep current by holding brief division meetings and assimilate information into a reference library. Annual training will ensure that City staff are kept current and knowledgeable of Municipal Permit, *Stormwater Management Plan* and other requirements, and are effectively implementing them.

In the first year of the permit term, staff will conduct an educational program for the development community. This session will include a summary of the Municipal Permit and its effects upon development processing. This session may be conducted in conjunction with staff training and key issues and new requirements will be presented. In conjunction with LID standards preparation, the City will conduct a series of outreach sessions with the broad community. Additional public meetings (public hearings) will be held with the Planning Commission and City Council when these standards are considered for adoption. Once standards are adopted, City staff will produce an information brochure that summarizes new regulations.

As the City's Stormwater Management Plan changes in response to the City's NPDES Municipal Permit requirements and other factors, staff will prepare updates to the City's information brochures outlining new BMPs. Upon adoption of the LID Development Standards, an informational brochure will be printed that summarizes new requirements. The City will also post relevant information on its web site.

4.7 Program Effectiveness

Salinas will employ direct and indirect means to assess the City's stormwater management program's effectiveness.

Salinas has established a water-monitoring program that will compare baseline information with changes over the permit term.

For this permit term, water quality sampling will be conducted as outlined within the City's Quality Assurance Pollution Plan and the Monitoring requirements contained in the City's NPDES Municipal Permit.

Element

5

Construction Site Management

“How can any civilization survive if most of its forest had been removed, its soil washed away, its cropland salinized, its water and air polluted, its cities become crowded, unsafe and subject to disease...”

*Pan’s travail, Environmental Problems of the ancient Greeks and Romans
--J. D. Hughes*

5.1 Introduction

Building construction activity is a dynamic process where unexpected events are common. Weather conditions, altered drainage, discrepancies between planned and as actual grades, financing, and unforeseen construction requirements and other variables combine to make construction sites management challenging. Consequently, construction sites create special water runoff management concerns. Urban water runoff BMPs¹ for construction sites are usually temporary measures that require frequent maintenance, adjustment and monitoring to ensure effectiveness.

When urban water runoff and rainwater (called stormwater) drains from a construction site, it can carry sediment, and other pollutants that can damage riparian ecosystems, and degrade downstream waterways. According to the 1996 National Water Quality Inventory, stormwater runoff is a leading source of water pollution. The U.S. Environmental Protection Agency (EPA) estimated that nationally 20 to 150 tons of soil per acre is lost annually to stormwater runoff from construction sites.

Controlling erosion can significantly reduce sedimentation and mitigate damage from other pollutants transported by runoff during construction. To protect Salinas’ water and other resources, the City issues permits to construction site owners or the operators to minimize or reduce water pollution during and after construction.

¹ See CRWQCB Order Number R3-2004-0135 NPDES PERMIT Number CA0049981, Attachment 1 – List of definitions this and other acronyms

Site owners (and their construction operators) must also meet General Permit Construction requirements under the National Pollutant Discharge Elimination System (NPDES) program. As part of the application process for projects one acre in size or larger, owner (and operator) must prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) that documents how they will control their site's stormwater. Erosion and sediment control (ESC) may be contained within the SWPPP, and must be included within the Project Schedule. The SWPPP, and other General Permit² requirements are administered at the local level by the City of Salinas, and integrated into its Building, Encroachment, Subdivision and Grading Permit processes.

5.2 Construction Site Management Element Goal / Requirements

The City's goal through this element is to protect water resources by reducing or eliminating pollutants entering the City's Municipal Separate Storm Sewer System (MS4) and receiving waters. Element 5 is one aspect of the City's comprehensive approach to managing its natural resources. The City's Municipal Code, General Plan, Grading and Stormwater Ordinances administer the management of construction activities. Another document that governs municipal actions is its National Pollutant Discharge Elimination System Municipal Permit (NPDES Permit, or simply Municipal Permit) issued by the CRWQCB. NPDES Permit requirements can be found at the following web site: <http://www.ci.salinas/PubWrks/MtcSvc/StormWater-NPDES/Attachment4-SWMPRevisionReqs.pdf>. Requirements imposed by the CRWQCB mandate the City to take a series of actions. Mandated activities related to construction are summarized in Table 5.1 on the following page.

This element focuses on three principal goals. The first is to develop regulations and performance standards including incorporation of these regulations and standard operating procedures into daily practice, beginning with the site planning process and extending through the completion of construction. The second goal is to train staff and inform the public about new regulations, standards and procedures. The third goal is to ensure program effectiveness through management and enforcement.

Since receiving its Municipal Permit, the City has begun updating its two primary construction related ordinances: its Grading Ordinance and its Stormwater Control Ordinance. Adoption of these ordinances will take place during the second year of the permit term. Implementation of these ordinances will improve municipal effectiveness in minimizing construction impacts.

The City's training and education goals will be achieved through a variety of programs described later in this element. The City's program effectiveness goal will be accomplished through trained staff actively managing programs, and reporting results. Annually, the City will prepare and submit an evaluation report of Construction Site Management Element's effectiveness and goal attainment. This report will document results, comparing them to goals and benchmarks. Documentation will be included in the City's Annual Report to the CRWQCB. Implementation is an iterative process with conclusions from the previous year shaping programs for the following year. Attainment of program goals will also be achieved through meeting City objectives. Section 5.3 Objectives are guides to City day-to-day practices and, in many cases, serve as requirements for development. Other BMPs are discussed later in this element.

² NPDES Permit Number CA0049981

City departments responsible for conducting inspections, include Development and Engineering Services and Maintenance Services Department. These inspections will ensure that adequate Best Management Practices (BMPs) are installed and maintained for all private and public construction projects.

Table 5.1 NPDES Permit Requirements - Construction Site Management Element

Permit Section	Summary Requirements	Plan Reference
OD.1.a.i.	Comply with the Order, including all Attachments, the SWMP, and any approved modifications	5.2
OD.1.a.ii.	Coordinate with Internal Departments and Outside Agencies	5.2
A4.II.	Develop & Implement Construction Site Mgmt Program	5.3
A4.II.a.	Projects >1 ac: require Submittal of WDID#	5.4
A4.II.a.i.	Control sediment using source control and structural BMPs	5.3
A4.II.a.ii.	Retain construction-related materials at project site	5.6 A
A4.II.a.iii.	Contain unauthorized non-storm water at project site	5.6 A
A4.II.a.iv.	Control erosion from slopes with source control and other BMPs	5.6 A
A4.II.a.	Require submittal of SWPPP to City of Salinas	5.4
A4.II.a.iv.	Meet CRWQCB San Francisco Bay Region Erosion and Sediment Control Field Manual Requirements	5.4
A4.II.b.	Inventory active construction projects	5.4.B
A4.II.b.	Develop and implement an effective tracking system	5.4 B
A4.II.b.	Update Construction and Grading Projects Inventory as new projects are submitted	5.4 B
A4.II.c.	Implement Construction BMPs, or provide justification with SWPPP	5.6 A
A4.II.c.	Stabilize construction exit (sometimes referred to as "construction entrance")	5.6 A
A4.II.c.	Schedule grading operations to minimize exposed, and unprotected, graded areas during wet weather season	5.4 F
A4.II.c.	Implement downstream sediment controls	5.6 A
A4.II.c.	Implement concrete washouts	5.6 A
A4.II.c.	Implement storm inlet protection	5.6 A
A4.II.c.	Implement Slopes/Channel Protection	5.4
A4.II.c.	Implement good housekeeping practices at site	5.6
A4.II.c.	Prepare & distribute construction site BMPs brochure	5.8
A4.II.d.i.	Require proof of NOI submittal prior to permit issuance	5.4
A4.II.e.	Inspect all active construction sites once/month during wet season	5.4 F
A4.II.e.	Inspect all Active construction sites once every other month during dry season	5.4 F
A4.II.e.	Inspect high priority sites (>5 AC@min) once/week during wet season	5.4 F
A4.II.e.	Establish criteria for high priority sites in SWMP	5.5
A4.II.e.	Inspections to include: BMPs, sediment controls, and records keeping	5.5
A4.II.f.	Develop ordinance, and enforce regulations	5.7
A4.II.f.	Prepare escalating enforcement ordinance/policy with sanctions	5.7
A4.II.g.	Refer construction noncompliance orally to CRWQCB within 5 business days	5.7

Stormwater Management Plan

A4.II.g. & 4.IV.h.	Refer non-filers (General Construction Permit) to CRWQCB, in writing, within 10 business days	5.7
A4.II.h.	Train plan check employees on development plan check and inspection issues	5.3
4.IV.e.	Train inspectors of commercial and industrial facilities	5.3
4.IV.h.	Refer (orally) non-filers to CRWQCB within 5 business days	5.7
4.IV.h.	Refer non-filers needing NOI or WDID # to CRWQCB within 10 business days	5.4
4.IV.i.	Provide annual training for commercial/Industrial inspections	5.4 D
A4.V.g.	Annually inspect City of Salinas owned facilities/activities and train inspectors	5.8
A4.V.g.	Record all inspections (database, photos, checklist, etc.)	5.7
4.VI.c.	Maintain record of drive-by inspections	5.3.f
4.VII.g.	Conduct small construction outreach (<1 ac)	5.3.a
4.VII.g.	Prepare and distribute construction brochure of BMPs consistent w/ NPDES Permit	5.8

5.3 Construction Objectives

1. Minimize clearing and grading. Clearing and grading should occur only when necessary to build and provide access to structures or infrastructure.
2. Protect waterways and stabilize drainageways. All natural waterways within a development site should be clearly identified before construction activities begin.
3. Stabilize exposed soils by seeding, hydro-seeding and/or other such practices as soon as practical.
4. Protect steep slopes and cuts. There are few steep slopes in Salinas; but wherever possible, clearing and grading of existing steep slopes should be avoided. Where clearing cannot be avoided, erosion and sediment control practices should be immediately implemented to prevent runoff.
5. Install perimeter erosion and sediment control elements to retain sediment-laden runoff before it leaves the site.
6. Employ sediment-settling controls. Sediment basins can be designed to improve trapping efficiency through the use of design “traps” and lessening overland velocity.
7. Ensure City of Salinas staff members involved in project review, permit approval, and construction inspection are provided comprehensive training on storm water pollution prevention—(theory and practice). Also ensure that contracted consultants and construction industry professionals are adequately educated on urban water pollution prevention regulations, BMPs, NPDES Permit, as well as other requirements/techniques.
8. Provide NPDES information, such as BMP construction fact sheets, on the City’s web page for easy access.
9. Require the submittal of a Storm Water Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control (EC) plan with all development, building, and grading permit applications that involve soil disturbance on greater than 1 acre. Currently, only projects greater than 1 acre are required under state law to submit an ESC Plan and a SWPPP.

An effective ESC plan ensures that erosion and sediment control measures are considered during the site planning stage of development; and include both structural and nonstructural controls. Nonstructural controls decrease erosion potential; while

structural controls are preventative and mitigative in nature. While stormwater control plans tend to focus more on nonstructural site design controls, ESC plans focus on structural controls. Although proper design and siting help prevent the development of areas prone to erosion; construction activities invariably result in conditions where erosion can occur. At a minimum, the following ESC/SWPPP plan elements are required:

- Topographic and Vicinity Maps showing nearby roadways; natural and finished grades before and after construction; geographic features and drainage patterns; and proposed stormwater facility locations—(receiving water, conduits to receiving waters, and/or drain inlets, etc.)
 - Site development plan showing existing and proposed buildings and paved areas
 - Vegetation Plan (Existing and Proposed)
 - Erosion and Sedimentation Control plan drawings
 - A detailed, site specific, listing of the potential sources of stormwater pollution
 - Description of type and location erosion and sediment control Best Management Practices (BMPs)
 - Detailed drawings and specifications for BMPs
 - Design calculations, including quantity of existing and proposed runoff
 - Construction Schedule
 - Name and telephone number of the person responsible for implementing the ESC/SWPPP.
 - Certification/signature by the landowner or an authorized representative.
10. Produce an implementation schedule necessary to implement the Construction Site Management Element through the five-year term of the Municipal Permit.
11. Monitor program effectiveness using measurable goals to document urban runoff pollution prevention activities conducted on construction sites. By September of each year, submit a summary of activities to the City's Water Resources/Urban Runoff Pollution Prevention Program along with the Annual Activities Report for inclusion into City's Annual Report to CRWQCB.

5.4 Activities

Construction sites are defined as any parcel on which soil is disturbed by construction activity requiring one or more of the following permits: Building, Encroachment, Grading, Subdivision or any other construction related permits. Construction activity may be a result of private development projects, or City of Salinas Capital Improvement projects. A California Regional Water Resources Control Board (CRWRCB) Waste Discharge Identification number (WDID), including proof that a Notice of Intent (NOI) (application for coverage under the SWRCB's General Construction Storm Water Permit) has been submitted to the CRWRCB are already required as part of the application for any Building, Encroachment, Grading, Subdivision or any other construction related permit for any construction site consisting of one or more acres. Furthermore, the City of Salinas also requires that the application include a Stormwater Pollution Prevention Plan (SWPPP) including appropriate BMPs for approval by City staff prior to issuance of any construction related permit.

A. Regulations

The City of Salinas has updated its Grading Ordinance and Stormwater Ordinance. Documentation of those activities required of construction related permits will be an integral part of new Permit Processing Software currently being procured.

B. Identification of Project Sites-Inventory

The City of Salinas already uses its Building and Construction/Encroachment Permit process to inventory, schedule inspections and track all construction activity. Since the City of Salinas employs uniform building and construction inspection and monitoring programs where all sites are inspected thoroughly, there has not been a need to prioritize projects. For the most part, this process has been successful and currently meets the requirements of the City of Salinas' NPDES Permit. During this permit cycle, the City of Salinas expects to install new Permit Processing Software that will have the capability to track construction activity from initial planning to final construction, and the ability to archive that information for future use.

C. Prioritization of Project Sites

Construction projects can range from a simple addition to a home, to a major residential subdivision, industrial complex, or shopping center. The following factors, along with other procedures, will be considered when establishing project priorities:

- ✓ Site Location and Proximity to Environmentally Sensitive Sites: Including receiving waters, such as creeks, Carr Lake, Markley Swamp, the Salinas River, and Reclamation Ditch 1665; areas designated as Areas of Special Biological Significance by the State Water Resources Control Board ("Basin Plan"); areas designated as preserves or equivalent in the Cities General Plan or by California State Fish and Game; and any other equivalent sensitive area that has been formally designated.
- ✓ Project Type and Size: The total disturbed area will be considered and a generalized listing of project types will be developed;
- ✓ Soil Erosion Potential: Each site will be evaluated for its potential for erosion;
- ✓ Onsite Slope: The City of Salinas lies within the Salinas River Valley, and therefore is relatively flat. Onsite slope conditions will be evaluated for its potential to contribute pollutants and factored into the selection of BMPs;
- ✓ Means, Methods and Season of Construction: methods, as well as the season of construction (wet versus dry) will also influence the selection of BMPs. Site management practice of wetting sites for dust control often results in dry season construction being treated similar to wet season for BMP installations. The varying methods of site clearing and grubbing, and the amount of exposed soil at any given time/project phase shall be considered in determining priority.
- ✓ Non-storm Water Discharges: The potential for non-storm water discharges such as: soil amendments, fertilizers, building waste materials, concrete waste, construction materials and compounds, types of machinery and equipment on-site, as well as spoils and debris from excavation and dewatering will be considered in determining site priority;
- ✓ Practices and Past History of Construction Owners: Past performance regarding urban water runoff will be given consideration.

These factors summarize the varied circumstances that govern a project's potential effects upon the environment, and will be considered when setting priorities. In general, larger and/or more complex projects, and projects with greater potential for adverse impacts will simply command more resources and higher priority.

City of Salinas staff has been able to provide a uniform level of inspection services to all projects. Even if the City of Salinas can continue to provide uniformly high inspection services: establishing priorities does have merit. Within a project, the different stages of construction pose varying levels of risk to water resources. Therefore, projects that may begin as high priority may become a medium or low priority as it is constructed (or visa versa). Specific aspects of development, such as grading and land clearing pose greater risk than most other aspects. City of Salinas staff will manage construction permit services, including construction site management inspection, to meet City policies (General Plan), as well as State of California and Federal mandates.

Priorities shall serve as a tool and minimum threshold, but not a replacement for City policy. In accordance with the Municipal Permit, the City of Salinas has developed the following priority criteria:

1. High Priority Construction Sites:
 - a. Site of 5 acres or greater.
 - b. Projects, active or inactive, adjacent to a water body.
 - c. Any Site tributary to a 303(d) impaired water body or environmentally sensitive area.
2. Medium Priority Sites:
 - a. Sites of 1 acre, or grater;
 - b. Sites where grading permits are required, but SWPPP are not; and
 - c. Sites (private and public) where minimal grading is proposed, such as single family homes, driveway additions, or retaining walls.
3. Low Priority Sites:
 - a. Sites (private and public) where no grading is proposed, such as tenant improvements.

Where all construction activity, including the storage and handling of construction-related materials, spills and waste, will be completely enclosed (with no conduit to storm drains or surface water exists), the City of Salinas will not inspect for urban runoff pollution. Examples are: interior remodeling, mechanical work, tenant improvements, temporary mobile home (or trailers), and emergency construction activities necessary to protect the public's health and safety. Whether or not the City of Salinas requires or provides inspection services; property owners and/or contractors are still required to practice good housekeeping measures to protect water resources.

D. Inspection Schedules

Initial inspections are typically conducted within a few working days of the pre-construction meeting, i.e., the first inspection conducted for the project. Subsequent inspections are conducted with each subsequent construction inspection requested (at minimum as shown in Table 5.2). Depending upon circumstances, subsequent inspections may be conducted as frequently as daily, or as infrequently as monthly (not related to storm water). During these inspections, general impressions of site management and operations are made and documented. Dependent upon the inspection results, a follow-up inspection specifically for urban water runoff may be

scheduled. Anticipation or onset of heavy storms can trigger the need for additional inspections.

E. Inspection/ Monitoring Criteria and Procedures

Construction site inspections for urban water runoff will include the following. City staff will identify and meet with the qualified contact person responsible for the project. Contact person must demonstrate, document, or otherwise provide proof of knowledge and training on Urban Water Runoff BMPs:

1. Erosion and sediment control plans included within approved construction drawings shall be used, even when a SWPPP is not required;
2. SWPPP, and construction drawing, BMPs must be installed and operating as specified and approved (or revised, with approval of City of Salinas staff);
3. SWPPP's and plans must always reflect current site conditions;
4. Impacted Storm drains (down or upstream) shall be protected at all times;
5. Natural drainage courses shall be protected;
6. BMPs shall be in place and function properly, consistent with approved erosion and sediment control plans, SWPPP's or revisions;
7. Non-storm water BMPs shall be employed (such as concrete washout, irrigation runoff, oil containment, and others);
8. Sediment traps, basins, and other BMPs shall function properly;
9. Perimeter protection shall be provided to ensure that sediment and debris from construction activities does not migrate to public streets and storm drain facilities. The City Engineer may require daily, or more frequent, cleaning;
10. Stormwater discharge points shall be free of significant sediment deposits;
11. Erodible slopes shall be protected by approved soil stabilization methods;
12. Material and equipment handling, storage, and maintenance areas shall be clean and free of spills, leaks or other harmful materials;
13. Temporary stockpiles of construction materials shall be located in approved areas, and protected from erosion;
14. On-site traffic routes, parking and equipment storage and supplies shall be restricted to areas designed on approved plans/SWPPP's;
15. Landscaped (included seeded) and irrigation areas shall be maintained to protect them, and to ensure no runoff off-site.

F. Inspections

Consistent with NPDES Permit requirements, the City of Salinas has updated its grading ordinance. Adoption of the updated grading ordinance is anticipated during the second year of this permit. This ordinance along with the Stormwater Ordinance prescribes means to protect receiving waters. Key language in the draft Grading Ordinance includes:

- ✓ Prohibiting accelerated erosion;
- ✓ Prohibiting grading that may obstruct, impeded or interfere with natural stormwater flows;
- ✓ Holds property owners, or their agents, responsible for protecting areas on or near their property;

- ✓ Requires installation and maintenance of BMPs to protect adjacent waterways and properties;
- ✓ Requires all construction projects to implement a set of BMPs.

Table 5.2 Construction Inspection Frequency by Priority

Priority Description	Wet Season (October 1 - April 30)	Dry Season (May 1 - Sept. 30)	Inspection Frequency
High Priority			
Active/Inactive Sites	✓		Once a week
		✓	Every other month
All Other Active Construction Sites Requiring Minimum BMPs	✓		Once a month
		✓	Once every other month

5.5 Performance Standards

Adequacy of construction site management practices shall be evaluated based upon the following performance standards:

- ✓ No measurable increase of pollution (in runoff) from the site, including sediment.
- ✓ No erosion to slopes.
- ✓ Water running off the site, must not have greater velocity than it did prior to construction activity.
- ✓ Lack of adequate BMPs, or poorly installed measures, shall be corrected.

Sites where construction has ceased for a period of 7 consecutive calendar days or more shall be considered inactive. Inactive, as well as active sites, must be fully protected from erosion and sediment discharges throughout the year. Responsibility for this protection shall rest with the property owner, and/or his/her contractor. As discussed in previous sections, appropriateness of BMPs will vary depending upon several factors, including wet and dry season.

Minimum Construction BMPs

All construction projects shall implement the following BMPs unless the BMP is not practicable. If a BMP is deemed not practicable, a detailed justification shall be included with the approved SWPPP:

1. Stabilized construction entrance.
2. Scheduling of grading activities to minimize bare graded areas during the rainy season.
3. Downslope sediment controls, e.g. sediment log.
4. Concrete truck washouts.
5. Storm drain inlet protection.
6. Protection of slopes and channels.
7. Good housekeeping practices (e.g. trash management, proper material storage, etc.)

5.6 Relationship Between Performance Standards, Site Management Requirements and Best Management Practices

It is the responsibility of the property owner and/or contractor to select, install and properly maintain appropriate BMPs. BMPs must be installed in accordance with an industry standard, or in accordance with the California General Permit for Construction Activities.

If a selected BMP is implemented but allows sediment or other pollutants to be discharged from the site; applicable City regulations will have been violated. Mere implementation of site management and Best Management Practices discussed below, and elsewhere, will not excuse a failure to meet the established performance standards. The City expects that owners/contractors will replace these non-compliant features with those that comply with City requirements, post haste.

Consistent with the California General Permit for Construction Activities, the City will require that both erosion and sediment control BMPs be installed and maintained for all grading and building projects.

Minimum Best Management Practices

Best Management Practices (BMPs) are contained in multiple sections of this element. This section includes the broad BMPs required in the NPDES Permit. Location of BMPs within this element does not imply greater or lesser significance. All BMPs listed in the preceding sections are required. For those BMPs determined to be not practicable, applicants shall be required to include in the SWPPP a detailed justification for the reasons why and identify which BMPs they have proposed as a substitute.

- ✓ Stabilize construction exit.
- ✓ Comply with the City of Salinas' grading and stormwater ordinances.
- ✓ Minimize grading during the wet season; If grading does occur during the wet season, implement additional BMPs for any rain event that may occur.
- ✓ Emphasize erosion prevention as the most important measure for keeping sediment on-site.
- ✓ Utilize sediment controls as a supplement to retaining sediment on-site.
- ✓ Minimize exposure times of disturbed bare soil areas.
- ✓ Permanently stabilize, and reseed disturbed soil areas, once grading is complete.
- ✓ Provide downslope sediment controls (e.g. sediment logs)
- ✓ Concrete washouts.
- ✓ Storm drain inlet protection.
- ✓ Protection of slopes and channels
- ✓ Good housekeeping practices (e.g. trash management, materials storage, etc.)
- ✓ Controlled erosion of slopes and channels by implementing an effective combination of erosion control (source control) and other BMPs as described in the *Erosion and Sediment Control Field Manual*³, *Construction Stormwater BMP Handbook*, or an equivalent manual.

³ California Regional Water Quality Control Board-San Francisco Bay Region, *Erosion and Sediment Control Field Manual*, August 2002

Additional generalized BMP categories are provided in the section that follows. These are included for reference. Additional reference information regarding Construction BMPs is available from these sources, and included here for reference: 1) *Caltrans Storm Water Quality Handbook*⁴, 2) the *Construction BMP Handbook*⁵, and 3) the *Construction Sites Storm Water Runoff Control* from U.S. EPA.⁶

Erosion Controls

Intended to stabilize slopes using vegetation, and/or physical stabilization techniques.

- ✓ Practice Site Management—clearing only those areas essential for conducting activities.
- ✓ Locate potential sources of pollutants away from water bodies and critical areas.
- ✓ Route construction traffic to avoid existing or newly planted vegetation.
- ✓ Protect natural vegetation with fencing, tree armoring, or other appropriate measures.
- ✓ Protect environmentally sensitive areas.
- ✓ Provide linings for urban runoff conveyance channels.
- ✓ Use check dams.
- ✓ Use sodding.

Sediment Controls

Intended to provide perimeter protection or exposed areas from sediment ingress/discharge in sheet flows.

- ✓ Use polymers to stabilize soils.
- ✓ Install sediment basins.
- ✓ Use modified risers and skimmers.
- ✓ Establish inlet protection.
- ✓ Use vegetative buffers.

Materials Management

Prevents waste, debris and materials stored or used on site from becoming transported downstream due to wind, rain, or runoff from the site.

- ✓ Develop and implement a material management program.
- ✓ Develop and implement a spill control plan.
- ✓ Stockpile topsoil and reapply as a soil amendment to reestablish vegetation.

5.7 Enforcement and Construction Regulations

The City of Salinas enforces its ordinances and permits at all construction and grading projects as necessary to maintain compliance with the City's NPDES Permit. Inspections of such projects include review of erosion control measures and Best Management Practices. Inspection results and findings are recorded and maintained by the City. Follow up inspections are performed, as necessary.

Violations of the City's ordinances and NPDES Permit are enforced using a progressively escalating procedure and include both monetary and non-monetary

⁴ California Department of Transportation, *Storm Water Quality Handbook*,

⁵ California Stormwater Quality Association, *Construction Stormwater BMP Handbook*; Available online at: www.cabmphandbooks.org/construction.asp#SWPPP.

⁶ Available online at: <http://www.cfpub.epa.gov/npdes/stormwater/measurablegoals/param4.cfm>

administrative, civil, and criminal remedies. If conditions pose a risk to the public or threaten resources, the City can take action to abate the risk. When the City is unsuccessful in obtaining compliance and has exhausted its administrative and legal remedies, it will provide notification to the CRWQCB. If it is determined that a site poses an immediate or significant threat to water quality, the City shall provide notification to the RWQCB within 5 days of such determination. For construction sites requiring coverage under the General Construction Permit, the City shall refer non-filers to the Regional Board within ten (10) business days of discovery. At a minimum, the City shall provide the following information: project location, develop, estimated project size, and records of communication with the developer regarding filing requirements. Such notification shall be followed by written notification with ten (10) days of the incident.

5.8 Training / Education

One of the most important factors determining whether erosion and sediment controls are properly selected installed and maintained is the knowledge and experience of the designer, contractor and City of Salinas staff member.

City of Salinas staff members in key positions are trained at two levels. First, staff members are provided a general orientation to the City's NPDES Permit requirements and construction related issues and procedures. Trainers discuss and demonstrate BMPs and their relative suitability under various conditions. Field training, using active construction sites, augments this general orientation. General training will be provided every 2 years. Staff will be provided with secondary training annually.

Secondary training will be provided to plan review and inspection staff. This more focused training will keep them current on professional practices and regulatory requirements. General Construction Permit requirements (including elements of an effective SWPPP, proven BMPs and their proper installation and maintenance, changing regulatory conditions, and inspection and enforcement procedures) will be reviewed. This training will take place as part of meetings on topical subjects, and through attendance at workshops and conferences. Staff meetings on a variety of topics will serve as debriefing and prospective sessions (regarding construction/grading, NPDES permit processing and project status reviews).

Once trained, key staff will serve as trainers for others. Lessons learned at workshops and outside training will be shared during staff meetings. City staff will produce and make available informational brochures on construction requirements, erosion and sediment control plans, and BMPs.

5.9 Program Effectiveness

Effectiveness measures will include a variety of direct and indirect measures. The City of Salinas' monitoring and water quality sampling program will serve as one measure of effectiveness. Sediment will be one of the key measurements taken in water quality samples. Correlation between actual measurements and potential sources of pollutants will be made. Monitoring results will be included in the City of Salinas' database as technology becomes available.

The City will also employ the following activities to measure program effectiveness:

1. Meeting NPDES Permit requirements
2. The quality of the City's training and public education program
 - a. Number of training activities per year
 - b. Percent of staff (involved with construction review/inspection) trained.
 - c. Staff acquisition of knowledge regarding regulations, procedures, and water resource protection concepts.
 - d. Qualifications of trainers, and staff comments on training
 - e. Relevance of the City web site regarding construction BMPs and requirements
 - f. Availability of information brochures and contractors' comments on them
 - g. Number of projects conditioned.
3. The quality of the SWPPP's, ESC plans, and BMPs submitted
4. The level of industry compliance

City staff, or an independent third party will assess these measurements by conducting quality and field assessments, as resources permit. Measurement of SWPPP's and ESC plans will be used to assess combined effectiveness of several nonstructural BMPs, including standards and specifications documents, staff training, industry education and City of Salinas plan checking procedures.

Public Education and Outreach

Element

6

"I have come to believe that a great teacher is a great artist and that there are as few as there are any other great artist. Teaching might even be the greatest of the arts since the medium is the human mind and spirit."

--John Steinbeck

6.1 Introduction

An informed public is essential if Salinas is to succeed with its efforts to protect water resources. Before people will change, they need to be aware of the issues. As successful corporate leaders across America have found without employee involvement there is no commitment. People need to be engaged.

If the City is to meet its Municipal Permit requirements, the public must participate. However, they need to understand why they should. The challenge, therefore, is to successfully convey what is needed, and why. The City's approach to carry its message is through forming public-private partnerships.

Education is an integral component of each element of this Plan. Each element commits to educating City staff and officials through focused training. Further, elements in this Plan foster continuous education as part of municipal management practices. Education also extends to the public. The City's NPDES Municipal Permit requires broad as well as specific educational outreach. Regional Water Quality Control Board requirements regarding education and outreach are summarized in Table 6.1.

Pollutants of concern addressed by this element include trash and debris, sediment, metals, nutrients, pesticides, fertilizers, vehicle waste products, organic carbon, oil and grease, coliform, and various non-rainwater discharges. For this permit term, the City will focus on reducing the amount of trash (including plastics), sediments, pesticides and fertilizers entering receiving waters.

Table 6.1 Municipal Permit Requirements—Public Education

Section	Requirement Summary	Municipal Permit Section
Entire	Implement a Public Outreach Program	4.VII
Entire	Implement Public Participation Program	4.VII
6.3 A	Storm water management planning to include: Advertising, Media Relations, PSAs “How to literature” distributed to targeted groups below:	4.VII
6.3	Municipal personnel	4.Vii.a.i.
	Construction Site Contractors	4.Vii.a.ii
	Industrial and Commercial owners/operators	4.VII.a.iii and 4.Vii.a.v
6.3 C & D	Residential—school children	4.V.II.a.v
6.3 D	Non-English speakers	4.V.II.a.vi
6.3 B	Quasi-governmental (educational institutions, water districts, sanitation etc.)	4.V.ii.a.vii
6.3 C	Residential - Auto repair - Auto washing - Home / garden - Household Haz. Mat. - Pet Waste - Green Waste - Other	4.V.II.b.i 4.V.II.b.ii 4.V.II.b.ii 4.V.II.b.iii 4.V.II.b.iv 4.V.II.b.v 4.V.II.b.vi
6.3 E	Stencil storm drain inlets/ Signage @ selected high use public access points	4.V.II.c
6.3	Media Impressions--525K minimum	4.V.II.d
6.3 D	Classroom education: 75% of 3-6 grades	4.V.II.e
6.3 C	Business Outreach:	4.V.II.f
6.3 C	Small Construction Outreach	4.V.II.g
6.3 F	Public Awareness Surveys	4.v.II.h
6.3 B	Annual Meetings	4.v.II.i

6.2 Goal

Salinas’ goal in the Public Education and Outreach Element is to promote behavioral changes through increased knowledge that lead to greater responsibility and protection of its water resources. Salinas intends to achieve this goal through three principal objectives or strategies. First, move towards an integrated and collaborative municipal approach. Plan implementation requires City staff in various disciplines to work together to address overlapping issues. Second, educate the public about local hydrology including natural water systems, the City’s storm drain system and how they affect their quality of life. Third, seek active partnerships and collaborators in protecting watershed health.

6.3 Public Outreach and Education Activities

“First they ignore you; then they laugh at you; then they fight you; then you succeed”

--Adapted from Mahatma Gandhi.

Salinas' public outreach education program focuses on identifying critical audiences and reinforcing its message with them. To establish a common base of knowledge in the first years of the permit term, the education program will necessarily be broad. In subsequent years, messages will be more focused.

Salinas will implement a four-pronged multi-media outreach campaign. Targeted audiences will include the general public, public agencies/quasi-governmental organizations, select community sectors, and primary schools. Themes will be shared across target audiences, and activities will overlap to achieve the desired repetition. To leverage the message and limited municipal resources, the City will partner extensively.

A. General Public

The City's annual outreach goal is a minimum of 525,000 impressions. To obtain this goal, Salinas will conduct a multi-media program that will consider public access television stations, radio, newsprint articles and advertisements, informational brochures, a speakers bureau, and information booths at events--including the Monterey County Fair, and the annual Environmental Health Coalition Conference. Other outreach efforts may include PSAs at movie theaters, messages on Monterey-Salinas Transit buses and/or informational displays at environmental resource locations. As they become available, Salinas will broadcast Internet stormwater webcasts as a public service at a downtown facility. Media will be selected based upon market strength, cost-effectiveness, available resources, and other factors. The media outreach campaign will begin in the second year of the permit term. Principal partners in this effort will include the business community, various media companies, County of Monterey Environmental Health Department, Monterey County Water Resources Agency, Monterey Aquarium, Stormwater Education Alliance (consortium of Monterey Peninsula municipal communities and school districts) Monterey Bay National Marine Sanctuary, non-governmental organizations, and other groups.

B. Public Agency/Quasi-Governmental

One key to the program success is a clear message. Clarity of message requires internal coordination. Internal stakeholders (city departments) will continue to participate in the City's Salinas NPDES Committee (Committee). Under the direction of the Maintenance Services Department, the Committee will meet to coordinate municipal efforts. Programs will be integrated between departments. Members of Committee will be responsible for ensuring that their respective departments are meeting Municipal Permit requirements regarding public education. For example, public outreach for illicit discharges will continue to reside with the City's Maintenance Services Development. Annually, the Maintenance Services Department will present a report to the City Council on water resource management program activities. Committee members will further act as liaison to appropriate governmental entities (City Council, Planning Commission,

Architectural Review Committee, Park's Commission, et al) and ensure that officials are knowledgeable of relevant Municipal Permit requirements.

With respect to external stakeholders, Salinas will continue to seek partnerships with its sister agencies and quasi-governmental entities to protect water resources. The City will build upon past municipal practices with the County of Monterey, the Salinas Valley Solid Waste Authority, California State University Monterey Bay, Salinas area school districts, agricultural community and others. Salinas will pursue formation of a more structured watershed group to address protecting water resources.

C. Target Audiences

Targeted audiences will be provided specific literature, programs and information all tailored to their specific needs. Salinas will conduct programs for the following audiences: development community (architects, designers, building contractors, et al), business community (commercial and industrial), residential community, and non-English speaking community.

Development Community

The City's Municipal Permit, issued in February 2005, contains changes that necessitated training of municipal staff and educating the public. New requirements for site planning and architectural design required that City staff become knowledgeable and share their knowledge with people involved in development. City staff members are becoming familiar with new site planning and development concepts. For example, several staff attended a workshop on Low Impact Development conducted by the RWQCB. City planning and other staff will be trained once the City adopts new development standards. This is anticipated in the later part of the second year, or early in the third year of the permit term. Once this occurs, they will conduct educational outreach for the development community. Discussions have already begun.

The City's Development and Engineering Services Department (DES) has made plans to prepare and distribute informational literature summarizing new regulations. DES has also begun training its management staff on LID and source control techniques. Additional changes to the City's development processes are contemplated in 2006 after the City adopts a new Zoning Code, Grading Ordinance, Stormwater Ordinance and Low Impact Development (LID) Design Standards. Adoption of any one of these laws would produce a need for training and outreach.

Once new grading and stormwater regulations are adopted and LID design standards are established, DES will also conduct an educational outreach program for residential and commercial designers, builders and contractors of small and large projects. This program will include providing information on three major topics: 1) statutes and regulations, including the Grading Ordinance, Stormwater Ordinance, Municipal Permit, this Plan's BMPs, LID Development Standards and Zoning Code Update governing the discharge of sediment and other pollutants from large and small construction sites; 2) guidance documents available for selecting and installing BMPs, such as those listed in a) City Development Design Standards, b) this Plan, c) documents referenced within this Plan—CASQA Handbook, CalTrans, EPA documents, Bay Area Stormwater Management Association (BASMA) *Start at the Source*; and 3) penalties for noncompliance.

Public outreach for industrial businesses has been in place since 1999. Salinas contracts with the Monterey Regional Water Pollution Control Agency (MRWPCA) to conduct its NPDES industrial operations outreach and inspection program. Industrial operations involved in the current program are primarily agricultural processing plants. All of these industries discharge into the City's Industrial Wastewater Processing Plant. Education programs are tied to the inspection process. To ensure regulations are being met, the City (through its consultant) makes "cold-calls" with industry. Inspectors inform and educate industry employees at the time of inspections and during site visits. To meet Municipal Permit requirements, public outreach for industry (including commercial businesses) will need to be expanded to include all of the industrial sites listed in the City's Commercial and Industrial Element. Educational outreach and inspections of the City's high priority commercial businesses will begin in the fourth year of the Municipal Permit. Until then, the City will develop educational materials and partnership programs with the Salinas Chamber of Commerce, Builders Exchange and other business groups.

Business Community

An educational program for restaurant employees is being prepared as part of the City's commercial and industrial program. A video, poster and other materials are under review. The City of Monterey has developed a bilingual restaurant video that addresses Best Management Practices first presented by the City of Los Angeles in poster format. Housekeeping BMPs, such as appropriate kitchen mat washing techniques are explained. When Salinas begins its commercial inspection program later in the permit term, it will use some of the educational materials currently under review. Education programs for restaurants and retail gasoline stations will part of the first wave of commercial education programs.

Residential Community

One commercial educational program underway in Salinas involves retail nurseries and residential gardeners. *Our Water, Our World* (OWOW) targets two of the most commonly used residential pesticides: chlorpyrifos (Dursban) and diazinon. These two pesticides occur in local runoff and wastewater treatment plant discharges. This program will place bi-lingual information in nurseries informing residents of environmentally safe gardening practices. Salinas is conducting the OWOW program in partnership with the Salinas Valley Solid Waste Authority and the non-profit Ecology Action. Salinas will provide a range of literature on healthy gardening practices, such as "The Healthy Home and Garden" and the OWOW series to nurseries for inclusion in their display racks. Materials for the OWOW series, restaurant information and other educational information will be produced in English and Spanish, as appropriate.

Latin Community

Salinas has a large Latin population. The City is over 62-percent Latin, with a segment that is non-English speaking. Spanish speaking residents fill vital jobs in agriculture, construction, food service and many other industries. They can become an invisible part of the City's fabric if efforts are not made to include them. In addition to the bilingual displays at the workplace, Salinas will produce general education and public outreach programs in Spanish, as well as in English. Spanish radio and local television access stations will be included in the mix of media programs that the City produces.

D. Classroom Education

Beginning in the second year of the permit term, Salinas will co-coordinate offering environmental education to 75 percent of school children grades 3 through 6. Programs will cover basic ecology and hydrology, such as the water cycle and include water pollution prevention practices. Training will be offered twice during the permit term. Instructors will integrate presentation into science-math core curriculum requirements to be readily acceptable by teachers. The program will be modeled after successful programs conducted in northern and central California, such as “Splash”, and Walt Disney Company’s Environmentality™. Hands-on learning will be emphasized. Students’ activities will serve as an outreach effort to involve entire Salinas families with community participation and hands-on learning. Well known children’s stories and beloved characters will introduce children to basic and more advanced lessons in the environment to basic environmental concepts. Salinas will partner with the Salinas Elementary Unified School District, area high schools, and other elementary school district’s to conduct the program. High school students will be enlisted to assist primary grade students in learning about local water resources. High school and elementary students will be involved in a hands-on way with fresh water ecology and hydrology. Programs in the field will introduce students to the “Wild Things in Your Backyard.”

E. Stenciling and Signage

Salinas will stencil its storm drain inlets in its civic center, near schools and other areas where high pedestrian traffic is present. Stencils will carry the message that storm drains flow to local creeks and the Monterey Bay. The City will partner with non-governmental organizations, high school and primary grade students, volunteers, and city staff in this program. Guided by a project manager, high school students will stencil downtown areas, as serve as mentors for primary graded students to stencil storm inlets at school locations. This will be a continuing program with the schools, as painted signs last about 2-years before needed to be re-painted. Stenciling is one of a series of hands-on efforts to introduce children to their environment. Sign painting will be conducted as part of other field programs, such as field water quality sampling. These programs are part of the larger perspective of getting children out in their environment and introducing them to Environmentality.™

F. Public Survey

Twice during the permit term, Salinas will conduct a public awareness survey. Surveys will reveal the public’s knowledge of local hydrology and measures to protect water quality. They will also be used to shape future programs. Surveys will also be used to increase public awareness. Surveys will be conducted in English and Spanish. Once returned and tabulated, surveys will also be used to evaluate program effectiveness. In the second year of the permit term, Salinas will conduct a survey as part of its information booth at the Monterey County Fair.

6.4 Program Effectiveness

The most comprehensive measure of program effectiveness is the City’s Public Awareness Surveys that will be conducted twice during the permit term. Measurements could be made prior to implementing specific educational efforts and again after they are completed. In addition, many of the programs, such as the school children education

program contain effectiveness measurements as part of the program. Other programs will be evaluated against the Municipal Permit requirements, or by quantitative and indirect means. For example, Salinas will measure public education programs for specific target sectors by determining the number of educational sessions provided, percent of the audience reached, and the success in conveying the information.

Commercial and Industrial Facilities



“Men do change, and change comes like the wind that ruffles the curtains at dawn, and it comes like the stealthy perfume of wildflowers hidden in the grass.”

--John Steinbeck

7.1 Introduction

Commercial and industrial operations are potential sources of watershed pollution in any urban area. As the hub of one of the world’s most productive agricultural regions, the City of Salinas is home to major agriculture-related industries that have potential to degrade water quality. The pollution threats from these operations have generally been addressed by the provision of municipal wastewater services and adherence to longstanding permit requirements. An equally large risk to water quality is represented by the collective impacts of the hundreds of smaller commercial and industrial operations dispersed throughout the City. This element identifies the City’s high-risk commercial and industrial operations and presents a strategy for reducing their potential to discharge pollutants into the watershed to the maximum extent practicable (MEP), thereby meeting the City’s Municipal Permit requirements. Table 7.1 summarizes Municipal Permit requirements and identifies where in this Plan the corresponding text may be found.

The City’s strategy for complying with its NPDES permit includes the following subject areas:

1. Pollutant source identification/inventorying of businesses
2. Establishment of Best Management Practices (BMPs)
3. Inspections/Enforcement Program
4. Training
5. Measurement of Program Effectiveness

The remainder of this element is organized around these five subject areas.

Table 7.1 Municipal Permit Requirements -		
Section	Commercial/Industrial Element Summary of Requirements	Permit Section
7.2.B	Identify and inventory all industrial facilities and activities	A4.IV.a
7.2.A	Identify and inventory all commercial facilities and activities	A4.IV.b
7.3	Establish minimum BMPs	A4.IV.c
Appendices D1-D5	Require BMPs for all high-risk commercial	A4.IV.d
7.3.C	Require BMPs for all industrial facilities	A4.IV.d
7.4.A	Inspect Industrial facilities and activities	A4.IV.e
7.4.A	Inspect commercial facilities and activities	A4.IV.f
7.4.B	Facilities with no exposure to storm water runoff	A4.IV.g ₁
7.4.B	Enforcement	A4.IV.g ₂
7.4.B	Process to refer non-filers to Regional Board	A4.IV.h
7.5	Training	A4.IV.i
7.6	Measurement of Program Effectiveness	

7.2 Pollutant Source Identification

The City has identified and inventoried all high-priority commercial facilities and all industrial facilities located within its municipal limits. Inventories are included in a separate City document. High-risk commercial inventory data includes 1) name of business, 2) address, and 3) the nature of the business, or activity that best reflects the principal facility product or service. The industrial inventory will be updated annually. The commercial inventory shall be updated by the third year of the permit term and annually thereafter. The City continuously assesses the storm water pollution characteristics of other types of businesses to ensure that its inventory is complete and appropriate.

A. High-risk Commercial Facilities

Within the category of commercial operations, the City has assigned a high-risk to five types of operations based on their potential to contribute to stormwater pollution. Best Management Practices have been tailored to the characteristics of these five categories. The five categories include:

1. Food Services – (299 facilities) Major water quality concerns associated with food service establishments include high water use, generation of solid waste, and wastewater discharge. Wastewater is disposed through drains leading to a sewer, or directly into storm water drains. Food service pollutants of concern (POCs) can include organic materials and trash (food wastes), bacteria, fats, oils, grease, toxic chemicals in cleaning products, disinfectants and pesticides.

2. Automotive Repair Facilities – (220 facilities) This category includes automotive repair facilities, aviation repair facilities, and all other engine repair facilities. POCs may include heavy metals, hydrocarbons, solvents, chlorinated compounds, acids, alkalis, trash and debris.
3. Retail Gasoline Outlets – (42 RGOs) This category includes commercial facilities that provide vehicle fueling services, including self-service facilities as well as those that provide a convenience store. Potential pollutant sources from this category can include fueling spills, air and water dispensing areas, outdoor cleaning of impervious surfaces, as well as dumpsters. Typical POC include heavy metals, hydrocarbons, toxic chemicals (benzene, toluene, xylene, MTBE), detergents, food wastes and trash.
4. Commercial Car Washes - (16 facilities) Major water quality issues derive from wastewater discharge to the City sewer system. Common POC produced by commercial car washers can include heavy metals, hydrocarbons, suspended solids, nutrients (detergents), and hazardous waste materials.
5. Mobile Cleaners – (48 commercial businesses categorized as carpet cleaners, upholstery, and dry cleaners). Typical pollutants produced by carpet cleaners can include toxic organic compounds and suspended solids.

B. Industrial Facilities

A wide variety in size and type of operations was found among the 166 industrial facilities that operate within the City of Salinas. These facilities have been inventoried in a separate document. Agricultural related industries predominate among the larger facilities. Most of the City's industrial sites are located near the City's southern boundary where the City's Industrial Waste Water Plant treats agricultural process-water discharged from these industries. All other industrial facilities throughout the City have their wastewater (sanitary sewage and any process water) treated by the Monterey Regional Water Pollution Control Agency at the regional wastewater plant in Marina.

Industrial facilities may produce a variety of non-storm water contaminants such as sediments, nutrients, metals, organics, toxicants, floatable materials, oxygen-demanding substances, oil and grease, bacteria, and pesticides.

7.3 Best Management Practices (BMPs)

The City has established two categories of BMPs. The first is a set of seven broad recommended strategies that, if incorporated into the procedures of each commercial and industrial operation in the City of Salinas, would go a long way towards preventing or reducing watershed pollution.

The second type of BMP includes sets of practices tailored to the specific categories of operation and activities. For commercial operations, Source Control BMPs have been established for the primary activities associated with each of the five categories of high-risk commercial facilities identified in Section 7.3.A. These are contained in Appendices D-1 through D-5. For industrial operations, three progressive levels of BMPs from the City's *Industrial Inspection Guidance Manual* are listed in 7.3C. These include Storm

Water Discharge Elimination BMPs, Source Control BMPs, and Treatment Control BMPs.

It is the responsibility of the owner/operators of high-risk commercial facilities and industrial facilities to achieve compliance with the NPDES storm water requirements through the effective implementation of the required BMPs. Each owner/operator is responsible for the effectiveness of BMPs and the facility's discharge to the storm drains.

A. Recommended Strategies

1. Use smaller quantities of toxic materials or substitute less toxic materials.
2. Minimize the volume of cleaning water to decrease wastewater.
3. Provide signage to remind or instruct employees and customers of proper procedures to eliminate waste.
4. Implement a spill response plan.
5. Segregate and recycle wastes.
6. Provide a schedule of preventive maintenance.
7. Train employees in pollution prevention.

B. Required BMPs for Commercial Facilities

In accordance with Section A4.IV.c of the City's Municipal Permit all commercial businesses designated as a high-risk ranking must implement business or activity specific BMPs.

Detailed source control BMPs for each of the five high-risk commercial facility types are presented in Appendices D-1 through D-5. With the exception of those identified as voluntary (*italicized*, and designated with an asterisk -*), each BMP is mandatory.

In cases where commercial facilities are found to not meet MEP during an inspection described in Section 7.5.A after applying BMPs for high-risk businesses, the City will require implementation of structural BMPs to meet MEP. Structural BMPs may include the following:

- Overhead coverage of outdoor work areas or chemical storage
- Retention ponds, basins, or surface impoundments that confine storm water to the site
- Berms and concrete swales or channels that divert run-on and runoff from pollutant sites
- Secondary containment structures
- Treatment controls (e.g. infiltration devices and oil/water separators)

C. Required BMPs for Industrial Facilities

Industrial facilities are required to comply with the BMPs in the order stated in the City's *Industrial Inspection Guidance Manual*, 2000. The manual describes a progression of three types of BMPs: Storm Water Discharge Elimination, Source Controls and Treatment Controls. If Discharge Elimination measures and Source Control BMPs are found unsuccessful in removing POC to MEP, Treatment Control BMPs may be required. Required industrial facilities BMPs include:

1. Storm Water Discharge Elimination BMPs

- a. Eliminate the discharge. Examples include recycling the discharge back into the system (closed loop system) and effective spill prevention and cleanup measures. However this BMP may not be possible for certain continuous discharges depending on the facility's operation.
- b. Minimize pollutant generation through effective BMPs (remove the pollutants from the discharge or reduce to insignificant levels)
- c. Re-route the discharge to the sanitary sewer system (illicit connections such as floor drains, wash waters, and other wastewaters). Wastewaters, such as wash waters and process waters, should be discharged to the sanitary sewer, if allowed by the Monterey Regional Water Pollution Control Agency (MRWPCA). The MRWPCA has specific requirements regarding allowable discharges to the sanitary sewer system, and some discharges may require pretreatment or have discharge limits on certain parameters.
- d. Implement structural or treatment controls that would treat the storm water before it enters the storm drain system. Temporary BMPs should be put in place to minimize pollutants until the permanent BMPs are in place.
- e. Obtain an individual NPDES permit from the Central Coast Regional Board for discharge to the storm drain system. This may be an unattractive option given the time and costs that would be required to obtain and implement an individual NPDES permit adopted by the Regional Board. The permit may also include requirements for reporting, treating, monitoring, and achieving discharge limits.

2. Source Control BMPs

A thorough description of the source control BMPs for the following activities can be found in Appendix A-9. Source Control BMPs are activity specific to provide the most effective means of controlling the pollutant of concern (POC).

- a. Vehicle & Equipment Fueling
- b. Vehicle & Equipment Washing and Steam Cleaning
- c. Vehicle & Equipment Maintenance and Repair
- d. Outdoor Loading & Unloading of Materials
- e. Outdoor Container Storage of Liquids
- f. Outdoor Process Equipment Operations and Maintenance
- g. Outdoor Storage of Raw Materials, Products, and Byproducts
- h. Waste Handling & Disposal
- i. Contaminated or Erodible Surface Areas
- j. Building and Grounds Maintenance
- k. Building Repair, Remodeling, and Construction
- l. Parking/Storage Area Maintenance

3. Treatment Control BMPs

Treatment control BMPs may be required if the previous two types of BMPs have not been successful in removing the POC to MEP.

- a. Infiltration
- b. Wet Ponds
- c. Constructed wetlands
- d. Biofilters
- e. Extended detention basins
- f. Media filtration (e.g., sand filters)
- g. Oil/water separators and water quality inlets

At a minimum, BMPs shall be implemented at each site by February 2009. The minimum BMPs shall be disseminated to each industrial or commercial facility by February 2008 and every year thereafter.

7.4 Inspections and Enforcement

The City's inspections and enforcement program ensures that the objectives of the City's NPDES compliance strategy are met. Inspectors will point out operational techniques and management practices that site managers may wish to consider along with required practices. Information on these management practices will be provided. Inspection and enforcement ensures fair and equitable treatment of all facility operators.

A. Inspections

The City shall inspect all industrial facilities and activities that discharge into the sanitary sewer service at least once each year. The City will prioritize a commercial facilities inspection list from the inventory of high-risk commercial facilities. Inspection priority will be based on facility type, location, compliance or compliance history, and other factors. The City will inspect a minimum of 20% of these facilities each year, commencing after the fourth year of the permit.

The City is currently exploring possible collaborations with the Monterey County Health Department's Hazardous Materials/Waste Division to inspect high-priority commercial businesses. Inspections for all industrial facilities discharging to the City's Industrial Waste Water Plant are being conducted. An inspection program is being expanded to include new industries as they come on-line.

Inspectors will be trained to readily identify deficiencies, assess potential impacts to receiving waters, and evaluate the appropriateness and effectiveness of deployed BMPs and SWPPPs, if applicable. The inspectors will ensure compliance with all local ordinances, using a checklist, or equivalent, and photographs to document the site and BMP conditions. Records of all inspections will be maintained a minimum of three years.

B. Enforcement

The City of Salinas enforces its ordinances and permits at all construction and grading projects as necessary to maintain compliance with the City's Municipal Permit. Inspections of such projects include review of erosion control measures and BMPs. Inspection results and findings are recorded and maintained by the City. Follow up inspections are performed, as necessary.

Violations of the City's ordinances and Municipal Permit are enforced using a progressively escalating procedure and include both monetary and non-monetary

administrative, civil, and criminal remedies. If conditions pose a risk to the public or threaten resources, the City can take action to abate the risk. When the City is unsuccessful in obtaining compliance and has exhausted its administrative and legal remedies, it will provide notification to the CRWQCB. Such notification shall be provided orally within 5 business days followed by written notification within ten (10) days of the incident. Additionally, the City shall refer non-filers to the Regional Board within ten (10) business days of discovery.

The City may remove facilities from the commercial and industrial inventory if an inspection reveals the facility's industrial or commercial processes meet the requirements for a conditional exclusion for "no exposure" under 40 CFR 122.2.

7.5 Training

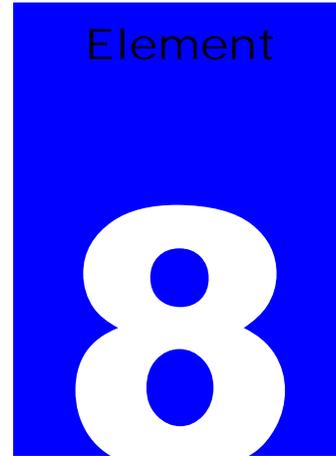
The City will provide annual training for employees in targeted positions (whose jobs or activities are engaged in industrial or commercial inspections) regarding the requirements of the City permit. This training shall include storm water BMP installation and maintenance techniques, good housekeeping measures, inspection procedures, enforcement procedures, and information on the requirements in the General Industrial Permit including elements in an effective SWPPP.

7.6 Program Effectiveness

Measures of program performance include the number of activities undertaken, the number or percentage of participation, and feedback from participating commercial and industrial operations. The measures will provide management data for making decisions on future program budgets and staffing needs.

Effectiveness measures can also assess the degree to which program activities reduce pollutants to the MEP or eliminate prohibited non-storm water discharges. Effectiveness will be measured on a limited number of inspections, observations, and/or monitoring. Inspection reports and feedback from inspectors will provide opportunities to evaluate actual improvements. Further compliance with the Municipal Permit will be the major benchmark measure of effectiveness.

Illicit Discharge And Illegal Connection



"It always seemed strange to me that the things we admire in men, kindness and generosity openness, honesty, understanding and feeling are the concomitants of failure in our system. And those traits we detest, sharpness, greed, acquisitiveness, meanness, egotism and self-interest are the traits of success. And while men admire the quality of the first, they love the produce of the second."

--John Steinbeck

8.1 Introduction

Illicit discharges and illegal connections represent the public's knowingly, or unknowingly discharging pollutants into the municipal storm sewer system. Principal remedies to address this matter include public education, verification through inspections and enforcement.

8.2 Goal

The City's goal is to prevent discharges with potential pollutants from entering the storm drain system. These discharges can be intentional or unintentional (accidental). The program will have two objectives: 1) prohibit non-storm water discharges and 2) investigate and remediate illicit discharges and improper disposal into the MS4.

The City intends to achieve its goal and meet its Municipal Permit requirements (Table 8.1) through a collaborative effort between several City departments and outside agencies. Partners include, but are not limited to, the Salinas Valley Solid Waste Authority (SVSWA), Household Hazardous Waste Facility, Monterey County Environmental Health Department, Salinas Police Department and the Salinas Fire Department.

Table 8.1 Permit Requirements – Illicit Discharges and Illegal Connections

Section	ID/IC Permit Requirements Summary	Permit Section
8.2	Implement ongoing ID/IC program	VI
8.2	Prohibit non-storm water discharges to the MS4	VI
8.3 A	Develop map	VI a.
8.3 A	Identify and map industrial facilities	VI a.
8.3 B	Continue to operate hotline telephone number	VI b.
8.3 B	Advertise hotline	VI b.
8.3 B	Maintain log of IDs and spill calls	VI b.
8.3 B	Train phone operators (emergency/ non-emergency procedures)	VI b.
8.3 C	Conduct drive-by inspections	VI c.
8.3 C	Maintain records of drive-by inspections	VI c.
8.3 C	Review and determine areas that shall have increased inspections	VI c.
8.3 D	Develop program for dry weather screening	VI d.
8.3 D	Develop procedures for dry weather screening	VI d.
8.3 D	Collect samples for Analysis in accordance with MPR, Attachment 5, Order R3-2004-0135	VI d. i
8.3 D	Conduct dry-weather screening at identified stations four times a year	VI d. ii
8.3 D	Record general information if flow or ponded runoff is observed	VI d. iii
8.3 D	Record all applicable observations if no flowing or ponded runoff	VI d. vi
8.3 D	Develop threshold levels for monitoring results	VI d. v
8.3 E	Respond to, contain, and clean up sewage and other spills	VI e.
8.3 E	Develop mechanism whereby notification of sewage spills from private laterals and failing sewage systems can be reported	VI e.
8.3 F	Implement progressive enforcement policy	VI g.
8.3 F	Use appropriate sanctions to ensure compliance	VI g.
8.3 G	Facilitate disposal of used oil and toxic materials	VI f.
8.3 G	Include additional educational activities	VI f.

8.3 Activities

To ensure the well being of the MS4 system, the City will employ various activities that will aid in the achievement of this goal. The following activities are tools by which the City hopes to have better control over pollutants that enter or could possibly enter the MS4.

A. Mapping

In order to identify priority areas for illicit discharges the City has mapped all inlets and outfalls and has updated its associated inventory. Using this mapping system and staff surveys, the City has identified priority areas for illicit discharge screening: concentrated areas of industrial and commercial facilities. The City has also mapped locations of industrial facilities within the City. By employing the land use maps to show inlet locations, the City is able to designate areas where illicit discharges and toxic spills can be contained.

B. Illicit Discharge Reporting System

The goal of the illicit discharge reporting system is to promote and facilitate the public's awareness and reporting of illicit discharges and disposal incidents. The program consists of a publicized hotline phone number to accept incoming calls from the public concerning possible illicit discharges and disposals. This telephone number is now listed in the phone book and on City public education materials. During the next printing of the local white/yellow page phone directory, the City will highlight the number as the Spill Reporting Hotline. The City now coordinates municipal response, follow-up, and documentation of such incidents through its Maintenance Service Department. Telephone operators and field personnel are trained in emergency and non-emergency procedures.

The City's Maintenance Department in conjunction with the Police Department shares handling the public's reporting of possible illicit discharges and illegal connections (ID/ICs). During regular business hours (Monday-Friday between 8:00 a.m. to 5:00 p.m.) calls are placed to the Maintenance Services personnel. After-hour calls are routed to the City's Police Department who then contacts standby trained Maintenance Service personnel.

The public can also give referrals about illicit discharges and illegal connections through other departments and agencies such as the Household Hazardous Waste Facility, Salinas Solid Waste Authority, and the Monterey County Environmental Health. The hotline and/or other numbers that the public can contact to report illicit discharges or illegal connections will be printed on all education, training, and public participation materials as well as printed on the phone book.

C. Illicit Discharge Identification

The City has an on-going program to identify illicit discharges through drive-by inspections. City maintenance personnel and/or industrial inspectors conduct inspections for major outfalls and other priority areas. City staff members drive through residential neighborhoods twice a month and weekly for commercial areas. These drive-by inspections are conducted in conjunction with the City's street sweeping program. The City maintains records of incidents reported by inspections along with follow-up actions. The City has identified areas where ID/IC's are most likely to occur.

D. Dry Weather Screening

The City conducts a dry-weather screening program consistent with required Municipal Permit procedures (Order R3-2004-0135). Dry-weather screening is conducted four times a year, at minimum. At least one of these dry weather analytical and field screening monitoring events is conducted between May 1st and September 30th of each year. Screening records are kept whether or not discharges were observed at the site. The City identifies potential discharges by:

- Abnormal water flows during the dry season
- Pungent odors

- Discoloration or oily substances in the water, or stains and waste residue in ditches, channels, or drain boxes

All samples collected are analyzed in accordance with Monitoring and Reporting Plan (MPR), Attachment 5; Order R3-2004-0135. Once collected, the City determines whether the (non-stormwater) discharge is a permitted one. Threshold levels for the amounts of pollutants and levels for monitoring results are determined by the City. If discharge does not exceed threshold levels, no further action will be taken. If the discharge is not a permitted discharge, the City will take corrective actions. Written procedures for dry weather analytical and field screening monitoring, including field observations, monitoring and analyses that is conducted during the dry season has been prepared and is contained within the City's Quality Assurance Program Plan (see Element 9).

E. Contain, Control, and Response to Spills

Dry-weather monitoring, drive-by inspections, or public reporting can lead to further investigation or result in immediate action. For example, when a spill occurs, the City's trained personnel respond. The *City of Salinas Spill Response Plan* contains strategies and identifies responsibilities to enable various departments to effectively work together. First responders are normally the City's Fire, and Maintenance Services Departments. Through its Spill Response Plan, staff training, internal communication protocols and its published telephone numbers, the City has developed mechanisms for public reporting, and rapid municipal staff response to spills and failed systems. When an illicit discharge, illegal connection, or emergency spill threatens the sanitary storm sewage system the City works with all appropriate departments, programs and agencies to ensure the protection of water quality.

Part of the City's spill response program includes prevention through public education and promotion of proper materials management.

F. Facilitate Disposal of Used Oil and Toxic Materials

Salinas has had an on-going partnership with the Salinas Valley Solid Waste Authority (SVSWA), and others to promote the proper handling and disposal of toxic materials and recycling of vehicle and other fluids. The City partners with the County of Monterey in its Used Oil and Filter Recycling Program. This program consists of drop-off centers, including residential, agricultural, and marina drop-off sites. The City also fosters proper disposal of toxins and other waste through the SVSWA's Household Hazardous Waste Collection Facility. The City plans to continue its public education program partnerships to inform the public of the proper management methods and disposal of used oil and other hazardous materials. Education includes distribution of brochures.

G. Enforcement

The City's inspections and enforcement program ensures that the objectives of the City's NPDES compliance strategy are met. Inspectors will point out operational techniques and management practices that site managers may wish to consider along with required practices. Information on these management practices will be provided. Inspection and enforcement ensures fair and equitable treatment of all facility operators.

8.4 Program Effectiveness

Effectiveness will be measured by two means: direct and indirect. The direct method is measured by conducting sampling and water quality testing. Indirect measures include tracking the number of reported spills, the number of discharge incidents, the quantity of pollutants that entered the City's sanitary storm sewer system, the number of educational material provided to the public, and compliance with the City's Municipal Permit's requirements.

Monitoring and Water Quality Testing



"I hate cameras. They are so much more sure than I am about everything."

---John Steinbeck

9.1 Introduction

Element 2: Water Resources contains a brief description of the City of Salinas' past water quality testing.

In June 2005, Salinas contracted preparation of its 2005-2009 water quality testing program plan. The City selected the firm, in part, because of their experience with local agricultural monitoring efforts, specifically the Agricultural Waiver Program required by the Regional Water Quality Control Board. The first step in developing the City's new water quality testing program was preparation of a Quality Assurance Program Plan (QAPP). Water quality testing has followed.

In accord with the City's Municipal Permit (Monitoring and Reporting Program Order No. R-3-2004-0135, Attachment 5), Salinas began its water quality testing in 2006 with dry season measurements. Wet season testing will follow consistent with the City's Municipal Permit and QAPP.

9.2 Quality Assurance Program Plan

The Quality Assurance Program Plan provides the City with a means to protect water resources through direct sampling of water quality, comparing results with benchmarks, and regional factors and recording trends. It is a principle tool in understanding the health of and managing the urban watershed within the City. The QAPP also includes provision to consider water quality outside of City limits. It contains a collaborative approach with regional stakeholders, (agricultural and others), in the Reclamation Ditch Watershed. This collaborative approach fosters the sharing of data with other stakeholders, greater efficiency and effectiveness in terms of data gathering and analysis, and continues the City's effort towards regional watershed management.

The program's goals are threefold: 1) to characterize water quality conditions to determine compliance, 2) to understand long-term water quality trends in urban watershed drainage areas, and 3) to meet requirements of the Regional Water Quality

Control Board's Monitoring and Reporting Program (Order No. R3-2004-0135). Goal attainment will be achieved by implementing six objectives. Primary objectives are summarized in the QAPP. In brief they include:

- A. Characterize urban runoff discharges;
- B. Assess the physical, chemical and biological impacts of urban runoff on receiving waters;
- C. Identify sources of pollutants;
- D. Assess the overall health and evaluate long-term trends in receiving water quality;
- E. Provide data necessary to assess compliance with the Order; and
- F. Measure and provide information to improve effectiveness of the City's Stormwater Management Plan, Urban Watershed Management Program and various BMPS;

Constituents to be monitored during this permit term and monitoring locations are summarized in Tables 9.1 and 9.2 respectively. The entire QAPP may be reviewed by going to : (<http://www.ci.salinass.ca.us/PubWrks/MtcSvc/StormWater-NPDES/StormWaterRegulations.html>). This is a large document of over 300 pages.

Table 9.1 Constituents to be Monitored: 2005-2009

Constituent	Wet Season Monitoring Frequency	Dry Season Monitoring Frequency
Field Observations		
Odor	Not required	Once per year
Oil sheen	Not required	Once per year
Color	Not required	Once per year
Conventional Water Quality		
Flow	Twice per year	Once per year
pH	Twice per year	Once per year
Conductivity	Twice per year	Once per year
Dissolved Oxygen	Twice per year	Once per year
Temperature	Twice per year	Once per year
Total Ammonia	Twice per year	Once per year
Orthophosphate as P	Twice per year	Once per year
Total chlorine	Twice per year	Once per year
Detergent	Twice per year	Once per year
Turbidity	Twice per year	Once per year
Nitrate as N	Twice per year	Not required
TOC	Twice per year	Not required
Total Dissolved Solids	Twice per year	Not required
Total copper and total zinc	Twice per year	Not required
Pathogens		
<i>E. coli</i>	Twice per year	Not required
Total and fecal coliform	Twice per year	Not required
Toxicity Test		
Chronic Water Column Toxicity	Twice per year	Twice per year
Sediment Toxicity	Annually during Spring (March 1 – April 30)	
Benthic Invertebrate Assessment	Annually during Spring (March 1 – April 30)	

Source: Pacific EcoRisk, *City of Salinas Storm Water Monitoring Program; Quality Assurance Project Plan August 2006*

Printed copies are also available for viewing between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday at the City’s Maintenance Services Department, 426 Work Street and at the City Clerk’s Office, City Hall, 200 Lincoln Avenue.

Table 9.2 Summary of Sampling Sites, Frequency and General Class of Parameters

Site Type and Location	Conventional Water Quality & Flow	Pathogens	Water Column Toxicity	Sediment Toxicity	Biological Assessment
Urban Discharge Sites¹					
Storm Drain Outfall #7	2 to 3	2	0	0	0
Storm Drain Outfall #19	2 to 3	2	0	0	0
Storm Drain Outfall #32	2 to 3	2	0	0	0
Storm Drain Outfall #52	2 to 3	2	0	0	0
City Background Sites					
Salinas River near Davis Road u/s City Outfall	3	2	4	1	0
Salinas Reclamation Canal u/s City Outfall	3	2	4	1	0
Agriculture Background Sites					
Gabilan Creek at Boronda Road	3	2	4	1	0
Natividad Creek u/s Salinas Reclamation Canal	3	2	4	1	0
Salinas Reclamation Canal at La Guardia ²	-	-	-	-	-
Receiving Water Sites					
Salinas River near Davis Road d/s City Outfall	3	2	4	1	1
Salinas Reclamation Canal d/s City Outfall	3	2	4	1	1
<i>Number of Sites</i>	10	10	6	6	2
<i>Additional Field QC Analyses³</i>	4	2	2	1	1
<i>Total Number of Samples</i>	30 to 34	22	26	7	3

1 - See sampling schedule on page 4 regarding sampling frequency for urban discharge sites.

2 - Salinas Reclamation Canal at La Guardia site receives mixture of urban runoff and ag runoff. The Cooperative Monitoring Program is currently discussing with the RWQCB the movement of this site further upstream. The Salinas Reclamation Canal u/s City Outfall site is ~100 meters downstream from the site at La Guardia and currently serves as a background site for this watershed.

3 - 1 in 20 samples requires a field split, and field blanks for conventional parameters are required during periodic field audits.

Source: Pacific EcoRisk, *City of Salinas Storm Water Monitoring Program; Quality Assurance Project Plan August 2006*

Quality Assurance Program Plan Link:

http://www.ci.salinas.ca.us/MtcSvc/StormWater-NPDES/SalinasSMP_QAPP.pdf



Program Funding and Legal Authority

Element

10

"If you are in trouble, or hurt or need—go to the poor people. They're the only ones that'll help – the only ones."

--John Steinbeck

10.1 Introduction

The City of Salinas is required to maintain a National Pollution Discharge Elimination System (NPDES) permit to allow discharge of stormwater from municipal separate storm sewer systems (MS4's) within the City's jurisdiction. The authority to impose Permit Orders to Salinas is based on the federal Clean Water Act, the Porter-Cologne Water Quality Control Act, and accompanying regulations. The purpose of the Storm Water Program is to prevent the discharge of pollutants to surface water bodies by preventing stormwater runoff from acting as a vehicle for pollution.

The City of Salinas Stormwater Management Plan (SWMP) is a comprehensive program comprised of various program elements and activities designed to reduce stormwater pollution to the maximum extent practicable (MEP) and eliminate prohibited non-stormwater discharges in accordance with federal and state laws and regulations. These laws and regulations are implemented through the City's NPDES municipal stormwater discharge permit. The City recognizes the importance of stormwater management and has allocated resources to administer and implement the SWMP.

In addition to the issuance of a new NPDES Permit, several other factors will affect how the City manages its stormwater program over the next permit term. These factors include changes to the physical size and condition of the City and its financial situation, as well as City land use and other policies.

10.2 Regulatory Background

In 1987, Congress amended the federal Clean Water Act (CWA) to require public agencies which serve urbanized areas with a population greater than 100,000 and other designated areas to obtain permits to discharge urban stormwater runoff from

municipally owned drainage facilities including streets, highways, storm drains, and flood control channels.¹ The CWA's 1987 amendments require municipalities to effectively prohibit non-stormwater discharges to municipal separate storm sewer systems and to implement controls to reduce pollutants in stormwater to the maximum extent practicable (MEP). The SWMP focuses on complying with these two essential requirements.

In November 1990, the United States Environmental Protection Agency (EPA) promulgated enforceable regulations establishing municipal stormwater permit requirements under its NPDES Program. In California, EPA has delegated its NPDES permitting authority to the State Water Resources Control Board (SWRCB). The SWRCB issues and enforces NPDES Permits through its nine California Regional Water Quality Control Boards (RWQCB). The California Water Code (Porter-Cologne Act) provides these agencies with the authority to coordinate and control water quality in waters of the State. This SWMP describes what will be accomplished and is consistent with the provisions of State law.

10.3 City of Salinas' Regulatory Authority

The City of Salinas is a charter city with corporate powers derived directly from the California Constitution. California Constitution, Article XI, §3(a). Through its charter, the City of Salinas has supremacy over municipal affairs subject only to conflicting provisions in the state or federal constitutions and preemptive state law on matters of statewide concern. Unless preempted by state legislation on matters of statewide concern, the City's laws will prevail over inconsistent state laws.²

Consistent with this authority, the City has adopted a zoning code to regulate land use and development, and a municipal code, which includes a Stormwater Ordinance and a Grading Ordinance. The City's Storm Water Ordinance and Grading Ordinance are currently being reviewed and updated to comply with the additional requirements imposed upon the City by the NPDES Program. Current drafts of these two ordinances can be found in Appendices C-2 and C-3. These two documents are scheduled for completion and adoption in the second year of the permit term.

A thorough discussion of the City's legal authority is provided in the City's statement of legal authority (Appendix C-1).

10.4 Program Funding

NPDES permit requirements and other mandates ratchet-up City obligations. Financial constraints limit the City's ability to maintain services at historic levels, much less to develop and implement new programs. Continued population growth fuels an increase in demand, while budget reductions continue to reduce municipal capabilities.

To meet the costs associated with this federally mandated program, in 1999, the City of Salinas implemented a citywide stormwater utility and imposed a "storm drainage fee" for those using the City's stormwater system. However, the City's method of assessing stormwater related activities was invalidated as violating Proposition 218. The court indicated the fee was a property-related fee under Proposition 218, and therefore the fee

¹ Federal Water Pollution Control Act, as amended by the Clean Water Act. Section 402(p).

² California Constitution Art. XI, §5(a).

was required to go through Proposition 218's notice and hearing procedures and its voter approval procedures. The Court of Appeal concluded that "management of storm water runoff from 'impervious' areas is a property-related service and accordingly the storm-drainage fee is subject to Proposition 218." To date, no other source of funding has replaced the lost revenue and the City continues to struggle to fund the mandates of the NPDES Program.

The Salinas City Council approved funding for a two-year budget to include operations and capital improvement projects. These budgets are summarized on the Table 10.1 *Storm Sewer (NPDES) Capital Projects and Operating Budgets*. Tables 10.2 and 10.3 provide additional information regarding operating budgets. The total amount authorized for these two fiscal years of the Permit is \$4,539,800. The funding sources are General Funds, Gas Tax, Development Impact Fees, the Sanitary Sewer Fund ("*Sewer Fund*") and Solid Waste Franchise Fees ("*3% Franchise Fee*") that are funds collected to implement Street Sweeping. The total funding represents a substantial investment of public funds to address stormwater activities, inclusive of capital projects, facility and construction inspection, program development, and maintenance activities.

Even with this level of investment in stormwater activities, additional resources will be necessary to meet the Permit requirements. To achieve the unfunded aspects of the program, the City must pursue other avenues to cut the program costs through collaborations with local stakeholders. Through this collaborative approach, the City hopes to maximize the funds available for activities not achievable by collaborative means. The combined benefits of a regional collaboration with stakeholders have the effect of reducing all participants' costs and affecting a broader coverage with the pollution prevention efforts. Salinas is committed to broadening the collaborative approach as the opportunities arise for a more effective program implementation.

Unless state legislation is changed, if the City is going to adequately fund the NPDES Program, it will need to take one or more of the following actions to institute a new stormwater fee: 1.) secure two-thirds approval of the general electorate; 2.) secure sufficient support of property owners; or 3.) develop a legally defensible alternate strategy. Meeting any of these requirements is a formidable challenge.

Table 10.1 Storm Sewer (NPDES) Capital Projects and Operating Budgets

<u>Number</u>	<u>Description</u>	<u>Fund Source</u>	<u>Fiscal Year 2005-06</u>	<u>Fiscal Year 2006-07</u>	<u>Fiscal Year 2007-08</u>	<u>Fiscal Year 2008-09</u>
<u>Capital Projects</u>						
9139	Storm Sewer Drainage Repairs	Gas Tax	550,000	250,000	250,000	250,000
9176	Master Storm Drain Plan Update	Gas Tax	50,000			
		Dev Fees	50,500			
9365	Street Sweepers Acquisition	Gas Tax		127,700	86,800	86,800
9436	Storm Water Monitoring NPDES	General Fund	359,500	200,000	350,000	400,000
		Storm Fees*	190,500	100,000		
9512	NPDES Public Education	Storm Fees*		100,000	150,000	
9735	Priority 1: Storm Sewer Line Repairs	Dev Fees	740,000	300,000		
Sub-Total Storm Sewer (NPDES): Capital Projects			1,940,500	1,077,700	836,800	736,800
<u>Operations and Maintenance</u>						
9348	WDR-Grease Trap Inspections	Sewer Fund		250,000	250,000	
5180	Storm Sewer Operating Budget	Gas Tax		535,000	520,000	730,000
		Storm Fees*		138,800	179,000	
Sub-Total Storm Sewer: Operating Budget				673,800	699,000	730,000
5185	Street Sweeping Operating Budget	3% Franchise Fee		435,000	440,000	650,000
		Gas Tax		162,800	180,800	
Sub-Total Street Sweeping Operating Budget				597,800	620,800	650,000
Grand Total Project, Program and Available Funds by Year			1,940,500	2,599,300	2,406,600	2,116,800

*Storm Fees are residual from City's prior Stormwater Utility Fee.

Note: NPDES related budgeted funds total \$9,063,200 over the Municipal Permit term (FY 2005/2006 to FY 2008/2009)

Table 10.2 NPDES Storm Drain Budget Fiscal Years 2004-2008

ENTERPRISE OPERATIONS					
NPDES Storm Drain Sewer		5180			
Operating Expenditures	04-05	05-06	06-07	07-08	
	Actual	Budget	Proposed	Proposed	
1. Employee Services	379,227	431,800	455,100	477,500	
2. Office Supplies & Materials	52	500	500	500	
3. Bldg/Veh/Equip Maint/Supplies	2,555	3,000	3,000	3,000	
4. Vehicle Fuels & Lubricants		3,000	3,000	3,000	
5. Small Tools & Equipment	357	500	500	500	
6. Clothing & Personal Equip	708	1,000	1,000	1,000	
7. Street Materials	1,205	2,500	2,500	2,500	
8. Special Dept Supplies	3,215	4,000	4,000	4,000	
9. Chemicals	77	1,100	1,100	1,100	
10. Communications	174	200	200	200	
11. Rents & Leases	924	4,000	4,000	4,000	
12. Contract Maintenance Services	4,067	24,235	26,100	26,100	
13. Professional Services	32,752	74,500	74,500	74,500	
14. Administration/Contingencies	55,421	87,700	85,300	87,800	
15. Training/Conferences/Meetings	1,731	3,000	5,000	5,000	
16. Membership & Dues		100	100	100	
17. Insurance and Bonds	4,200	6,900	7,900	8,200	
18. Refunds & Reimb Damages	16				
TOTAL	486,681	648,035	673,800	699,000	
Authorized Positions	5.5	5.5	5.5	5.5	
Funding Source					
Storm Sewer (NPDES) Fund					

Table 10.3 NPDES Street Sweeping Budget Fiscal Years 2004-2008

ENTERPRISE OPERATIONS				
NPDES Street Sweeping				5185
Operating Expenditures	04-05 Actual	05-06 Budget	06-07 Proposed	07-08 Proposed
1. Employee Services	355,029	378,200	391,600	412,500
2. Office Supplies & Materials	19	800	800	800
3. Bldg/Veh/Equip Maint/Supplies	60,907	73,223	73,000	73,000
4. Vehicle Fuels & Lubricants	21,954	24,100	30,800	30,800
5. Special Dept Supplies	1,291	1,500	1,500	1,500
6. Communications		800	800	800
7. Utilities	1,733	5,500	5,500	5,500
8. Contract Maintenance Services	16,842	26,000	26,000	26,000
9. Administration/Contingencies	58,838	62,400	59,300	61,000
10. Insurance and Bonds	12,125	7,900	8,500	8,900
TOTAL	528,738	580,423	597,800	620,800
Authorized Positions	4.5	4.5	4.5	4.5
Funding Source				
Storm Sewer (NPDES) Fund				