



City of Scottsdale

Municipal Separate Storm Sewer System



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Annual Report

August 26, 1999 to June 30, 2000

NPDES Permit Number AZS000020

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Acronyms and Abbreviations

ALERT	Automated Local Evaluation in Real Time
ARS	Arizona Revised Statutes
BMP	Best Management Practices
C.H.U.M.S	Customers Helping Us Maintain Scottsdale
CFR	Code of Federal Regulations
City	City of Scottsdale
Code	Scottsdale Revised Code
Draft Ordinance	The City's draft Storm Water Ordinance
EPA	United States Environmental Protection Agency
FCD	Flood Control District of Maricopa County
HHW	Household Hazardous Waste
HURF	Highway User Revenue Fund
IC/ ID	Illicit Discharge Identification and Elimination Program
IGA	Inter-Governmental Agreement
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
Part 2 Application	Part 2 NPDES Permit Application for Municipal Separate Storm Sewer Permit Application, City of Scottsdale, Arizona
QC	Quality Compliance
Tax Division	City Tax Division
TPD	Transportation Planning Division
USEPA	United States Environmental Protection Agency

EXECUTIVE SUMMARY

This Annual Report describes the requirements and programs implemented by the City of Scottsdale as part of its Storm Water Management Plan (SWMP) under the requirements of the National Pollutant Discharge Elimination System (NPDES). The 2000 Annual Report format responds to the specific requirements in the permit.

The City's SWMP meets or exceeds the requirements established in the following documents:

- 40 CFR 122.26
- NPDES Permit Number AZ S000020
- Part 2 NPDES Municipal Separate Sewer Permit Application (Woodward-Clyde, *Part 2 NPDES Municipal Separate Storm Sewer Permit Application, City of Scottsdale, Arizona, October 26, 1998*).

Chapter 1 provides a brief introduction and background to the purpose of the 2000 Storm Water Management Program.

Chapter 2 presents the Certification Statement for the period covered and the NPDES permit number.

Chapter 3 relates the current status of the SWMP implementation and the delegation of responsibilities. The City of Scottsdale reviewed and implemented the following items related to the City's SWMP: public agency activities to improve runoff from urban areas, education programs to communicate to City staff, the business community, and the public about how they can affect the quality of storm water discharges, industrial discharge requirements, which include the Multi-Sector General Permit (MSGP) and the Storm Water Pollution Prevention Plan (SWPPP), and illicit discharge identification and elimination, which comply with the field, regulatory, and education elements.

Chapter 4 describes the new SWMP monitoring sites for the City. The City did not collect any storm water samples during the reporting period because there was only one storm event, on August 27, 1999, which displayed rain gauge results that complied with the requirements for a representative storm as designated in the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Permit Application City of Scottsdale, Arizona, dated October 1998.

Chapter 5 discusses the effectiveness of the Storm Water Management Programs and Program Modifications.

Chapter 6 summarizes the City of Scottsdale's expenditures for the activities and monitoring programs related to the SWMP for the 1999/2000 fiscal year and estimated expenditures for 2000/2001 fiscal year.

1.0 INTRODUCTION

1.1 Purpose

This Annual Report identifies the progress of the various activities and programs implemented by the City of Scottsdale (henceforth referred to as the City) as proposed in the Part 2 National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Permit Application (Part 2 NPDES Permit Application), dated October 1998. (Woodward-Clyde, 1998) The annual reporting period is from August 26, 1999 to June 30, 2000. The Annual Report includes a summary of the activities associated with the stormwater management program, a description of the updated stormwater monitoring program, an assessment of the stormwater management program and a fiscal analysis for annual expenditures for 1999/2000 and 2000/2001. This report also includes the formalized City of Scottsdale Storm Water Management Plan, dated September 2000, which is presented in Appendix 1-1. The report is prepared pursuant to the requirements of the NPDES Permit Number AZS000020.

1.2 Background

On November 16, 1990, new federal regulations required municipalities to seek NPDES permits for stormwater discharges from their municipal separate storm sewer system (MS4). Under these regulations, Scottsdale, Arizona was classified as a medium-sized municipality with MS4, requiring a two-part application for an NPDES stormwater discharge permit to Region IX of the United States Environmental Agency (USEPA). The City submitted the Part I application in October of 1997 and the Part II application in October of 1998.

The Part 2 NPDES Permit Application for the City consisted of:

- review of potential pollutant sources,
- tabulated results from five monitoring stormwater outfall locations,
- estimates of pollutant loadings to receiving waters,
- proposed monitoring plans,
- and a management plan to incorporate new Best Management Plans (BMPs).

The new management plan also contained an assessment of the existing BMP's success and effectiveness for the overall management plan, and a financial and legal review of the implementation of the new management plan. The City is required to present an annual report, discussing and evaluating the status of the implementation as stated in the Part 2 NPDES Permit Application.

2.0 CERTIFICATION STATEMENT

CERTIFICATION STATEMENT

**MUNICIPAL SEPARATE STORM SEWER SYSTEM
ANNUAL REPORT
FOR THE YEAR ENDING JUNE 30, 2000**

NPDES Permit Holder: City of Scottsdale, Arizona

Period Covered by this report: August 26, 1999 to June 30, 2000

NPDES permit Number: AZS000020

Person to contact concerning information contained in this report:

William Erickson
NPDES Coordinator
Transportation Systems Department
7447 E. Indian School Rd., Suite 205
Scottsdale, AZ 85251

(480) 312-7652

As required by 40 C.F.R. Section 122.22 (b) (2)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or person who manage the system, or those persons directly responsible for gathering this information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

William Erickson, NPDES Coordinator
City of Scottsdale

Date

3.0 STATUS OF STORMWATER MANAGEMENT PROGRAM IMPLEMENTATION

3.1 Introduction and Stormwater Responsibilities

During the fiscal year 1999/2000, the City updated and amended the existing and proposed BMPs from the Part 2 NPDES Permit Application. This information is contained in the City of Scottsdale Storm Water Management Plan (RBF Consulting, *City of Scottsdale Storm Water Management Plan*, September 2000.). The following section presents a summary of the various responsibilities of the City related to the stormwater management program and how the City addressed these responsibilities.

3.2 Summary of Legal Authority

Regulations governing the preparation of Part 2 Applications for NPDES Municipal Separate Storm Sewer System (MS4) permits (40 CFR 122.26) require that applicants demonstrate adequate legal authority to:

- Control the quality of industrial stormwater discharges and the contribution of pollutants to the municipal storm sewer system by such discharges
- Prohibit illicit discharges to the municipal storm sewer
- Control spills, dumping, or disposal of materials other than stormwater to the municipal storm sewer
- Control through interagency agreements the contribution of pollutants from one portion of the municipal system to another
- Require compliance with conditions in ordinances or permits
- Carry out inspections, surveillance and monitoring necessary to determine compliance and non-compliance with permit conditions

On September 5, 2000, the City of Scottsdale's city council approved unanimously (7 to 0 vote) the required modifications indicated within the Part 2 NPDES Permit Application, and will be implemented officially on October 5, 2000. Appendix 3-2.1 contains a copy of the formal presentation made to the City Council by the Floodplain and Stormwater Management Section. A formal copy of the Ordinance is available in Appendix 2-1 of the Storm Water Management Plan. Appendix 2-1 of the SWMP contains the entire text of the Ordinance (No. 3333). The City has complied with the necessary legal authority. Appendix 3-2.2 is a letter from the Assistant City Attorney verifying the approval of the ordinance and its start date. The modifications will be placed within the Scottsdale Revised Code and Divisions.

Modifications include:

- **The title of Chapter 37** of the Scottsdale Revised Code was amended to read "Floodways, Floodplains and Regulation of Stormwater".
- **Sec. 37-17** was amended as suggested in the draft Stormwater Ordinance.
- **Sec. 37-42** was modified to include the requirement that prior to issuance of permits by the City for development, the developer must furnish the floodplain administrator and the project review manager with proof that the project is sufficiently safe from flooding and is designed to minimize flooding.

- **Sec. 37-44 and Sec. 37-45** were amended to include pipes, conduits and other forms of conveyance in addition to waterways as being regulated, and reference penalties and restitution for violators of the same.
- **Article III of Chapter 37** of the Scottsdale Revised Code and Divisions 1, 2 and 3 of Article III were created and were entitled as:

ARTICLE III: STORMWATER QUALITY PROTECTION

- **DIVISION 1: GENERALLY** – This will consist of Sec. 37-58 through 37-70.
- **DIVISION 2: VIOLATIONS** – This will consist of Sec. 37-71 through 37-71 through 37-85.
- **DIVISION 3: ABATEMENT OF VIOLATIONS** –This will consist of Sec. 37-86 through 37-100.
- **Sec. 37-58** was created to empower the City Manager with regulation of all activities in the public right-of-way and public storm drain system so as to reduce to the maximum extent possible the addition of pollutants to the stormwater that could cause a violation of either an NPDES or applicable water quality standard, or any activity that could affect the public storm drain system.
- **Sec. 37-59** was created to include definitions as proposed in the draft Stormwater Ordinance.
- **Sec. 37-60** was created to define a public nuisance with respect to the stormwater drain system.
- **Sec. 37-61** was created to prohibit use, handling, storage, spill, dump or discharge of stormwater, pollutants or significant materials in a manner that creates a public nuisance, discharge without valid permit of water into a public right-of-way or storm drain system any substance that is not entirely stormwater.
- **Sec. 37-62** was created to require a detailed stormwater management plan from any applicant for authorization, permission or permit for construction of improvements or other activities on nonresidential property.
- **Sec. 37-63** was created to empower the City Manager with the authority to enter any facility or property to determine compliance with this article or an NPDES permit.

3.3 Public Agency Activities

The various departments/divisions/sections within the City of Scottsdale infrastructure that have existing Best Management Practices and that require either improved or newly installed programs are as follows:

AGENCY/DEPARTMENT	Existing BMPs (# of BMPS)	Proposed BMP's (# of BMPs)
FIELD SERVICES	YES (4)	YES (1 Additional)
SOLID WASTE MANAGEMENT	YES (5)	YES (3 Additional)
DEVELOPMENT SERVICES	YES (12)	YES (13 Additional, 1 Improvement.)
INSPECTION SERVICES	YES (5)	YES (10 Additional)
ENVIRONMENTAL MANAGEMENT OFFICE/COMMUNICATIONS/PUBLIC AFFAIRS DIVISION	YES (5)	YES (3 Additional)
WATER AND WASTEWATER DEPARTMENT	YES (1)	YES (1 Additional)
COMMUNITY MAINTENANCE AND RECREATION DIVISION	YES (2)	YES (1 Additional)
CITY INDUSTRIAL FACILITIES (CORPORATION YARD/ WATER RECLAMATION FACILITIES/ AIRPORT)	YES (1)	YES (1 Additional)
TRANSPORTATION PLANNING DIVISION	YES (2)	YES (4 Additional)
LAW DIVISION	NO	YES (1 Additional)

Tables 3-1 A and B present a summary of the existing and proposed BMPs identified in the Part 2 NPDES Permit Application. These Tables also discuss how the City implemented the BMP during the reporting period. Changes to the original tables in the Part 2 NPDES Permit Application are indicated in bold.

3.3.1 Cleaning and Maintenance Activities

Existing BMPs include street sweeping (A1), Bike Path Cleaning, (A2) Spill/Accident Response (A3), Stormwater Conveyance System Cleaning and Maintenance (A4). Field Services Division is responsible for these activities. To maintain these existing BMPs, the City employs six motor sweeper operators, which operate three 2000-model Air Bears, one 1995-model Mobile Athey, one 1998-model Tymco Air A600 and one 1999-model Tymco A600. The city also employs one person, who is responsible for bike path maintenance.

The street sweeping schedules are as follows:

- Residential districts, once every three weeks
- Business districts, twice every week
- Main Arterial streets, once a week
- Bike paths, once a month.

Street sweeping spoils are temporarily stored at the satellite and the primary Corporation Yards. The spoils are then transported to the Salt River Landfill and

not to a Waste Transfer Station as mentioned in the Part 2 NPDES Permit Application.

In addition to the street sweeping maintenance, the City has also adopted the proposed BMP, "A5", which implements a specific, periodic schedule for drainage way cleaning and maintenance. Field Services has established this as current practice. They inspect the system draining into the Indian Bend Wash bimonthly. Refer to Appendix 3-3 for more information regarding street sweeping.

3.3.2 Solid Waste Management

The Solid Waste Management successfully maintained existing BMPs during the reporting period, including General Waste Collection (B1), Collection of "Green" Wastes and Bulk Items from Residential Properties (B2), Recycling (B3), Hazardous Waste collection (B4), Pet Waste Disposal Regulation and Education (B5).

In order to accomplish these tasks, the City owns and operates approximately 40 collection vehicles. The City collects and properly disposes wastes. Proper collection by the City will reduce the potential for these materials entering storm drain system and ultimately contaminating surface waters. The City provides weekly general waste collection in residential areas (approximately 65,000 single-family households) and provides monthly collection of uncontained green wastes and bulk items. In regards to Commercial/Business waste, the City allows private hauling companies to assist in waste collection at competitive rates. Solid Waste Management also provides Public Lands (for example, parks and downtown Scottsdale) with general waste collection using various waste receptacles. The Solid Waste Management Division utilizes the City's website to distribute information to the general public, in regards to collection. Along with general waste collection the City provides white goods (refrigerators, washers, etc.) removal and moving box pick-up to Scottsdale residents, by schedules pick-up only. Refer to Appendix 3-3 for website information.

The City currently runs a recycling program for residential households. The program has 98.6 % of Scottsdale residents participating, making it a successful program.

Recyclable materials, include:

- glass
- paper
- plastic
- aluminum

These materials are combined into specially marked bins and collected weekly by the City. The recyclables (approximately 20,000 tons annually) are then hauled to the Transfer Station or the recycler located within the City of Phoenix. Refer to Appendix 3-3 for website information regarding recyclables. A special annual

event, "Household Hazardous Waste" (HHW), has been dedicated to the sole collection of Hazardous Wastes for Scottsdale residents. The next proposed HHW event is scheduled for November 3rd and 4th, 2000 and will be conducted in collaboration with Motorola's System Solutions Group. Refer to Appendix 3-3.

The process is as follows:

- 1) Residents bring materials to the Corporation Yard or a designated Motorola facility.
- 2) Trained employees of the Solid Waste Management Division, Rural Metro and Laidlaw Environmental services collect the materials.
- 3) Materials are identified and marked with a RCRA EPA identification number (AZP 971 121 001). An EPA Uniform Hazardous Waste Manifest form is used to document the material. The previous event involved a total of 39 employees.

Pet waste disposal methods are outlined in the City Code (Scottsdale), Chapter 24, Section 24-16e. The Solid Waste Management and Code Enforcement Groups address issues associated with pet waste disposal by implementing and maintaining education/inspection enforcement programs. In off-leash dog parks located throughout the City, the City provides bags and trash receptacles, so that owners can collect and dispose of their animal's waste, immediately. Police officers and Maricopa County Animal Control are authorized to cite person/persons neglecting to collect and dispose of their pet's waste in the trash receptacles provided.

3.3.3 Plan Review for New Development and Significant Redevelopment

Quality Compliance Division (previously referred to as Development Services) employs 35 technical staff members to review final construction plans. After appropriate review and the QC Division has granted approval, City Council reviews and approves/disapproves final plats for construction activities disturbing more than one acre. Plans are reviewed against City, State, and Federal requirements for circulation, drainage, sewage, water, landscaping, and zoning. Throughout the past year, the existing BMPs have been updated and the City has implemented a majority of the proposed BMPs.

Existing BMPs (updates/modification) includes:

- The specification of Runoff Management Criteria (C2)
- The specification of Sump Pump Requirements (C7)
- The specification of Drainage Requirements for Fueling Stations (C8)
- The specification of Regulation and Grease Traps (C9)
- The Quality Compliance Division now reviews the number and placement of sediment and grease traps at commercial and industrial facilities.
- Maintenance of a Development Tracking System (C10)

The Proposed BMPs are as follows:

- Education of City Personnel (C12)
- Street Sweeping (C15)
- Stormwater System Maintenance (C16)
- Specification of Car Washing Requirements (C17)
- Specification of Waste Management Practices (C18)
- Specification of Materials Handling Practices at Industrial Facilities (C19)
- Maintenance of Permit Tracking System (C21)
- Specifications of Drainage Requirements for Equipment Washing and Maintenance (C23)
- Regulation of Source Controls (C24)

3.3.4 Public Education

Public Education is provided primarily through the City of Scottsdale's website at <http://www.ci.scottsdale.az.us>. The City of Scottsdale also provides information in regards to its various programs and services through mailers that are either sent to the Scottsdale's residents through utility bills or straight mailers. Refer to Appendix 3-3.13 and 3-3.14 for examples of the mailers that were sent during the reporting period.

3.3.5 Park and Greenbelt Maintenance, Fertilizer and Pesticide Management

The City contracts out a majority of operations that generate "green" waste in City parks. The only exception is "green" wastes generated during tree pruning. This waste is either hauled by a contracted hauling company or is chipped by the City for use as compost.

Application of herbicides, pesticides and chemical treatment (treatment for park lakes) is primarily contracted out to private companies. Surfactant herbicides are not used and oil-based herbicides are avoided. Pesticide application is limited to treatment of buildings, with the exception of the occasional application to limit ant populations.

3.3.6 BMPs for Flood Control Facilities

The Transportation Planning Division is responsible for flood control storage facilities. These facilities also treat stormwater by allowing suspended solids to settle before flow into the receiving waters. The City will also continue to review existing infrastructure during maintenance, repair and rehabilitation operations to assess the feasibility of installing trash booms where receiving waters may benefit and where technically feasible.

3.4 New Development and Significant Redevelopment

The City has several significant practices in place that address stormwater management issues. The existing BMPs that are applicable are:

- The specification of Drainage Design for Special Flood Concern Areas (C1)
- The specification of General Hydrology and Drainage Report Requirements (C3)
- The specification of Stormwater Discharge requirements (C4)
- The specification of Drainage Plan Requirements for subdivisions (C5)
- Guidance on Hydrology Drainage Report Requirements (C6)
- SWPPP/NOI (Notice of Intent) Requirement for Applicable Sites (C11)
(The confirmation of NOI for Federal Construction General NPDES Permit on sites disturbing \geq 5-acres. The City is requesting that a NOI and SWPPP be submitted for sites \geq 1-acre.
- The first ½ in. of runoff is required to be detained in extended detention basin if flood control detention is specified (Appendix 3-4, SWMP)

The City is in the process of evaluating the proposed BMPs, which are listed below:

- Specification of Storm Sewer Infrastructure Requirements (C12)
- Specification in Hydrology and Drainage Report (C13)
- Inspection of Maintenance of Site Access (C14)
- Permit Requirements for Applicable Sites (C20)
- Specification of Drainage Requirements for Industrial Facilities (C22)
- Specification of Stormwater Discharge requirements (C25)

It is expected that a comprehensive evaluation of these BMPs will take approximately six months to complete.

Regular maintenance of the storm drain system has been started by the City of Scottsdale and a maintenance tracking system is currently under development. The maintenance tracking system includes wireless connection to the City's GIS through an Internet browser. Storm drain facilities that have been inspected and do not require maintenance will be recorded with the inspection date. Facilities requiring maintenance will be logged for a maintenance crew's action. Consolidated data from the City's maintenance tracking system will be incorporated into the City's Stormwater Management System for annual reporting.

To organize data and facilitate reporting, an NPDES module has been incorporated into the City's computerized Stormwater Management System. The NPDES module includes data tables, data entry forms and reports for:

- Industrial Facilities
- Industrial On-site Inspection
- Industrial SWPPP Checklist
- Construction Inspection
- Construction SWPPP review
- Permit Classes
- Public Lands

- Storage Facilities
- Outfalls
- Dry Wells
- Constituent Loads
- Sample Data
- Storm drain system maintenance

Sample forms and additional discussion of the Stormwater Management Tracking System are found in the Draft City of Scottsdale Stormwater Management Plan.

3.5 Training and Public Education Program

3.5.1 Overview

Scottsdale currently supports a wide and relatively thorough public education effort in regards to stormwater. The City also provides training to their employees for various departments that are involved in preventing stormwater pollution.

3.5.2 Employee Training Program

The City conducted a one-half day workshop training on September 6, 2000 for all of the divisions, which will be effected by the Stormwater Management Program. Representatives from the various departments including the Transportation Planning Division, the Stormwater and Floodplain and Management Division, the Environmental Management Office/ Communication and Public Affairs Division, Quality Compliance Division (Development Services), and Field Services Department reviewed the BMPs identified in the Storm Water Management Plan and discussed appropriate ways to facilitate the implementation of the BMPs. The purpose of the workshop was to familiarize that City staff with the Storm Water Management Plan and ensure that the BMPs will be implemented in the field. In most cases the BMPs were already implemented or were in the final stages of implementation. Refer to Appendix 3-5.

The City provides training to the Parks and Recreation Division employees (approximately 50 people) concerning the following programs:

- appropriate use and application of herbicides and pesticides
- appropriate pest control applications
- appropriate pool chemical disposal methods

3.5.3 Public Education Program

The City has provided a variety of public outreach programs that educate all age groups of Scottsdale's residents. Excerpts of advertisements and announcements of the various programs are available in Appendix 3-3. These public outreach

programs affect all of the divisions within the city. With the use of the website, residents are allowed to view:

- Contact information for all of the City's divisions, including the Environmental Hot-Line
- City Ordinance
- City's Design Standards and Policies Manual for Drainage
- Access to review comments and approvals of private development projects
- Necessary glossaries and descriptions of terms and projects for general reading.
- "Waste Collection" schedules and the various "Waste" pick-ups that are available,
- Stormwater and Floodplain Management's "Homeowner's Guide to Drainage"
- Stormwater Quality Program
- "Ecosystem", Scottsdale's Environmental Management System's information page,
- Environmental—Community Outreach, children's programs using "Gecko Eco" to promote programs.
- Environmental Calendar Year Poster
- Environmental Awards and Incentives to Employees,
- Green Building Program, creating an environmentally friendly structure.
- Pollution Prevention Programs
- Information and discussion on Environmental Issues, particularly in Scottsdale.
- C.H.U.M.S.—Customers Helping Us Maintain Scottsdale, information page
- Tips on Water Conservation, with Rebate programs and landscaping and lawn maintenance workshops

3.6 Industrial Discharge Requirements

3.6.1 General Guidelines for Industrial Facilities

Although many of the source controls presented in relation to commercial and residential areas are also conducted in industrial areas, these areas present an additional risk towards stormwater quality based on the increased volume and hazards of the chemicals and processes used at industrial facilities. The City has developed several general guidelines and requirements to promote the reduction of stormwater pollution from industrial facilities. Industrial facility requirements include:

- plans must show that sump pumps for commercial/industrial facilities must be manually turned on to avoid contamination with stormwater;
- fueling stations must be separately located within a drainage area that is not connected to the municipal stormwater system.
- a 6-ft separation must be maintained between sanitary and storm sewer lines. No major landscaping features are permitted within 6 ft of water or sewer lines.

Additional recommended measures are presented in the Storm Water Management Plan. The City is now in the process of tracking all industrial facilities within its City limits, and reviewing the SWPPPs prepared by industrial dischargers under the multi-sector general permit. The City will also periodically inspect industrial facilities to ensure that the SWPPPs have been implemented and that a current NOI has been filed with the EPA.

3.6.2 Review for MSGP SWPPPs

Industrial areas in Scottsdale comprise approximately 2.5% of the City as a whole, or 7.4% of developed areas in the City; Scottsdale is not an industrial city. Subsequently, there are fewer BMPs that focus on industrial facilities, relative to residential areas. Industrial discharges within the City are required to obtain coverage under the Multi-sector General Permit (MSGP) issued by the EPA Region 9. The MSGP requires that the industrial dischargers develop a SWPPP and implement the program at each facility.

Several City departments, such as Water and Wastewater Department, Field Services, and Solid Waste Management interact with the industrial areas of the City to promote awareness of stormwater issues. Development Services reviews plans for industrial facilities. Tables 3-1 A and B present the BMPs identified in the Part 2 NPDES Permit Application, which are related to improving the quality of stormwater runoff from industrial areas to the maximum extent practicable. The following BMPs from the Part 2 NPDES Permit Application apply to the identification, control, inspection and monitoring of stormwater pollution from industrial facilities: C7-9, C19-24, F1-2, I1, J3 and J5.

The City Tax Division provided a database of business maintained for tax purposes; this database can be segregated based on SIC code. There are 726 industrial facilities in the City, which have one of the following Standard Industrial Codes (SIC codes): 10, 12-16, 20-45, 5015, 5093 and 5171. Current NPDES permit holders within the City's limits include: Rolamech, Calcomp, Microsemi, Federal Express, Motorola, Paradise Valley Water Company, Scottsdale Corporation Yard, Scottsdale Municipal Airport, and Gainey Ranch Water Reclamation Facility.

3.6.3 Special Requirements for Stormwater Discharge Associated with Industrial Activity from Facilities Subject to EPCRA Section 313 Requirements

EPCRA Section 313 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA)) requires operators of specific facilities that manufacture, import, process or otherwise use listed toxic chemicals to report releases of those chemicals to the environment on an annual basis. Listed toxic chemicals are defined the 40 CFR Part 372. The special requirements for facilities subject to reporting requirements under EPCRA Section 313 for a water priority chemical, involve additions to the baseline stormwater pollution prevention plans. Specifically, the SWPPP must address special provision for the storage, processing and handling of Section 313 water priority chemicals. The industrial facilities must also demonstrate that they are utilizing the Best Available Technology for controlling discharges of water priority chemicals into stormwater.

An exemption from the special requirements for Section 313 facilities will be granted if the facility can certify in the SWPPP that all water priority chemicals handled or used are gaseous or non-soluble liquids or solids at atmospheric pressure and temperature. Section 7.3 of the Storm Water Management Plan, describes the details of the requirements associated with industrial activity from facilities subject to EPCRA Section 313.

3.6.4 Inspections and Industrial Dischargers

The Water Resources Department of the City is responsible for reviewing SWPPP for industrial discharges and for performing annual inspections of MSGP NPDES Permit holders to establish if the site is complying with the SWPPP prepared for the site.

3.7 Illicit Connection/Discharge Identification and Elimination

3.7.1 Overview

Per the Storm Water Management Plan, illicit discharges and non-stormwater discharges are prohibited from entering into a stormwater system through illicit connections and/or illegal dumping. Illicit connections are described as a direct connections that enter into a storm drain allowing non-permissible discharges entering into a stormwater system. Illegal dumping is the discharge of pollutants into a stormwater system legal connection, such as catch basins, or by directly dumping the pollutants into any watercourse, natural or man-made (i.e. wash, creek, channel).

According to EPA regulations, inspection of outfalls, where wet and dry weather flow is present, is required. For more information in regards to the requirements for an illicit discharge and illegal dumping program, reference CFR 40, Part 122.26. The City has an elimination program that complies with the objectives of

the CFR 40, Part 122.26. It is called the Illicit Discharge Identification and Elimination Program (IC/ID).

3.7.2 Field Element

Various Divisions within the City of Scottsdale hold responsibility for creating and maintaining this IC/ID Program. They are as follows: Parks & Maintenance, TPD, Maricopa County Flood Control District, Code Enforcement Group of Community Services, Rural Metro, Fire Police Department and Laidlaw. Refer to the Storm Water Management Plan's Figure 8-1. The schematic describes the programs interaction and distributed responsibility. The City will conduct field inspection of the storm drain outfalls. A Field Inspection and Documentation Manual has been developed and is provided in the SWMP. Twenty percent of all major outfalls will be screened every year with the entire system screened in 5 years. The major outfalls and outfall locations have been previously identified. If a dry weather flow is observed, samples will be taken in accordance with the Field Sampling Guidelines provided in the SWMP.

3.7.3 Regulatory Element

Sec. 37-60 and Sec. 37-61 of the Stormwater Ordinance regulates illicit connection and illicit discharges. The EPA regulations can be found in CFR 40, Part 122.26.

3.7.4 Education Element

Environmental Management/Communications and Public Affairs Division is responsible for educating the public of hazardous dumping and pollution prevention, with the maintenance and use of the City's website. (E1 & E2) It is also responsible for a special Illegal Dumping Hotline—(480-994-7778) and also works with the Solid Waste Management group and private company environmental partners on HHW. (E4 & E5) Aside from the website, this City's division reaches the public through television advertising campaigns, newsletters, "Pride Newsletter", posters and banners. (E7) For example, topics such as lake water quality and where storm water discharges, helps to identify the importance of not dumping into drains (using stencil drain inlets) that discharge into lakes. (E8 & G3)

4.0 STORMWATER MONITORING PROGRAM

4.1 Description of Outfall Monitoring Program

The objectives of the monitoring program as detailed in the Part 2 NPDES Permit Application are:

- Generate representative data of stormwater quality for various land uses across the City
- Continue development of the stormwater quality database described in the Part 2 NPDES Permit Application and to support other regional databases
- Collect data for estimating pollutant loads and event mean concentrations
- Identify general stormwater quality concerns
- Provide data for use in developing and implementing control measures

A brief description of the monitoring program follows. More detailed information is available in the Part 2 NPDES Permit Application and the SWMP (Section 6).

The plan involves monitoring at 5 locations, each equipped with automatic sampling equipment. Five locations were originally proposed in the Part 2 NPDES Permit Application. The selection of these locations was based on land use and drainage characteristics. In addition, two alternative locations were also proposed in the event that any of the five primary locations were found unsuitable for monitoring. The Flood Control District (FCD) and the City of Scottsdale found several of the monitoring locations unsuitable and have adopted new monitoring locations. Ms. Julie Cox of the FCD of Maricopa County sent a letter to the City explaining the FCD concerns with some of the current monitoring stations; this letter is attached as Appendix 4-1. A copy of the map from the Part 2 NPDES Permit Application with the locations proposed therein is attached as Figure 4-1. The current stormwater monitoring locations are shown on Figure 4-2.

The monitoring system also includes rain gauges maintained by the FCD of Maricopa County as part of the Automated Local Evaluation in Real Time (ALERT) system in cooperation with the City's Transportation Planning Division.

The infrequency of storm events in Scottsdale coupled with high rates of infiltration and evapotranspiration limits the successful collection of samples during wet weather events. Two characteristic storms per year, one in the summer and one in the winter, were proposed to be monitored in the Part 2 NPDES application. The criteria for characteristic storms are summarized in Table 4-1.

4.2 Description of Monitoring Procedures

The FCD of Maricopa County will perform the stormwater sampling under an intergovernmental agreement (IGA) at five monitoring locations within the City. The FCD of Maricopa County uses the following 2 manuals as guidance documents for conducting stormwater sampling: Flood Control District Field Sampling Protocol Version 4.5, dated June 24, 1999 and Flood Control District Stormwater Quality Sampling Team

Field Manual, 1999. Rainfall measurements are conducted using telemetered rain gauges operated by the FCD. The nearest rain gage to the selected monitoring stations are shown in Figure 4-2. Real time and historic rainfall data are available by accessing Maricopa County's ALERT system web site.

The FCD and the City have jointly accepted the five permanent and two alternate sampling locations, shown in Figure 4-2. The equipment for these stations was purchased in June of 2000 and it is expected that these stations will become functional by November 2000.

4.3 Stormwater Monitoring Results

In the period referenced by this document, no characteristic storms were encountered. The only storm event that detected rain amounts appropriate for a qualifying storm was on August 27, 1999, and on this date only 5 out of 15 gauges recorded rain amounts that were representative of a qualifying storm event. This event occurred before sampling site selection was finalized. Table 4-2 summarizes data obtained from the ALERT system for storm events from August 1999 to September 2000. Since no stormwater samples were collected during the 1999/2000 reporting period, pollutant loading estimates could not be prepared using actual field results. Therefore, the pollutant loading estimates are based on modeling results as shown in Table 4-3. The modeling results for 1999 are similar to the 1998 data.

5.0 ASSESSMENT OF STORMWATER MANAGEMENT PROGRAM

Presently, there are two general methodologies for assessing the performance of the BMPs: conventional water quality monitoring and non-conventional monitoring. In July 1996, the Center for Watershed Protection issued a report on Environmental Indicators to Assess Stormwater Control Programs and Practices (R.A. Clayton and W.E. Brown, Silver Spring, MD). This report provides a set of methods to assess the effectiveness of a stormwater management program. Indicator categories include 1. Conventional indicators, such as water quality indicators, physical and hydrological indicators, and biological indicators, and 2. non-conventional indicators, such as program indicators, site indicators and social indicators.

5.1 Conventional Indicators

Scottsdale averages slightly over seven inches of annual rainfall. During the 1999/2000 reporting period, the City of Scottsdale did not collect stormwater samples from their stormwater monitoring locations due to the lack of rainfall during this time period. Therefore, this report does not include any water quality data or pollutant-loading estimates based on stormwater sampling data from the 1999/2000 reporting year. However, annual pollutant loading estimates were calculated in accordance with the formulas contained in Statistical Summary of Selected Physical, Chemical, and Microbial Characteristics, and Estimates of Constituent Loads in Urban Stormwater, Maricopa County Arizona (USGS-Water Resource Investigation Report 94-4240) by KVL Consultants. Table 4-1 presents a summary of the Annual Pollutant Loadings for 1998 (measured & modeled) and for 1999 (modeled only). The modeling results are based on an average rainfall of 7.1 inches. The 1998 measured results were all lower than the modeling results, except for copper, cadmium and zinc.

5.2 Non-conventional Indicators

The non-conventional indicators used by the City include:

- Identifying and correcting illicit connections
- Implementing and maintaining BMPs
- Social indicators

The illicit discharge identification and elimination program includes 3 elements: 1. Field Element, 2. Regulatory Element, and 3. Education Element. The Parks and Maintenance Department is responsible for illicit discharge screening. If dry weather flow is observed, the Flood Control District of Maricopa County and the Flood Plain and Stormwater Management Division of the City will investigate the type and source of flow. If the flow is hazardous, the Rural Metro Fire Department will be the first response team on site. If clean up is required, the City will contract this work with a private remediation contractor.

The City has developed an inspection program for the outfalls identified in the Part 2 NPDES Permit Application. Table 8-1 of the Storm Water Management Plan shows the schedule for implementing the inspection program for the outfalls. During the 1999/2000

reporting period, the City notified EPA Region 9 concerning 2 illicit discharges. One of the illicit discharges was an oil release caused by a disgruntled employee and the second was a sanitary sewer break. The City responded quickly to contain and treat the sanitary sewer situation according to the BMPs in the Part 2 NPDES Permit Application and according to the Storm Water Management Plan. The EPA informed the City that they were very pleased to observe their quick response to remediate the situation.

The regulatory element includes the City's Municipal Code, which prohibits illicit discharges or illegal connections to the storm drain conveyance system. The Stormwater Enforcement Officer will take necessary action to effectively implement and enforce the City code.

The education element includes several different programs, which promote public reporting of illicit discharge spills. These programs include: the Environmental Management Office telephone hotline number, public education through information pamphlets and extensive exposure on television channel 11, student awareness programs, stenciling of storm drain inlets (future), storm drain surveillance and alternative disposal program for household hazardous wastes. During the 1999/2000 reporting period the City performed employee-training programs for pesticide application and for pest control.

The Flood Plain and Stormwater Management Division is responsible for implementing and maintaining the BMPs identified in the Storm Water Management Plan. This Division works with the various Departments within the City to ensure that those departments are implementing those BMPs, which are relevant to their department. Tables 3-1 A and B list the BMPs identified in the Part 2 NPDES Permit application and also provide information concerning the status of the BMP during the 1999/2000 reporting period. The Storm Water Management Plan identifies the various aspects of the stormwater management program including which departments are responsible for the various BMPs previously presented in the Part 2 NPDES Permit Application and identifies additional BMPs.

Social indicators focus on the following types of programs: awareness of where stormwater goes; the seriousness of storm drain pollution and what contributes to this type of pollution; waste disposal methods; and illegal dumping reporting.

5.3 Program Modifications

In addition to the BMPs listed in the Part 2 NPDES Permit Application, the Storm Water Management Plan recommended additional BMPs, which are summarized in Table 5-1. The City has reviewed and accepted the BMPs identified in the Storm Water Management Plan and is in the process of implementing these BMPs.

6. FISCAL ANALYSIS

The Fiscal Analysis section presents a summary of the annual expenditures for the fiscal year 1999/2000 and the estimated expenditures for 2000/2001 for the Stormwater Management Program. Annual fiscal analyses are requirements of both the federal regulations and the NPDES Permits.

“Capital costs” refer to expenditures for land, equipment and structures. “Operations and Maintenance costs” refer to normal costs of operation, including the cost of maintaining equipment and facilities in proper working order.

Because several of the BMPs in the Management Program were non-structural in nature and focused more upon source control and maintenance activities than capital cost-intensive structural controls, identification of resources was not straightforward. The uncertainty associated with the projected costs is due to the following reasons:

- Lack of historical information and experience with costs for such programs
- Uncertainty in the level of effort necessary to make a program effective (it is extremely difficult to assess *a priori* the effectiveness of many programs, particularly education-oriented programs, and thus the required level of effort for their effective implementation)
- Public response to BMP programs
- Vicissitudes of society and nature which influence pollutant generation, which in turn may impact upon activities necessary for effective implementation of various elements of the Management Program

The City's fiscal year currently extends from July 1 to June 30.

The fiscal analysis is intended for guidance purposes only; the City does not propose it as a specific commitment of expenditures. The City's commitment is to the implementation of the Management Program. The information is presented as a guide for budgetary planning.

6.1 FY 1999/2000 Annual Expenditures

Table 6-1 presents a summary of the actual expenditures for the programs identified in the Stormwater Management Program presented in the Part 2 NPDES Municipal Separate Storm Sewer Permit Application, for the City of Scottsdale, 1998. The total expended in fiscal year 1999/2000 was \$22,616,500. Table 6-1 also presents data from the previous fiscal year, 1998/1999.

BMP funding sections are divided based on the department/division responsible for BMP implementation:

- Field Services
- Solid Waste Management
- Development Services
- Inspection Services
- Communications and Public Affairs Division/Environmental Management Office

- Water Resources Department
- Community Maintenance and Recreation Division
- Legal Department
- Environmental Planning and Design Office
- Capital Project Management Division
- City Industrial Facilities
- Municipal Services Department
- Transportation Planning Division
- Flood Control District of Maricopa County
- Rural Metro Fire Department

6.2 Estimate Expenditures FY 2000/2001

Table 6-1 presents the estimated expenditures for the fiscal year 2000/2001. The City of Scottsdale estimated expenditures for 2000/2001 fiscal year will be \$24,878,450 for Stormwater Management activities.

6.3 Funding Sources

Funding sources for the Stormwater Management Program include the Highway User Revenue Fund (HURF), User Fees, and the General Fund. The source of funding for the HURF is a State gas tax, which is allocated to the cities based on population. The user of the particular service pays for user fees; e.g. the solid waste customers pay solid waste user fees. The primary funding sources for the General Fund includes: City sales tax, state shared sales tax, state shared income tax, property taxes, permit fees and recreational fees.