



STORM WATER MANAGEMENT PLAN

CITY OF LITCHFIELD PARK



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TABLE OF CONTENTS

1.	Overview of Storm Water Management Program	1
1.1	Introduction.....	1
1.2	Organization of SWMP.....	2
1.3	Permit, Laws, and Regulations.....	3
1.4	Facilities Covered.....	4
1.5	Small MS4 General Permit.....	4
2.	Program Management	5
2.1	Overview.....	5
2.2	Goals and Policy.....	5
2.3	Discussion of Local Receiving Waters.....	6
2.4	Storm Water Management Responsibilities.....	6
2.5	Legal Authority and Enforcement.....	7
3.	Public Education and Outreach	9
3.1	Overview.....	9
3.2	Target Audiences.....	9
3.2.1	Residents.....	9
3.2.2	Developers.....	10
3.2.3	City Staff.....	10
3.2.4	Business Education Program.....	10
3.2.5	Schools.....	11
3.3	Public Education Program.....	11
3.4	Selected BMP's.....	11
3.4.1	Storm Water Pollution Prevention Brochure.....	12
3.4.2	Business Education Program.....	12
3.4.3	Water Conservation Practices for Homeowners.....	13
3.4.4	Storm Water Webpage.....	13
3.4.5	Implementation Goals.....	13
4.	Public Participation/Involvement	15
4.1	Overview.....	15
4.2	Selected BMP's.....	15
4.2.1	Community Storm Water Hotline.....	16
4.2.2	Public Information Meeting.....	16
4.2.3	Volunteer Activities.....	17
4.2.4	Web Page.....	17
4.3	Implementation Goals.....	17
5.	Illicit Discharge Detection and Elimination	19
5.1	Overview.....	19
5.2	Selected BMP's.....	20
5.2.1	Identify Illicit Connections.....	20
5.2.2	Map Storm Drain System.....	21
5.2.3	Illegal Dumping and Discharge Ordinance.....	21
5.3	Implementation Goals.....	22
6.	Construction Site Storm Water Runoff Control	23
6.1	Overview.....	24
6.2	SWPPP Requirement.....	24
6.3	Selected BMP's.....	25
6.3.1	SWPPP Checklist.....	26

6.3.2	Construction Runoff Control Ordinance	26
6.3.3	Construction Plan and SWPPP Review	26
6.3.4	Construction Site Inspections	27
6.3.5	Land Grading Plans	27
6.4	Implementation Goals	28
7.	Post-Construction Runoff Control	30
7.1	Overview	30
7.2	Selected BMP's	30
7.2.1	Detention/Retention/Infiltration Basins Maintenance	31
7.2.2	Post-Construction Ordinance	31
7.2.3	Developer Education Program	32
7.2.4	Dry Well Management	32
7.2.5	Catch Basin Maintenance	33
7.3	Selected BMP's	33
8.	Pollution Prevention/Good Housekeeping for Municipal Operations	35
8.1	Overview	35
8.2	Selected BMP's	35
8.2.1	Municipal Training Program	35
8.2.2	Vehicle Washing	35
8.2.3	Street Sweeping	36
8.2.4	Debris Disposal	36
8.3	Implementation Goals	36

Table of Figures

TABLE 2-1 BENEFICIAL USES OF RECEIVING WATERS IN LITCHFIELD PARK.....	6
TABLE 2-2 RESPONSIBLE DEPARTMENTS AND PARTIES.....	7
TABLE 3-1 BMPs FOR PUBLIC EDUCATION MEASURE.....	11
TABLE 3-2 PUBLIC EDUCATION MEASURABLE GOALS.....	14
TABLE 4-1 PUBLIC PARTICIPATION/INVOLVEMENT BMPs.....	16
TABLE 4-2 PUBLIC PARTICIPATION/INVOLVEMENT MEASURABLE GOALS.....	17
TABLE 5-1 BMPs FOR ILLICIT DISCHARGE DETECTION AND ELIMINATION.....	20
TABLE 5-2 ILLICIT DISCHARGE DETECTION AND ELIMINATION MEASURABLE GOALS.....	22
TABLE 6-1 CONSTRUCTION SITE STORM WATER RUNOFF CONTROL BMPs.....	25
TABLE 6-2 CONSTRUCTION SITE STORM WATER RUNOFF CONTROL MEASURABLE GOALS.....	28
TABLE 7-1 POST-CONSTRUCTION RUNOFF CONTROL BMPs.....	31
TABLE 7-2 POST-CONSTRUCTION RUNOFF CONTROL MEASURABLE GOALS.....	33
TABLE 8-2 POLLUTION PREVENTION FOR MUNICIPAL OPERATIONS MEASURABLE GOALS.....	36

1. Overview of Storm Water Management Program

1.1 Introduction

Pollution of surface water bodies is a large problem, which affects the nation's communities. According to the 1996 National Water Quality Inventory, approximately 40 percent of surveyed U.S. water bodies are impaired and do not meet water quality standards. Polluted storm water runoff is believed to be one of the leading sources of this contamination. In response to the concern over pollution in America's waterways, Congress passed the Clean Water Act (CWA) in 1972. The CWA is the primary federal law that protects our waters. Polluted storm water runoff was addressed specifically under the CWA by a two-phase program that relies on the National Pollutant Discharge Elimination System (NPDES) permit coverage. The two phases of the AZPDES storm water program are known as Phase I and Phase II.

In 1990, the Environmental Protection Agency (EPA) implemented Phase I of the NPDES storm water program under the CWA. Phase I of the storm water program addresses the prevention of pollution from storm water runoff from three main categories:

- (1)** "medium" and "large" municipal separate storm sewer systems (MS4s) serving populations over 100,000,
- (2)** construction activities disturbing 5 acres of land or greater,
- (3)** 10 specific categories of industrial activities.

In order to expand the protection of water bodies and promote cleaner water, the Phase II Final Rule was published in 40 CFR on December 8, 1999. This rule extends the NPDES permit coverage to include small MS4s serving urbanized areas (those serving populations less than 100,000) as well as construction sites from 1 to 5 acres. The City of Litchfield Park was listed in Appendix 6 to the Preamble of 40 CFR, Federal Register Vol. 64, No. 235 p. 68812, as a governmental entity located fully or partially within an urbanized area, which is required to comply with the Phase II requirements. In December, 2002, ADEQ received authority from the EPA to implement the Arizona Pollution Discharge Elimination System (AZPDES) Program. As such, the ADEQ is the permitting authority.

The goals of the Phase II program are similar to the Phase I program, which are to reduce the discharge of pollutants to the maximum extent practicable (MEP), protect water quality, and satisfy the water quality requirements of the Clean Water Act. In order to facilitate the development of the Phase II program, six measures have been defined by the EPA which, when addressed, are believed to reduce the discharge of pollutants. These six measures are known as the six minimum control measures. The specific methods of addressing these six minimum control measures through the selection of appropriate Best Management Practices (BMP's) have been tailored to the unique conditions found in the City of Litchfield Park.

This Storm Water Management Plan (SWMP) has been developed by the City of Litchfield Park (City) in order to fulfill the requirements for compliance with the Arizona Pollution Discharge Elimination System (AZPDES) Phase II storm water permit application. This SWMP addresses the six minimum control measures established by the EPA:

1. Public education and outreach on storm water impacts Public participation/involvement
2. Public participation/involvement
3. Illicit discharge detection and elimination
4. Construction site storm water runoff control
5. Post-construction storm water management in new development and redevelopment
6. Pollution prevention/good housekeeping for municipal operations:

For each of the six measures outlined above, this SWMP identifies the BMP's that will be implemented by the City. Each of the BMP's adopted in this plan is accompanied by measurable goals in order to assess their effectiveness and level of implementation. An implementation schedule is provided for each of the BMP'S as well as the names of those persons within the City who will be responsible for implementing them.

The intent of this SWMP, when implemented, is to reduce the discharge of pollutants from the City's municipal separate storm sewer system (MS4) to the "maximum extent practicable" (MEP). The City will be responsible for the administration and implementation of this SWMP and will also play a regulatory role at construction sites within the City.

In order to assess the effectiveness of the SWMP, as well as comply with the legal requirements of the program, the City will submit an annual report each year during the first 5-year permit term. The annual report will provide a detailed inventory of each BMP, progress on associated measurable goals, as well as a schedule of implementation will be provided.

1.2 Organization of SWMP

This SWMP is divided into eight sections with associated appendices, as applicable. The sections are briefly described below:

Section 1. Overview of Storm Water Management Plan - Background information on the requirements of the AZPDES system and the organization of the SWMP.

Section 2. Program Management - The goals of the City's storm water program, the responsibilities of the City, developers, corporations and individuals, and the legal authority and enforcement options available to the City.

Section 3. Public Education and Outreach - The purpose of this program is to disseminate information on the importance of clean storm water runoff to the general public.

Section 4. Public Participation and Involvement - This section outlines the City's objectives for involving the public in the design of the program and how they intend to involve the public during its implementation.

Section 5. Illicit Discharge Detection and Elimination - This section describes the City's program for regulating non-storm water discharges into the MS4, the methods for detecting non-storm water discharges, and the education of the public with concentration on the hazards of illegal dumping.

Section 6. Construction Site Storm Water Runoff Control - The program set forth by the City to reduce polluted storm water runoff from construction sites one acre to five acres is described along with the procedures for review, inspection, and enforcement are set forth.

Section 7. Post-Construction Runoff Control - This section identifies programs to be carried out by the City to reduce pollution from post- construction and redevelopment areas, including both structural and nonstructural BMP'S, maintenance of infrastructure, and enforcement of regulations. This section addresses the following types of construction:

- **Residential-** Individual, Subdivision, Master Planned Community
- **Commercial-** Small (1 - 4.99 acres), Medium (5.0 - 10 acres), and Large (> 10 acres)

Section 8. Pollution Prevention / Good Housekeeping - The City's program for reducing pollution from routine municipal operations is contained in this section. This section also outlines the City's employee training programs for storm water pollution prevention.

Some sections may have one or more appendices in support of the material presented in the text. The appendices will also include the forms needed to comply with the small construction general permit once they are released.

1.3 Permit, Laws, and Regulations

The City is required to submit an AZPDES permit application to the Arizona Department of Environmental Quality (ADEQ) for the discharge of storm water from the MS4 in accordance with the requirements of the Phase II Final Rule adopted on December 8, 1999. The City is designated as the operator of a *regulated small MS4* as defined in the Phase II Final Rule and information from the 1990 census.

On December 8, 1999, the EPA published the regulation entitled "National Pollutant Discharge Elimination System-Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges". This new rule

requires that specific permitting provisions be enacted for certain MS4s and construction activities. An AZPDES permit is required if storm water is to be discharged from any of the following:

- (1) regulated small MS4s or Municipal Operations sites;
- (2) construction sites of 1 to 5 acres;
- (3) industrial sites with selected Standard Industrial Classifications (SIC) codes that do not meet the Phase II conditional no exposure certification.

Construction sites greater than 5 acres in size are already covered under the Phase I storm water regulations. The Phase II regulations extended this coverage to construction sites one acre and larger.

Application for coverage under the Construction General Permit requires the completion of a one-page form called a Notice of Intent (NOI), which certifies that the applicant will comply with the permit conditions. Before the NOI is submitted, a Storm Water Pollution Prevention Plan (SWPPP) must be prepared. The Construction General Permit contains the requirements, which the ADEQ considers necessary to produce an acceptable SWPPP. Additional information relative to compliance with the Construction General Permit is provided in Section 6 of this SWMP.

1.4 Facilities Covered

This SWMP covers discharges from the facilities located within the boundaries of the City that are not covered under the Phase I permit. Individuals, corporations, utilities, and other governmental agencies conduct activities within the City boundary. The City will regulate such activities through a permitting process to ensure that they are consistent with the requirements of their AZPDES permit.

The City will update this SWMP periodically in a continuing effort to maintain a state-of-the-art storm water quality management program. Minor updates will occur at the staff level and will consist of bookkeeping matters, such as changes in who is responsible for a specific BMP, or other minor changes. Major updates will include changes in the SWMP such as the implementation of new BMP's or the discontinuance of ineffective ones, policy changes, or other related changes.

1.5 Small MS4 General Permit

The Arizona Department of Environmental Quality (ADEQ) has received primacy for the AZPDES storm water programs within the State of Arizona. The City will be submitting an application for coverage under the Phase II NPDES storm water program to the ADEQ. ADEQ will then serve as the permitting authority for the City. Documentation regarding the Phase II program, such as a copy of the small MS4 storm water general permit, is provided in Appendix A Small MS4 Documents.

2. Program Management

2.1 Overview

In order to comply with the goals of the AZPDES Phase II Final Rule, the City has developed this Storm Water Management Program (SWMP). This program will be implemented on an ongoing basis and will be updated and refined at least once every 5 years. This section describes the overall objectives of the City's SWMP, some of the local issues specific to the City's receiving waters, departmental implementation of the SWMP, and an overview of the legal authority to implement and enforce the program.

2.2 Goals and Policy

The goal of Litchfield Park's SWMP is the protection of its water resources through compliance with the AZPDES Phase II requirements. As such, this program has been designed to aid in accomplishing this goal. The City of Litchfield Park's storm water program is based on the six minimum control measures established by the AZPDES Phase II Final Rule.

The objectives of the SWMP are to:

- Remain in compliance with environmental laws and regulations and remain compatible with other programs within the City;
- Implement cost effective Best Management Practices (BMP'S) that provide water quality benefits; and
- Control pollutants that may adversely impact Litchfield Park's receiving waters (Agua Fria River).

The City's storm water program is based on a set of six minimum control measures established by the EPA, which have been designed to protect the Nation's waters by reducing polluted storm water runoff. The implementation of the six minimum control measures specified in the Phase II requirements, and listed herein, will support these objectives through City Policy.

The six categories are:

1. Public education and outreach on storm water impacts
2. Public participation involvement
3. Illicit discharge detection and elimination
4. Construction site storm water runoff control
5. Post-construction storm water management in new development and/or redevelopment
6. Pollution prevention/good housekeeping for municipal operations

The City also recognizes the importance of the watershed approach in improving water quality and has began working with neighboring jurisdictions in coordinating programs such as public outreach and education, attending meetings, participating in special studies, and reporting spills.

2.3 Discussion of Local Receiving Waters

The City is located within the Middle Gila Watershed. Due to surface water diversions, groundwater pumping, and the limited rainfall received, the majority of the streambeds within this watershed are dry. Three primary locations exist which receive Litchfield Park's runoff. These locations are (1) Roosevelt Irrigation District Canal, (2) Maricopa County Drainage, and (3) ADOT drainage. The ultimate receiving water for the City's discharge is the Gila River. As a condition of discharging to the river system, the City of Litchfield Park must maintain the designated beneficial uses, which are listed in Table 2.1.

Table 2-1 Beneficial Uses of Receiving Waters in Litchfield Park

Receiving Water	Designated Beneficial Use
<i>Gila River</i>	<i>Aquatic and Wildlife Ephemeral Partial Body Contact</i>

The City encompasses approximately 3.3 square miles. This SWMP has been designed to cover all storm water runoff and discharges located within the City's boundaries. This SWMP was developed to serve as a comprehensive management tool to help maintain storm water quality throughout the entire city.

2.4 Storm Water Management Responsibilities

The Storm Water Management Program will be implemented by the Public Works Department with the support of other City departments. The departments within the City, which will be responsible for implementing the program, are outlined below. As discussed in the general permit developed by the State of Arizona, the name and title of the responsible person must be listed for each BMP. Throughout this SWMP, the department responsible for each BMP is identified. The person responsible for ensuring the implementation of the BMP's assigned to each department is outlined in Table 2-1 Responsible Departments and Parties. This document is meant to be a living document, and as departments or personnel change within the City, this table will be updated accordingly.

Table 2-2 Responsible Departments and Parties

Department	Responsible Party
Public Works Engineering Building Safety & Zoning City Clerk	Chuck Ransom, Director of Field Operations W.C. Scoutten John Rae Mary Rose Evans

The Engineering Department, Building & Zoning Department and City Clerks Office will also contribute through a supporting role to the implementation of the storm water program.

The Director of Field Operations will assume the lead role in the program implementation and coordinate the internal and external activities. The Director, with support from the City Engineer, will be responsible for the annual reports and submitting them to the current permitting authority. The annual reports will include a review of the progress being made on the measurable goals that were defined with the City's Best Management Practices.

2.5 Legal Authority and Enforcement

The City will establish the legal authority to enforce the provisions of this SWMP in accordance with the AZPDES permit. Legal Authority will be provided to the City by the Litchfield Park City Code and through the Arizona Revised Statutes (ARS).

The City is also granted specific powers by the ARS for control of storm water quality:

- **ARS § 9-276(A)** - The City is authorized to regulate and prevent the throwing of offensive material in and prevent injury to any street, way, alley or public grounds; provide for the cleaning and purification of waters, watercourses and canals, and the draining or filling of ponds on private property when necessary to prevent or abate nuisances; regulate the construction, repair and use of vaults, cisterns, areas, hydrants, pumps, sewers and gutters; and define nuisances, abate them, and impose fines upon persons creating or continuing nuisances.
- **ARS § 9-461.05(D)(1)** - The City is responsible for preparing a general plan to guide land use regulation within the City; this includes City zoning ordinances to control the uses of land, which may contribute to the contamination of storm water runoff.
- **ARS § II -952** - The City may enter into an intergovernmental agreement for services or joint/cooperative action. The City may consider an Intergovernmental agreement for the management of storm water leaving State freeways that are within the jurisdiction of the Arizona Department of Transportation (ADOT). The City may also enter into intergovernmental agreement with neighboring cities and/or Maricopa County to provide for an integrated storm water collection and regulation program.

- **ARS § 13-1602(A)(1)** - To prevent pollution of storm water, the City may invoke general state criminal laws that provide for the punishment of misdemeanors. These include criminal damage to property and criminal littering or polluting.
- **ARS § 13-1603(A)(1) and (2)** - Since the City owns a majority of the storm water collection system within Litchfield Park, certain activities that pollute the storm water collection system may constitute criminal damage to City property. The City can prevent unlawful disposal of materials on public property, e.g., the storm water collection system, or the discharge of any sewage, oil products or other harmful substances into any waters of the State of Arizona (State) that lie within the jurisdiction of the City.
- **ARS § 49-107** - The City can receive a delegation of authority from the Arizona Department of Environmental Quality (ADEQ) for permitting, inspecting, monitoring, and enforcing some of ADEQ's programs.
- **ARS § 49-141(6)** - The pollution of domestic water is specifically defined as an environmental nuisance.
- **ARS § 49-143** - The City may issue abatement orders requiring owners or occupants of private property on which an environmental nuisance exists to remove the nuisance.

3. Public Education and Outreach

3.1 Overview

According to the Phase II regulations outlined within Section 40 of the Code of Federal Regulations (Parts 9, 122, 123, and 124, December 8, 1999), the first minimum control measure which must be addressed is public education and outreach on storm water impacts.

In order to comply with this minimum control measure, the City must implement a public education program or conduct equivalent outreach activities to inform the public about storm water pollution issues. Implementing a comprehensive storm water management information campaign is believed to have a significant effect on the public acceptance of the storm water program as well as reducing the actual impact of storm water pollution.

One of the key factors in developing an effective storm water public information and outreach program is identifying the target audiences, their corresponding level of interest, and their potential for involvement. Many different target audiences exist within the City. In order to meet the requirements for this minimum control measure, Litchfield Park has identified these different groups and the methods that should be used to address each of them. The target audiences within the City include:

- Residents
 - (a) Homeowners
 - (b) Homeowners Association
- Developers
- City Staff
- Business Owners
- Schools

The public education campaign, which will be developed by the City, will be used to inform these groups of the importance of pollution prevention and maintaining clean storm water runoff as well as to inform the various audiences of their responsibilities regarding the Phase II program.

The City will meet the goals established under the public education and outreach measure by implementing an educational program as set forth in this SWMP.

3.2 Target Audiences

The audiences that the City plans to target with their information campaign include Residents, Developers, Business owners, Schools and City Staff.

3.2.1 Residents

Residents comprise one of the largest audiences for the storm water program. Residents within the City are one of the most important groups that must be targeted. Providing sufficient information to the residents will help to educate them regarding the importance of the storm water program as well as the legal requirements for the implementation of the program. Educating the residential public early on the development of a storm water management program is believed to result in greater acceptance and compliance with the requirements of the program.

Homeowners have a large impact on the effectiveness of a storm water management program as well as shouldering many of the costs that must be met when implementing a storm water program. Educated homeowners are more likely to notice an illegal discharge to the storm drain system and be willing to report it.

The City believes that all residential members of their communities can have a positive impact reducing storm water pollution; if they are sufficiently informed of the requirements and of the part they can play.

3.2.2 Developers

The City has identified SunCor, SunHealth, Kabuto and other future developers to be educated about the importance of clean storm water runoff. Also, The Wigwam Resort has been identified as having the potential for improving storm water quality.

3.2.3 City Staff

The third group that will be targeted for the public education and outreach program is the City's staff. This audience will receive information and training specific to the tasks on which they work. A detailed description of the plan for training the City staff is described in Section 8, Pollution Prevention/Good Housekeeping for Municipal Operations.

3.2.4 Business Education Program

The City of Litchfield Park will be working with local businesses to ensure that the managers and owners understand their responsibilities in regards to storm water quality. The City's business education program is designed to provide information to those businesses that are more likely to have significant storm water impacts. As part of the City's efforts to reduce pollution, they will be identifying the types of businesses that are located within their boundaries. Once the types of businesses are identified, the City will be developing specific Fact Sheets targeting those businesses, which may have the greatest impact on storm water quality. These fact sheets will include information that has been tailored to the various business types and will be distributed to those existing businesses.

3.2.5 Schools

The importance of educating young people to these issues cannot be understated. The City of Litchfield Park will provide a brochure for the students, which will outline the importance of protecting our environment and suggestions as to how they can help. The City will work closely with the Board of Education to create an informative and viable brochure.

The students can also be an important part of disseminating information through bringing home brochures, flyers and other pertinent materials.

3.3 Public Education Program

In order to effectively communicate the importance of clean water and preventing storm water pollution, the City will design a public education campaign. This campaign will target various segments of the City. The City will provide a constant message through such measures as distributing flyers containing storm water facts and information as well as making this information available at city events. The City will also utilize their public television channel to provide information. The City does not meet the criteria for alternate language requirements, i.e., more than 50% of the population that speaks a language other than English.

The Best Management Practices that the City will be implementing are outlined below. A description of each selected BMP along with its target audience is also provided.

3.4 Selected BMP's

As described earlier in this document, the Phase II Rule contains few specific requirements for storm water management. Instead, the operator of an MS4 is required to develop specific Best Management Practices (BMP's) that will provide the most benefit for their area. Under this method, each MS4 operator will be able to tailor a Storm Water Management Program to the problems and conditions with which they are faced. The City has selected the following BMP's which they feel will provide the greatest benefit in meeting the Public Education and Outreach minimum control measure. The selected BMP's are shown in Table 3-1 BMP's for Public Education Measure. A detailed description of each of the BMP's along with a description of how it will help to meet the City's goals is also provided.

Table 3-1 BMP's for Public Education Measure

BMP	Responsible Party*
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Storm Water Pollution Prevention Brochure	Public Works/Engineer
Water Conservation Program	Public Works/Engineer
Business Education Program	Public Works/Engineer

* The name and title of the person responsible for the implementation of the BMP's for each department is provided in Table 2-2 Responsible Departments and Parties.

3.4.1 Storm Water Pollution Prevention Brochure

One of the fundamental purposes of the Public Education and Outreach minimum control measure is to better inform the public about both the effects of polluted storm water runoff and the need to reduce storm water pollution. As discussed earlier in this section, the City faces a unique challenge in this aspect. Due to the minimal amount of storm water that is received in the City each year, the general arid nature of the southwest, storm water runoff is not a topic that is in the forefront of the Litchfield Park residents' minds. In order to educate and inform the City's residents about storm water runoff, as well as pollution prevention, Litchfield Park will be identifying an informational brochure that they can tailor to meet their storm water needs.

This storm water brochure will be general in nature. It is anticipated that the brochure will provide interesting and informative tips regarding storm water runoff, water pollution, and various measures that residents can take to reduce storm water pollution. The brochure will also provide information regarding the City's storm water hotline and the types of discharges to report. This information will also be included in the City newsletter, City Hall Lobby information rack, local cable Channel 11, and available on the website.

Specific actions that will occur under this BMP include:

- Identify a storm water pollution prevention flyer
- Distribute the storm water pollution prevention flyer through schools, the library, public events, and cable Channel 11

All residents of Litchfield Park will either receive or have access to the brochure, estimated 3,850 people.

3.4.2 Business Education Program

Businesses are another key audience that the City will strive to educate regarding their storm water program. The City will identify the types of business that exist within the City, and will then provide those businesses that have the highest potential for polluting storm water runoff with fact sheets that have been designed for their type of business. These fact sheets will include information outlining the possible sources of pollution for their type of business, as well as methods for reducing pollution.

Specific actions that will occur under this BMP include:

Identify types of business within the City
Develop fact sheets for business types with the highest polluting potential
Distribute fact sheets to all businesses.

It is estimated that 73 businesses are located within the City of Litchfield Park.

3.4.3 Water Conservation Practices for Homeowners

Based on EPA studies, water usage in the home can easily be reduced 15 to 20% without major discomfort to the homeowner. The program is intended to help prevent the wasting of a valuable natural resource and reduce the potential runoff from excessive residential use of water. Prudent use of lawn sprinkling and flood irrigation can reduce runoff, thereby reducing potential contamination. This can be accomplished by reducing or eliminating the sprinkling and irrigation of these areas on days when storms are expected so that the area can provide additional flood storage and percolation. The City will implement water conservation BMP. The City will encourage water conservation by informing residents of ways that water usage and runoff can be reduced in the home.

In order to implement this BMP, the City will produce a flyer and publish advertisements in their City newsletter, which outline water conservation practices for homeowners. Tips for reducing water consumption will be outlined in this flyer, as well as the direct benefits to the homeowner. The City of Litchfield Park will distribute this informational flyer through City events.

Specific actions that will occur under this BMP include:

- Develop a water conservation flyer
- Distribute the water conservation flyer through public events
- Publish ads in the City's newsletter

3.4.4 Storm Water Webpage

The City will create a storm water webpage on their website, which is currently under construction, with a synopsis of the SWMP. It will include specifics such as prevention methods as well as procedures and contacts for questions and reporting possible pollution occurrences. It will include links to pertinent web sites such as STORM and Water-Use it Wisely. The full text of the SWMP will be included.

3.4.5 Implementation Goals

As was described earlier in this SWMP, the City is responsible for tracking their progress on the SWMP through the development of measurable goals. These measurable goals must include specific actions that will aid the City in establishing and implementing the BMP's outlined in this section. The actions, which have been established for these measurable goals, must also include a specific time frame within which they will be accomplished.

Table 3-2 Public Education Measurable Goals

Measurable Goal	Permit Year					Start Date	End Date
	04	05	06	07	08		
Storm Water Pollution Prevention Brochure							
Prepare a storm water pollution prevention flyer			X			10/06	once
Distribute the storm water flyer			X			12/06	once
Percent of Resident Population Reached (100% by mail)			ALL			12/06	once
Business Education Program							
Identify businesses within the City		X	X			10/06	once
Distribute fact sheets to these businesses			X			12/06	once
Percent of Businesses Reached (100% by mail)			ALL			12/06	once
Water Conservation Practices for Homeowners							
Develop a water conservation flyer			X			11/06	once
Distribute the water conservation flyer through City events			X			12/06	once
Publish newspaper ads once a year			X	X	X	12/06	ongoing

Note: Permit Year 04: March 10, 2003-June 30, 2004
 Permit Year 05: July 1, 2004-June 30, 2005
 Permit Year 06: July 1, 2005-June 30, 2006
 Permit Year 07: July 1, 2006-June 30, 2007
 Permit Year 08: July 1, 2007-June 30, 2008

4. Public Participation/Involvement

4.1 Overview

The second minimum control measure mandated ADEQ include seeking the active participation and involvement of the public. The regulatory text for the second minimum control measure states:

... the municipal storm water management program must comply with applicable State, tribal, and local public notice requirements.

- **Broader public support-** Citizens who participate in the development of the SWMP are partially responsible for the program and, therefore, may be less likely to raise legal challenges to the program and more likely to take an active role in its implementation.
- **Public Informational Meeting-** Litchfield Park will strive to prevent polluted storm water runoff within the City through seeking public participation in their pollution prevention campaign. The City will meet the requirements of Public Participation by including Storm Water Pollution Prevention as an area covered by the Cityscape Commission which was established to inventory the problems, requirements, and opportunities in the area of community appearance and beautification including entrance ways, street trees, city service, ordinance review, utilities, and municipal planting. The Commission evaluates problems and recommends improvements and a budget for Cityscape programs to the City Council. Since its purview is the entire City, it will provide an established public forum for education, discussions, and suggestions to improve the SWMP on a regular basis. The Commission's involvement will include actively seeking public input during public information meetings, as well as soliciting public participation throughout the implementation of the storm water program. Cityscape will hold an annual public meeting to discuss the SWMP. This chapter describes the BMP's that the City has selected to implement. These BMP's have been specifically tailored to promote public participation and involvement within the City's storm water program.

Public events run by the City occur throughout the year and have a proven track record of attendance by the residents. Cityscape will distribute the brochures and flyers to solicit volunteers during these events.

Litchfield Park will make a copy of the NOI and the SWMP available for review at the City Hall and on their web page. Interested parties will be able to review the SWMP and submit written comments to the City. The Director of Field Operations and the City Engineer will then review these comments.

4.2 Selected BMP's

As described earlier in this chapter, the actual requirements that have been established for the Public Participation/involvement minimum control measure are minimal. The City will strive to meet and exceed these minimum requirements in the development and implementation of their SWMP.

Table 4-1 Public Participation/Involvement BMP's

BMP	Responsible Party*
Public Information Meeting	Chuck Ransom

*The name and title of the person responsible for the implementation of the BMP's for each department is provided in Table 2-2 Responsible Departments and Parties.

4.2.1 Community Storm Water Hotline

The City of Litchfield Park provides emergency services through contracts with outside agencies rather than City departments. Therefore, a Hotline will be established and monitored during regular office hours at City Hall. However, any off-hour activities observed and considered detrimental or illegal can be reported to the Maricopa County Sheriff's Department or the Metro Fire District for immediate action.

4.2.2 Public Information Meeting

The City will hold an annual public information meeting in order to inform residents, businesses, and employees of the regulations and requirements of the storm water management program. The public information meeting will be held in compliance with all State and City public notice requirements. The purpose of the meeting will be to discuss the requirements of the program as well as the importance of maintaining clean storm water runoff. This public information meeting will also provide an opportunity for City residents to ask questions and provide input regarding the program.

Litchfield Park intends that this SWMP serve as a living document. The City's residents will have the opportunity to make comments regarding the programs outlined in the SWMP and these comments will be considered when modifying the SWMP.

Specific actions that will occur under this BMP include:

- Hold an annual public information meeting regarding the storm water program to report on the Program's status and effectiveness, obtain input from the public, and discuss any modifications that may be required to maintain the appropriate level of achievement.

4.2.3 Volunteer Activities

Many volunteer organizations become involved in public service projects. The City will solicit these groups such as Cityscape, the Boy Scouts, service organizations, businesses, and individuals using flyers and local advertising. Under the direction of the Field Operations Department, they will be asked to participate in the program by volunteering for:

1. storm drain marking
2. watershed/stream clean up
3. stream monitoring
4. distribution of informational flyers
5. storm water hotline.

The target audience includes all groups and individuals with an interest in maintaining the high standards of the City of Litchfield Park as a place to live and work. Since volunteers come and go, this will be an ongoing process.

4.2.4 Web Page

The City will expand its web page to include a synopsis of the Program and its activities. It will include a solicitation for interested parties to volunteer for the various activities contemplated.

Pertinent information will be included such as the Storm Water Hotline and identification of/and access to contacts, the SWMP and the NOI. Also included will be the full document as well as the location of hard copies for review.

The web page will also be a key tool to keep the public apprised of progress and features as the program evolves.

4.3 Implementation Goals

The City will track the progress through the development of measurable goals. The measurable goals will include the specific actions of the City in establishing and implementing the BMP's outlined in this section. The actions, which have been established for these measurable goals, must also include a specific time frame within which they will be accomplished.

Table 4-2 Public Participation/involvement provides an outline of the actions that the City plans to take, as well as the time frame by which the goals will be completed. In the City's annual reports, an accounting will be made of the progress and implementation of the selected BMP's. Where feasible, readily quantifiable data will be collected and maintained for each of the BMP's. The party responsible for implementing each of the BMP's is provided in Table 4-2 Public Participation/involvement.

Table 4-2 Public Participation/Involvement Measurable Goals

Measurable Goal	Permit Year					Start Date	End Date
	04	05	06	07	08		
Community Storm Water Hotline							
Establish a response procedure for complaints			x			11/06	once
Public Information Meetings							
Hold an annual public information meeting regarding the storm water program in conjunction with Cityscape			x	x	x	12/06	ongoing
Volunteer Activities							
Solicit volunteers for Tasks			x	x	x	12/06	ongoing
Web Page							
Modify current web page and update			x			12/06	once

Note: Permit Year 04: March 10, 2003 – June 30, 2004
 Permit Year 05: July 1, 2004 – June 30, 2005
 Permit Year 06: July 1, 2005 – June 30, 2006
 Permit Year 07: July 1, 2006 – June 30, 2007
 Permit Year 08: July 1, 2007 – June 30, 2008

5. Illicit Discharge Detection and Elimination

5.1 Overview

The third minimum control measure mandated by the ADEQ includes developing a plan to detect and address illicit and non-storm water discharges to storm drain systems. The regulatory text for the third minimum control measure is very specific and states:

- *... develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined at Sec. 122.26(b) (2).*
 - *Develop, if not already completed, a storm sewer system map showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;*
 - *To the extent allowable under State, Tribal or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the storm drain system and implement appropriate enforcement procedures and actions*
- (C) *Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, and*
- (D) *Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.*
- *... address the following categories of non-storm water discharges or flows (i.e., illicit discharges) only if you identify them as significant contributors of pollutants to your small MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (discharges or flows from fire fighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to waters of the United States).*

The ADEQ recommends four components to the illicit discharge detection and elimination plan:

- Procedures for locating priority areas likely to have illicit discharges;
- Procedures for tracing the source of an illicit discharge;
- Procedures for removing the source of the discharge; and
- Procedures for program evaluation and assessment

The ADEQ further recommends visual screening of outfalls during dry weather. Educational efforts are also recommended including a program to publicize and facilitate public reporting of illicit connections and discharges.

This chapter will describe the City's BMP's that institute this control measure. These BMP's have been specifically tailored to facilitate the detection and elimination of illicit discharges to the Community's storm drain system.

5.2 Selected BMP's

Table 5-1 BMP's for Illicit Discharge Detection and Elimination, lists the BMP's that the City will implement for the Illicit Discharge Detection and Elimination minimum control measure. A detailed description of each of the BMP's, along with a description of how it will help to meet the City's goals, is also provided.

Table 5-1 BMP's for Illicit Discharge Detection and Elimination

BMP	Responsible Party*
Identify Illicit Connections	Public Works/City Engineer/Building Inspector
Map Storm Drain System	Public Works/City Engineer
Illegal Dumping Ordinance	Public Works/City Engineer/City Clerk

*The name and title of the person responsible for the implementation of the BMP's for each department is provided in Table 2-2 Responsible Departments and Parties.

5.2.1 Identify Illicit Connections

An illicit discharge detection program can be an effective method to reduce the quantity of industrial or commercial pollutants that enter the storm drain system. The ADEQ defines illicit connections as "illegal and/or improper connections to storm drainage systems and receiving waters". Any discharge that is not composed entirely of storm water or authorized non-storm water and that is conveyed to the storm drain system or to a water body is considered an illicit discharge.

Illicit discharges result from connections to the storm drain system of which the business owner may be unaware and which are generally not evident in architectural plans. Illicit connections can occur in several ways the most common of which include cross connections with sanitary sewers and floor drains that are improperly attached to storm drainpipes. Such improper connections can often be located through field screening procedures, source testing protocols, and visual inspection.

The City of Litchfield Park will establish a procedure to identify and remove illicit discharges. The following methods are some of the items the City of Litchfield Park may include in their plan:

- Locating existing illicit discharges to the municipal storm drain system or local waters using storm drain monitoring, which includes both visual inspection and chemical analysis if necessary to aid in identifying potential discharge sources.

- Documenting the testing and elimination of illicit connections, including recording the location of the connection, the date of testing, and the method used to remove the connection.
- Field inspection and documentation of outfalls will occur as follows:
 - Both major outfalls will be visually screened every year with the entire system screened in five years.
 - If dry weather flow is observed, an Illicit Discharge Form will be completed and provided to the Public Works Department. Within 15 days, the Department will begin the investigation to identify the source of the discharge.
 - If the City is unable to identify the source of the discharge, samples will be taken, as appropriate.
 - If a discharge is determined to be hazardous, the Fire Department will mitigate the emergency and a hazardous waste contractor will remediate the site. The City will contact a hazardous waste collection company to remove the material and remediate the site.
 - If a discharge is found to be illicit, the Code Enforcement Group will be notified and will begin enforcement procedures.
- All notifications to the City of potentially Illicit Discharges shall be investigated by City staff within 15 days of receipt.

Specific actions that will occur under this BMP include:

- Develop a plan to identify and remove illicit discharges
- Inspect the two major outfalls each year for dry weather flows.

5.2.2 Map Storm Drain System

One of the requirements for the Phase II program is the development of a map of the municipal separate storm sewer system. This map is to identify the location of all outfalls, as well as the names and locations of all waters of the United States that receive discharges from those outfalls. The City will develop a map of their storm sewer system. This map will serve as a tool for providing a better understanding of the City's storm sewer system.

Specific actions that will occur under this BMP include:

- Develop a map of the storm drain system identifying major outfalls.

5.2.3 Illegal Dumping and Discharge Ordinance

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

One of the most effective methods of preventing illegal dumping is through public education. The City will be providing public education to their residents according

to the Public Education and Outreach BMP's described in Section 3, Public Education and Outreach. Additionally, the City will train staff on the hazards of illegal dumping as described in Section 8, Pollution Prevention/Good Housekeeping for Municipal Operations.

The City recognizes that reliance on public reporting is an important factor in the effectiveness of anti-illegal dumping programs. The City has in place Ordinance 05-104, Chapter 9, which regulates non-storm water discharges into the storm sewer system. This ordinance was developed by the City to outline the prohibited actions that constitute illegal dumping. Additionally, it establishes the enforcement procedures and actions that may be taken against any individual found to be discharging non-storm water discharges to the storm sewer system. This ordinance will be reviewed and amended as necessary.

Specific actions that will occur under this BMP include:

- Establish and enforce the ordinance prohibiting illegal and illicit discharges.

5.3 Implementation Goals

The City is responsible for tracking their progress on the SWMP through the development of measurable goals. These measurable goals must include specific actions that will aid the City in establishing and implementing the BMP's outlined in this section. The actions that have been established for these measurable goals also include a specific time frame within which they will be accomplished.

Table 5-2 Illicit Discharge Detection and Elimination Measurable Goals provides an outline of the actions that the City plans to take as well as the time frame for completing the goals. In the City's annual reports, an accounting will be made of the progress and implementation of the selected BMP's. Where feasible, readily quantifiable data will be collected and maintained for each of the BMP's. The party responsible for implementing each of the BMP's is provided in Table 5-1 BMP's for Illicit Discharge Detection and Elimination.

Table 5-2 Illicit Discharge Detection and Elimination Measurable Goals

Measurable Goal	Permit Year					Start Date	End Date
	04	05	06	07	08		
Identify Illicit Connections							
Develop a plan to identify illicit discharges	x					3/03	6/06
Develop an Illicit Discharge reporting form			x				
Inspect the major outfalls for dry weather flows	x	x	x	x	x	3/03	ongoing
Map Storm Drain System							
Develop a map of the storm drain system identifying major outfalls	x					3/03	once
Illegal Dumping/Illicit Discharge Ordinance							
Establish an ordinance prohibiting illegal & illicit discharges. Review and update		x				9/05	1/07
Implement and enforce the IDDE ordinance		x	x	x	x	x	ongoing

Note: Permit Year 04: March 10, 2003 – June 30, 2004
 Permit Year 05: July 1, 2004 – June 30, 2005
 Permit Year 06: July 1, 2005 – June 30, 2006
 Permit Year 07: July 1, 2006 – June 30, 2007
 Permit Year 08: July 1, 2007 – June 30, 2008

6. Construction Site Storm Water Runoff Control

6.1 Overview

The fourth minimum control measure mandated by the ADEQ includes requiring the implementation of construction site storm water runoff control measures. The regulatory text for the fourth minimum control measure is very specific and states:

- *... develop, implement, and enforce a program to reduce pollutants in any storm water runoff ... from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in your program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. If the AZPDES permitting authority waives requirements for storm water discharges associated with small construction activity in accordance with Sec. 122.26(b)(15)(i), you are not required to develop, implement, and/or enforce a program to reduce pollutant discharges from such sites.*
- *The program must include the development and implementation of, at a minimum:*
 - A.** *An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State, Tribal, or local law,*
 - B.** *Requirements for construction site operators to implement appropriate erosion and sediment control (ESC) best management practices;*
 - C.** *Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality,*
 - D.** *Procedures for site plan review which incorporate consideration of potential water quality impacts;*
 - E.** *Procedures for receipt and consideration of information submitted by the public, and*
 - F.** *Procedures for site inspection and enforcement of control measures.*

The ADEQ recommends that municipalities require the development of Storm Water Pollution Prevention Plans for construction sites within their jurisdiction that discharge into a municipality's storm drain system.

This chapter outlines the BMP's that the City has selected to implement this control measure. The BMP selection presented here outlines the City's requirements for Construction Site storm water control.

6.2 SWPPP Requirement

The City of Litchfield Park will require that a copy of the Storm Water Pollution Prevention Plan (SWPPP), submitted for the AZPDES, be submitted for any site that disturbs more than one acre or any site, regardless of size, that is part of a larger planned development or land purchase. The SWPPP shall be prepared by the developer in accordance with the Construction General Permit and submitted

to the City. The City of Litchfield Park does not recognize any waivers of this requirement established by the ADEQ. Plan reviewers for the City have previously and routinely required the submission of the design plan in the SWPPP with the development plans.

The SWPPP shall contain, at a minimum:

- General project information (nature of activity, area of disturbance etc.)
- General location and site map
- Narrative site description (describe and quantify discharges, etc.)
- Goals and criteria statements
- Description of stabilization practices
- Description of structural practices
- Description of post-construction storm water management
- Description of any other control measures used
- Approved state and local plans

The following documents are provided in Appendix B Small Construction General Permit to assist in the development of a SWPPP:

- Construction General Permit
- Construction Notice of Intent (NOI)
- Notice of Termination (NOT)
- Construction General Permit Fact Sheet

6.3 Selected BMP's

The BMP's that the City has selected are shown in Table 6-1 Construction Site Storm Water Runoff Control BMP's. A detailed description of each of the BMP's, along with a description of how it will help to meet the City's goals, is also provided.

Table 6-1 Construction Site Storm Water Runoff Control BMP's

BMP	Responsible Party
SWPPP Checklist	Public Works/Engineer/Building
Construction Runoff Control Ordinance	Public Works/Engineer/Building
Construction Plan and SWPPP Review	Public Works/Engineer/Building
Construction Site Inspections	Public Works/Engineer/Building
Land Grading Plan	Public Works/Engineer/Building

*The name and title of the person responsible for the implementation of the BMP's for each department is provided in Table 2-2 Responsible Departments and Parties.

6.3.1 SWPPP Checklist

As outlined in Section 6.2, the City will require that all development that disturb more than one acre, as well as developments that are smaller than one acre but part of a larger master planned development, to submit an SWPPP. The City will enforce the submittal of an SWPPP by amending their plan review procedures to require that an SWPPP be submitted before a grading permit is issued.

In order to provide guidance to the developer and to help reduce unnecessary costs, the City will develop a SWPPP checklist. This checklist will be available to all developers and will serve as a guideline for developing the SWPPP. It is envisioned that by following the steps listed in the checklist, the developer will have developed an effective SWPPP.

Specific actions that will occur under this BMP include:

- Develop an SWPPP Checklist;
- Make SWPPP Checklist available to developers.

6.3.2 Construction Runoff Control Ordinance

The City will develop a construction runoff control ordinance which requires all construction site operators disturbing more than one acre of land to practice erosion and sediment control, as well as properly dispose of construction wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste. Representatives of the City will have the authority to inspect construction sites to ensure that proper BMP's are being implemented, and also allow the City to cite those contractors not following the requirements.

Specific actions that will occur under this BMP include:

- Develop a construction runoff control ordinance.

6.3.3 Construction Plan and SWPPP Review

During the 1990's, the City adopted ordinances including Chapter 14 Subdivision Regulations and Chapter 15 Flood Damage Regulations which, among other things, require the submission of grading and utility plans and calculations for the design of storm water management facilities, including retention basins, for all subdivisions and land development.

This will be amended to require all contractors disturbing more than one acre of land on their construction sites to submit the NOI, SWPPP and ADEQ permit as well as the construction plans describing the BMP's the contractor will incorporate. The City will review these plans in order to ensure that the BMP's set forth by the contractor will adequately reduce storm water runoff and erosion from the construction sites and that the SWPPP contains the information required. The City will issue no construction permits until the SWPPP has been reviewed and approved by the ADEQ and the City, and the City has verified in written communication that the BMP's for the site are appropriate. Even though Litchfield

Park will be reviewing the SWPPP and construction plans, the ultimate responsibility for implementing the BMP's remain with the developer.

Specific actions that will occur under this BMP include:

- Review construction site plans, NOI, ADEQ permit and SWPPP's.

6.3.4 Construction Site Inspections

In order to ensure that the contractors are implementing the procedures outlined in the SWPPP, the City currently provides construction site inspections as required in the aforementioned ordinances. The inspection program will be expanded to include evaluation of discharges or potential discharges to the MS4 during construction. A representative from the City inspects the construction projects within the City. The site inspections, for land disturbances of greater than one acre, will provide the opportunity for the City of Litchfield Park to verify that the BMP's outlined in the SWPPP's are being implemented and that a copy of the SWPPP is on site. The City will have the authority to cite the contractors if the construction site is found to be out of compliance with their SWPPP.

The City of Litchfield Park currently enforces the construction regulations through Chapter 14 of the City Code. If inspections reveal that the developer/owner is not constructing the facilities in accordance with the approved plans, a cease and desist order is issued. The Order will not be lifted until the developer/owner corrects the identified items and complies with the approval. Further, Chapter 14 provides, in part, that anyone who violates this Chapter "shall be guilty of a misdemeanor...." The City has previously taken action against developers who violated this Chapter.

In addition, the City will also be available to receive information from the public regarding potential storm water violations at construction sites. The City will be developing a community hotline as described in Section 4.2.1 Community Storm Water Hotline.

Specific actions that will occur under this BMP include:

- Establish a construction site inspection schedule.
- Train inspectors on SWPPP inspections.
- Inspect construction sites to ensure compliance with the SWPPP'S.

6.3.5 Land Grading Plans

Land grading is an effective means of reducing steep slopes and stabilizing highly erodible soils when properly implemented with storm water management and erosion and sediment control practices. Land grading involves reshaping the ground surface to planned grades as determined by an engineering survey, evaluation, and layout. Such reshaping provides more suitable topography for buildings, facilities, and other land uses while helping to control surface runoff and soil erosion by decreasing runoff velocity.

Grading Plans are required by Chapters 14 and 15, as noted above, as part of the review process of the subdivisions and other land development in order to determine the project's impact on storm water management and the mitigation of such impacts.

The implementation of this best management practice will be to review and modify the existing requirements as necessary to ensure that grading by all developers and landowners comply with this requirement. This grading plan must establish which areas of the site will be graded, how drainage patterns will be directed, and how runoff velocities will affect receiving waters. The grading plan must also include information regarding when earthwork will start and stop, must establish the degree and length of finished slopes, and must clearly dictate where and how excess material will be disposed of (or where borrow materials will be obtained if needed).

Only those areas necessary for building activities and equipment traffic should be cleared and graded. The lowest elevation of the site should remain undisturbed to provide a protected storm water outlet before storm drains or other construction outlets are installed. The City will require that a grading plan conforming to the above specifications be submitted and approved before a grading permit will be issued.

Specific actions that will occur under this BMP include:

- Require a grading plan, necessary for procurement of a grading permit within the City's jurisdiction.

6.4 Implementation Goals

Table 6-2 Construction Site Storm Water Runoff Control Measurable Goals provides an outline of the actions that the City plans to take, as well as the time frame for completing the goals. In the City's annual reports, an accounting will be made of the progress and implementation of the selected BMP's. Where feasible, readily quantifiable data will be collected and maintained for each of the BMP's. The party responsible for implementing each of the BMP's is provided in Table 6-1 Construction Site Storm Water Runoff Control BMP's.

Table 6-2 Construction Site Storm Water Runoff Control Measurable Goals

Measurable Goal	Permit Year	Start Date	Review Times						
			04	05	06	07	08		
SWPPP Checklist									
Develop an SWPPP Checklist			X				12/06	Once	

Distribute SWPPP Checklist to developers			X	X	X	12/06	Ongoing
Construction Runoff Control Ordinance							
Develop a construction runoff control ordinance.	X					<3/03	Review 1/07
Construction Plan and SWPPP Review							
Review construction site plans and SWPPPs	X	X	X	X	X	<7/03	Ongoing
Construction Site Inspections							
Establish a construction site inspection schedule during site grading	X					<7/03	Review 1/07
Train inspectors on SWPPP requirements and inspections following storm events	X					7/04	Once
Inspect construction sites for SWPPPs	X	X	X	X	X	1/06	Ongoing
Land Grading Plan							
Require a grading plan before issuing a grading permit	X	X	X	X	X	<3/03	Ongoing

Note: Permit Year 04: March 10, 2003 – June 30, 2004
 Permit Year 05: July 1, 2004 – June 30, 2005
 Permit Year 06: July 1, 2005 – June 30, 2006
 Permit Year 07: July 1, 2006 – June 30, 2007
 Permit Year 08: July 1, 2007 – June 30, 2008

7. Post-Construction Runoff Control

7.1 Overview

The fifth minimum control measure mandated by the ADEQ includes developing, implementing, and enforcing a program to address post-construction storm water pollution from new development and redevelopment projects. The regulatory text for this minimum control measure states:

... develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into your small MS4. Your program must ensure that controls are in place that would prevent or minimize water quality impacts.

Specifically, the program must:

- o Develop and implement strategies which include a combination of structural and/or non-structural Best Management Practices (BMP's) appropriate for your community,*
- o Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal, or local law.*
- o Ensure adequate long-term operation and maintenance of BMP's.*

The ADEQ believes that when storm water quality is considered from the beginning of a project, new development and redevelopment projects will be better able to reduce pollution from storm water runoff throughout the life of the project. In order to effectively implement a post-construction storm water program, a combination of both structural and non-structural BMP's must be addressed. Non-structural BMP's include preventative actions that involve the management of source controls, as well as public outreach and appropriate ordinances. Structural BMP's on the other hand, include measures such as detention ponds, filter strips, and other methods, which physically affect the storm water runoff.

As part of this SWMP, the City developed a post-construction storm water program that addresses storm water runoff in both new development and redevelopment. The City will require both structural and non-structural BMP's in order to reduce storm water pollution in new development and redevelopment areas. The City will implement an education program aimed at homeowners and developers.

7.2 Selected BMP's

The City will strive to comply with the objectives of the Post-Construction Runoff Control minimum control measure through the selection and implementation of appropriate BMP's. The City has adopted many standards and requirements regarding the design of post-construction storm water control measures. These measures include guidelines for the design and use of detention and retention

basins, as well as storm water transmission options. This SWMP adopts the existing storm water design requirements by reference. These requirements can be found in the most recent versions of the *Drainage Design Manual for Maricopa County, Arizona*. This manual should be consulted in order to receive the most up to date information regarding the structural BMP's that may be used within the City.

In addition to the BMP's established in the manuals discussed above, the City has elected to implement additional BMP's. The BMP's, which the City has selected, are outlined in Table 7-1 Post-Construction Runoff Control BMP's. A detailed description of each of the BMP's, along with a description of how it will help to meet the City's goals is also provided.

Table 7-1 Post-Construction Runoff Control BMP's

BMP	Responsible Party
Detention/Retention/Infiltration Basins Maintenance	Public Works/Engineer
Develop Post-Construction Ordinance	Public Works/Engineer/City Clerk
Catch Basin Maintenance	Public Works/Engineer

*The name and title of the person responsible for the Implementation of the BMP's for each department is provided in Table 2-2 Responsible Departments and Parties.

7.2.1 Detention/Retention/Infiltration Basins Maintenance

Throughout the City, various basins are utilized to store and control storm water runoff. In order to ensure that these basins will function as required, they must be properly maintained.

The City will maintain the storm water basins located on public properties, while the storm water basins located on privately owned properties will be required to be maintained by their respective owner.

Specific actions that will occur under this BMP include:

- Develop a maintenance schedule for city owned storm water basins.
- Maintain city owned storm water basins according to the established schedule.

7.2.2 Post-Construction Ordinance

The long-term maintenance and inspection program will address the operation and maintenance of post-construction controls. Those BMP's that are owned and operated by the City pose no issues.

However, the City has no post construction control over the long-term operation and maintenance of privately owned BMP's. In order to provide some control, the City will implement the following:

- For privately owned projects, the maintenance of the controls will be ensured through covenants, conditions, and restrictions at the time of approval. The developer will be informed that this requirement must be conveyed to the HOA/property owner when the project is handed over. This information will be recorded on the final as-built plans.

The City will develop an ordinance that will provide the City with the power to enforce the post-construction requirements. The purpose of this ordinance is to ensure that measures are in place to address the post-construction runoff from new development and redevelopment projects. The ordinance will also grant the City the authority to inspect the post-construction BMP's and ensure their upkeep.

Specific actions that will occur under this BMP include:

- Establish a post-construction storm water ordinance, including enforcement actions:
 - Written Notice of Violation
 - Cease and Desist Orders
 - Civil Penalties
 - Criminal Penalties

7.2.3 Developer Education Program

In order to assist the development community, as well as homeowners and business owners, about the requirements of complying with the post-construction minimum control measure requirements, the City will develop an education program for the public. The program will provide educational materials outlining BMP's that will help minimize water quality impacts and the requirements for properly maintaining the BMP'S.

Specific actions that will occur under this BMP include:

- Develop post-construction BMP information.
- Make the information available for pickup by interested parties

7.2.4 Dry Well Management

The City utilizes dry wells to aid the drainage of storm water from their retention basins. A drywell is a bored, drilled, or driven hole, whose depth is greater than its width, and is used for the disposal of storm water. Since dry wells are exclusively used for the draining of storm water from the retention basins, it is important that they are adequately managed. These management programs include maintaining a proper inventory of the dry wells within the City. Drywells are currently reviewed and permitted under Chapters 14 and 15, as part of the design of storm water control measures. However, the ordinances will be reviewed and modified, if required, to comply with the detail requirements of the MS4. The City will also develop a database to establish an inventory of the dry wells within the City.

Specific actions that will occur under this BMP include:

- Require that a permit be issued before construction of new drywells;
- Create a database inventory of the dry wells within the City, along with their current maintenance status;
- All new drywells must be registered with ADEQ.

7.2.5 Catch Basin Maintenance

Storm water runoff typically enters the storm drain system through the catch basins. Catch basins are also known as storm drain inlets and curb inlets. Since the majority of the water that enters the storm drain system passes through the catch basins, these basins provide one of the first opportunities for removing trash and pollutants from the storm water runoff.

In order for the catch basin to operate effectively, storm debris must periodically be removed. The owners of property where the catch basins are installed are required to install and maintain effective post-construction BMP's. The owners will be required to submit a report to the City outlining the maintenance that is being performed on the catch basins. Based on the proposed ordinance described above, the City will inspect the BMP's to verify the maintenance.

Specific actions that will occur under this BMP include:

- Require owners (typically homeowner associations) of privately owned catch basins to submit an annual report of maintenance activities accomplished in accordance with established BMP's.
- Annual inspection by the City, of City and privately owned catch basins based on the proposed ordinance described above.

7.3 Selected BMP's

Table 7-2 Post-Construction Runoff Control Measurable Goals provides an outline of the actions that the City plans to take, as well as the time frame by which the goals will be completed. In the City's annual reports, an accounting will be made of the progress and implementation of the selected BMP'S. Where feasible, readily quantifiable data will be collected and maintained for each of the BMP's. The party responsible for implementing each of the BMP's is identified in Table 7-1 Post-Construction Runoff Control BMP'S.

Table 7-2 Post-Construction Runoff Control Measurable Goals

<i>Measurable Goal</i>	<i>Permit Year</i>	<i>Start</i>	<i>Review</i>
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	04	05	06	07	08	Date	Date
Detention/Retention/Infiltration Basins Maintenance							
Develop a maintenance schedule for city owned basins.	X					7/04	Once
Provide an annual report of maintenance	X	X	X	X	X	7/05	6/08
Post-Construction Ordinance							
Establish a post-construction storm water ordinance				X		12/06	6/07
Developer Education Program							
Develop post-construction BMP information materials				X		1/07	3/07
Make the information available for pickup by interested parties				X	X	3/07	ongoing
Drywell Management							
Require a permit be issued before construction of new drywells	X					<1/04	Review 1/07
Create a database inventory of drywells including maintenance status			X	X	X	7/06	Annual
Catch Basin Maintenance							
Require owners of catch basins to submit an annual report of maintenance done.			X	X	X	7/05	Ongoing
Annual Inspection by the City	X	X	X	X	X	1/04	ongoing

Note: Permit Year 04: March 10, 2003 – June 30, 2004
 Permit Year 05: July 1, 2004 – June 30, 2005
 Permit Year 06: July 1, 2005 – June 30, 2006
 Permit Year 07: July 1, 2006 – June 30, 2007
 Permit Year 08: July 1, 2007 – June 30, 2008

8. Pollution Prevention/Good Housekeeping for Municipal Operations

8.1 Overview

The sixth minimum control measure mandated by the ADEQ includes developing and implementing a pollution prevention program for municipal operations. The regulatory text for this minimum control measure states:

... develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Using training materials that are available from EPA, State, Tribe, or other organizations, your program must include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.

The City will develop a program that will help prevent pollution from municipal activities. This chapter describes the BMP's that the City has selected.

8.2 Selected BMP's

The Pollution Prevention/Good Housekeeping for Municipal Operations BMP's, will impact the municipal operations listed below. Although specific operations are listed, it is the City's intent to familiarize all municipal employees with the SWMP. A detailed description of each of the BMP's, along with a description of how it will help to meet the City's goals, is also provided.

Impacted Operations

- Storm sewer maintenance
- Vehicle maintenance
- Streets and roads
- Park maintenance
- Storage yards

8.2.1 Municipal Training Program

The City has implemented a municipal employee-training program. The purpose of this program is to explain the municipal and environmental problems associated with polluted storm water runoff. The training will also address methods that the municipal employees may take to reduce potential hazardous runoff. Potential training items may include proper storage and handling of municipal materials, identifying and reporting illicit discharges, or other related activities. The training program was established based on the identified needs of the municipal employees. Given the size of the City, the Public Works Department provides all of the services which are impacted by the SWMP and they will be trained annually to implement the Program. The PWD has 20 employees.

8.2.2 Vehicle Washing

In order to prevent storm water pollution from washing motor pool vehicles, City owned vehicles are washed on site using high-pressure water without chemicals. The washing occurs in a specifically designated area, which drains to an on-site retention basin where it is filtered through the surface of the basin. This basin is owned and maintained by the City

Specific actions that will occur under this BMP include:

- Wash motor pool vehicles at the designated location.

8.2.3 Street Sweeping

Due to the large amount of pollutants that can be found on roadways, the City will continue the street sweeping program. It is believed that street sweeping will remove sediment buildup on the roadways and in the gutters, and will therefore reduce the pollutant load during a storm water event. A street sweeping program has been established such that each street is swept at three week intervals.

Specific actions that will occur under this BMP include:

- Evaluate street sweeping program annually.
- City streets are swept regularly on a three-week interval.

8.2.4 Debris Disposal

After a heavy rainfall, the drain inlets are visually inspected and debris is removed at that time to ensure proper drainage.

All debris recovered from maintenance activities are recycled or disposed of in accordance with applicable regulations. These include sediment, floatables, and general debris.

8.3 Implementation Goals

Table 8-2 Pollution Prevention for Municipal Operations Measurable Goals provides an outline of the actions that the City plans to take, as well as the time frame by which the goals will be completed. In the City's annual reports, an accounting will be made of the progress and implementation of the selected BMP's. Where feasible, readily quantifiable data will be collected and maintained for each of the BMP's.

Table 8-2 Pollution Prevention for Municipal Operations Measurable Goals

<i>Measurable Goal</i>	<i>Permit Year</i>					<i>Start Date</i>	<i>Review/Implement</i>
	<i>04</i>	<i>05</i>	<i>06</i>	<i>07</i>	<i>08</i>		

Municipal Training Program							
Identify storm water training needs of municipal employees			X			12/06	One Time
Develop a training program			X			12/06	One Time
Train municipal staff			X			12/06	One Time
Vehicle Washing							
Wash motor pool vehicles at specific City location	X	X	X	X	X	3/03	Ongoing
Street Maintenance							
Evaluate street sweeping program	X	X	X	X	X	3/03	Annually
Sweep city streets every 3 weeks	X	X	X	X	X	7/04	ongoing
Catch Basin cleaning annually	X	X	X	X	X	7/04	Annually

Note: Permit Year 04: March 10, 2003 – June 30, 2004
 Permit Year 05: July 1, 2004 – June 30, 2005
 Permit Year 06: July 1, 2005 – June 30, 2006
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 Permit Year 08: July 1, 2007 – June 30, 2008