

The logo for Animas Environmental Services, LLC, consisting of the letters 'AES' in a white, serif font on an orange rectangular background.

Animas Environmental Services, LLC

**City of Farmington  
NPDES Phase II  
Storm Water Management Plan**

Original: January 2003  
Updated: March 2007  
Prepared for: City of Farmington  
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Farmington, New Mexico 87401

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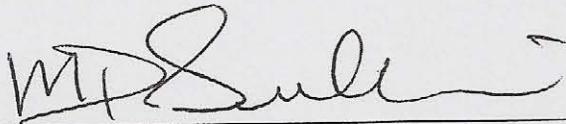
## Storm Water Management Plan Update and Certification

The original City of Farmington Storm Water Management Plan for small municipal separate storm sewer systems (MS4s) was developed by the City of Farmington and subsequently approved by Farmington City Council in March 2003.

After the finalization of the permit on September 29, 2006, the permit went into the effect on January 1, 2007. During February and March 2007, City of Farmington re-evaluated and updated the Storm Water Management Plan.

I certify that 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 persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Certified by:



Michael Sullivan  
Director, Community Development  
City of Farmington

3-27-2007

Date

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**Appendices**

- A. Copy of Public Notice, Farmington Daily Times, February 1, 2007
- B. Tabulated Storm Water Analyses and Laboratory Analytical Reports

## LIST OF ACRONYMS

BMP	Best Management Practice
CWA	Clean Water Act
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit
NMED-SWQB	New Mexico Environment Department Surface Water Quality Bureau
NPDES	National Pollutant Discharge Elimination System
NURP	National Urban Run-off Program
SWMP	Storm Water Management Program
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
WPCA	Water Pollution Control Act

## 1.0 Introduction

### 1.1 *Regulatory Background*

The federal Water Pollution Control Act (WPCA), initially enacted in 1948, utilized ambient water quality standards to specify acceptable levels of pollution in lieu of preventable causes of water pollution. The 1972 Amendments to the Federal Water Pollution Control Act, referred to as the Clean Water Act (CWA), implemented measures which were focused on establishing effluent limitations on point sources, or “any discernable, confined, and discrete conveyance... from which pollutants are or may be discharged”. Additional measures employed by the CWA included the following items:

- Increased accountability toward dischargers of pollutants;
- Required states and tribes to survey their waters and determine the appropriate use for each, followed by the implementation of specific water quality criteria for various pollutants to protect the identified uses; and
- Provided certain funding mechanisms to assist communities in achieving clean water goals.

The CWA introduced the National Pollutant Discharge Elimination System (NPDES). The NPDES program was established as the fundamental regulatory mechanism of the CWA requiring direct dischargers of pollutants into waters of the United States to obtain an NPDES permit. Between 1972 and 1987, the NPDES permit program focused on improving surface water quality by reducing pollutants of industrial process wastewater and municipal sewage. During this period, several nationwide studies on water quality, most notably the USEPA’s National Urban Runoff Program (NURP), identified storm water discharges as a significant source of water pollution (USEPA, 1983). The results of NURP and similar studies resulted in the reauthorization of the CWA in 1987 with the passage of the Water Quality Act (WQA). The WQA established a legal framework for and required USEPA to develop a comprehensive phased program for regulating municipal and industrial storm water discharges under the NPDES permit program.

The NPDES Phase I rule, which was issued in November 1990, addressed storm water discharges from medium to large municipal separate storm sewer systems (MS4s), which were communities serving a population of at least 100,000 people, as well as storm water discharges from industrial activity. The ruling also placed permitting requirements on some construction activities.

The NPDES Phase II rule, which was promulgated on December 8, 1999, addressed small MS4s serving a population of less than 100,000 people in urbanized areas. The final rule requires that all MS4s located within urbanized areas as defined by the Bureau of the Census automatically comply with the Phase II Storm Water regulations by developing and implementing a Storm Water Management Program (SWMP).

A significant portion of the City of Farmington, New Mexico, met the definition of an urbanized area in the 2000 Census (<http://www.census.gov>), and Farmington must therefore meet the Phase II Storm Water regulations. The 1999 NPDES Phase II rule required that the City of Farmington developed a SWMP and submitted a draft Notice of Intent (NOI) to the USEPA by March 10, 2003.

The Final NPDES Phase II rule was signed and issued on September 29, 2006, and became effective on January 1, 2007. The permit expires on December 31, 2012. The City of Farmington intends to apply for coverage under the General Permit for Discharges from Small MS4s (Permit No. NMR040000).

## *1.2 Storm Water Pollution*

Storm water pollution has two main components: the increased volume and rate of runoff from impervious surfaces, and the concentration of pollutants in the runoff. Both components are directly related to development in urban and urbanizing areas. Together, these components cause changes in hydrology and water quality that result in a variety of problems, including wildlife and riparian habitat modification and loss, increased flooding, decreased aquatic biological diversity, and increased sedimentation and erosion.

In addition to chemical pollutants in storm water, the physical aspects related to urban runoff, such as erosion and scour, can significantly affect a receiving water's fish population and associated habitat (EPA, 2000). Alterations in hydraulic characteristics of streams receiving runoff include higher peak flow rates, increased frequency and duration of bankfull and subbankfull flows, increased occurrences of downstream flooding, and reduced baseflow levels (EPA, 1999).

Traditional flood control measures that rely on the detention (storage) of the peak flow (referred to as peak shaving) have been characteristic of many storm water management approaches. These measures, however, have generally not targeted pollutant reduction and in many cases have exacerbated the problems associated with changes in hydrology and hydraulics. EPA recommends an approach that integrates the control of storm water peak flows and the protection of natural channels to sustain the physical and chemical properties of aquatic habitat.

Effective management of storm water runoff offers a multitude of possible benefits, including protection of wetlands and aquatic ecosystems, improved quality of receiving waterbodies, conservation of water resources, protection of public health, and flood control.

## 2.0 Storm Water Management Program Elements

The City of Farmington reviewed and approved a Draft SWMP in early March 2003. Subsequent to publication of the Final NPDES Phase II MS4 Rule on September 29, 2006, the City of Farmington began review and updating of its SWMP. The City of Farmington Phase II NPDES program will implement and enforce a SWMP designed to reduce the discharge of pollutants from the municipal separate storm sewer system to the “maximum extent practicable” to protect water quality. Six minimum control measures, listed below, are required under Phase II regulations:

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

In addition to identifying specific goals that will be implemented for each of the control measures identified above, information about the city, its government, population, departments, etc. are submitted with this plan.

## 3.0 City of Farmington Information

The City of Farmington is located within San Juan County in the northwest corner of New Mexico. Farmington is situated at the confluence of the Animas, San Juan and La Plata Rivers. The population of Farmington has continued to grow and, based upon the 2000 Census, now meets the definition of an urbanized area. Basic information about Farmington is also included below:

**Farmington Web Address:** <http://www.fmtn.org>

**Address:**

City of Farmington  
800 Municipal Drive  
Farmington, New Mexico 87401

**Responsible Officials:**

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***Demographics (based on 2000 U.S. Census data):***

<b>Population of Farmington</b>	37,844
<b>Population of Urbanized Area within San Juan County</b>	53,294
<b>Land Area</b>	32.92 square miles
<b>Significant Local Waters</b>	Animas River San Juan River La Plata River

Watershed information on the web:  
<http://www.epa.gov/surf>

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## 4.0 Total Maximum Daily Loads in the Animas and San Juan Rivers

The New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) has developed Total Maximum Daily Load (TMDLs) for surface waters in the State that are not expected to meet water quality standards. The NMED-SWQB TMDL Development Section performs Federally- and State-required surface water quality review and planning functions, which involves determining and planning a watershed or basin-wide budget for pollutant influx to a watercourse. This process necessarily involves state and federal agencies, local water users and other concerned citizens as well as the public at-large.

The TMDL Program (<http://www.nmenv.state.nm.us/SWQB/TMDL/index.html>) determines the adequacy and significance of water quality and other supporting data, reviews the effectiveness of existing water quality protection and pollution control measures, evaluates existing management strategies and develops potential new water quality management implementation strategies. The program interactively uses the full resources of the SWQB to develop and coordinate materials that support the current CWA § 303(d) List for the State of New Mexico.

According to the NMED TMDL Program staff, TMDLs do not currently specify a wasteload allocation applicable to storm water discharges. Therefore, in accordance with Section 1.4.6 of the Phase II MS4 Permit, adherence to a SWMP that meets the requirements of the Permit will generally be assumed to be consistent with any currently approved TMDL. If any EPA-approved or established TMDL specifically precludes such discharges in the future, the MS4 operator may not be eligible for coverage.

According to the current CWA § 303(d) List for New Mexico, the TMDL Program established TMDLs for fecal coliform (*E. coli*) and sedimentation/siltation for stretches of the Animas and San Juan Rivers on August 31, 2005. The NMED SWQB and the San Juan Watershed Group are currently developing TMDLs for eutrophication (i.e. nutrients) and for mercury in fish tissue. Current TMDL standards for portions of the San Juan, Animas, and La Plata Rivers are summarized below in Table 1.

**Table 1. Surface Water Total Maximum Daily Loads (TMDLs)**

<b>Surface Water Reach</b>	<b>Designated Uses</b>	<b>State Impairments</b>	<b>General Criteria*</b>	<b>Regulatory Reference</b>
San Juan River – Hogback upstream to confluence with Animas River	Municipal and industrial water supply; Irrigation Livestock watering Wildlife habitat Secondary contact Marginal coldwater aquatic life; Warmwater aquatic life	1. Mercury (Fish Tissue) 2. Total and fecal coliform (Pathogens)	pH 6.6 to 9.0; Temperature 32.2C (90F); E. coli (grab) 410 cfu/100 mL or monthly geometric mean 126 cfu/100 mL	NMAC 20.6.4.401; 20.6.4.900
San Juan River – from confluence with Animas River upstream to Canon Largo	Municipal and industrial water supply; Irrigation Livestock watering Wildlife habitat Secondary contact Marginal coldwater aquatic life; Warmwater aquatic life	1. Mercury (Fish Tissue) 2. Sediment/siltation; 3. Total and fecal coliform (Pathogens)	pH 6.6 to 9.0; Temperature 32.2C (90F); E. coli (grab) 410 cfu/100 mL or monthly geometric mean 126 cfu/100 mL	NMAC 20.6.4.408; 20.6.4.900
La Plata River – from confluence with San Juan River upstream to New Mexico-Colorado line  (Note: impairments from San Juan River to McDermott Arroyo)	Irrigation; Marginal warmwater aquatic life; Marginal coldwater aquatic life; Livestock watering; Wildlife habitat; Secondary contact	1. Dissolved oxygen (Oxygen depletion); 2. Sediment/siltation; 3. Total and fecal coliform (Pathogens)	pH 6.6 to 9.0; Temperature 32.2C (90F); E. coli (grab) 410 cfu/100 mL or monthly geometric mean 126 cfu/100 mL	NMAC 20.6.4.402; 20.6.4.900
Animas River – from its confluence with San Juan River upstream to Estes Arroyo.	Municipal and industrial water supply; Irrigation Livestock watering Wildlife habitat Primary contact Marginal coldwater aquatic life; Warmwater aquatic life	1. Eutrophication (Nutrients) 2. Total and fecal coliform (Pathogens)	pH 6.6 to 9.0; Temperature 27C (80.6F); E. coli (grab) 410 cfu/100 mL or monthly geometric mean 126 cfu/100 mL	NMAC 20.6.4.403; 20.6.4.900

Note: \*Additional criteria referenced in specific designated use regulatory references.

## 5.0 Public Education and Outreach on Storm Water Impacts (Minimum Measure #1)

The key to implementing and managing an effective storm water management program begins with community awareness and involvement. With this, greater support is typically achieved as the public gains an understanding of the reasons why storm water management is necessary and important. Public support is also beneficial when municipalities attempt to institute new funding initiatives or when recruiting volunteers. In addition, greater compliance with program requirements is realized as individuals become aware of their role in protecting the environment and their ability to impact the quality of local waterways.

### 5.1 *EPA Requirements*

To satisfy this control measure, permittees must implement a public education program regarding the importance of proper storm water management. At a minimum, permittees must perform the following tasks:

1. Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities to communicate the impacts of storm water discharges on local water bodies. In addition, this program must address steps that can be taken to reduce storm water pollution; and
2. Determine appropriate best management practices and measurable goals toward developing a public education and outreach program.

### 5.2 *EPA Guidance*

Three main action areas are important for successful implementation of a public education and outreach program:

1. Forming partnerships with governmental, environmental, civic and industrial organizations.
2. Using educational materials and strategies, such as brochures, posters, educational displays at events, telephone hotlines and educational programs for school children.
3. Reaching diverse audiences through a mix of appropriate local strategies to address the viewpoints of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.

## 5.3 *Efforts to Date*

### 5.3.1 **Annual Water Fair**

The City of Farmington has participated in the Water Fair during the past several years and has presented information specifically about storm water and protection of the Animas, San Juan and La Plata Rivers. The Water Fair is attended by students from around San Juan County. The fair addresses all aspects of water quality preservation.

### 5.3.2 **NPDES Phase II Training/Education**

NPDES Phase II education has been implemented and targeted at the City Council, City Departments, including Community Development (Building Inspection, Construction Inspection, City Engineering, Planning, Streets, Water/Wastewater Administration, and Solid Waste), Parks, Recreation, and Cultural Affairs (Parks Operation and Golf Courses), and Administrative Services (Municipal Operations Center, Vehicle Maintenance, and Warehouse). Informational sessions were provided to City Council in 2003, prior to approval of the Preliminary SWMP. Other City personnel attended the NPDES General Construction Permit courses that are discussed below.

Several NPDES General Construction Permit courses were taught in 2003 and 2004 because residential and commercial builders were identified as a target group needing additional outreach. Courses were taught in conjunction with San Juan College, City of Aztec and San Juan County. Dates included October 2003, May 2004, and January 2005. Course material typically included one day of classroom instruction by Scott Olson, Erosion Control Specialists, followed by a day of field instruction. The course primarily targeted erosion control and reduction of sediment/silt entering surface waters. Good housekeeping practices, which will reduce other contaminants (i.e. petroleum hydrocarbons, concrete washout, etc.) from impacting surface or groundwater, were also emphasized. For the course offered in October 2003, additional classroom instruction was offered on cultural resources and historic preservation clearances; threatened and endangered species documentation and consultation; and preparation of Sediment Control Plans (SCP) (a requirement added to the Construction General Permit by the New Mexico Environment Department) through use of RUSLE (Revised Universal Soil Loss Equation).

San Juan College (SJC) also organized and offered a storm water permitting course specifically for the oil and gas industry, which is one of the primary industries in the San Juan Basin. The first course was held in May 2006, and a second course is scheduled for April 11, 2007. Course material focused construction activities typical to the oil and gas industry. The course instructor was Scott Olson, Erosion Control Specialists.

According to registration data, a total of approximately **251** builders, developers, engineers, and government and industry personnel attended the courses to date (2003 through present).

<i>Year</i>	<i>NPDES Course</i>	<i>Registered</i>	<i>Attended</i>
October 2003	General Construction – Storm Water	70	62
May 2004	General Construction – Storm Water	37	32
January 2005	General Construction – Storm Water	100	91
May 2005	General Construction – Storm Water	43	34
May 2006	Oil & Gas Construction – Storm Water	32	32
April 2007	Oil & Gas Construction – Storm Water	-	-

### **5.3.3 Partnership with Home Builders Association**

The City of Farmington has established an informal partnership with the San Juan County Home Builders Association (SJC-HBA) which includes educating members on current requirements of NPDES Construction General Permits and providing educational materials on BMPs and other site controls. At the annual HBA Home Show, the City of Farmington provided educational brochures and publications relating to storm water and appropriate construction BMPs available at a booth staffed by City of Farmington personnel. The annual HBA Home Show targets builders, developers and the general public (most likely interested in residential construction). The most recent HBA Home Show was held in March 2007, and approximately 25,000 to 30,000 people were in attendance.

### **5.3.4 SWMP on Farmington Web Page**

The Draft SWMP dated 2003 has been posted on the Farmington web page (<http://www.fmtn.org>) for review by the public. Comments, responses, and suggestions have been solicited. The Updated SWMP (2007) will also be posted on the Farmington web page before April 2007. The SWMP may be revised or updated at the end of the permit year, and any modifications will be discussed within the required annual reports to EPA. The on-line availability of the SWMP will most likely be utilized by interested members of the general public.

## **5.4 Planned Actions**

### **5.4.1 Annual Water Fair**

The City of Farmington will continue its participation in the annual water fair and offer additional educational materials and brochures on storm water, potential pollutants, and protection of surface waters. The purpose of the presenting materials is to increase awareness of the need to protect water resources. The entire spectrum of potential water pollutants are addressed within materials presented, and the targeted audience is school aged children.

### **5.4.2 Form Partnerships**

The City of Farmington will continue to initiate partnerships with local groups and organizations, including the local irrigation ditch boards, the River Reach Foundation,

San Juan Watershed Group, the local chapter of the National Society for Professional Engineers (NSPE), the Farmington Metropolitan Planning Organization (FMPO), and any other interested groups or organizations. The purpose of forming additional alliances is to increase awareness of the need of protecting water resources. Forming partnerships will allow for a mechanism to better identify and develop strategies to improve surface water quality in Farmington. The entire range of potential storm water pollutants could be addressed within BMPs developed by various partnerships.

Additionally, City of Farmington will initiate meetings with nearby and adjacent MS4 entities, including the City of Aztec, San Juan County and San Juan College. Note that San Juan College's MS4 drains to the City of Farmington's MS4; however, San Juan College technically falls outside of the urbanized area. The purpose of the meetings will be to: 1) identify shared issues and goals; and 2) develop strategies and timelines for coordinating efforts on specified issues and goals.

#### **5.4.3 Library of Best Management Practices (BMPs)**

A library of Best Management Practice (BMPs) will be posted on the Farmington web page (<http://www.fmtn.org>). Additionally, a list or computer disk of links to useful BMPs will be available at the City Building Permit Counter, which can be utilized by developers and residential and commercial builders. BMPs will be applicable for public education and outreach to city residents, businesses and industry, contractors and builders, and educators.

#### **5.4.4 NPDES Phase II Training/Education – City Government**

NPDES Phase II education will be implemented and targeted at the City Council as well as several City Departments, including Community Development (Building Inspection, Construction Inspection, City Engineering, Planning, Streets, Water/Wastewater Administration, and Solid Waste), Parks, Recreation, and Cultural Affairs (Parks Operation and Golf Courses), and Administrative Services (Municipal Operations Center, Vehicle Maintenance, and Warehouse). Training and education efforts will also be targeted to relevant committees, including the Planning and Zoning Commission. Training and education regarding the NPDES Phase II requirements and implementing the SWMP may include staff presentations or attendance at storm water courses presented by San Juan College.

#### **5.4.5 NPDES Phase II Training/Education – Construction Activities**

City of Farmington and San Juan College will evaluate and organize continued NPDES training on an as-needed basis. Additional training has also recently been identified by HBA as frequently being requested by HBA members. The target audience of such training is residential and commercial builders, graders and excavators, and developers, along with local government personnel. It is anticipated that the course instructor would be Scott Olson, Erosion Control Specialists, and that the coursework will be similar to courses presented in the past few years.

#### **5.4.6 NPDES Phase II Training/Education – Industrial Storm Water**

The City of Farmington will explore offering additional training for industrial storm water permit holders in the area, perhaps in coordination with San Juan College, possibly in coordination with City of Aztec and San Juan County. The NPDES Multi-Sector General Permit (MSGP) for industrial activity expired in October 2005. The new MSGP has not

yet been finalized. However, general storm water training targeted at the industrial categories required to apply for coverage under the MSGP will increase awareness of the MSGP permit requirements, including proper BMPs, illicit discharge and connections and local notification requirements.

#### **5.4.7 NPDES Phase II Training/Education – Residential**

City of Farmington, San Juan College and local nurseries will develop and present one day courses on xeriscaping, low water use gardening, and rain water harvesting. City of Farmington anticipates the courses could be offered in May and/or September of 2008. Course materials will utilize City of Santa Fe and NMED publications on xeriscaping, low water use, and rain water harvesting. The targeted audience will be residential homeowners.

#### **5.4.8 Utility Bill Information Sheets/Brochures**

The City of Farmington will include a series of informative brochures within utility bill mailings on storm water runoff, potential pollutants, and protection of surface waters. The City will complete at least one mailing per year during the permit cycle. The target audience of the mailings will be the general public, i.e. those who live in Farmington and receive utility bills.

A table outlining measurable goals, persons or departments responsible for implementing them, target audience and proposed completion date are presented in Table 2.

**Table 2. Public Education/Outreach Measurable Goals**

	<i>Description of Education/Outreach Activity</i>	<i>Department/Personnel Responsible for Implementation</i>	<i>Targeted Audience</i>	<i>Month</i>	<i>Year of Permit</i>
1	Annual Water Fair - develop and distribute additional informational materials about protection of rivers and lakes and water conservation.	Water/Wastewater Admin. Ruben Salcido	Children and Youth	Annually	2007 - 2012
2	Partnerships – initiate partnerships with interested groups and organizations:	<p><b>Irrigation Ditch Boards</b> City Engineering</p> <p><b>FMPO</b> Planning Division (Charity Fechter)</p> <p><b>NSPE</b> Community Development (Nica Westerling, Jeff Smaka, Larry Cynova)</p> <p><b>River Reach</b> Parks, Recreation, and Cultural Affairs Jeff Bowman/Roger Drayer</p> <p><b>San Juan Watershed Group</b> Water/Wastewater Admin. (Paul Montoya, Ruben Salcido)</p> <p><b>San Juan College, City of Aztec, and San Juan County</b> Community Development</p>	<p>Farmers; Agricultural</p> <p>Transportation</p> <p>Engineers</p> <p>Recreational Users</p> <p>Industry, Government, Environmental Organizations</p> <p>Adjacent MS4s</p>	December	2008
3	Library of Best Management Practices (BMPs) - available at the City of Farmington Building Permit Counter and online at Farmington web site.	Community Development	Developers Builders General Public	September	2007

	<b>Description of Education/Outreach Activity</b>	<b>Department/Personnel Responsible for Implementation</b>	<b>Targeted Audience</b>	<b>Month</b>	<b>Year of Permit</b>
4	NPDES Phase II Training – City Government - to include City Council and relevant departments.	Community Development City Engineer/MS4 Personnel	City Employees	November	2007
5	NPDES Phase II Training – Construction Activities – to focus on erosional control and BMPs associated with construction activities. Course to be offered in conjunction with San Juan College and taught by Scott Olson.	Community Development City Engineer/MS4 Personnel	Developers Builders City Employees	May	2008
6	NPDES Phase II Training – Industrial Activities – to focus on BMPs, storm water runoff, and illicit discharge or connections to City sewer or storm drains. <i>NOTE: To be conducted after MSGP for industrial activities is published.</i>	Community Development Water/Wastewater Admin. Ruben Salcido	Industry	November	2008
7	NPDES Phase II Training – Residential – to focus on educating public about xeriscaping, proper fertilization, rainwater harvesting, and minimizing irrigation runoff.	Parks, Recreation, and Cultural Affairs Roger Drayer	General Public (Residential Homeowners)	May and/or September	2008
8	Utility bill information sheets or brochures on storm water and protection of surface water. <i>NOTE: Should advertise public outreach session for xeriscaping, rainwater harvesting, etc. See Section Above.</i>	Community Development City Engineer/MS4 Personnel	General Public	Yearly	2007 through 2012

## 6.0 Public Involvement/Participation (Minimum Measure #2)

The USEPA believes the public can provide valuable input and assistance toward implementing a Phase II storm water management program. As a result, the NPDES Phase II program will require public participation and involvement in the development and implementation of a storm water management program. Providing the public with an opportunity to develop the program will help to broaden public support, increase the number of potential ideas to meet the permitting requirements, provide a conduit to other community and government programs and shorten the implementation schedules due to fewer public outcries and dissent.

### 6.1 *EPA Requirements*

At a minimum, permittees will be required to comply with applicable public notice requirements and to determine appropriate best management practices and measurable goals toward encouraging public participation and involvement.

### 6.2 *EPA Guidance*

Permittees should include the public in developing, implementing, and reviewing their storm water management programs. The public participation process should make every effort to reach out and engage all economic and ethnic groups. Alternative advertising methods should be used whenever possible, including radio or television spots, postings at libraries, schools, bus stops and multilingual announcements. There are a variety of practices that could be incorporated into a public participation and involvement program, such as public meetings, citizen watch groups, community cleanups and storm drain stenciling.

### 6.3 *Efforts to Date*

#### **6.3.1 Code Compliance Hotline**

The City of Farmington tracks the types of code compliance calls it receives and then documents follow up actions by the City. Over the past year or so, there were four complaints made regarding dumping or leaking of sanitary waste, and there were seven complaints regarding illegal dumping of grease, industrial waste, and oil.

#### **6.3.2 Farmington Clean & Beautiful**

The Farmington Clean & Beautiful Program, which is operated by the Parks, Recreation, and Cultural Affairs Department, currently coordinates several activities throughout the year relating to beautification and litter removal throughout the City. Relevant programs include the Adopt-a-Highway and Adopt-a-Spot, Farmington Clean and Beautiful Cleanup Weekends. The purpose of the cleanup activities is to physically remove litter, trash and debris which could potentially be carried to surface waters via storm water runoff. Volunteers from various civic groups, schools, and scout groups participate in these cleanup events. In 2006, cleanup weekends (in total) drew approximately 900 volunteers collecting approximately 400 bags of trash.

### 6.3.3 Household Non-Hazardous Waste Program

The Farmington Parks, Recreation, and Cultural Affairs Department currently coordinates the Household Non-Hazardous Waste Program, which is staffed by volunteers, to collect and properly dispose of household non-hazardous waste twice per year. The amount of waste collected is documented, and the waste is properly disposed of at an approved facility. Operation of this program reduces the potential amount of materials that could be illegally disposed of in a storm drain or sanitary sewer. Participants include members of the general public. The event was historically advertised via fliers inserted into utility bills; however, the events are now advertised through use of newspaper advertising and fliers.

Historic collection data for the Household Non-Hazardous Waste Program in 2004, 2005, and 2006 are presented below:

<i>Year</i>	<i>Yard Waste (carloads)</i>	<i>Dumpster Waste (carloads)</i>	<i>Metal Waste (carloads)</i>
Spring 2004	344	519	164
Fall 2004	96	221	82
Spring 2005	No data	No data	No data
Fall 2005	173	290	115
Spring 2006	243	476	194
Fall 2006	138	262	65

Additionally, in 2006, a refrigerator recycling day was held by Farmington Clean and Beautiful, and a total of 122 refrigerators were collected and properly disposed of. Refrigerators may potentially contain ozone depleting freon as well as other potential pollutants, such as coolants, metals, etc. that may impact surface waters if they come into contact with storm water runoff. Refrigerator recycling was funded through Farmington's Community Development Block Grant (CDBG) Program.

### 6.3.4 Household Hazardous Waste Program

The Household Hazardous Waste Program is overseen by the Water/Wastewater Department, and one collection event is typically held on an annual basis. Residents of Farmington can bring old batteries, household paints and chemicals, etc. for proper disposal.

### 6.3.5 Public Meetings

The following public meetings were held after the issuance of the draft permit:

**January 28, 2003:** General information regarding NPDES Phase II requirements was presented by Nica Westerling, P.E., City of Farmington, and Elizabeth McNally, P.E., AES, at the Farmington City Council meeting.

**January 30, 2003:** General information regarding the NPDES Phase II requirements was presented by Nica Westerling, P.E., City of Farmington, and Elizabeth McNally, P.E., AES, at the Farmington Planning and Zoning Committee meeting.

**February 6, 2003:** Information on the six minimum control measures was presented along with the proposed BMPs and measurable goals the City is considering as part of its SWMP. Rich Powell from the NMED-SWQB also attended the meeting and provided additional input. A total of 19 people attended the meeting.

**February 20, 2003:** The first portion of the meeting included specific information on the requirements of the existing NPDES General Construction Permit along with the new requirements for small construction activities which are part of the proposed NPDES General Construction Permit. The second portion of the meeting addressed potential partnering opportunities for public outreach and education with San Juan College (which operates its own MS4 but falls outside the Urbanized Area) and with the County. A total of 11 people attended the meeting.

**March 6, 2003:** Farmington City Council Work Session Meeting. The draft SWMP was reviewed by City Council, and questions and comments were put forward by Council members. The draft SWMP was approved unanimously by the Farmington City Council.

Comments, questions, and feedback about storm water issues and the draft SWMP were used to refine and clarify Farmington's SWMP.

After final issuance of the NPDES Phase II MS4 permit, the City of Farmington published a legal notice in the Farmington Daily Times on **February 1, 2007**, that the Draft SWMP was available for review. Comments were to be received by the City Engineer no later than March 1, 2007. No comments or questions were received from interested parties. A copy of the legal notice is included in Appendix A.

### **6.3.6 Storm Drain Stenciling**

The City of Farmington coordinated with Eagle Scouts to complete storm drain stenciling throughout portions of the City. This work was completed in 2003 and 2004. Storm drain stenciling alerts the general public that water entering storm drains discharges to the San Juan, Animas and La Plata Rivers.

## **6.4 Planned Actions**

### **6.4.1 Code Compliance Hotline**

The City of Farmington will continue to encourage the public to report code violations, including illicit discharges to storm drains or illegal dumping. Information about the code compliance hotline is available on the City of Farmington's web page (<http://www.fmtn.org>) and is listed in the telephone book. The target users of the hotline are the general public. Code violation data will be incorporated into Annual Reports prepared and submitted to USEPA.

### **6.4.2 Farmington Clean and Beautiful**

Farmington's Parks, Recreation, and Cultural Affairs Department is responsible for managing the Farmington Clean and Beautiful Program. This program also includes the Adopt-a-Spot and Adopt-a-Highway programs. Farmington Clean and Beautiful cleanup weekends are typically held twice per year. The next cleanup weekends are scheduled for May 19<sup>th</sup> and September 8<sup>th</sup>, 2007. Participants include members of local civic groups, students, and scout groups. Cleanup efforts include physical removal of trash, debris and other items which may enter storm drains and ultimately be discharged to surface waters (i.e. San Juan, Animas and La Plata Rivers). Additional storm water educational materials will be incorporated into outreach activities managed by the Farmington Clean and Beautiful Program.

### **6.4.3 Household Non-Hazardous Waste Program**

The City of Farmington will track and maintain documentation on the amount of waste disposed of through the Household Non-Hazardous Waste Program and include this information in the annual compliance report. Dumpster weekends are typically held twice per year, and the scheduled dates for 2007 are April 21<sup>st</sup> and October 27<sup>th</sup>, 2007. Collection data will be incorporated into Annual Reports submitted to USEPA.

### **6.4.3 Household Hazardous Waste Program**

The City of Farmington Community Development Department will track and maintain documentation on the amount of waste disposed of through the Household Hazardous Waste Program and include this information in the annual compliance report. Events are held annually, and collection data will be incorporated into Annual Reports prepared and submitted to USEPA.

### **6.4.4 Public Meetings**

The City of Farmington will hold one public meeting per year during the life of the permit to solicit questions, concerns, comments and feedback on the SWMP and the City's efforts to date. Additionally, City personnel from various departments (i.e. Community Development, Water/Wastewater, Parks, Recreation, and Cultural Affairs, etc.) will be in attendance at these meetings to review efforts and schedule coordination of future measurable goals relating to storm water. Personnel from adjacent MS4s may also be in attendance. Notice of the meetings will be advertised in the Legal section of the newspaper and also posted on the Farmington web page.

Community Development personnel will be responsible for scheduling and running the public meeting. Within the meeting, reasonable comments or suggestions received by the City of Farmington with regards to storm water will be presented for discussion. If changes or modifications to the SWMP are warranted, these changes will be made to the SWMP, presented for approval to the City Council, and then referenced in the next MS4 Phase II Annual Report submitted to USEPA.

### **6.4.5 Storm Drain Labeling**

The City of Farmington will continue to work with Farmington students, scouts, civic groups or any other member of the general public to complete storm drain labeling throughout Farmington. Areas around schools, shopping centers, and parks are of special interest because there are often more pedestrians in these areas.

#### **6.4.6 Farmington Web Site**

The City of Farmington will create an area on its web page which presents the SWMP, relevant links to BMPs (i.e. BMP library), and also a link to provide suggestions, comments, or ask questions of the designated NPDES personnel within the Community Development Department. The target users of the web page are considered to be the general public.

**Table 3. Public Involvement Measurable Goals**

	<i>Description of Goal</i>	<i>Department/Personnel Responsible for Implementation</i>	<i>Target Audience</i>	<i>Month</i>	<i>Permit Year</i>
1	Code Compliance Hot Line for reporting storm water complaints or reports of illicit discharges. Data to be included within SWMP Annual Reports.	Code Compliance	General Public	Ongoing	2007 - 2012
2	Coordinate with Farmington Clean & Beautiful to continue cleanup weekends.	Andrea Duncan Parks & Recreation	Civic group volunteers; students; scout groups	May & September	2007 - 2012
3	Coordinate, implement, and track volume of waste disposed of through the Household Non-Hazardous Waste Programs.	Andrea Duncan Parks & Recreation	General Public	April & October	2007 - 2012
4	Coordinate, implement, and track volume of waste disposed of through the Household Hazardous Waste Programs.	Ruben Salcido Water/Wastewater Admin.	General Public	Annually	2007 - 2012
5	Hold annual public meeting to solicit feedback on the SWMP. Personnel from Farmington's Community Development, Planning and Zoning, Parks, Recreation, and Cultural Affairs, Water/Wastewater departments to be present.	Community Development	General Public City of Farmington Departments	December	2007 - 2012
6	Continue storm drain labeling to raise awareness that water or materials entering storm drains ultimately discharges to the San Juan, Animas and La Plata Rivers.	Community Development	Civic group volunteers; students; scout groups	December	2008
7	Farmington web page – to include posting the most recent SWMP, NOI, useful links, BMP library, and a feedback/contact link	City of Farmington IT	General Public	September	2007

## 7.0 Illicit Discharge Detection and Elimination (Minimum Measure #3)

To eliminate illicit discharges into the public storm sewer system, permittees will be required to develop a strategy to detect and eliminate such discharges. An illicit discharge has been defined by the EPA as “any discharge into a separate storm sewer system that is not composed entirely of storm water”. Typically, illicit discharges enter a storm sewer system either through direct connections, e.g., sanitary sewer piping, or indirectly from cracked sanitary sewer conveyance systems, spills collected by storm drains, or from contaminants dumped directly into a storm drain inlet. Pollutants associated with illicit discharges include heavy metals, toxics, oil and grease, solvents, nutrients, viruses and bacteria. These untreated discharges have the potential to cause significant degradation to receiving waterbodies. The following are typical examples of illicit discharges:

- Sanitary wastewater
- Effluent from septic tanks
- Laundry wastewater
- Commercial car wash discharges
- Improper disposal of household or automotive toxics
- Spills from roadway accidents

Substantial levels of these contaminants can damage fish and wildlife habitats, decrease aesthetic value, and threaten public health due to contaminated food and drinking water supplies.

### 7.1 EPA Requirements

The Storm Water Phase II rule requires the following to comply with this minimum measure:

1. Develop a storm sewer map illustrating the location of all storm sewer outfalls and the names and location of all waters of the United States that receive discharges from these outfalls.
2. Prohibit the discharge of non-storm water discharges into the public storm sewer system through the implementation of an ordinance or other regulatory mechanism and appropriate enforcement procedures and actions. Develop a plan to detect and address non-storm water discharges, including illegal dumping.
3. Educate public employees, businesses, and the general public regarding the impacts associated with illegal discharges and the improper disposal of waste.
4. The determination of appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

### 7.2 EPA Guidance

The objective of the illicit discharge detection and elimination minimum control measure is to have regulated small MS4 operators gain a thorough awareness of their systems.

This awareness allows them to determine the types and sources of illicit discharges entering their system; and establish the legal, technical, and educational means needed to eliminate these discharges. Permittees could meet these objectives in a variety of ways depending on their individual needs and abilities, but some general guidance for each requirement is provided below.

### **7.2.1 Storm Water Sewer Map**

A storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system, and it is needed to help determine the extent of discharged dry weather flows (dry weather flows indicate a non-storm water discharge), the possible sources of the dry weather flows, and the particular waterbodies these flows may be affecting.

### **7.2.2 Legal Prohibition and Enforcement**

Some permittees may have limited authority to establish and enforce an ordinance or other regulatory mechanism prohibiting illicit discharges. In such cases, the permittee is encouraged to obtain the necessary authority, if possible.

*It should be noted that irrigation water discharged into Farmington's storm water sewer system may be considered a non-storm water discharge by the EPA; however, EPA Region VI, does not issue NPDES permits for irrigation water discharges at this time, and the City of Farmington has no legal authority to prohibit irrigation water from being discharged into its storm drain system.*

### **7.2.3 Plan to Detect and Address Illicit Discharges**

The plan to detect and address illicit discharges is the central component of this minimum control measure. The four steps of a recommended plan include:

1. Locate problem areas
2. Find the source
3. Remove/Correct illicit connections
4. Document actions taken

Locating problem areas and finding the source of illicit discharges will be achieved by City of Farmington through the use of storm water sampling; dry weather outfall inspections; camera inspections of storm drain lines; and responding to illicit discharge code compliance reports.

Once sources are verified, illicit connections will be removed or mitigated. Other sources may require the implementation of site specific BMPs, such as upgrade or replacement of on-site septic systems, installation of oil/water separators, etc. Any actions taken or required by the City of Farmington will be documented and included in future annual reports.

City of Farmington has initially determined that the following types of non-storm water discharges do not appear to be significant contributors of pollutants to the MS4:

- Water line flushing;
- Landscape irrigation and lawn watering;
- Diverted stream flows;

- Rising groundwater;
- Uncontaminated groundwater infiltration;
- Uncontaminated pumped groundwater;
- Discharges from potable water sources;
- Foundation drains, water from crawl space pumps, footing drains;
- Air conditioning condensation;
- Irrigation water;
- Springs;
- Individual residential car washing and non-commercial or charity car washing;
- Flows from riparian habitats and wetlands;
- Dechlorinated swimming pool discharges;
- Spills (petroleum products, chemicals, etc);
- Street wash water;
- Discharges from emergency fire fighting activities.

The City of Farmington will continually evaluate whether these non-storm water discharges may be contributing to pollutants in the MS4 system as new information and data become available. Any modifications will be incorporated into the SWMP and detailed within the Annual Report submitted to USEPA.

#### **7.2.4 Educational Outreach**

Outreach to public employees, businesses, property owners, the general community, and elected officials regarding ways to detect and eliminate illicit discharges is an integral part of this minimum measure.

### *7.3 Efforts to Date*

#### **7.3.1 Baseline Storm Water Sampling**

Animas Environmental Services, LLC (AES) on behalf of the City of Farmington conducted baseline sampling at representative storm water outfall locations throughout the city in February 2007. The purpose of the sampling is to assist in locating problem areas and to establish baseline data for the Farmington MS4. Storm water samples were measured for pH, temperature, dissolved oxygen (DO), and specific conductivity. Laboratory samples were also collected and analyzed for chemical oxygen demand (COD), total suspended solids (TSS), oil and grease, and metals (aluminum, arsenic, cadmium, copper, iron, lead, nickel, and zinc). Field measurements and laboratory analytical results were tabulated and are presented in Appendix B along with the laboratory analytical reports.

Initial baseline results showed concentrations to be below EPA storm water benchmarks, with the exception of two samples (Outfall #1 and #2) collected from Farmington's Municipal Operations Center (MOC). Elevated pH readings, specific conductivity, and COD were noted, with specific conductivity in Outfall #1 at 13.88 mS/cm, which is approximately one order of magnitude higher than other samples collected. Note that specific conductivity is reflective of total dissolved solids (TDS) and may reflect an impact from materials stored at the MOC (such as magnesium chloride). MOC Outfall #1 also had COD concentrations of 193 mg/L, which is above the EPA general storm water benchmark of 120 mg/L. pH readings from both Outfall #1 and #2 were slightly elevated, with 9.13 and 9.62, respectively.

Additionally, the San Juan Watershed Group has conducted outfall sampling (July and October 2006) along the Animas River in order to assist NMED-SWQB in the development of TMDLs for nutrients (nitrogen and phosphorus). Tabulated sampling results from these sampling events are available from the NMED and from the San Juan Watershed Group.

### **7.3.2 Household Hazardous Waste Program**

Farmington's Community Development Department currently coordinates the Household Hazardous Waste Program, which is staffed by volunteers, to collect and properly dispose of household hazardous waste on an annual basis. The amount of waste collected is documented, and the waste is properly disposed of at an approved facility. Operation of this program reduces the potential amount of materials that could be illegally disposed of in a storm drain or sanitary sewer.

### **7.3.3 Illicit Discharge Complaints**

The City of Farmington currently receives and tracks complaints about illicit discharges and illegal dumping via its Code Compliance hotline. Documenting and responding to illicit discharge complaints will assist in reducing or eliminating improper disposal of waste. Over the past year, the Code Compliance hotline received approximately seven complaints regarding the illegal dumping of grease, oil, and chemicals.

### **7.3.4 Camera Inspection of Sanitary Sewer and Storm Drains/Lines**

Inspections of storm drains and lines are conducted via camera on an as-needed basis by CH2MHill-OMI (OMI), the City of Farmington's contractor for water and wastewater services. One-fifth of sanitary sewer lines are inspected via camera each year to document line conditions and discovery of illicit connections. Documentation of the camera inspections and mitigative actions are maintained by OMI.

Additional storm drain connection inspections are conducted by OMI when inspecting water and sanitary sewer connections at locations within Farmington. When illicit connections are found, OMI personnel restore proper connections and document all actions.

### **7.3.5 Storm Water Sewer System Map**

The City of Farmington currently maintains a storm water sewer system map and a map with manhole locations. The map has not yet been incorporated into AutoCad or GIS and is only available on paper.

### **7.3.6 Implementation of Structural BMPs**

The City of Farmington last completed a Master Drainage Study in 1978. Although not formally adopted by the City of Farmington, most of the structural improvements recommended within the Study were completed by the City of Farmington in the 1980s and 1990s. Structural improvements made include (but are not limited to) the following:

- 30<sup>th</sup> Street Dam on College Arroyo;
- Martin Arroyo Dam;
- East 20<sup>th</sup> Street Storm Sewer to East Main Street.;
- Hutton Road and East Main Street Storm Sewer;

- West Downtown Storm Sewer;
- West Apache Street Crossing Structure on Farmington Glade;
- Vine Avenue Storm Sewer System;
- East Main Street Crossing Structure on Porter Arroyo;
- 30<sup>th</sup> Street Crossing Structure on Porter Arroyo;
- Santiago-Cooper-Fairgrounds Storm Sewer System;
- Municipal Drive Crossing Structure on Farmington Glade;

## 7.4 Planned Actions

### 7.4.1 Quarterly Storm Water Sampling

The City of Farmington will conduct routine sampling at select and representative storm water outfall locations for the next two years. Storm water sampling will be conducted (weather permitting) on a quarterly basis at approximately 12 storm water outfall locations throughout the City or at locations where Farmington's MS4 discharges to the Animas, San Juan, and La Plata Rivers.

Storm water flow will be measured, along with rainfall data, pH, temperature, DO, and specific conductivity. Laboratory analyses will include oil and grease, TSS, COD, aluminum, arsenic, cadmium, chloride, copper, iron, lead, nickel and zinc, fecal coliform (*E. coli*), and nutrients (including nitrate/nitrite, total Kjeldahl nitrogen (TKN), ammonia, and phosphorus). All sampling will be conducted in accordance with *Standard Operating Procedures for Sample Collection and Handling* (Surface Water Quality Bureau, NMED, June 2004). Sample parameters, appropriate EPA methods, and general EPA storm water benchmark values are noted below.

<b>Sample Parameter</b>	<b>EPA Method</b>	<b>General EPA Storm Water Benchmark Values</b>
Flow	Field measurement	Not Applicable
pH	EPA 150.1	6.0 - 9.0
Temperature	EPA 170.1	Not Established
Dissolved Oxygen	EPA 360.1	Not Established
Specific Conductivity	EPA 160.1	<0.2 mS/cm*
Oil and Grease	EPA 1664	<15 mg/L
Chemical Oxygen Demand (COD)	EPA 410.4	<120 mg/L
Aluminum	EPA 6020	<0.75 mg/L
Arsenic	EPA 6020	<0.16854 mg/L
Cadmium	EPA 6020	<0.0159 mg/L
Copper	EPA 6020	<0.0636 mg/L
Iron	EPA 6020	<1 mg/L

<b>Sample Parameter</b>	<b>EPA Method</b>	<b>General EPA Storm Water Benchmark Values</b>
Lead	EPA 6020	<0.0816
Nickel	EPA 6020	<1.417
Zinc	EPA 6020	<0.117
Fecal Coliform (E. coli)	EPA 1603 (filter membrane) or SM 9223.B (Colilert)	Not Established
Nutrients (Nitrate/Nitrite, Total Kjeldahl Nitrogen (TKN), Ammonia, Phosphorus)	Nitrate - EPA 353.2, 354.1; Nitrite – EPA 353.2; 354.1; TKN - EPA 351.2 or 351.3; Ammonia - EPA 350.3, 350.2, 350.1; Phosphorus - EPA 365.4 or SM 4500-P	Not Established
Total Suspended Solids (TSS)	EPA 160.2	<100 mg/L

\*Note – EPA benchmark value for specific conductivity is not typical for the San Basin area.

Based on the results of two years of data, the frequency of sampling may be reduced (but to not less frequently than semi-annual sampling). The sample outfall locations may be modified in order to better represent storm water discharges by the MS4 system. Data will assist the City of Farmington to better identify areas that need attention, in particular development and implementation of better BMPs.

Results will be reviewed and evaluated with regards to applicable TMDLs developed for various reaches of the Animas, San Juan and La Plata Rivers. All data will be presented in Annual Reports to USEPA and NMED-SWQB. Data will also be made available to San Juan Watershed Group.

### **7.4.2 Camera Inspection of Sanitary Sewers and Storm Drains/Lines**

The City of Farmington has implemented an inspection program in which one-fifth of the sanitary sewer lines are inspected via camera each year. This inspection program will assist in determining and documenting the conditions of the sanitary sewer system and documenting any illicit connections to storm drain lines. Storm drain lines will continue to be inspected via camera on an as-needed basis or more frequently, if funds allow.

Specific written protocols for the inspection program will be developed and may be incorporated into the next contract for services. Additionally, \$150,000 has been budgeted for cleaning of storm drains in Fiscal Year 2007, and \$300,000 has been proposed within the Fiscal Year 2008 budget for cleaning storm drains.

### **7.4.3 Dry Weather Inspections of Storm Sewer Outfalls**

The City of Farmington or a contractor will conduct dry weather inspections of storm sewer outfall locations and major arroyos within the City on a quarterly basis for the first two years of the MS4 permit (and then re-evaluated). Inspections will include documenting the flow rate (if any) and recording characteristics of the flow, including appearance, odor, turbidity, pH, temperature, and conductivity. Based upon the visual appearance of any non-storm water observed, additional samples may be collected for

laboratory analysis of constituents such as oil and grease, COD, total suspended solids, nutrients, or E. coli. Note that all laboratory analytical methods will be approved under 40 CFR 136. Major storm sewer outfall locations are included on Figure 1.

#### **7.4.4 Ordinance Review/Development**

The City of Farmington will review and/or amend existing ordinances to ensure they effectively prohibit illicit discharges or dumping and that they include appropriate enforcement mechanisms. If no such ordinances exist, they will be developed and implemented by the City of Farmington.

Currently, the existing Farmington ordinance prohibits discharge to natural outlets, but does not specifically prohibit discharge to storm drains:

***Sec. 26-3-5. Discharge to natural outlets.***

*It shall be unlawful to discharge to any natural outlet within the city or in any area under the jurisdiction of the city any sewage or other polluted waters, except where suitable treatment has been provided in accordance with this article.*

*(Code 1969, § 32-71)*

Community Development will be responsible for preparing the requested ordinance change, submitting to City Attorney for review, and presenting to City Council for approval.

#### **7.4.5 Incorporation of Storm Drain Map and Manhole Map into GIS**

Once the City of Farmington has established a comprehensive GIS Program, it will incorporate the existing storm drain map and manhole map into GIS. The City has budgeted for a contractor to complete this work during the 2008 Fiscal Year. Work should begin in July 2008 and be completed by June 2009. Community Development will be responsible for ensuring this task is completed.

#### **7.4.6 Develop Budget and Timeline for Implementation of Structural BMPs**

The City of Farmington will develop a budget and schedule for implementation of structural BMPs which will prevent illicit discharges and/or connections into the storm sewer system. Community Development will be responsible for completing this task. The City of Farmington has budgeted for completion of a Master Drainage Study. Within 18 months of completion of the Master Drainage Study, the City of Farmington will develop a timeline for completing structural BMPs which will assist in preventing illicit discharges and/or connections.

#### **7.4.7 Develop Partnerships with Local Irrigation Ditch Boards**

The City of Farmington will develop a partnership with local irrigation ditch boards in order to establish a protocol to monitor irrigation overflows for potential hazards and to minimize illicit discharges into the storm sewer system. Currently, irrigation water discharged into Farmington's storm water sewer system is considered a non-storm water discharge by the EPA; however, EPA Region VI, does not issue separate NPDES permits for irrigation water discharges at this time, and the City of Farmington has no legal authority to prohibit irrigation water from being discharged into its storm drain system.

#### **7.4.8 Track Industrial Facilities Required to Have NPDES Multi-Sector General Permits for Storm Water Discharges**

The City of Farmington will develop a method to track which industrial facilities located within Farmington are required to have a NPDES Multi-Sector General Permit (MSGP) for storm water discharges. Currently, these facilities are required to submit a copy of their Notice of Intent (NOI) to the City of Farmington. Once identified, City of Farmington will develop protocol to inspect each facility and ensure that no illicit connections to City sanitary or storm sewers are present at the facility.

#### **7.4.9 Inform Public Employees, Businesses and General Public of Hazards Associated with Illegal Discharges and Improper Waste Disposal**

Through public outreach and education efforts, Farmington will continue its efforts to keep public employees, businesses and general public informed of the hazards and impacts to the environment associated with illegal discharges and improper waste disposal. Public outreach and educational efforts are presented in detail in Section 5 and include the following:

- Household Hazardous and Non-Hazardous Waste Disposal Programs;
- Annual Water Fair;
- Farmington Web page;
- NPDES Storm Water Courses;
- Educational Outreach Programs; and
- Storm Water Information Presented in Utility Bills

Illicit discharge measurable goals, departments or personnel responsible for implementation and the proposed completion date are included in Table 4.

**Table 4. Illicit Discharge Measurable Goals**

	<i>Description of Goal</i>	<i>Department/Personnel Responsible for Implementation</i>	<i>Month</i>	<i>Permit Year</i>
1	Implement quarterly storm water sampling program of representative outfall locations for at least 2 years. Re-evaluate sampling plan after 2 years and possibly change frequency (not less than semi-annual).	Community Development to Implement; City Personnel or Qualified Contractor May Conduct Sampling	Jan-March April-June July-Sept Oct-Dec	2007 2008
2	Implement camera inspection program where 1/5 <sup>th</sup> of drains are inspected via camera each year. Approximately \$300k budgeted during FY08 for cleaning storm drains.	Community Development Water/Wastewater Admin.	June	2008
3	Start conducting quarterly dry weather outfall inspections on routine basis. Sample locations to include outfall locations at rivers and major arroyos.	Community Development to Implement; City Personnel or Qualified Contractor May Conduct Sampling	Jan-March April-June July-Sept Oct-Dec	2007 2008
4	Review existing ordinances to ensure that they effectively prohibit illicit discharges or dumping. Ensure that appropriate enforcement mechanisms are in place.	Community Development	December	2008
5	Incorporate storm water collection map into GIS.	Community Development Drafting Department	December	2009
6	Develop budget and timeline for implementation of structural BMPs relating to illicit discharge/ connection. To be developed within 18 months after completion of Master Drainage Study.	Community Development	July	2010
7	Develop partnership efforts with local irrigation ditch boards.	Community Development City Engineering	December	2008

	<b>Description of Goal</b>	<b>Department/Personnel Responsible for Implementation</b>	<b>Month</b>	<b>Permit Year</b>
8	<p>Identify or track industrial facilities within the City (by business licensing or other means) which are required to have Industrial Multi-Sector General Permits for the NPDES Program.</p> <p>Once identified, develop a protocol for inspecting and certifying that no illicit connections to sanitary or storm sewer are present.</p>	<p>Business Licenses to identify facilities;</p> <p>Water/Wastewater Admin. to develop protocol for inspection and certification that no illicit connections present.</p>	<p>December</p> <p>December</p>	<p>2008</p> <p>2010</p>
9	<p>Continue public outreach and educational efforts to keep public employees, businesses, and general public informed about hazards and impacts of illegal discharges and improper waste disposal.</p>	<p>Community Development (See Section 5)</p>	<p>Varies</p>	<p>2007 - 2012</p>

## 8.0 Construction Site Storm Water Runoff Control (Minimum Measure #4)

Polluted storm water from construction sites, including development of subdivisions, is often conveyed to storm sewer systems that ultimately discharge into rivers and streams. During a small storm event, both large and small construction sites can contribute a significant quantity of pollutants to receiving water bodies. Although sediment is the primary concern, other contaminants include nutrients, pesticides, oils and grease, concrete truck washout material, and construction chemicals and debris.

### 8.1 EPA Requirements

The Storm Water Phase II rule requires the following to comply with this minimum measure:

1. Establishment of an ordinance or other regulatory mechanism requiring the proper implementation of sediment and erosion controls, and controls for other wastes, for construction sites with a land disturbance greater than or equal to one acre.
2. Procedures for site plan review of construction plans that consider potential water quality impacts.
3. Procedures for site inspection and enforcement control measures.
4. Sanctions to ensure compliance with local regulatory requirements (established in the ordinance or other regulatory mechanism).
5. Procedures for the receipt and consideration of information submitted by the public.

### 8.2 EPA Guidance

#### 8.2.1 Regulatory Mechanism

Through the development of an ordinance or other regulatory mechanism, the small MS4 operator must establish a construction program that controls polluted runoff from construction sites with a land disturbance of greater than or equal to one acre. The ordinance or regulatory mechanism must include enforcement escalation procedures for recalcitrant or repeat offenders.

#### 8.2.2 Site Plan Review

The small MS4 operator must include in its construction program requirements for the implementation of appropriate BMPs on construction sites to control erosion and sediment and other wastes at the site. Before ground is broken at the construction site, the MS4 operator must review the plans and verify that the BMPs proposed for the site would generally be appropriate for site conditions if properly installed and maintained. Note that the MS4 operator is not required to guarantee that BMPs selected by the construction site operator will prove effective in practice. Responsibility for replacing BMPs that prove ineffective in practice remains with the construction site operator.

### **8.2.3 Inspections and Penalties**

Once construction commences, BMPs should be in place, and the small MS4 operator's enforcement activities should begin. To ensure that the BMPs are properly installed, the small MS4 operator is required to develop procedures for site inspection and enforcement of control measures to deter infractions. Where the MS4 lacks legal authority for direct enforcement action, the program must include notification procedures, and if a construction site operator fails to comply with procedures or policies established by the MS4, the MS4 operator may rely on EPA and NMED for assistance in enforcement of this provision of the permit.

### **8.2.4 Information Submitted by the Public**

A final requirement of the small MS4 program for construction activity is the development of procedures for the receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities.

## *8.3 Efforts to Date*

### **8.3.1 NPDES Storm Water Courses**

The City of Farmington, in coordination with San Juan College, has presented several NPDES general construction storm water courses since 2003 in an effort to better educate the builders, developers, public employees, etc. about the requirements of the NPDES Construction General Permit. See Section 5 for more information. Several City employees attended these general construction storm water courses. Additionally, the City Engineer provided informal training on the requirements of both the Construction General Permit and the MS4 Phase II Permit.

### **8.3.2 Current Land Grading Ordinance**

The City of Farmington has a land grading ordinance in effect, which requires a permit for any project in which more than two acres is graded.

#### ***Sec. 12-4-1. Permit required for grading.***

(a) No person shall grade, cut, fill or excavate, nor cause the same to be performed in any place without first obtaining a permit from the city engineer. No permit shall be issued until the applicant has prepared and submitted a dust remediation plan. The plan shall include action reasonably calculated to reduce blowing dirt. Acceptable dust remediation plans may include information regarding the commencement of construction, landscaping, planting of growing crops, application of dust retardant, fencing, or any other action intended to reduce blowing dirt. The plan shall contain an implementation schedule. The plan shall be subject to approval by the city engineer.

(b) Any fee for a permit issued pursuant to this section shall be established by city council resolution.

(c) The term grading shall mean any leveling activity which results in the removal of vegetation from the surface of property.

(d) The term cutting shall include any dirt removal which results in a slope or grade greater than 30 percent on the remaining property.

(e) Any person grading, filling, cutting, or excavating property subject to this section without having first obtained a permit or having failed to follow the approved dust remediation plan shall be guilty of a misdemeanor and shall be punished in accordance with section 1-1-10 of the Farmington City Code.

(f) As used herein, the term tract shall mean any contiguous area of land owned or controlled by the same person, partnership, corporation or other entity whether or not the same has previously been platted, surveyed, or otherwise described as two or more parcels and includes areas previously platted for dedication as public right-of-way. (Code 1969, § 15-1; Ord. No. 99-1090, § 1, 2-9-99)

**Sec. 12-4-2. Exemptions.**

- (a) This article shall not apply to any tract smaller than two acres.
  - (b) This article shall not apply to the removal of materials referred to in this article from any land within the city, the transportation of such materials, or the use of such materials to fill lands within the city when such operations are carried on as an integral process in connection with any public contract awarded by the state, the city, or any political subdivision of the state or the United States.
  - (c) None of the sections of this article relating to land filling shall apply in the case of land filling made at any sanitary landfill designated by the city.
  - (d) This article shall not apply to fill made through the use of gravel, aggregate or other materials in the construction or maintenance of driveways, parking areas or residence yards, or in laying or maintaining asphalt or blacktop areas.
  - (e) This article shall not apply to plowing or other turning of soil required for agricultural purposes.
- (Code 1969, § 15-6; Ord. No. 99-1090, §§ 2, 3, 2-9-99)

### **8.3.3 City Engineering Requirements**

City Engineering and the Building Permit Department have been making resources available to assist builders and developers in developing construction Storm Water Pollution Prevention Plans (SWPPPs) prior to applying for permits. Additionally, when possible they have been requesting copies of the NOI filed by the construction owner and/or operator before issuing a building permit. If the construction owner/operator needed assistance in developing a SWPPP or applying for a NOI, Building Permit staff and the City Engineer have been referring owners/operators to the Home Builders Association or to the EPA web resources for more assistance.

### **8.3.4 Partnership with San Juan County HBA**

The City of Farmington has developed an informal partnership (including membership in HBA) in order to keep HBA members apprised of new developments and requirements for construction storm water permits. This includes offering construction storm water permit courses and providing educational materials at the annual HBA Home Show. The most recent HBA Home Show was held in March 2007 and approximately 25,000 to 30,000 people were in attendance. The City of Farmington manned a booth during the show to provide construction assistance.

## **8.4 Planned Actions**

### **8.4.1 Review and Amend Existing Ordinances**

The current City ordinance for grading is not consistent with the requirements of the Construction General Permit or the MS4 Phase II Permit and will have to be amended to establish a City construction program that controls runoff from construction sites equal to or greater than one acre (including areas of planned development one acre or more). The City of Farmington will review and amend existing ordinances to require a construction permit for projects that will disturb one or more acres. The ordinance will

require that a storm water pollution prevention plan (SWPPP) with appropriate BMPs is prepared to control erosion, sediment and other wastes associated with the project. Any new ordinances will also include procedures for site inspection and enforcement of controls, with increasing penalties for repeat offenders. The ordinance may also specify notification of EPA or NMED for owners/operators who do not comply with the requirements of the Construction General Permit.

The ordinance will have to be approved by City Council, and the public will have the opportunity for input and comments on proposed ordinances. Additionally, the City of Farmington anticipates working closely with San Juan County HBA during development of the ordinance to allow for input and feedback specifically from the builders and developers.

#### **8.4.2 Conduct NPDES Phase II Training/Education Within City Government**

NPDES Phase II education targeting construction activities will be implemented for several City Departments, including Community Development (Building Inspection, Construction Inspection, City Engineering, Planning, and Streets) and Parks, Recreation, and Cultural Affairs (Parks Operation and Golf Courses). Training and education efforts will also be targeted to relevant committees, including the Planning and Zoning Commission. This will ensure that 1) City operations and construction projects are conducted in a manner consistent with the MS4 and Construction General Permit, and 2) City Planning Division and Planning and Zoning Commission can work proactively with the public.

#### **8.4.3 Develop Budget for Hiring Personnel to Conduct Construction Inspection**

The City of Farmington will develop a budget and schedule for hiring additional personnel to conduct construction site inspection and enforcement of construction permit regulations, including structural BMPs to prevent storm water runoff from the construction site. It is anticipated that costs associated with hiring additional personnel may possibly be offset by increasing permit fees for residential and commercial construction.

#### **8.4.4 Hire/Subcontract a Certified Construction Storm Water Inspector(s)**

The City of Farmington will hire or subcontract a Certified Construction Site Erosion Control Inspector to conduct inspections at construction sites one acre or larger in size within City limits. This additional personnel may also be responsible for other tasks associated with the municipal NPDES Phase II permit requirements, including, but not limited to, preparing Storm Water Pollution Prevention Plans (SWPPPs) for City construction projects, conducting further training to City personnel or the public, and performing dry weather inspections of outfall locations.

#### **8.4.5 Make a Best Management Practice (BMP) Guide Available**

The City of Farmington will make available a guide or library of BMPs of construction site controls which could be utilized to minimize storm water runoff during construction projects. The guide will be posted on the Farmington web page and will also be

available for purchase. It is anticipated the BMP Guide will be useful to contractors, homebuilders, developers and engineers.

#### **8.4.6 Continue Construction Site Outreach/Education of Contractors, Builders, Developers, and Engineers**

The City of Farmington will continue to implement outreach and education efforts to contractors, builders, developers and engineers regarding construction site storm water control measures and BMPs. Efforts may include printed material available through the City or downloadable material off of the Farmington web site, and training courses or information sessions.

Construction site measurable goals are presented in Table 5, along with personnel/departments responsible for implementation and proposed completion dates.

**Table 5. Construction Site Run Off Measurable Goals**

	<i>Description of Measurable Goal</i>	<i>Department/Personnel Responsible for Implementation</i>	<i>Month of Permit</i>	<i>Year of Permit</i>
1	Review and amend existing grading ordinance to address erosion control and other BMPs at construction sites greater than or equal to 1 acre.	Community Development MS4 Personnel  City Legal Department	December	2008
2	Conduct annual internal training of City staff regarding storm water permitting requirements for construction activities – to include training of Construction Inspection, City Engineering, Planning and Zoning, Streets, Parks, Recreation, and Cultural Affairs.	Community Development MS4 Personnel  Construction Inspection Personnel	December	2007 – 2012
3	Develop budget for hiring additional personnel to conduct inspection and enforcement of construction site activities and applicable BMPs.	Community Development	December	2008
4	Make available a guide of Best Management Practices (BMPs) of construction site controls. Guide may be available for purchase from the City or downloading off the web site by contractors and developers.	Community Development City Engineering	December	2007
5	Hire/Subcontract a Certified Construction Site Erosion Control Inspector to conduct construction site inspections.	Community Development City Engineering	December	2008
6	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new requirements.	Construction Inspection Personnel  Community Development City Engineering or MS4 Personnel	Ongoing	2007 - 2012

## 9.0 Post-Construction Storm Water Management in New Development and Redevelopment (Minimum Measure #5)

Post construction storm water management is necessary because runoff from areas undergoing development has significantly impacted receiving waterbodies. This impact typically occurs in two forms. The first impact is due to an increase in the type and quantity of pollutants in storm water runoff. As water flows over these sites, it transports harmful contaminants such as oil and grease, pesticides, heavy metals, and various nutrients, (e.g., nitrogen and phosphorous). These pollutants become suspended in the runoff and are conveyed to receiving water bodies, such as lakes and creeks. The second post-construction impact typically occurs as a result of increased storm water runoff rates and volume due to an increase in impervious surfaces. This increase in runoff has not only been shown to interrupt the natural water balance of percolation into the ground, but also to impact the receiving waterbody through streambank scouring and downstream flooding.

### 9.1 *EPA Requirements*

The Storm Water Phase II rule requires the following to comply with this minimum measure:

1. Develop and implement strategies which include a combination of both structural and nonstructural BMPs.
2. Create an ordinance or other regulatory mechanism requiring the utilization of post construction controls.
3. Ensure adequate long-term operation and maintenance of the controls.
4. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

### 9.2 *EPA Guidance*

It is important to recognize that many BMPs are climate-specific, and not all BMPs are appropriate in every geographic area. Because the requirements of this measure are closely tied to the requirements of the construction site runoff control minimum measure, EPA recommends that small MS4 operators develop and implement these two measures in tandem.

#### 9.2.1 **Non-Structural BMPs**

Planning and Procedures – Runoff problems can be addressed efficiently with sound planning procedures. Master Plans, Comprehensive Plans, and zoning ordinances can promote improved water quality by guiding growth of a community away from sensitive areas and by restricting certain types of growth (industrial, for example) to areas that can support it without compromising water quality.

Site-Based Local Controls – These controls can include vegetative buffer strip and riparian zone preservation, minimization of disturbance and imperviousness, and maximization of open space.

## **9.2.2 Structural BMPs**

Storage Practices – Storage or detention BMPs control storm water by gathering runoff in wet ponds, dry basins, or multi-chamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices both control storm water volume and settle out particulates for pollutant removal.

Infiltration Practices – Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to ground water, and, thereby, result in reduced storm water quantity and reduced mobilization of pollutants.

Vegetative Practices - Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, enhance pollutant removal, maintain/improve natural site hydrology, promote healthier habitats, and increase aesthetic appeal.

## *9.3 Efforts to Date*

### **9.3.1 Animas River Corridor Parks**

The City of Farmington and River Reach Foundation have developed a river corridor park system along the Animas River to provide a protective buffer and riparian zone preservation area, which aids in improving surface water quality.

### **9.3.2 Detention Ponds – Foothills Area**

Several storm water detention ponds have been constructed since the 1990s within the Foothills residential area of Farmington. The presence of the detention ponds lessens the chance of storm water overflow downstream and at outfalls discharging to the arroyos and rivers.

### **9.3.3 Drainage Swales Installed at Commercial Facilities, Professional Offices, and Residential Units**

City of Farmington has strongly encouraged drainage swales to be installed during the construction of commercial facilities, professional offices, and residential units. The drainage swales allow storm water velocity to decrease and infiltrate on-site rather than being directed as a concentrated flow directly into City storm drains.

### **9.3.4 Wetland Area/Filtration Pond – Miller Street/Murray Drive Bridge**

An infiltration pond was constructed adjacent to the Miller Street Bridge in the 1990s in an effort to allow storm water to infiltrate in the pond before reaching the Animas River, thus reducing sediment and other pollutant loading to the river.

### **9.3.5 Other Structural Controls Outlined in 1978 Master Drainage Study**

A Master Drainage Study was completed for the City of Farmington in 1978. As a results, several recommended structural controls were installed in the 1980s and 1990s to improve storm water quality and flows in Farmington. Examples include the 30<sup>th</sup> Street Dam on College Arroyo and Martin Arroyo Dam.

## 9.4 *Planned Actions*

### **9.4.1 Develop Ordinances for Post Construction Controls**

The City of Farmington will develop an ordinance to require the utilization of post construction controls for construction projects one acre or larger, including subdivisions. The ordinance will have an enforcement mechanism. City of Farmington currently anticipates that requirements for post construction controls will be incorporated into the revised/amended construction ordinance.

### **9.4.2 Develop Map/Guide to Successful Post Construction Storm Water Controls**

The City of Farmington will develop a map or guide to sites with existing successful post construction storm water controls within the City. It is anticipated that it would be helpful to local contractors, builders, planners, etc. to see examples of how post construction storm water controls may be incorporated into their projects. This information will be incorporated into the BMP Guide (discussed below) and will also be available on the Farmington web page. The City of Farmington hopes to partner with San Juan College on developing a post construction storm water control guide.

### **9.4.3 Make a Best Management Practice (BMP) Guide Available**

The City of Farmington will make available a guide or library of BMPs of post construction site controls which could be utilized to establish storm water runoff controls after a construction project is complete. The guide will be posted on the Farmington web page and will also be available for purchase. It is anticipated the BMP Guide would be useful to contractors, homebuilders, developers and engineers in planning for post construction controls.

### **9.4.4 Hire/Subcontract Storm Water Inspector for Post-Construction Inspections**

The City of Farmington will hire or subcontract a Certified Construction Site Storm Water Inspector to conduct post construction inspections and ensure that long-term structural controls are operating correctly and are being maintained.

### **9.4.5 Conduct Outreach/Education to Contractors, Builders, Developers, Engineers**

The City of Farmington will continue to implement outreach and education efforts to contractors, builders, developers and engineers regarding post construction site storm water control measures and BMPs. Efforts will include printed material available through the City or downloadable material off of the Farmington web site; and training courses or information sessions.

### **9.4.6 Develop Budget and Timeline for Implementation of Drainage Study**

The City of Farmington will develop a budget and schedule for completing a citywide drainage study. A Master Drainage Study has been proposed to begin in 2008. Results of the drainage study will assist in determining what structural BMPs may be warranted as well as the potential locations of any structural BMPs.

#### **9.4.7 Identify Potential Installation or Retrofits of Structural Controls**

Once the drainage study has been completed, the City will evaluate the installation of additional structural controls or the retrofit of existing structural controls to reduce pollutant loading. For example, flood control ponds could possibly be retrofitted with filters to reduce impact to surface waters.

The City anticipates that evaluation, budgeting and scheduling structural controls to reduce pollutant loading will take approximately 18 months after the completion of the Master Drainage Study.

Table 6 includes measurable goals proposed for post construction controls.

**Table 6. Post Construction Measurable Goals**

	<i>Description of Goal</i>	<i>Department/Personnel Responsible for Implementation</i>	<i>Month of Permit</i>	<i>Year of Permit</i>
1	Develop an ordinance addressing post-construction storm water runoff control of construction sites greater than or equal to 1 acre.	Community Development City Engineering  City Legal Department	December	2008
2	Develop a map/guide to existing successful post-construction storm water controls within the City.	Community Development City Engineering  Construction Inspection Personnel	December	2008
3	Make available a guide of Best Management Practices (BMPs) of structural and non-structural post-construction site controls.	Community Development City Engineering	September	2007
4	Hire/Subcontract with a Certified Construction Site Storm Water Inspector to conduct post-construction inspections.	Community Development City Engineering	December	2008
5	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new post construction requirements.	Construction Inspection Personnel  Community Development City Engineering	Ongoing	2007 - 2012
6	Begin work on a Master Drainage Study.	Community Development City Engineering	December	2008
7	Identify potential retrofit of existing structural controls for enhanced pollutant removal within 18 months after completion of the Master Drainage Study.	Community Development City Engineering	July	2010

## 10.0 Pollution Prevention/Good Housekeeping for Municipal Operations (Minimum Measure #6)

The final control measure required by the NPDES Phase II program involves the examination and possible alteration of municipal operations. This measure requires that municipalities evaluate their actions to ensure a reduction in the amount and type of pollution that accumulates on streets, parking lots, open spaces, and storage and vehicle maintenance areas that discharge into local waterbodies. In addition, this measure requires an evaluation of results from land development actions that may be environmentally damaging. The primary intent of the USEPA with this measure is to improve and protect water quality by altering the performance of municipal operations. However, the USEPA also feels that this measure could result in increased cost savings for municipalities through proper and timely maintenance of storm sewer systems.

### 10.1 EPA Requirements

The Storm Water Phase II rule requires the following to comply with this minimum measure:

1. Develop and implement an operation and maintenance program with the objective of preventing or reducing pollutant runoff from municipal operations into the municipal storm sewer system.
2. Include employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.
3. Determine the appropriate BMPs and measurable goals for this minimum control measure.

### 10.2 EPA Guidance

EPA encourages the small MS4 operator to consider the following components when developing their program for this measure:

1. Maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural controls to reduce floatables (i.e. floating debris) and other pollutants discharged from the separate storm sewers.
2. Controls for reducing or eliminating the discharge of pollutants from areas such as roads and parking lots, maintenance and storage yards (including salt/sand storage and snow disposal areas), and waste transfer stations.
3. Procedures for the proper disposal of waste removed from separate storm sewer systems.
4. Ways to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporation of additional water quality protection devices or practices.

## *10.3 Efforts to Date*

### **10.3.1 Street Sweeping**

The City of Farmington currently has a street sweeping program in place in which all City streets are cleaned on a regular basis. The street cleaning schedule and associated documentation are maintained by the City of Farmington Streets Unit. Collected waste is disposed of properly.

### **10.3.2 Cleaning Storm Drain Lines and Inlets**

The City of Farmington cleans storm drain inlets throughout the City on a routine basis. Additionally, in 2006 the City began to clean out select storm drain lines throughout the City. The program of cleaning storm drain lines will continue over the next several years. However, because there are no records of the storm drain lines having been cleaned out in the past, it is currently unknown what percentage of storm drain lines can be cleaned out each year. Cleaning of storm drain lines will be conducted each year until the yearly budgeted funds are depleted.

### **10.3.3 Dust Abatement Applications to Unpaved Roads**

The City of Farmington currently makes dust abatement applications with magnesium chloride ( $MgCl_2$ ) to major unpaved roads within City limits, which reduces the amount of blowing sand and subsequent sediment loading to surface waters. The City of Farmington also paves dirt and gravel roads with cold-milled asphalt as it becomes available, which further reduces blowing sand and sediment loading.

### **10.3.4 Municipal Operations Center (MOC)**

Farmington's Municipal Operations Center (MOC) is located south of the Animas River and west of Browning Parkway. Operations at the MOC are covered under the MS4 Phase II permit and include such activities as vehicle washing, fueling and repair; storage of City vehicles and equipment; storage of magnesium chloride (used for dust abatement); storage of paints and other chemicals used in street maintenance; and storage of electric utility equipment. The location of the MOC is included on Figure 1.

As part of baseline storm water sampling, AES on behalf of the City of Farmington collected storm water samples from two MOC outfalls in February 2007. As discussed in Section 7.3, samples were analyzed for pH, temperature, DO, specific conductivity, metals, oil and grease, and chemical oxygen demand (COD). Both samples had elevated concentrations of specific conductivity and COD, indicating the presence of salts and chemicals that reduce available oxygen concentrations in water. Based upon this information, the City has begun a review of structural and non-structural BMPs at the MOC to prevent potential illicit discharges and improve the quality of storm water leaving the site.

### **10.3.5 Four Corners Regional Airport**

The Four Corners Regional Airport (FCRA) is owned and operated by the City of Farmington and is located at 1300 W. Navajo Street. The industrial portions of the airport drain to a series of detention ponds located along the north side of Navajo and

then ultimately drain to the Farmington Glade, located east of the airport. The location of the FCRA is included on Figure 1.

The FCRA maintains coverage under the MSGP 2000 (NOI Tracking #NMR05B016) for City operations at the airport. Note that major tenants of the airport are also required to apply for coverage under the MSGP and ensure their SWPPPs are consistent with the City's SWPPP for the FCRA.

### **10.3.6 Farmington Power Plants**

The City of Farmington (Farmington Electric) operates two power plants, the Animas Power Plant, located at 501 McCormick School Road, and the Bluffview Power Plant, located at 755 W. Murray Drive. The locations of these facilities are presented on Figure 1.

Each of these facilities is currently covered under the MSGP 2000, the Animas Power Plant with NOI Tracking #NMR05B219 and NMR05B222 and the Bluffview Power Plant with NOI Tracking #NMR05B335.

### **10.3.7 Waste Water Treatment Plant (WWTP)**

The City of Farmington Waste Water Treatment Plant (WWTP) is located near the confluence of the Animas and San Juan Rivers near S. Lake Street. The site has a lined storm water pond which collects storm water runoff from the facility. Once collected, the storm water is piped to the treatment plant headworks and then treated and discharged along with other treated wastewater under the plant's NPDES permit. No untreated storm water leaves the facility. Therefore, the WWTP is not required to maintain a separate industrial storm water permit. The location of the WWTP is included on Figure 1.

### **10.3.8 Farmington Recycling Center (Waste Management)**

The City of Farmington has a recycling center (operated by Waste Management) located at the corner of Orchard and Elm in downtown Farmington. Waste materials, including paper, cardboard, glass, plastic, aluminum and steel, are dropped off by the general public and properly sorted and stored in covered storage areas or containers by Waste Management personnel until transported off-site. The location of the recycling center is presented on Figure 1.

Review of the now expired MSGP 2000 shows that this facility requires a MSGP; however, no Notice of Intent (NOI) was found in the USEPA database. Since the new MSGP has not been issued and application for coverage under the old MSGP is not allowed, the City of Farmington/Waste Management cannot currently apply for permit coverage. Once the new MSGP is finalized, the City of Farmington or Waste Management (dependent upon the lease agreement) will file for coverage under the new MSGP.

## 10.4 Planned Actions

### **10.4.1 Develop Written Protocols for Street Sweeping and Drain Inlet Cleaning**

The City of Farmington will review written protocols for the street sweeping and storm drain inlet cleaning programs. The protocols should include the frequency of street sweeping and inlet cleaning as well as procedures for properly disposing of waste generated during these activities. If needed, the protocols will be updated, and records will be kept of all street sweeping and drain inlet cleaning. Results will be incorporated into Annual Reports prepared and submitted to USEPA.

### **10.4.2 Continue Cleaning of Storm Drain Lines**

The City of Farmington has started cleaning of storm drain lines and intends to continue with some percentage of storm drain lines completed each year. Work will be completed until budgeted funds are depleted each year. Results of the storm drain line cleaning efforts will be incorporated into the Annual Reports submitted to USEPA.

### **10.4.3 Continue Dust Abatement of Unpaved Roads**

City of Farmington will continue dust abatement on unpaved roads on an as-needed basis. Excessive dust can contribute to sediment loading. The Farmington Streets department will be responsible for maintaining records of dust abatement activities.

### **10.4.4 Review and Modify Good Housekeeping and BMPs for Municipal Operations Center**

Based upon the results of the baseline storm water sampling completed in February 2007, the City will review existing BMPs and update or improve BMPs to improve the quality of storm water leaving the site and to prevent illicit discharges. Additionally, personnel training content and protocols will be re-evaluated and modified if necessary.

The City will also continue to conduct storm water sampling from MOC outfalls on a quarterly basis in an effort to gather additional storm water quality data, with special attention will be paid to specific conductivity and COD concentrations. Sampling results will be incorporated into Annual Reports submitted to USEPA.

### **10.4.5 Continue Coverage for Airport Under New MSGP**

The City of Farmington will ensure that the airport applies for continued coverage under the MSGP once it is re-issued. In the interim, the airport will continue to implement BMPs according to the airport SWPPP.

### **10.4.6 Continue Coverage for Power Plants Under New MSGP**

The City of Farmington will ensure that the power plants apply for continued coverage under the new MSGP, once it is re-issued. In the meantime, the two power plants will continue to implement BMPs according to their respective SWPPPs.

### **10.4.7 Obtain Coverage for Recycling Center Under New MSGP**

The City of Farmington will ensure that the recycling center is covered under MSGP once it is re-issued. If Waste Management is responsible for preparing a SWPPP and

submitting a NOI, City of Farmington will obtain a copy of both the SWPPP and NOI to maintain for their records.

#### **10.4.8 Provide Routine Training to City Personnel**

The City of Farmington will develop and implement a routine training program for City personnel addressing pollution prevention, spill prevention, and good housekeeping. A mechanism to track training efforts will be also be developed. Mike Wells, Safety and Environmental Manager, for the City of Farmington's Human Resources Department will coordinate and document these efforts.

Table 7 presents measurable goals for municipal operations pollution prevention, good housekeeping, and training.

**Table 7. Municipal Operations Pollution Prevention and Good Housekeeping Measurable Goals**

	<i>Description of Goal</i>	<i>Department/Personnel Responsible for Implementation</i>	<i>Month</i>	<i>Year of Permit</i>
1	Develop written protocols for existing street sweeping and drain inlet cleaning programs. Continue these programs.	Ruben Salcido Water/Wastewater Admin.  Jim Couch Streets	December	2008
2	Continue storm drain cleaning program, with a percentage of storm drains cleaned each year. Include summary of efforts within Annual Report.	Ruben Salcido Water/Wastewater Admin.	Ongoing	2007 - 2012
3	Continue dust abatement on non-paved roads on an as-needed basis.	Jim Couch Streets	Ongoing	2007 - 2012
4	Review and modify good housekeeping and structural BMPs for MOC. Review personnel training content and protocol.	Rod Hunt Municipal Operations  Mike Wells Safety and Environmental Manager	December	2007
5	Continue to conduct quarterly storm water sampling at MOC outfalls for 2 years (then re-evaluate). Include results in Annual Report.	Community Development MS4 Personnel or Contractor	Jan – March Apr – June July – Sept Oct – Dec	2007 2008
6	Ensure airport continues coverage under new MSGP when re-issued.	Community Development  Airport Manager	Undetermined (when MSGP is finalized)	2007
7	Ensure power plants continue coverage under new MSGP when re-issued	City of Farmington Electric Utility Mike Sims	Undetermined (when MSGP is finalized)	2007

	<i>Description of Goal</i>	<i>Department/Personnel Responsible for Implementation</i>	<i>Month</i>	<i>Year of Permit</i>
8	Obtain coverage for recycling center when new MSGP re-issued	Ruben Salcido Water/Wastewater Admin.  Or Waste Management (depends on lease contract)	Undetermined (when MSGP is finalized)	2007
9	Re-evaluate and modify (if necessary) routine training program for City personnel on pollution prevention and good housekeeping.	Mike Wells Safety and Environmental Manager	December	2008

## 11.0 Measurable Goals Implementation Timeline

The measurable goals outlined in the previous sections have been summarized and presented below for each year of the permit, from 2007 through 2012.

**Table 8. 2007 Measurable Goals**

<b>Measurable Goal Timeline: Permit Year 2007</b>				
<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
Public Education/ Outreach	Annual Water Fair - develop and distribute additional informational materials about protection of rivers and lakes and water conservation.	Water/Wastewater Admin. Ruben Salcido	Annually	2007
	Library of Best Management Practices (BMPs) - available at the City of Farmington Building Permit Desk and online at Farmington web site.	Community Development and City of Farmington IT	September	2007
	NPDES Phase II Training – City Government - to include City Council and relevant departments.	Community Development City Engineer/MS4 Personnel	November	2007
	Utility bill information sheets or brochures on storm water and protection of surface water. <i>NOTE: Should advertise public outreach session for xeriscaping, rainwater harvesting, other topics of interest.</i>	Community Development City Engineer/MS4 Personnel	Annually	2007
Public Involvement	Code Compliance Hot Line for reporting storm water complaints or reports of illicit discharges. Data to be included within SWMP Annual Reports.	Code Compliance	Ongoing	2007
	Coordinate with Farmington Clean & Beautiful to continue cleanup weekends.	Andrea Duncan Parks & Recreation	May & September	2007
	Coordinate, implement, and track volume of waste disposed of through the Household Non-	Andrea Duncan Parks & Recreation	April & October	2007

## Measurable Goal Timeline: Permit Year 2007

<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
	Hazardous Waste Programs.			
	Coordinate, implement, and track volume of waste disposed of through the Household Hazardous Waste Programs.	Ruben Salcido Water/Wastewater Admin.	Annually	2007
	Hold annual public meeting to solicit feedback on the SWMP. Personnel from Farmington's Community Development, Planning and Zoning, Parks, Recreation, and Cultural Affairs, Water/Wastewater departments to be present.	Community Development	December	2007
	Farmington web page – to include posting the most recent SWMP, NOI, useful links, BMP library, and a feedback/contact link	Community Development and City of Farmington IT	September	2007
Illicit Discharge Detection & Elimination	Implement quarterly storm water sampling program of representative outfall locations for at least 2 years. Re-evaluate sampling plan after 2 years and possibly change frequency (not less than semi-annual).	Community Development to Implement; City Personnel or Qualified Contractor May Conduct Sampling	Jan-March April-June July-Sept Oct-Dec	2007
	Start conducting quarterly dry weather outfall inspections on routine basis. Sample locations to include outfall locations at rivers and major arroyos.	Community Development to Implement; City Personnel or Qualified Contractor May Conduct Sampling	Jan-March April-June July-Sept Oct-Dec	2007
Construction Site Runoff Control	Conduct annual internal training of City staff regarding storm water permitting requirements for construction activities – to include training of Construction Inspection, City Engineering, Planning and Zoning, Streets, Parks, Recreation, and Cultural Affairs.	Community Development MS4 Personnel  Construction Inspection Personnel	December	2007
	Make available a guide of Best Management Practices (BMPs) of construction site controls. Guide may be available for purchase from the City or downloading off the web site by contractors and developers.	Community Development City Engineering	December	2007

### Measurable Goal Timeline: Permit Year 2007

<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new requirements.	Construction Inspection Personnel  Community Development City Engineering or MS4 Personnel	Ongoing	2007
Post-Construction Site Runoff Control	Make available a guide of Best Management Practices (BMPs) of structural and non-structural post-construction site controls.	Community Development City Engineering	September	2007
	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new post construction requirements.	Construction Inspection Personnel  Community Development City Engineering	Ongoing	2007
Municipal Operations Good Housekeeping & BMPs Municipal Operations	Continue storm drain cleaning program, with a percentage of storm drains cleaned each year. Include summary of efforts within Annual Report.	Ruben Salcido Water/Wastewater Admin.	Ongoing	2007
	Continue dust abatement on non-paved roads on an as-needed basis.	Jim Couch Streets	Ongoing	2007
	Review and modify good housekeeping and structural BMPs for MOC. Review personnel training content and protocol.	Rod Hunt Municipal Operations  Mike Wells Safety and Environmental Manager	December	2007
	Continue to conduct quarterly storm water sampling at MOC outfalls for 2 years (then re-evaluate). Include results in Annual Report.	Community Development MS4 Personnel or Contractor	Jan – March Apr – June July – Sept Oct – Dec	2007
	Ensure airport continues coverage under new MSGP when re-issued.	Community Development  Airport Manager	Undetermined (when MSGP is finalized)	2007
	Ensure power plants continue coverage under new MSGP when re-issued	City of Farmington Electric Utility Mike Sims	Undetermined (when MSGP is finalized)	2007

<b>Measurable Goal Timeline: Permit Year 2007</b>				
<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
	Obtain coverage for recycling center when new MSGP re-issued	Ruben Salcido Water/Wastewater Admin.  Or Waste Management (depends on lease contract)	Undetermined (when MSGP is finalized)	2007

**Table 9. 2008 Measurable Goals**

<b>Measurable Goal Timeline: Permit Year 2008</b>				
<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
Public Education/ Outreach	Annual Water Fair - develop and distribute additional informational materials about protection of rivers and lakes and water conservation.	Water/Wastewater Admin. Ruben Salcido	Annually	2008
	Partnerships – initiate partnerships with interested groups and organizations:	<b>Irrigation Ditch Boards</b> City Engineering  <b>FMPO</b> Planning and Zoning (Charity Fechter)  <b>NSPE</b> Community Development (Nica Westerling, Jeff Smaka, Larry Cynova)  <b>River Reach</b> Parks, Recreation, and Cultural Affairs	December	2008

## Measurable Goal Timeline: Permit Year 2008

<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
		Jeff Bowman/Roger Drayer  <b>San Juan Watershed Group</b> Water/Wastewater Admin. (Paul Montoya, Ruben Salcido)  <b>San Juan College, City of Aztec, and San Juan County</b> Community Development		
	NPDES Phase II Training – Construction Activities – to focus on erosional control and BMPs associated with construction activities. Course to be offered in conjunction with San Juan College and taught by Scott Olson, Erosion Control Specialists	Community Development City Engineer/MS4 Personnel	May	2008
	NPDES Phase II Training – Industrial Activities – to focus on BMPs, storm water runoff, and illicit discharge or connections to City sewer or storm drains. <i>NOTE: To be conducted after MSGP for industrial activities is published.</i>	Community Development Water/Wastewater Admin. Ruben Salcido	November	2008
	NPDES Phase II Training – Residential – to focus on educating public about xeriscaping, proper fertilization, rainwater harvesting, and minimizing irrigation runoff.	Parks, Recreation, and Cultural Affairs Roger Drayer	May and/or September	2008
Public Education/ Outreach	Utility bill information sheets or brochures on storm water and protection of surface water. <i>NOTE: Should advertise public outreach session for xeriscaping, rainwater harvesting, and other topics of interest.</i>	Community Development City Engineer/MS4 Personnel	Annually	2008
Public Involvement	Code Compliance Hot Line for reporting storm water complaints or reports of illicit discharges. Data to be included within SWMP Annual Reports.	Code Compliance	Ongoing	2008

## Measurable Goal Timeline: Permit Year 2008

<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
	Coordinate with Farmington Clean & Beautiful to continue cleanup weekends.	Andrea Duncan Parks & Recreation	May & September	2008
	Coordinate, implement, and track volume of waste disposed of through the Household Non-Hazardous Waste Programs.	Andrea Duncan Parks & Recreation	April & October	2008
	Coordinate, implement, and track volume of waste disposed of through the Household Hazardous Waste Programs.	Ruben Salcido Water/Wastewater Admin.	Annually	2008
	Hold annual public meeting to solicit feedback on the SWMP. Personnel from Farmington's Community Development, Planning and Zoning, Parks, Recreation, and Cultural Affairs, Water/Wastewater departments to be present.	Community Development	December	2008
	Continue storm drain labeling to raise awareness that water or materials entering storm drains ultimately discharges to the San Juan, Animas and La Plata Rivers.	Community Development	December	2008
Illicit Discharge Detection & Elimination	Implement quarterly storm water sampling program of representative outfall locations for at least 2 years. Re-evaluate sampling plan after 2 years and possibly change frequency (not less than semi-annual).	Community Development to Implement; City Personnel or Qualified Contractor May Conduct Sampling	Jan-March April-June July-Sept Oct-Dec	2008
	Implement camera inspection program where 1/5 <sup>th</sup> of drains are inspected via camera each year. Approximately \$300k budgeted during FY08 for cleaning storm drains.	Community Development Water/Wastewater Admin.	June	2008
	Start conducting quarterly dry weather outfall inspections on routine basis. Sample locations to include outfall locations at rivers and major arroyos.	Community Development to Implement; City Personnel or Qualified Contractor May Conduct Sampling	Jan-March April-June July-Sept Oct-Dec	2008

### Measurable Goal Timeline: Permit Year 2008

<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
	Review existing ordinances to ensure that they effectively prohibit illicit discharges or dumping. Ensure that appropriate enforcement mechanisms are in place.	Community Development	December	2008
	Develop partnership efforts with local irrigation ditch boards.	Community Development City Engineering	December	2008
	Identify or track industrial facilities within the City (by business licensing or other means) which are required to have Industrial Multi-Sector General Permits for the NPDES Program.	Business Licenses to identify facilities;	December	2008
Construction Site Runoff Control	Review and amend existing grading ordinance to address erosion control and other BMPs at construction sites greater than or equal to 1 acre.	Community Development MS4 Personnel  City Legal Department	December	2008
	Conduct annual internal training of City staff regarding storm water permitting requirements for construction activities – to include training of Construction Inspection, City Engineering, Planning and Zoning, Streets, Parks, Recreation, and Cultural Affairs.	Community Development MS4 Personnel  Construction Inspection Personnel	December	2008
	Develop budget for hiring additional personnel to conduct inspection and enforcement of construction site activities and applicable BMPs.	Community Development City Engineering	December	2008
	Hire/Subcontract a Certified Construction Site Erosion Control Inspector to conduct construction site inspections.	Community Development City Engineering	December	2008
	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new requirements.	Construction Inspection Personnel  Community Development City Engineering or MS4 Personnel	Ongoing	2008

### Measurable Goal Timeline: Permit Year 2008

<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
Post-Construction Site Runoff Control	Develop an ordinance addressing post-construction storm water runoff control of construction sites greater than or equal to 1 acre.	Community Development City Engineering  City Legal Department	December	2008
	Develop a map/guide to existing successful post-construction storm water controls within the City.	Community Development City Engineering  Construction Inspection Personnel	December	2008
	Hire/Subcontract with a Certified Construction Site Storm Water Inspector to conduct post-construction inspections.	Community Development City Engineering	December	2008
	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new post construction requirements.	Construction Inspection Personnel  Community Development City Engineering	Ongoing	2008
	Begin work on a Master Drainage Study.	Community Development City Engineering	December	2008
Municipal Operations Good Housekeeping & BMPs	Develop written protocols for existing street sweeping and drain inlet cleaning programs. Continue these programs.	Ruben Salcido Water/Wastewater Admin.  Jim Couch Streets	December	2008
	Continue storm drain cleaning program, with a percentage of storm drains cleaned each year. Include summary of efforts within Annual Report.	Ruben Salcido Water/Wastewater Admin.	Ongoing	2008
	Continue dust abatement on non-paved roads on an as-needed basis.	Jim Couch Streets	Ongoing	2008
	Continue to conduct quarterly storm water sampling at MOC outfalls for 2 years (then re-evaluate). Include results in Annual Report.	Community Development MS4 Personnel or Contractor	Jan – March Apr – June July – Sept Oct – Dec	2008

<b>Measurable Goal Timeline: Permit Year 2008</b>				
<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
	Re-evaluate and modify (if necessary) routine training program for City personnel on pollution prevention and good housekeeping.	Mike Wells Safety and Environmental Manager	December	2008

**Table 10. 2009 Measurable Goals**

<b>Measurable Goal Timeline: Permit Year 2009</b>				
<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
Public Education/ Outreach	Annual Water Fair - develop and distribute additional informational materials about protection of rivers and lakes and water conservation.	Water/Wastewater Admin. Ruben Salcido	Annually	2009
	Utility bill information sheets or brochures on storm water and protection of surface water. <i>NOTE: Should advertise public outreach session for xeriscaping, rainwater harvesting, and other topics of interest.</i>	Community Development City Engineer/MS4 Personnel	Annually	2009
Public Involvement	Code Compliance Hot Line for reporting storm water complaints or reports of illicit discharges. Data to be included within SWMP Annual Reports.	Code Compliance	Ongoing	2009
	Coordinate with Farmington Clean & Beautiful to continue cleanup weekends.	Andrea Duncan Parks & Recreation	May & September	2009
	Coordinate, implement, and track volume of waste disposed of through the Household Non-Hazardous Waste Programs.	Andrea Duncan Parks & Recreation	April & October	2009

### Measurable Goal Timeline: Permit Year 2009

<i>Minimum Control Area</i>	<i>Proposed Task</i>	<i>Person/Department Responsible for Implementing</i>	<i>Month</i>	<i>Year</i>
	Coordinate, implement, and track volume of waste disposed of through the Household Hazardous Waste Programs.	Ruben Salcido Water/Wastewater Admin.	Annually	2009
	Hold annual public meeting to solicit feedback on the SWMP. Personnel from Farmington's Community Development, Planning and Zoning, Parks, Recreation, and Cultural Affairs, Water/Wastewater departments to be present.	Community Development	December	2009
Illicit Discharge Detection & Elimination	Incorporate storm water collection map into GIS.	Community Development Drafting Department	December	2009
Construction Site Runoff Control	Conduct annual internal training of City staff regarding storm water permitting requirements for construction activities – to include training of Construction Inspection, City Engineering, Planning and Zoning, Streets, Parks, Recreation, and Cultural Affairs.	Community Development MS4 Personnel  Construction Inspection Personnel	December	2009
	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new requirements.	Construction Inspection Personnel  Community Development City Engineering or MS4 Personnel	Ongoing	2009
Post-Construction Site Runoff Control	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new post construction requirements.	Construction Inspection Personnel  Community Development City Engineering	Ongoing	2009
Municipal Operations Good Housekeeping & BMPs	Continue storm drain cleaning program, with a percentage of storm drains cleaned each year. Include summary of efforts within Annual Report.	Ruben Salcido Water/Wastewater Admin.	Ongoing	2009
	Continue dust abatement on non-paved roads on an as-needed basis.	Jim Couch Streets	Ongoing	2009

Table 11. 2010 Measurable Goals

<b>Measurable Goal Timeline: Permit Year 2010</b>				
<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
Public Education/ Outreach	Annual Water Fair - develop and distribute additional informational materials about protection of rivers and lakes and water conservation.	Water/Wastewater Admin. Ruben Salcido	Annually	2010
	Utility bill information sheets or brochures on storm water and protection of surface water. <i>NOTE: Should advertise public outreach session for xeriscaping, rainwater harvesting, and other topics of interest.</i>	Community Development City Engineer/MS4 Personnel	Annually	2010
Public Involvement	Code Compliance Hot Line for reporting storm water complaints or reports of illicit discharges. Data to be included within SWMP Annual Reports.	Code Compliance	Ongoing	2010
	Coordinate with Farmington Clean & Beautiful to continue cleanup weekends.	Andrea Duncan Parks & Recreation	May & September	2010
	Coordinate, implement, and track volume of waste disposed of through the Household Non-Hazardous Waste Programs.	Andrea Duncan Parks & Recreation	April & October	2010
	Coordinate, implement, and track volume of waste disposed of through the Household Hazardous Waste Programs.	Ruben Salcido Water/Wastewater Admin.	Annually	2010
	Hold annual public meeting to solicit feedback on the SWMP. Personnel from Farmington's Community Development, Planning and Zoning, Parks, Recreation, and Cultural Affairs, Water/Wastewater departments to be present.	Community Development	December	2010
Illicit Discharge and Detection	Develop budget and timeline for implementation of structural BMPs relating to illicit discharge/connection. To be developed within 18 months after completion of Master Drainage Study.	Community Development	July	2010

### Measurable Goal Timeline: Permit Year 2010

<i>Minimum Control Area</i>	<i>Proposed Task</i>	<i>Person/Department Responsible for Implementing</i>	<i>Month</i>	<i>Year</i>
	Once industrial facilities required to have MSGP are identified, develop a protocol for inspecting and certifying that no illicit connections to sanitary or storm sewer are present.	Water/Wastewater Admin. to develop protocol for inspection and certification that no illicit connections present.	December	2010
Construction Site Runoff Control	Conduct annual internal training of City staff regarding storm water permitting requirements for construction activities – to include training of Construction Inspection, City Engineering, Planning and Zoning, Streets, Parks, Recreation, and Cultural Affairs.	Community Development MS4 Personnel  Construction Inspection Personnel	December	2010
	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new requirements.	Construction Inspection Personnel  Community Development City Engineering or MS4 Personnel	Ongoing	2010
Post-Construction Site Runoff Control	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new post construction requirements.	Construction Inspection Personnel  Community Development City Engineering	Ongoing	2010
	Identify potential retrofit of existing structural controls for enhanced pollutant removal within 18 months after completion of the Master Drainage Study.	Community Development City Engineering	July	2010
Municipal Operations Good Housekeeping and BMPs	Continue storm drain cleaning program, with a percentage of storm drains cleaned each year. Include summary of efforts within Annual Report.	Ruben Salcido Water/Wastewater Admin.	Ongoing	2010
	Continue dust abatement on non-paved roads on an as-needed basis.	Jim Couch Streets	Ongoing	2010

**Table 12. 2011 Measurable Goals**

<b>Measurable Goal Timeline: Permit Year 2011</b>				
<b><i>Minimum Control Area</i></b>	<b><i>Proposed Task</i></b>	<b><i>Person/Department Responsible for Implementing</i></b>	<b><i>Month</i></b>	<b><i>Year</i></b>
Public Education/ Outreach	Annual Water Fair - develop and distribute additional informational materials about protection of rivers and lakes and water conservation.	Water/Wastewater Admin. Ruben Salcido	Annually	2011
	Utility bill information sheets or brochures on storm water and protection of surface water. <i>NOTE: Should advertise public outreach session for xeriscaping, rainwater harvesting, and other topics of interest.</i>	Community Development City Engineer/MS4 Personnel	Annually	2011
Public Involvement	Code Compliance Hot Line for reporting storm water complaints or reports of illicit discharges. Data to be included within SWMP Annual Reports.	Code Compliance	Ongoing	2011
	Coordinate with Farmington Clean & Beautiful to continue cleanup weekends.	Andrea Duncan Parks & Recreation	May & September	2011
	Coordinate, implement, and track volume of waste disposed of through the Household Non-Hazardous Waste Programs.	Andrea Duncan Parks & Recreation	April & October	2011
	Coordinate, implement, and track volume of waste disposed of through the Household Hazardous Waste Programs.	Ruben Salcido Water/Wastewater Admin.	Annually	2011
	Hold annual public meeting to solicit feedback on the SWMP. Personnel from Farmington's Community Development, Planning and Zoning, Parks, Recreation, and Cultural Affairs, Water/Wastewater departments to be present.	Community Development	December	2011

### Measurable Goal Timeline: Permit Year 2011

<i>Minimum Control Area</i>	<i>Proposed Task</i>	<i>Person/Department Responsible for Implementing</i>	<i>Month</i>	<i>Year</i>
Construction Site Runoff Control	Conduct annual internal training of City staff regarding storm water permitting requirements for construction activities – to include training of Construction Inspection, City Engineering, Planning and Zoning, Streets, Parks, Recreation, and Cultural Affairs.	Community Development MS4 Personnel  Construction Inspection Personnel	December	2011
	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new requirements.	Construction Inspection Personnel  Community Development City Engineering or MS4 Personnel	Ongoing	2011
Post Construction Control	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new post construction requirements.	Construction Inspection Personnel  Community Development City Engineering	Ongoing	2011
Municipal Operations Good Housekeeping and BMPs	Continue storm drain cleaning program, with a percentage of storm drains cleaned each year. Include summary of efforts within Annual Report.	Ruben Salcido Water/Wastewater Admin.	Ongoing	2011
	Continue dust abatement on non-paved roads on an as-needed basis.	Jim Couch Streets	Ongoing	2011

Table 13. 2012 Measurable Goals

<b>Measurable Goal Timeline: Permit Year 2012</b>				
<b>Minimum Control Area</b>	<b>Proposed Task</b>	<b>Person/Department Responsible for Implementing</b>	<b>Month</b>	<b>Year</b>
Public Education/ Outreach	Annual Water Fair - develop and distribute additional informational materials about protection of rivers and lakes and water conservation.	Water/Wastewater Admin. Ruben Salcido	Annually	2012
	Utility bill information sheets or brochures on storm water and protection of surface water. <i>NOTE: Should advertise public outreach session for xeriscaping, rainwater harvesting, and other topics of interest.</i>	Community Development City Engineer/MS4 Personnel	Annually	2012
Public Involvement	Code Compliance Hot Line for reporting storm water complaints or reports of illicit discharges. Data to be included within SWMP Annual Reports.	Code Compliance	Ongoing	2012
	Coordinate with Farmington Clean & Beautiful to continue cleanup weekends.	Andrea Duncan Parks & Recreation	May & September	2012
	Coordinate, implement, and track volume of waste disposed of through the Household Non-Hazardous Waste Programs.	Andrea Duncan Parks & Recreation	April & October	2012
	Coordinate, implement, and track volume of waste disposed of through the Household Hazardous Waste Programs.	Ruben Salcido Water/Wastewater Admin.	Annually	2012
	Hold annual public meeting to solicit feedback on the SWMP. Personnel from Farmington's Community Development, Planning and Zoning, Parks, Recreation, and Cultural Affairs, Water/Wastewater departments to be present.	Community Development	December	2012
Construction Site Runoff Control	Conduct annual internal training of City staff regarding storm water permitting requirements for construction activities – to include training of Construction Inspection, City Engineering, Planning and Zoning, Streets, Parks, Recreation, and Cultural Affairs.	Community Development MS4 Personnel	December	2012
		Construction Inspection Personnel		

**Measurable Goal Timeline: Permit Year 2012**

<b><i>Minimum Control Area</i></b>	<b><i>Proposed Task</i></b>	<b><i>Person/Department Responsible for Implementing</i></b>	<b><i>Month</i></b>	<b><i>Year</i></b>
	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new requirements.	Construction Inspection Personnel  Community Development City Engineering or MS4 Personnel	Ongoing	2012
Post Construction Control	Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new post construction requirements.	Construction Inspection Personnel  Community Development City Engineering	Ongoing	2012
Municipal Operations	Continue storm drain cleaning program, with a percentage of storm drains cleaned each year. Include summary of efforts within Annual Report.	Ruben Salcido Water/Wastewater Admin.	Ongoing	2012
Good Housekeeping and BMPs	Continue dust abatement on non-paved roads on an as-needed basis.	Jim Couch Streets	Ongoing	2012

## 12.0 Permitting and Reporting Requirements

Under the Phase II NPDES permit provisions, the City of Farmington has the flexibility to determine the BMPs and measurable goals, for each minimum control measure, that are most appropriate for the system. The chosen BMPs and measurable goals, which are submitted in the permit application, become an integral part of the SWMP; however, the NPDES permitting authority (EPA Region VI) can require changes in the mix of chosen BMPs and measurable goals if all or some of them are found to be inconsistent with the provisions of the Phase II Final Rule. Likewise, the City of Farmington can change its mix of BMPs if it determines that the SWMP is not as effective as it could be.

### *12.1 Reporting Requirements*

Evaluation reports must be submitted annually for each year of the permit term covering activities of the MS4 from January 1<sup>st</sup> through December 31<sup>st</sup>. The first annual report is due on April 1, 2008, with subsequent reports also due on April 1 of each year. As required in Section 5.8.1 of the Permit, the City of Farmington must provide public notice at least 30 days before submittal and make available a draft Annual Report for public review and comment. All public input must be considered in preparation of the final Annual Reports and any changes made to the SWMP.

The annual evaluation report must include:

- The status of compliance with the permit conditions, including an assessment of the appropriateness of the selected BMPs and the progress toward achieving the selected measurable goals for each minimum measure;
- Results of any information collected and analyzed, including monitoring data, if any. Note that Discharge Monitoring Reports (DMRs) should be generated which detail one storm event and associated analytical data.
- A summary of storm water activities planned for the next reporting cycle;
- A change in any identified BMPs or measurable goals for any minimum control measure;
- A description and schedule for implementation of additional BMPs that may be necessary, based on new information or monitoring results, to ensure compliance with TMDLs;
- Notice of relying on another governmental entity to satisfy some of the permit obligations, if applicable;
- A brief summary of any issues raised by the public on the draft Annual Report and any proposed changes to the SWMP, along with the permittee's responses to public comments.

The Annual Report and any DMRs must be submitted to USEPA and NMED at:

U.S. EPA Region 6  
Compliance Assurance and Enforcement Division  
Water Enforcement Branch (6EN-WC)  
1445 Ross Avenue  
Dallas, TX 75202-2733

Program Manager  
Point Source Regulations Section  
Surface Water Quality Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, New Mexico 87502

## *12.2 Penalties for Non-Compliance*

The Phase II NPDES permit that the City of Farmington is required to obtain is federally enforceable, therefore subjecting the City to potential enforcement actions and penalties by the NPDES permitting authority (EPA Region VI) if City does not fully comply with the application or permit requirements. This federal enforceability also includes the right for interested parties to sue under the citizen suit provision (Section 405) of the CWA.

## 13.0 Storm Water Management Program Funding

### *13.1 Background*

The City of Farmington is currently funding its storm water related activities through its contract with OMI as well as from the general fund. Appropriate funding mechanisms will be and evaluated and then determined with feedback from the Mayor and City Council.

### *13.2 Potential Funding Mechanisms*

Potential funding mechanisms and user fee rate designs can be modeled to fit specific needs of the existing storm water BMPs and the impending NPDES Phase II Storm Water requirements. In developing rate structures, there are two key issues to consider:

- The rate methodology must be equitable and easy to understand. It is important that the public understands and perceives the rate methodology to be fair. This provides for a quicker and more complete acceptance by the public.
- The rate methodology must be capable of generating sufficient revenue to cover the projected budget and must be within the willingness and ability of the community to pay.

A combination of a storm water utility fee and plan review and inspection fees may provide a funding mechanism to pay for the cost of implementing the NPDES program and supplementing the City's growing storm water system needs.

### 13.3 Construction Building Permit and Plan Review Fees

The City of Farmington may wish to consider implementation of additional construction building permit fees and plan review fees for construction projects one acre or larger. Since the City of Farmington will be required to conduct inspections during construction as well as post construction, these fees may be an equitable way to cover costs that will be incurred by the City in meeting these requirements.

#### 13.3.1 Building Permit Fees

The City could potentially generate a portion of the funds required to meet the municipal NPDES Phase II requirements by increasing building permit fees. Based upon building permit data from 2006, an additional \$25,400 could be generated.

<i>Permit Type</i>	<i>Permits in 2006</i>	<i>Proposed Fee</i>	<i>Total</i>
Commercial	9	\$200	\$1,800
Residential	236	\$100	\$23,600
			<b>\$25,400</b>

#### 13.3.2 Subdivision Plan Review Fees

The City could also generate additional funds to cover the costs of implementing the NPDES Phase II SWMP by increasing subdivision plan review fees. The City could consider imposing a summary plat review fee of \$50 and preliminary/final plat review fee of \$100 plus an additional fee of \$5 per lot. Based upon information from 2006, an additional \$7,700 could be generated.

<i>Plat Type</i>	<i>Reviews in 2006</i>	<i>Proposed Fee</i>	<i>Total</i>
Summary Plat	75	\$50	\$3,750
Preliminary/Final Plat	23	\$100	\$2,300
<i>**Assume 10 lots per subdivision for 230 lots total</i>	230	\$5	\$1,150
			<b>\$7,700</b>

### 13.4 Storm Water Utility Fees

Although the City of Farmington is currently a statute-ruled municipality and cannot impose a storm water utility fee, the following was included for sake of comparison.

#### 13.4.1 Residential Utility Fees

The City of Farmington could consider imposing an additional storm water utility or water utility fee of \$2 per month for each residential meter. The City of Farmington Parks Department has approximately 1,050 meters, which are turned off during the winter. The City could assess an additional \$2 per month for each month the Parks Department has its water meters in operation.

### 13.4.2 Commercial Utility Fees

The City of Farmington could consider imposing an additional storm water utility or water utility fee of \$4 per month for each commercial meter.

Based upon meter estimates, it is anticipated the City could potentially generate up to \$396,000 in revenues each year from additional residential and commercial utility fees.

<i>Type of Meter</i>	<i>Meters (Estimated)</i>	<i>Proposed Additional Fee Per Month</i>	<i>Months Per Year</i>	<i>Total</i>
Residential	12,000	\$2	12	\$288,000
Commercial	1,900	\$4	12	\$91,200
City of Farmington Parks Department	1,050	\$2	8	\$16,800
				<b>\$396,000</b>

### 13.4.3 Impervious Area Rate Methodology

City of Farmington may also wish to consider utilizing an impervious area rate methodology as the basis for funding a portion of the City's SWMP. Storm water fees could be determined by calculating the total impervious area contained within an individual parcel. The rate structure could include procedures for challenging fees and for obtaining "credits" to reduce the effective fee.

One potential rate methodology is based on impervious area and having a "flat" rate for residential properties (single and two-family properties) and having a pro-rated fee for commercial and industrial properties, where there are typically much greater areas with impervious surfaces.

The City of Farmington may wish to consider certain types of properties to be exempt from storm water user fees based upon the impervious rate methodology, including:

1. Public streets and roads
2. Properties classified as agricultural land use by the City of Farmington
3. Unimproved properties

### 13.4.4 Billing

Any potential storm water fees could be issued using the City of Farmington's current utility billing system. However, the City could update its computer software to handle assessing an additional fee, and this would cost approximately \$8,000.

## 14.0 Endangered Species Act (ESA) Consultation

In accordance with Section 1.5 of the Permit, the City of Farmington is in the process of evaluating eligibility criteria with regard to listed threatened and endangered species which may be impacted by storm water discharges from the Farmington's MS4. The City of Farmington has elected not to engage in agency consultation as a non-Federal representative (50 CFR § 402.08). Rather, City of Farmington retained Ecosphere Environmental Services (Ecosphere) in January 2007 to complete a Biological Assessment. Completion of the Biological Assessment is currently in process and will be forwarded to USEPA upon completion. USEPA will then complete agency consultation with U.S. Fish and Wildlife Service to finalize eligibility criteria for the City of Farmington.

### 14.1 Listed Species

Based on review of the U.S. Fish and Wildlife Services Endangered Species List (<http://www.fwx.gov/southwest/es/EndangeredSpecies/lists/ListSpecies.cfm>), the City of Farmington learned that the following species are listed as threatened, endangered, or candidate species:

**Table 14. Listed Wildlife Species**

<b>Species</b>	<b>Status</b>	<b>Habitat Description</b>
<b>Bald Eagle</b> ( <i>Haliaeetus leucocephalus</i> )	Threatened (Proposed Delisting)	Found near lakes and rivers with tall trees for perching/nesting. In open country, typically found close to water with tall trees or cliffs for perching/nesting.
<b>Mexican Spotted Owl</b> ( <i>Strix occidentalis lucida</i> )	Threatened	Found in old-growth mixed coniferous forest. Will also nest in caves or on cliff ledges in steep-walled canyons.
<b>Southwestern Willow Flycatcher</b> ( <i>Empidonax traillii extimus</i> )	Endangered	Breeds in riparian areas with dense growth of willow, arrowweed, buttonbrush, tamarisk and Russian olive, often with a scattered overstory of cottonwood. Found widely in New Mexico during migration, but confined to riparian areas during breeding (mid May – mid July).
<b>Colorado Pikeminnow</b> ( <i>Ptychocheilus lucius</i> )	Endangered w/ Critical Habitat; Experimental Population	Found in large rivers with warm, swift, and turbid waters; water depletion in San Juan and La Plata Counties may affect this species.
<b>Razorback Sucker</b> ( <i>Xyrauchen texanus</i> )	Endangered w/ Critical Habitat	Found in strong currents of large rivers with deep pool and eddy pool habitats. Preferred temperature range from 8 to 32 degrees C. Designated critical habitat includes: San Juan County and the San Juan River from the Hogback Diversion Dam to the Neskahai Canyon arm of Lake Powell.
<b>Black-Footed</b>	Endangered w/	Found in prairies and prairie dog towns.

<b>Species</b>	<b>Status</b>	<b>Habitat Description</b>
<b>Ferret</b> ( <i>Mustela nigripes</i> )	Experimental Population	Historically, found in western North and South Dakota, eastern Montana, Wyoming, and Colorado and possibly extended into Nebraska and south to Oklahoma and New Mexico. This species was considered extirpated from the wild; however, efforts are now being made at reintroduction.
<b>Knowlton Cactus</b> ( <i>Pediocactus knowltonii</i> )	Endangered	Pinyon/juniper woodlands in rocky, alluvial soils at 6,500 feet elevation. Distribution in San Juan County is currently known to be along the Pine River. This species is one of the rarest plants in New Mexico.
<b>Mancos Milk-vetch</b> ( <i>Astragalus humillimus</i> )	Endangered	Cracks of Point Lookout Sandstone of the Mesa Verde Group at 5,000-6,500 feet elevation. Grows on ledges and mesa tops in slickrock communities. Distribution includes San Juan County and adjacent Montezuma County, Colorado.
<b>Mesa Verde Cactus</b> ( <i>Sclerocactus mesae-verdae</i> )	Threatened	Salt desert scrub communities at 4,900-6,000 feet elevation in the Fruitland and Mancos Shale Formations. Distribution includes San Juan County and adjacent Montezuma County, Colorado.

## 14.2 Biological Assessment

### 14.2.1 Conduct Storm Water Sampling at Key Representative Outfall Locations

Baseline storm water sampling was conducted by AES on behalf of the City of Farmington in February 2007 at key and representative outfall locations within City limits or at points where Farmington's MS4 discharged to the Animas River. Sampling results were presented and discussed in Section 7.3, and the tabulated results and laboratory analytical reports are included in Appendix B. Quarterly storm water sampling and analyses will be conducted quarterly for at least the next two years in order to gather storm water data. Dry weather inspections will also be conducted quarterly for at least the next two years in order to identify any illicit discharges and to better characterize storm water conditions in Farmington.

### 14.2.2 Review Available Storm Water Data

Storm water analytical results showed that analyzed parameters were below USEPA general benchmarks for storm water, with the exception of specific conductivity, pH and COD concentrations from the Farmington Municipal Operations Center (MOC). Specific conductivity concentrations at MOC Outfall #1 were recorded at 13.88 mS/cm, which is about one order of magnitude higher than other outfall concentrations. Specific conductivity is good indicator of total dissolved solids (TDS) and salinity and may reflect impacts from materials stored at the

MOC, such as magnesium chloride. Sampling results were forwarded to Ecosphere for review and incorporation into the Biological Assessment.

### **14.2.3 Conduct Site Reconnaissance of Farmington's Storm Water Outfall Locations**

On March 8, 2007, an Ecosphere wildlife biologist and an AES environmental engineer inspected the outfall locations from which storm water samples were collected in February 2007. The outfall locations were observed for types of vegetation that might support listed species; damaged, stained or otherwise impacted vegetation; and visual inspection of any storm water discharges for a sheen, odor, etc. The Ecosphere wildlife biologist completed additional reconnaissance of remaining storm water outfall locations along the rivers later in March 2007. Results of the storm water outfall inspections will be incorporated into the Biological Assessment.

### **14.2.4 Prepare Biological Assessment for Submittal to USEPA by City of Farmington**

Ecosphere is currently in the process of preparing a biological assessment on behalf of the City of Farmington with regards to storm water discharges associated with its MS4. Ecosphere currently anticipates that Biological Assessment should be completed in April 2007. Once complete, the Biological Assessment will be forwarded to the USEPA for agency consultation.

## ***14.3 Mitigative Measures***

The City of Farmington has identified several direct mitigative measures which will be implemented and should be protective of listed species and associated habitat. Additional measures may be identified upon completion of the Biological Assessment or once additional information is obtained throughout the year (i.e. from storm water sampling or dry weather inspections). Proposed mitigative measures for existing storm water discharges include:

- Conducting quarterly storm water sampling for at least the next two years at key and representative outfall locations throughout Farmington or at areas where Farmington's storm drain systems discharges to Animas or San Juan Rivers (to be re-evaluated after two years);
- Conducting quarterly dry weather inspections of known outfall areas, including observations of stressed vegetation, stained soil, etc. Any water observed will be noted for odor, sheen, suspended solids, etc, and will be measured in the field for pH, temperature, specific conductivity and DO. Additional samples may be laboratory analyzed for potential constituents of concern (i.e. nutrients, COD, metals, TSS, oil and grease, E. coli, etc.) depending upon visual observations.
- For any post construction structural controls in close proximity to the rivers or near habitat of listed species, efforts will be made to utilize vegetative controls with native seeds or plantings;
- Public education efforts protective of listed species or associated habitat will include continued participation in the Annual Water Fair and storm drain stenciling;
- Additional trash management will be accomplished through Farmington Clean and Beautiful, Adopt-a-Spot, and Household Hazardous and Non-Hazardous Waste Programs;

- Completion of the Master Drainage Study will assist in identifying areas where additional structural controls are needed and can be planned with protection of critical habitat or listed species in mind.

## 15.0 National Historic Preservation Act (NHPA) Consultation

As required in Section 1.6 of the Permit, the City of Farmington has initiated consultation with the State Historic Preservation Office (SHPO) in order to determine whether City of Farmington is in compliance with the National Historic Preservation Act (NHPA).

### 15.1 Listed Property Records Search

City of Farmington retained San Juan College (SJC) Cultural Resources Management Program (CRMP) in January 2007 to prepare a 7.5" USGS quadrangle map showing the boundaries of the City of Farmington and all eligible recorded sites within City boundaries. The New Mexico Cultural Resource Information System (NMCRIS) and Archaeological Resource Management System (ARMS) were utilized by SJC-CRMP to obtain site data. The topographic site map with plotted eligible properties is being submitted to USEPA as part of the Notice of Intent and is also being submitted to SHPO on behalf of City of Farmington as part of the consultation process.

*Note that the topographic site map with eligible historic properties will be omitted from all copies of the SWMP made available to the public.*

### 15.2 Potentially Impacted Sites

After careful review of eligible historic properties plotted on the topographic site map, it was initially determined that a total of five listed properties may potentially be impacted by storm water discharges by City of Farmington. SJC-CRMP obtained additional site specific information on these five sites, which are summarized below:

#### **Site LA 68213/Farmers Mutual Ditch**

Recorded segments of the Farmers Mutual Ditch are in Sections 16, 17, and 18 (T29N, R13W) and in the southwest portion of Farmington. The original documentation for the noted a construction date of 1920 (Rayl 1988), but during later documentation of a different segment, a local resident stated that the construction was initiated in about 1875 (Matthews 2005). Regardless, the ditch is more than 50 years old. The Farmers Mutual Ditch is still a functioning irrigation ditch which is predominantly dirt-lined, but with numerous modifications of concrete supports, metal pipe culverts, updated head gates, etc. There is no determination of eligibility on record for site LA 68213/Farmers Mutual Ditch by SHPO.

#### **Site LA 99157**

Site LA 99157 is located in south Farmington near Boyd Park. The site consists of an abandoned gauging station consisting of a fenced metal platform on the south side of the Animas River with a metal cable extending north across the river. The site was built some time around 1952 and used to gage the depth in the river. The site is no longer in use. The site was determined to be an ineligible cultural property by SHPO in 1993.

#### **Site LA 115032/Echo Ditch**

The Echo Ditch is also known as the Farmington Echo Ditch and the Farmington-Allen Ditch. Three portions of the ditch have been documented in Section 19 (T29N, R12W) and Section 24 (T29N, R13W) in the south central portion of Farmington, adjacent to the Animas River. The initial construction date for the irrigation ditch is in the late 1890s. The Echo Ditch is a

functioning ditch that has been heavily modified over the years. The first segment of the Echo Ditch documented was determined to be an ineligible cultural property by SHPO in 2004. However, there is no record of an eligibility determination by SHPO for the other two recorded segments of the ditch.

#### **Site LA 137433/Denver and Rio Grande Western Railroad Grade**

A short segment of the Denver and Rio Grande Western Railroad grade has been documented in Section 31 (T30N, R12W), in the east-southeast portion of Farmington. The railroad grade was built in 1905 and abandoned by the railroad company in 1968 (Moore 2002). The portion of the documented railroad grade has been heavily impacted by construction activities and did not retain structural integrity. The portion recorded was recommended ineligible for nomination to the National Register, but there is no record of eligibility determination by SHPO.

#### **Site LA 137434/Star Ditch**

The portion of the Star Ditch that has been documented is just north of the above-mentioned railroad grade and is in Section 31 (T30N, R12W) in east-southeast Farmington. The initial construction date for the ditch is 1877, and the original ditch was about 5 miles long (Moore 2002). The ditch was potentially taken out of use for irrigation about 1959, abandoned by the ditch company in 1960, and was officially abandoned by the City of Farmington in the late 1980s or early 1990s. The segment of the ditch documented had been modified and partially converted into an underground storm drain system. The portion recorded was recommended ineligible for nomination to the National Register, but there is no record of determination by SHPO.

Of the five recorded sites in close proximity to Farmington's storm water outfall locations, three consist of irrigation ditches. Of the three ditches, two are still in use (Farmers Mutual Ditch and Echo Ditch). The ditches have either been determined to be ineligible for nomination to the National Register or there is no eligibility determination on record from SHPO. The remaining two sites consist of an abandoned gauging station (determined to be ineligible for listing by SHPO in 1993) and a section of the Denver and Rio Grande Western Railroad Grade (for which the site was recommended ineligible for listing, but there is no record of determination made by SHPO).

### ***15.3 Mitigative Measures***

At present, City of Farmington does not pipe or drain storm water into the Echo Ditch or Farmers Mutual Ditch; however, sheet flow does reportedly drain into the Farmers Mutual Ditch. City of Farmington anticipates that more information will be obtained from the proposed Master Drainage Study, which should be initiated in 2008. Based upon the results of the Master Drainage Study, specific mitigative measures can be developed in order to protect listed properties or potentially listed properties from adverse impact from existing storm water flows.

For any new storm water structural controls or BMPs that are implemented as a result of the Master Drainage Study, City of Farmington will ensure that the regulations are met:

- Cultural Properties Act, NMSA 1978 Section 18-6-8.1 requires state agencies to consider affects to properties listed on the State Register. Section 18-6-11.2 protects unmarked human burials on state and private land. Any discoveries of unmarked human burials will be reported to the local law enforcement agency and the Office of Medical

Investigator immediately. The Office of Medical Investigator will terminate jurisdiction to SHPO if the burial is not a crime scene.

- Cultural Properties Act, NMSA 1978 Section 18-6A-5 requires state agencies (departments, agencies, institutions, and political subdivisions of the state) to ensure that cultural properties on state land are not inadvertently damaged or destroyed.
- Prehistoric and Historic Sites Preservation Act, NMSA 1978 Section 18-8-7 requires that state agencies and political subdivisions consider feasible and prudent alternatives to a use (adverse effect) of a registered cultural property if public funds are expended.

## 16.0 References

American Public Works Association (APWA). *Designing and Implementing an Effective Storm Water Management Program*. Albuquerque, New Mexico February 15, 2000.

Bohannon-Huston, Inc. *Farmington Master Drainage Plan*. May, 1978.

City of Farmington. City Code of Farmington, New Mexico. Codified through Ord. No. 2006-1177, enacted Oct. 24, 2006. (Supplement No. 32, Rev.) Available at <http://www.municode.com/Resources/gateway.asp?pid=10760&sid=31>.

Dodson, Roy. *Storm Water Pollution Control*. Second Edition, McGraw Hill, New York, New York. 1999.

Federal Register, December 8, 1999. *National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule*.

San Juan College Cultural Resources Management Program (SJC-CRMP). *Results of a Cultural Resources Review for the City of Farmington MS4 Application*. Report 2007-SJC-007. March 23, 2007.

Surface Water Quality Bureau - New Mexico Environment Department. *Standard Operating Procedures for Sample Collection and Handling*. June 22, 2004.

U.S. Department of Interior, Fish and Wildlife Services, Southwest Ecological Field Office, Endangered Species Web Site – San Juan County, New Mexico  
<http://www.fws.gov/southwest/es/EndangeredSpecies/lists/ListSpecies.cfm>

U.S. EPA. Phase II NPDES Program Web Site.  
<http://cfpub.epa.gov/npdes/stormwater/swphase2.cfm>



## statebriefs

**Man convicted  
in Tanoan slaying**

ALBUQUERQUE (AP) — A man accused of killing a retired Sandia National Laboratories researcher in an upscale Albuquerque neighborhood was found guilty Wednesday of murder, kidnapping and other charges.

Ernest Gallegos, 46, was accused of breaking into the Tanoan East home of James Hogan and his wife, Carole, on the night of Aug. 24, 2004, binding the couple with plastic ties and blindfolding them with duct tape, then killing Hogan.

A Bernalillo County jury found Gallegos guilty of first-degree murder and felony murder, two counts of kidnapping, aggravated burglary, armed robbery, aggravated battery and tampering with evidence.

**Otero raises rate for  
housing prisoners**

ALAMOGORDO (AP) — Otero County has proposed a higher rate for housing Alamogordo city prisoners in the county jail.

A new rate plan calls for the city to pay \$80 per inmate per day, a \$10 increase.

Mayor Don Carroll said during a joint meeting Tuesday of the city and county commissioners that city officials were concerned about the new rate because the county did not fully explain its calculations.

"We just got 'This is the rate' without any explanation," he said. "If we were better informed, there would be instances where the city could assist the county."

Alamogordo is working with a judge to try to cut the number of city prisoners, City Manager Pat McCourt said. For example, some prisoners might be sentenced to ankle monitoring instead of jail time.

County commissioners said the detention center is falling short of money — a problem commission Chairman Doug Moore blamed partly on the state not paying for state prisoners at the jail.

"We have a \$2 million deficit because we have clientele who doesn't pay," Moore said.

Even at the \$80 a day rate, the 230-bed county jail will all more than \$1 million short

# Governor appoints Lovejoy to N

— The Associated Press —

SANTA FE — Lynda Lovejoy of Crownpoint was appointed by the governor Wednesday to the state Senate, taking over a seat vacated by the resignation of Leonard Tsosie.

Gov. Bill Richardson said Lovejoy, a former member of the state House of Representatives and the state Public Regulation Commission, is the first American Indian woman in the Senate.

The District 22 seat includes parts of McKinley, Rio Arriba, Bernalillo, Cibola and Sandoval counties. Each county commission in multi-county districts nominates someone to fill a vacancy, and the governor has the final authority.

In this case, each county nominated a different person, said a spokesman for the governor, Jon Goldstein.

Lovejoy was nominated for the seat by the Bernalillo County Commission.

Richardson said that in Lovejoy's more

than 15 years in public exhibited the leadership to make an excellent senator, for example for Native American all New Mexicans through

Lovejoy was on the floor through the end of last chairwoman in 1999, pa 2003.

She was a member of the House from 1989 through also made an unsuccessfu

# Plans underway for endurance ride

— By Carl Manning —  
The Associated Press

LAWRENCE, Kan. — Rob Phillips still remembers his first horse, a paint named Mickey he got more than 50 years ago. It was the start of a lifelong love affair with horses that's led to plans for an endurance race over the Santa Fe Trail.

For the past year, the 62-year-old retired real estate developer and his wife, Beverly, have been putting together The Great Santa Fe Trail Horse Race. It starts Sept. 3 in Santa Fe and ends Sept. 15 in Missouri, broken down into 10 rides of about 50 miles a day over 515 miles.

Phillips got the idea after hearing the story of Francis X. Aubry, a trader who in 1848 made a \$1,000 bet that he could traverse the trail from Santa Fe to its start in Independence, Mo., in six days. He took five days and 16 hours to cover the 800-mile route that normally took a month and established a record that stands to this day.

"When I heard that story, I thought we've got to do something about the Santa Fe Trail and get the world excited about it again," Phillips said.

Besides that, Phillips wanted to do something productive.

"You've got to have something to do. You can dry the dishes only so many times," he said.

So he came up with the endurance ride, which will follow the wide, meandering trail that cuts southwest through 16 Kansas counties. The riders will cover the sweeping landscape of open prairies and rolling plains that greeted travelers heading west with trade goods or in search of a better place to live.

"It will always be near to what we consider the trail. We're in real close proximity and I

land that wasn't camped on by people in covered wagons," Phillips said.

The trail opened in 1821 when Missouri trader William Becknell became the first to use it to haul goods by mule train to Santa Fe, then part of Mexico.

Although some settlers used the trail, it primarily was a trade route for bringing manufactured goods to Santa Fe and taking silver and other valuables back to Missouri. By 1880, the trail was eclipsed by the railroads and only the wagon ruts remained.

"It set up a new excitement about trading and the expansion in the west," said Rita Napier, University of Kansas history professor. "It represents a reaching out to expand."

Napier said the trail was important because more trade

meant more manufacturing but it was especially important to Kansas because it helped shape the state's growth.

With that historic backdrop, Phillips put together what he hopes will be an annual event.

"If you are going to do something, you might as well do it big, and if it's big you can see it," he said.

He expects to have 100 teams with about 500 horses dashing over the landscape. Already, people from 17 states have signed up, paying entry fees ranging from \$3,500 to \$4,500.

At first there was talk of prize money, but Phillips discarded the idea because he wanted the race to be more about the love of the sport than getting money.

But, he added, winning has its own rewards.



Rob and at their h

**LEGAL NOTICE**

Pursuant to submitting a Notice of Intent (NOI) the City of Farmington is updating the Draft Storm Water Management Plan (SWMP) as required by the U.S. EPA National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) under Permit No. NMR040000.

The permit effective date was January 1, 2007. The City of Farmington intends to submit the NOI to the U.S. EPA by April 1, 2007. The Draft SWMP can be viewed on the City of Farmington's web page at: ([http://www.farmington.org/pdf/community\\_development/280/ms4\\_plan.pdf](http://www.farmington.org/pdf/community_development/280/ms4_plan.pdf)) or at the Farmington Library. Any comments or suggestions regarding the SWMP or NOI should be received before March 1, 2007, by:

Nica Westerling, P.E.  
City Engineer  
City of Farmington  
800 Municipal Drive  
Farmington, NM 87401

Legal No. 54599, published in The Daily Times, Farmington, New Mexico on Thursday, February 01, 2007



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to be f  
(505) 511  
PC

**TABLE 1  
CITY OF FARMINGTON OUTFALL SAMPLING  
Farmington, New Mexico**

<b>AES Sample ID</b>	<b>Sample ID</b>	<b>Sample Date</b>	<b>Latitude Longitude</b>	<b>Flow  (gpm)</b>	<b>Temperature  (°C)</b>	<b>DO  (ppm)</b>	<b>pH</b>	<b>Specific Conductance  (mS/cm)</b>
<b>Benchmark Values</b>							<b>6.0 - 9.0</b>	<b>&lt;0.2</b>
<b>1</b>	<b>Arroyo West of Lowe's Parking Lot</b>	8-Feb-07	36°46.205N 108°08.592W	NO FLOW -- NOT SAMPLED				
	<b>Arroyo West of Lowe's Parking Lot</b>	12-Feb-07		NO FLOW -- NOT SAMPLED				
<b>2</b>	<b>El Paso/Middle Fork Square</b>	8-Feb-07	36°44.953N 108°09.443W	10	10.27	2.68	6.2	1.163
<b>3</b>	<b>Berg Park Location</b>	8-Feb-07	36°44.030N 108°11.073W	20	12.05	7.48	6.9	1.922
<b>4</b>	<b>MOC - Sewer Outfall # 1</b>	8-Feb-07	36°43.905N 108°10.453W	NO FLOW -- NOT SAMPLED				
	<b>MOC - Sewer Outfall # 1</b>	12-Feb-07		1	5.01	5.75	<b>9.13</b>	<b>13.88</b>
<b>5</b>	<b>MOC - Sewer Outfall # 2</b>	8-Feb-07	36°43.941N 108°10.397W	NO FLOW -- NOT SAMPLED				
	<b>MOC - Sewer Outfall # 2</b>	12-Feb-07		5	7.12	4.79	<b>9.62</b>	1.224
<b>6</b>	<b>MOC - Sewer Outfall # 3</b>	8-Feb-07	36°43.984N 108°10.291W	NO FLOW -- NOT SAMPLED				
<b>7</b>	<b>Murray Dr. Bridge Settling Pond</b>	8-Feb-07	36°43.239N 108°12.092W	10	9.61	6.72	7.0	1.244
<b>8</b>	<b>South Side Lift Station # 2</b>	8-Feb-07	36°43.075N 108°12.780W	1	6.2	7.59	7.7	1.592
<b>9</b>	<b>Cannery Court Location</b>	8-Feb-07	36°43.387N 108°13.183W	40	11.12	8.44	7.2	2.119
<b>10</b>	<b>Intersection of Gooding/Riverview</b>	8-Feb-07	36°43.810N 108°14.312W	NO FLOW -- NOT SAMPLED				
	<b>Intersection of Gooding/Riverview</b>	12-Feb-07		NO FLOW -- NOT SAMPLED				
<b>11</b>	<b>Baseball Fields on Pinon Hills (Inlet of 30-inch North HDPE Pipe)</b>	8-Feb-07	36°45.310N 108°14.304W	NO FLOW -- NOT SAMPLED				
<b>12</b>	<b>Baseball Fields on Pinon Hills (Outlet of 30-inch South HDPE Pipe)</b>	8-Feb-07	36°45.208N 108°14.388W	NO FLOW -- NOT SAMPLED				

**TABLE 1**  
**CITY OF FARMINGTON OUTFALL SAMPLING**  
**Farmington, New Mexico**

<i>AES Sample ID</i>	<i>Sample ID</i>	<i>Sample Date</i>	<i>Latitude Longitude</i>	<i>Flow  (gpm)</i>	<i>Temperature  (°C)</i>	<i>DO  (ppm)</i>	<i>pH</i>	<i>Specific Conductance  (mS/cm)</i>
<b>Benchmark Values</b>							<b>6.0 - 9.0</b>	<b>&lt;0.2</b>
<b>13</b>	<b>Glade Arroyo Culvert on South Side of Navajo St.</b>	8-Feb-07	36°44.389N 108°12.735W	NO FLOW -- NOT SAMPLED				
	<b>Glade Arroyo Culvert on South Side of Navajo St.</b>	12-Feb-07		NO FLOW -- NOT SAMPLED				

Note: Specific conductivity is generally found to be a good measure of the concentration of total dissolved solids (TDS) and salinity. Elements whose ionic forms contribute the most to these measures include: calcium (Ca<sup>2+</sup>), magnesium (Mg<sup>2+</sup>), sodium (Na<sup>+</sup>), potassium (K<sup>+</sup>), bicarbonate (HCO<sub>3</sub><sup>-</sup>), sulfate (SO<sub>4</sub><sup>2-</sup>), and chloride (Cl<sup>-</sup>).

**TABLE 2  
CITY OF FARMINGTON OUTFALL SAMPLING (METALS, TSS, Oil and Grease, and COD)  
Farmington, New Mexico**

AES Sample ID	Sample Location & Description	Sample Date	Aluminum	Arsenic	Cadmium	Copper	Iron	Lead	Nickel	Zinc	TSS	Oil & Grease	COD
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
<b>Benchmark Values</b>			<b>&lt;0.75</b>	<b>&lt;0.16854</b>	<b>&lt;0.0159</b>	<b>&lt;0.0636</b>	<b>&lt;1.0</b>	<b>&lt;0.0816</b>	<b>&lt;1.417</b>	<b>&lt;0.117</b>	<b>&lt;100</b>	<b>&lt;15</b>	<b>&lt;120</b>
1	Arroyo West of Lowe's Parking Lot	8-Feb-07	NO FLOW - NOT SAMPLED										
	Arroyo West of Lowe's Parking Lot	12-Feb-07	NO FLOW - NOT SAMPLED										
2	El Paso/Middle Fork Square	8-Feb-07	<0.0200	<0.00100	<0.00100	0.0131	0.153	<0.00100	0.01020	0.035	1.60	<1.0	<20
3	Berg Park Location	8-Feb-07	<0.0200	<0.00100	<0.00100	0.010	0.0216	<0.00100	0.00803	0.0223	<1.00	<1.0	<20
4	MOC - Sewer Outfall # 1	8-Feb-07	NO FLOW - NOT SAMPLED										
	MOC - Sewer Outfall # 1	12-Feb-07	0.367	0.0120	<0.00100	0.0139	0.876	0.00598	0.00453	0.0655	42	<1.0	193
5	MOC - Sewer Outfall # 2	8-Feb-07	NO FLOW - NOT SAMPLED										
	MOC - Sewer Outfall # 2	12-Feb-07	0.355	0.00145	<0.00100	0.00559	0.477	0.00268	0.00220	0.0190	24	<1.0	47.2
6	MOC - Sewer Outfall # 3	8-Feb-07	NO FLOW - NOT SAMPLED										
7	Murray Dr. Bridge Settling Pond	8-Feb-07	<0.0200	<0.00100	<0.00100	0.00772	0.0202	<0.00100	0.00219	<0.0100	<1.00	<1.0	<20
8	South Side Lift Station # 2	8-Feb-07	0.342	<0.00100	<0.00100	0.0192	0.476	0.00218	0.00466	0.0292	22.8	<1.0	32.9
9	Cannery Court Location	8-Feb-07	0.142	<0.00100	<0.00100	0.0106	0.147	<0.00100	0.00779	<0.0100	6	<1.0	<20
10	Intersection of Gooding/Riverview	8-Feb-07	NO FLOW - NOT SAMPLED										
	Intersection of Gooding/Riverview	12-Feb-07	NO FLOW - NOT SAMPLED										
11	Baseball Fields on Pinon Hills (Inlet of 30-inch North HDPE Pipe)	8-Feb-07	NO FLOW - NOT SAMPLED										

**TABLE 2**  
**CITY OF FARMINGTON OUTFALL SAMPLING (METALS, TSS, Oil and Grease, and COD)**  
**Farmington, New Mexico**

<b>AES Sample ID</b>	<b>Sample Location &amp; Description</b>	<b>Sample Date</b>	<b>Aluminum</b> <i>(mg/L)</i>	<b>Arsenic</b> <i>(mg/L)</i>	<b>Cadmium</b> <i>(mg/L)</i>	<b>Copper</b> <i>(mg/L)</i>	<b>Iron</b> <i>(mg/L)</i>	<b>Lead</b> <i>(mg/L)</i>	<b>Nickel</b> <i>(mg/L)</i>	<b>Zinc</b> <i>(mg/L)</i>	<b>TSS</b> <i>(mg/L)</i>	<b>Oil &amp; Grease</b> <i>(mg/L)</i>	<b>COD</b> <i>(mg/L)</i>
<b>Benchmark Values</b>			<b>&lt;0.75</b>	<b>&lt;0.16854</b>	<b>&lt;0.0159</b>	<b>&lt;0.0636</b>	<b>&lt;1.0</b>	<b>&lt;0.0816</b>	<b>&lt;1.417</b>	<b>&lt;0.117</b>	<b>&lt;100</b>	<b>&lt;15</b>	<b>&lt;120</b>
<b>12</b>	<b>Baseball Fields on Pinon Hills (Outlet of 30-inch South HDPE Pipe)</b>	8-Feb-07	NO FLOW - NOT SAMPLED										
<b>13</b>	<b>Glade Arroyo Culvert on South Side of Navajo St.</b>	8-Feb-07	NO FLOW - NOT SAMPLED										
	<b>Glade Arroyo Culvert on South Side of Navajo St.</b>	12-Feb-07	NO FLOW - NOT SAMPLED										

NOTES    COD - Chemical Oxygen Demand  
TSS - Total Suspended Solids

PL I.D. 702112

February 26, 2007

Animas Environmental Services  
P.O. Box 5314  
Farmington, NM 87499

Project Name/Number: CITY OF FARMINGTON MS4 PERMIT (NONE)

Attention: Ross Kennemer

On **02/09/07**, Pinnacle Laboratories Inc., (ADHS License No. AZ0643), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All samples were analyzed by Flowers Chemical Laboratories, Inc. (FCL), Altamonte Springs, FL.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.



H. Mitchell Rubenstein, Ph.D.  
General Manager

MR:jt

Enclosure

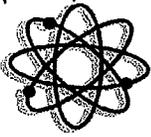
CLIENT : ANIMAS ENVIRONMENTAL SERVICES      DATE RECEIVED : 02/09/07  
 PROJECT # : (NONE)  
 PROJECT NAME : CITY OF FARMINGTON MS4 PERMIT      REPORT DATE : 02/26/07

PL ID: 702112

	PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	702112-01	ELPASO/MIDDLE FORK SQ.	AQUEOUS	02/08/07
02	702112-02	BERG PARK	AQUEOUS	02/08/07
03	702112-03	MURRY DR.BRIDGE SETTLING POND	AQUEOUS	02/08/07
04	702112-04	S. SIDE OF LIST STA #2	AQUEOUS	02/08/07
05	702112-05	CANNERY COURT	AQUEOUS	02/08/07

---TOTALS---

MATRIX                      #SAMPLES  
 AQUEOUS                      5



# FLOWERS CHEMICAL LABORATORIES INC.

P.O. Box 150597, Altamonte Springs FL 32715-0597 Phone 407-339-5984 Fax 407-260-6110 www.flowerslabs.com  
8253 South U.S. Highway 1, Port St. Lucie FL 34952-2860 Phone 772-343-8006 Fax 772-343-8089  
P.O. Box 1200, Madison FL 32341 Phone 850-973-6878 Fax 850-973-6878

Pinnacle Laboratories  
2709 D Pan American Freeway NE  
Albuquerque, NM 87107

PO #: 702112  
Client Project #: AES  
Date Sampled: Feb 8, 2007  
Feb 21, 2007; Invoice: 34033

### Report Summary

Date Received: Feb 12, 2007

FCL Project Manager: June S. Flowers

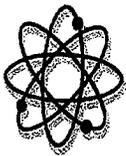
Laboratory #	Sample Description	Analysis	Chemist	Location	Sample Matrix
34033GW1	El Paso/Middle Fork Sq./702112-01	EPA160.2	RMV	Main Lab	Ground Water
		EPA1664	LCC	Main Lab	
		EPA410.4	PCW	Main Lab	
		EPA6010	EVB	Main Lab	
		EPA6020	EVB	Main Lab	
34033GW2	Berg Park/702112-02	EPA160.2	RMV	Main Lab	Ground Water
		EPA1664	LCC	Main Lab	
		EPA410.4	PCW	Main Lab	
		EPA6010	EVB	Main Lab	
		EPA6020	EVB	Main Lab	
34033GW3	Murry Dr. Bridge settling pond/702112-03	EPA160.2	RMV	Main Lab	Ground Water
		EPA1664	LCC	Main Lab	
		EPA410.4	PCW	Main Lab	
		EPA6010	EVB	Main Lab	
		EPA6020	EVB	Main Lab	
34033GW4	s. side of lift sta.#2/702112-04	EPA160.2	RMV	Main Lab	Ground Water
		EPA1664	LCC	Main Lab	
		EPA410.4	PCW	Main Lab	
		EPA6010	EVB	Main Lab	
		EPA6020	EVB	Main Lab	
34033GW5	Cannery Court/702112-05	EPA160.2	RMV	Main Lab	Ground Water
		EPA1664	LCC	Main Lab	
		EPA410.4	PCW	Main Lab	
		EPA6010	EVB	Main Lab	
		EPA6020	EVB	Main Lab	

### Certificate of Results

Sample integrity was certified prior to analysis. Test results meet all requirements of the NELAC Standards except as noted in the Quality Control Report. Uncertainties for these data are available on request. This report may not be reproduced in part; results relate only to items tested.



Jefferson S. Flowers, Ph.D.  
President/Technical Director



# FLOWERS CHEMICAL LABORATORIES INC.

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 8253 South U.S. Highway 1, Port St. Lucie FL 34952-2860 Phone 772 - 343 - 8006 Fax 772 - 343 - 8089  
 P.O. Box 1200, Madison FL 32341 Phone 850-973-6878 Fax 850-973-6878

Pinnacle Laboratories  
 2709 D Pan American Freeway NE  
 Albuquerque, NM 87107

PO #: 702112  
 Client Project #: AES  
 Date Sampled: Feb 8, 2007  
 Feb 21, 2007; Invoice: 34033

### Analysis Report

Lab #: 34033GW1 Sampled: 02/08/07 08:45 AND Desc: El Paso/Middle Fork Sq./702112-03

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Iron	0.153	mg/L	1.00	0.0100	0.0200	10078954	EPA6010	7439-89-6	02/12/07
TSS	1.601	mg/L	1.00	1.00	2.00	10079020	EPA160.2	E1642818	02/13/07
Aluminum	0.0200 U	mg/L	1.00	0.0200	0.0400	10079046	EPA6020	7429-90-5	02/13/07
Arsenic	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-38-2	02/13/07
Cadmium	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-43-9	02/13/07
Copper	0.0131	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-50-8	02/13/07
Lead	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7439-92-1	02/13/07
Nickel	0.0102	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-02-0	02/13/07
Zinc	0.0350	mg/L	1.00	0.0100	0.0200	10079046	EPA6020	7440-66-6	02/13/07
Chemical Oxygen Demand	20.0 U	mg/L	1.00	20.0	40.0	10079320	EPA410.4	Validator013	02/19/07
Oil + Grease (HEM)	1.00 U	mgHx/L	1.00	1.00	4.00	10079414	EPA1664	36-82-9	02/15/07

Lab #: 34033GW2 Sampled: 02/08/07 09:31 AND Desc: Belg Park/702112-02

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Iron	0.0216	mg/L	1.00	0.0100	0.0200	10078954	EPA6010	7439-89-6	02/12/07
TSS	1.00 U	mg/L	1.00	1.00	2.00	10079020	EPA160.2	E1642818	02/13/07
Aluminum	0.0200 U	mg/L	1.00	0.0200	0.0400	10079046	EPA6020	7429-90-5	02/13/07
Arsenic	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-38-2	02/13/07
Cadmium	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-43-9	02/13/07
Copper	0.0100	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-50-8	02/13/07
Lead	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7439-92-1	02/13/07
Nickel	0.00803	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-02-0	02/13/07
Zinc	0.0223	mg/L	1.00	0.0100	0.0200	10079046	EPA6020	7440-66-6	02/13/07
Chemical Oxygen Demand	20.0 U	mg/L	1.00	20.0	40.0	10079320	EPA410.4	Validator013	02/19/07
Oil + Grease (HEM)	1.00 U	mgHx/L	1.00	1.00	4.00	10079414	EPA1664	36-82-9	02/15/07

FLDOH: E83018 (Main Lab) FLDOH: E86562 (South Lab) FLDOH: E82405 (North Lab) NUDEP: FL015



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 P.O. Box 1200, Madison FL 32341 Phone 850-973-6878 Fax 850-973-6878

Pinnacle Laboratories  
 2709 D Pan American Freeway NE  
 Albuquerque, NM 87107

PO #: 702112  
 Client Project #: AES  
 Date Sampled: Feb 8, 2007  
 Feb 21, 2007; Invoice: 34033

Lab #: 34033GW3 Sampled: 02/08/07 11:10 AM Desc: Merry Dr. Bridge settling point/702112-03

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Iron	0.0202	mg/L	1.00	0.0100	0.0200	10078954	EPA6010	7439-89-6	02/12/07
TSS	1.00 U	mg/L	1.00	1.00	2.00	10079020	EPA160.2	E1642818	02/13/07
Aluminum	0.0200 U	mg/L	1.00	0.0200	0.0400	10079046	EPA6020	7429-90-5	02/13/07
Arsenic	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-38-2	02/13/07
Cadmium	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-43-9	02/13/07
Copper	0.00772	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-50-8	02/13/07
Lead	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7439-92-1	02/13/07
Nickel	0.00219	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-02-0	02/13/07
Zinc	0.0100 U	mg/L	1.00	0.0100	0.0200	10079046	EPA6020	7440-66-6	02/13/07
Chemical Oxygen Demand	20.0 U	mg/L	1.00	20.0	40.0	10079320	EPA410.4	Validator013	02/19/07
Oil + Grease (HEM)	1.00 U	mgHx/L	1.00	1.00	4.00	10079414	EPA1664	36-82-9	02/15/07

Lab #: 34033GW4 Sampled: 02/08/07 11:45 AM Desc: s. side of Iri sta #2702112-04

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Iron	0.476	mg/L	1.00	0.0100	0.0200	10078954	EPA6010	7439-89-6	02/12/07
TSS	22.8	mg/L	1.00	1.00	2.00	10079020	EPA160.2	E1642818	02/13/07
Aluminum	0.342	mg/L	1.00	0.0200	0.0400	10079046	EPA6020	7429-90-5	02/13/07
Arsenic	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-38-2	02/13/07
Cadmium	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-43-9	02/13/07
Copper	0.0192	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-50-8	02/13/07
Lead	0.00218	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7439-92-1	02/13/07
Nickel	0.00466	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-02-0	02/13/07
Zinc	0.0292	mg/L	1.00	0.0100	0.0200	10079046	EPA6020	7440-66-6	02/13/07
Chemical Oxygen Demand	32.9 I	mg/L	1.00	20.0	40.0	10079320	EPA410.4	Validator013	02/19/07
Oil + Grease (HEM)	1.00 U	mgHx/L	1.00	1.00	4.00	10079414	EPA1664	36-82-9	02/15/07

Lab #: 34033GW5 Sampled: 02/08/07 12:40 PM Desc: Cemetery Court/702112-06

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Iron	0.147	mg/L	1.00	0.0100	0.0200	10078954	EPA6010	7439-89-6	02/12/07

FLOH: E83018 (Main Lab) FLOH: E86562 (South Lab) FLOH: E82405 (North Lab) NJDEP: FLO15



# FLOWERS CHEMICAL LABORATORIES INC.

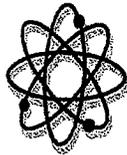
P.O. Box 150597, Altamonte Springs FL 32715-0597 Phone 407 - 339 - 5984 Fax 407 - 260 - 6110 www.flowerslabs.com  
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Pinnacle Laboratories  
 2709 D Pan American Freeway NE  
 Albuquerque, NM 87107

PO #: 702112  
 Client Project #: AES  
 Date Sampled: Feb 8, 2007  
 Feb 21, 2007; Invoice: 34033

Lab #	34933GW5	Sampled	02/08/07 12:40 PM	Desc	Cannery Court 702112-05	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed			
TSS	6.00	mg/L	1.00	1.00	2.00	10079020	EPA160.2	E1642818	02/13/07			
Aluminum	0.142	mg/L	1.00	0.0200	0.0400	10079046	EPA6020	7429-90-5	02/13/07			
Arsenic	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-38-2	02/13/07			
Cadmium	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-43-9	02/13/07			
Copper	0.0106	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-50-8	02/13/07			
Lead	0.00100 U	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7439-92-1	02/13/07			
Nickel	0.00779	mg/L	1.00	0.00100	0.00200	10079046	EPA6020	7440-02-0	02/13/07			
Zinc	0.0100 U	mg/L	1.00	0.0100	0.0200	10079046	EPA6020	7440-66-6	02/13/07			
Chemical Oxygen Demand	20.0 U	mg/L	1.00	20.0	40.0	10079320	EPA410.4	Validator013	02/19/07			
Oil + Grease (HEM)	1.00 U	mgHx/L	1.00	1.00	4.00	10079414	EPA1664	36-82-9	02/15/07			

FLDOH: E83018 (Main Lab) FLDOH: E86562 (South Lab) FLDOH: E82405 (North Lab) NJDEP: FL015



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Pinnacle Laboratories  
2709 D Pan American Freeway NE  
Albuquerque, NM 87107

PO #: 702112  
Client Project #: AES  
Date Sampled: Feb 8, 2007  
Feb 21, 2007; Invoice: 34033

### Quality Report

Quality Control Batch: 10078954		Analyst: EVB	
Blank	Result	Units	
Iron	0.0100U	mg/L	
<b>Laboratory Control Sample</b>			
Iron	9.38	mg/L	%REC 93.75
		Spike 10.0	%REC Lim 89.22-113.94
<b>Matrix Spike</b>			
Iron	4.95	mg/L	%REC 88.19
		Spike 5.00	%REC Lim 62.59-143.95
<b>Matrix Spike Duplicate</b>			
Iron	4.71	mg/L	%REC 83.41
		Spike 5.00	%REC Lim 62.59-143.95
			RPD 4.95
			RPD Lim 52.02

Quality Control Batch: 10079020		Analyst: RMV	
Blank	Result	Units	
TSS	1.00U	mg/L	
<b>Laboratory Control Sample</b>			
TSS	44.0	mg/L	%REC 92.63
		Spike 47.5	%REC Lim 53.61-139.53

Quality Control Batch: 10079046		Analyst: EVB	
Blank	Result	Units	
Aluminum	0.0200U	mg/L	
Arsenic	0.00100U	mg/L	
Cadmium	0.00100U	mg/L	
Copper	0.00100U	mg/L	
Lead	0.00100U	mg/L	
Nickel	0.00100U	mg/L	



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 Albuquerque, NM 87107

PO #: 702112  
 Client Project #: AES  
 Date Sampled: Feb 8, 2007  
 Feb 21, 2007; Invoice: 34033

Quality Control Batch: 10079046 Analyst: EYP

Blank  
 Zinc

### Laboratory Control Sample

Result	Units	Spike	%REC	%REC Lim
0.203	mg/L	0.200	101.42	49.55-142.49
0.221	mg/L	0.200	110.50	52.46-141.26
0.222	mg/L	0.200	111.06	52.37-141.35
0.224	mg/L	0.200	111.98	74.17-126.79
0.222	mg/L	0.200	111.12	52.01-141.59
0.228	mg/L	0.200	114.12	52.23-141.45
0.212	mg/L	0.200	105.75	52.35-141.33

### Matrix Spike

Result	Units	Spike	%REC	%REC Lim	Sample
0.223	mg/L	0.200	101.47	45.74-150.86	0.0201
0.243	mg/L	0.200	118.07	50.87-148.19	0.00659
0.227	mg/L	0.200	113.43	51.16-147.88	0.00100U
0.272	mg/L	0.200	128.85	64.93-135.91	0.0144
0.228	mg/L	0.200	114.12	51.14-147.68	0.00100U
0.257	mg/L	0.200	126.88	51.13-147.85	0.00295
0.241	mg/L	0.200	114.26	51.06-147.78	0.0128

### Matrix Spike Duplicate

Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
0.210	mg/L	0.200	94.93	45.74-150.86	0.0201	6.04	21.61
0.229	mg/L	0.200	111.43	50.87-148.19	0.00659	5.63	20.47
0.226	mg/L	0.200	112.75	51.16-147.88	0.00100U	0.61	20.81
0.238	mg/L	0.200	111.99	64.93-135.91	0.0144	13.21	18.47
0.219	mg/L	0.200	109.32	51.14-147.68	0.00100U	4.29	22.01
0.234	mg/L	0.200	115.36	51.13-147.85	0.00295	9.40	20.81
0.220	mg/L	0.200	103.45	51.06-147.78	0.0128	9.38	21.19

FLDOH: E83018 (Main Lab) FLDOH: E86562 (South Lab) FLDOH: E82405 (North Lab) NJDEP: FL015



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Pinnacle Laboratories  
 2709 D Pan American Freeway NE  
 Albuquerque, NM 87107

PO #: 702112  
 Client Project #: AES  
 Date Sampled: Feb 8, 2007  
 Feb 21, 2007; Invoice: 34033

Quality Control Batch: 10079320

Analyst: POW

Blank  
 Chemical Oxygen Demand

Result	Units
20.00	mg/L

Laboratory Control Sample  
 Chemical Oxygen Demand

Result	Units	Spike	%REC	%REC Lim
107	mg/L	100	106.79	50.63-142.97

Matrix Spike  
 Chemical Oxygen Demand

Result	Units	Spike	%REC	%REC Lim	Sample
208	mg/L	200	104.19	49.85-148.79	20.00

Matrix Spike Duplicate  
 Chemical Oxygen Demand

Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
206	mg/L	200	102.98	49.85-148.79	20.00	1.17	23.90

Quality Control Batch: 10079414

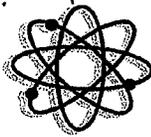
Analyst: ICC

Blank  
 Oil + Grease (HEM)

Result	Units
1.000	mgHx/L

Laboratory Control Sample  
 Oil + Grease (HEM)

Result	Units	Spike	%REC	%REC Lim
30.5	mgHx/L	40.0	76.25	54.59-138.35



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Albuquerque, NM 87107

PO #: 702112  
Client Project #: AES  
Date Sampled: Feb 8, 2007  
Feb 21, 2007; Invoice: 34033

## Narrative Report

### Sample Handling

Sample handling and holding time criteria were met for all samples. Samples collected by submitter. No unusual events occurred during analysis. Results are reported on a wet weight basis for aqueous matrices and on a dry weight basis for sludge and soil matrices unless otherwise noted. Sample results reported as dissolved were field filtered.

### Quality Control

Enclosed analyses met method or FCL criteria, unless otherwise denoted on the sample results. Applied data qualifiers are defined below.

### Attachments

Chain of Custody

Qualifier	Meaning
U	Compound was analyzed for but not detected.
J	One or more QC samples associated with this data value exceeded QC limits.
J1	Surrogate recovery limits have been exceeded.
J2	No known quality control criteria exist for the component.
J3	Reported value failed to meet established quality control criteria for either precision or accuracy.
J4	Sample matrix interfered with the ability to make an accurate determination on the spiked sample.
Q	Sample held beyond the accepted holding time.
L	Off-scale high; reported concentration exceeds the highest standard.
V	Analyte was detected in both the sample and the associated method blank.
ZTNTC	Too numerous to count. Numeric value represents filtration volume.
A	Absent
P	Present
T	Value reported is less than the statistical method detection limit. Reported for informational purposes only.
M	Value reported is greater than the statistical method detection limit, but less than the reported MDL.
G	The greatest of the dilutions performed did not yield sufficient oxygen depletion for valid data.
S	The least of the dilutions performed did not yield sufficient oxygen residual for valid data.
O	Result is greater than (over) the specified value.
I	Reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
B	Results based upon colony plate count outside ideal range.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.





# Pinnacle Laboratories Inc.

# CHAIN OF CUSTODY

DATE: 2/8/17 PAGE: 1 OF 1

PLI Accession # 702112

SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER: ROSS KEUNEKER

COMPANY: AES

ADDRESS: 624 E. COMANCHE  
FARMINGTON, NM 87401

PHONE: 505-584-2281

FAX: 505-324-2022

BILL TO: AES

COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) DMTBE □ TMB □ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB □ DBCP □	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics □ PBMS	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides/PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals: <u>Al, As, Cd, Cu, Fe</u>	NUMBER OF CONTAINERS			
<u>ELIASY MAXXIE FC SQUARE</u>	<u>2/8/17</u>	<u>0845</u>	<u>H2O</u>	<u>01</u>																												
<u>BERG PARK</u>		<u>0931</u>		<u>02</u>																												
<u>MURPHY DR. BRIDGE SECOND STOP</u>		<u>1110</u>		<u>03</u>																												
<u>S. SIDE OF LIFT STN #2</u>		<u>1145</u>		<u>04</u>																												
<u>CANNERY COURT.</u>		<u>1240</u>		<u>05</u>																												

## ANALYSIS REQUEST

8260 (TCL) Volatile Organics	
8260 (Full) Volatile Organics □ PBMS	
8260 (CUST) Volatile Organics	
8260 (Landfill) Volatile Organics	
Pesticides/PCB (608/8081/8082)	
Herbicides (615/8151)	
Base/Neutral/Acid Compounds GC/MS (625/8270)	
Polynuclear Aromatics (610/8310/8270-SIMS)	
General Chemistry:	
Priority Pollutant Metals (13)	
Target Analyte List Metals (23)	
RCRA Metals (8)	
RCRA Metals by TCLP (Method 1311)	
Metals: <u>Al, As, Cd, Cu, Fe</u>	
NUMBER OF CONTAINERS	

WEEKEND ANALYSES MAY RESULT IN AN ADDITIONAL SURCHARGE - PLEASE INQUIRE.

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS (NORMAL) <input checked="" type="checkbox"/>	
PROJ. NO.:		(RUSH) <input type="checkbox"/> 24hr <input type="checkbox"/> 48hr <input type="checkbox"/> 72hr <input type="checkbox"/> 1 WEEK	
PROJ. NAME: <u>COFF MS4 PERMIT</u>		CERTIFICATION REQUIRED <input checked="" type="checkbox"/> N/A <input type="checkbox"/> SDWA <input type="checkbox"/> AZ <input type="checkbox"/> OTHER	
P.O. NO.:		METHANOL PRESERVATION <input type="checkbox"/>	METALS <input checked="" type="checkbox"/> TOTAL <input type="checkbox"/> DISSOLVED
SHIPPED VIA: <u>CUPS</u>		COMMENTS: <u>CITY OF FARMINGTON</u> <u>(MS4 PERMIT)</u>	
SAMPLE RECEIPT			
NO CONTAINERS	<u>25</u>		
CUSTODY SEALS	<u>Y/N/NA</u>		
RECEIVED INTACT	<u>YES</u>		
BLUE ICE/ICE	<u>4200</u>		
RECEIVED BY: 1		RECEIVED BY: 2	
Signature: _____	Time: _____	Signature: _____	Time: _____
Printed Name: _____	Date: _____	Signature: _____	Time: _____
Company: <u>AES</u>		Signature: _____	Time: _____
See Reverse side (Force Majeure)		Signature: _____	Time: _____
RECEIVED BY: 1	RECEIVED BY: 2	RECEIVED BY: 2	
Signature: _____	Time: _____	Signature: _____	Time: _____
Printed Name: _____	Date: _____	Signature: _____	Time: _____
Company: _____		Signature: _____	Time: _____

PLEASE FILL THIS FORM IN COMPLETELY.

PL I.D. 702144

February 28, 2007

Animas Environmental Services  
P.O. Box 5314  
Farmington, NM 87499

Project Name/Number: CITY OF FARMINGTON MS4 PERMIT 021203

Attention: Ross Kennemer

On **02/13/07**, Pinnacle Laboratories Inc., (ADHS License No. AZ0643), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All samples were analyzed by Flowers Chemical Laboratories, Inc. (FCL), Altamonte Springs, FL.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.



H. Mitchell Rubenstein, Ph.D.  
General Manager

MR:jt

Enclosure

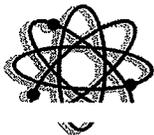
CLIENT : ANIMAS ENVIRONMENTAL SERVICES      DATE RECEIVED : 02/13/07  
 PROJECT # : 021203  
 PROJECT NAME : CITY OF FARMINGTON MS4 PERMIT      REPORT DATE : 02/28/07

PL ID: 702144

	PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	702144-01	MOC OUTFALL #1	AQUEOUS	02/12/07
02	702144-02	MOC OUTFALL #2	AQUEOUS	02/12/07

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
AQUEOUS	2



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Pinnacle Laboratories  
2709 D Pan American Freeway NE  
Albuquerque, NM 87107

PO #: 702144  
Client Project #: AES  
Date Sampled: Feb 12, 2007  
Feb 26, 2007; Invoice: 34468

## Report Summary

Date Received: Feb 16, 2007

FCL Project Manager: June S. Flowers

Laboratory #	Sample Description	Analysis	Chemist	Location	Sample Matrix
34468WW1	MOC OF#1/702144-01	EPA160.2	RMV	Main Lab	Waste Water
		EPA1664	LCC	Main Lab	
		EPA200.7	EVB	Main Lab	
		EPA200.8	EVB	Main Lab	
		EPA410.4	PCW	Main Lab	
34468WW2	MOC OF#2/702144-02	EPA160.2	RMV	Main Lab	Waste Water
		EPA1664	LCC	Main Lab	
		EPA200.7	EVB	Main Lab	
		EPA200.8	EVB	Main Lab	
		EPA410.4	PCW	Main Lab	

## Certificate of Results

Sample integrity was certified prior to analysis. Test results meet all requirements of the NELAC Standards except as noted in the Quality Control Report. Uncertainties for these data are available on request. This report may not be reproduced in part; results relate only to items tested.

Jefferson S. Flowers, Ph.D.  
President/Technical Director



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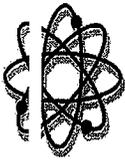
Pinnacle Laboratories  
2709 D Pan American Freeway NE  
Albuquerque, NM 87107

PO #: 702144  
Client Project #: AES  
Date Sampled: Feb 12, 2007  
Feb 26, 2007; Invoice: 34468

## Analysis Report

Lab #	Sampled	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
34468WW1	02/12/07 09:20 AM	193	mg/L	1.00	20.0	40.0	10079320	EPA410.4	Validator013	02/19/07
		0.367	mg/L	1.00	0.0200	0.0400	10079335	EPA200.8	7429-90-5	02/19/07
		0.0120	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7440-38-2	02/19/07
		0.00100 U	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7440-43-9	02/19/07
		0.0139	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7440-50-8	02/19/07
		0.00598	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7439-92-1	02/19/07
		0.00453	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7440-02-0	02/19/07
		0.0655	mg/L	1.00	0.0100	0.0200	10079335	EPA200.8	7440-66-6	02/19/07
		42.0	mg/L	1.00	1.00	2.00	10079362	EPA160.2	E1642818	02/19/07
		0.876	mg/L	1.00	0.0100	0.0200	10079477	EPA200.7	7439-89-6	02/21/07
		1.00 U	mgHx/L	1.00	1.00	4.00	10079652	EPA1664	36-82-9	02/22/07

Lab #	Sampled	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
34468WW2	02/12/07 09:00 AM	47.2	mg/L	1.00	20.0	40.0	10079320	EPA410.4	Validator013	02/19/07
		0.355	mg/L	1.00	0.0200	0.0400	10079335	EPA200.8	7429-90-5	02/19/07
		0.00145 I	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7440-38-2	02/19/07
		0.00100 U	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7440-43-9	02/19/07
		0.00559	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7440-50-8	02/19/07
		0.00268	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7439-92-1	02/19/07
		0.00220	mg/L	1.00	0.00100	0.00200	10079335	EPA200.8	7440-02-0	02/19/07
		0.0190 I	mg/L	1.00	0.0100	0.0200	10079335	EPA200.8	7440-66-6	02/19/07
		24.0	mg/L	1.00	1.00	2.00	10079362	EPA160.2	E1642818	02/19/07
		0.477	mg/L	1.00	0.0100	0.0200	10079477	EPA200.7	7439-89-6	02/21/07
		1.00 U	mgHx/L	1.00	1.00	4.00	10079654	EPA1664	36-82-9	02/23/07



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 P.O. Box 1200, Madison FL 32341 Phone 850-973-6878 Fax 850-973-6878

Pinnacle Laboratories  
 2709 D Pan American Freeway NE  
 Albuquerque, NM 87107

PO #: 702144  
 Client Project #: AES  
 Date Sampled: Feb 12, 2007  
 Feb 26, 2007; Invoice: 34468

**Quality Report**

**Quality Control Batch: 10079320**

**Analyst: PCW**

Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
20.0U	mg/L	100	106.79	50.63-142.97	20.0U	1.17	23.90
107	mg/L	200	104.19	49.85-148.79	20.0U	1.17	23.90
208	mg/L	200	102.98	49.85-148.79	20.0U	1.17	23.90
206	mg/L	200	102.98	49.85-148.79	20.0U	1.17	23.90

**Quality Control Batch: 10079335**

**Analyst: EVB**

Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
0.0200U	mg/L	0.200	106.10	48.64-136.18	0.200	1.17	23.90
0.00100U	mg/L	0.200	98.32	61.94-133.16	0.200	1.17	23.90
0.00100U	mg/L	0.200	103.60	61.75-133.27	0.200	1.17	23.90
0.00100U	mg/L	0.200	110.11	62.35-133.09	0.200	1.17	23.90
0.00100U	mg/L	0.200	104.01	62.15-133.13	0.200	1.17	23.90

FLDOH: E83018 (Main Lab)

FLDOH: E86562 (South Lab)

FLDOH: E82405 (North Lab)

NJDEP: FL015



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 Albuquerque, NM 87107

PO #: 702144  
 Client Project #: AES  
 Date Sampled: Feb 12, 2007  
 Feb 26, 2007; Invoice: 34468

**Quality Control Batch: 10079335** Analyst: EVB

**Laboratory Control Sample**

Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
0.217	mg/L	0.200	108.29	61.53-133.29	0.190	25.33	18.36
0.230	mg/L	0.200	114.88	46.42-136.84	0.00150	6.01	21.36

**Matrix Spike**

Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
0.275	mg/L	0.200	42.71	35.48-148.82	0.000230	0.47	21.29
0.201	mg/L	0.200	99.75	51.05-147.77	0.0318	1.85	21.71
0.214	mg/L	0.200	106.63	51.04-147.22	0.00100U	4.73	21.67
0.238	mg/L	0.200	103.03	51.00-147.96	0.00273	0.41	20.98
0.206	mg/L	0.200	103.12	51.29-147.83	0.0633	1.91	18.67
0.213	mg/L	0.200	105.24	50.71-147.07			
0.256	mg/L	0.200	96.48	31.87-150.97			

**Matrix Spike Duplicate**

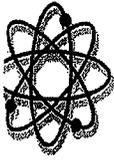
Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
0.355	mg/L	0.200	82.64	35.48-148.82	0.190	25.33	18.36
0.213	mg/L	0.200	105.97	51.05-147.77	0.00150	6.01	21.36
0.215	mg/L	0.200	107.13	51.04-147.22	0.000230	0.47	21.29
0.233	mg/L	0.200	100.85	51.00-147.96	0.0318	1.85	21.71
0.216	mg/L	0.200	108.12	51.29-147.83	0.00100U	4.73	21.67
0.212	mg/L	0.200	104.80	50.71-147.07	0.00273	0.41	20.98
0.251	mg/L	0.200	94.05	31.87-150.97	0.0633	1.91	18.67

**Quality Control Batch: 10079362** Analyst: RMW

Result	Units
1.00U	mg/L

**Laboratory Control Sample**

Result	Units	Spike	%REC	%REC Lim
46.0	mg/L	47.5	96.84	53.61-139.53



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Albuquerque, NM 87107

PO #: 702144  
Client Project #: AES  
Date Sampled: Feb 12, 2007  
Feb 26, 2007; Invoice: 34468

### Quality Control Batch: 10079477

Analyst: EVB

Blank  
Iron  
Result 0.0100U Units mg/L

### Laboratory Control Sample

Iron  
Result 1.02 Units mg/L  
Spike 1.00  
%REC 102.40 %REC Lim 49.96-144.28

### Matrix Spike

Iron  
Result 12.4 Units mg/L  
Spike 10.0  
%REC 122.31 %REC Lim 52.63-147.67  
Sample 0.214

### Matrix Spike Duplicate

Iron  
Result 12.4 Units mg/L  
Spike 10.0  
%REC 121.86 %REC Lim 52.63-147.67  
Sample 0.214 RPD 0.36  
RPD Lim 25.53

### Quality Control Batch: 10079652

Analyst: LCC

Blank  
Oil+Grease (HEM)  
Result 1.00U Units mg/Hx/L

### Laboratory Control Sample

Oil+Grease (HEM)  
Result 37.9 Units mg/Hx/L  
Spike 40.2  
%REC 94.28 %REC Lim 54.59-138.35

### Quality Control Batch: 10079654

Analyst: LCC

Blank  
Oil+Grease (HEM)  
Result 1.00U Units mg/Hx/L

### Laboratory Control Sample

Oil+Grease (HEM)  
Result 35.8 Units mg/Hx/L  
Spike 40.2  
%REC 89.05 %REC Lim 54.59-138.35



Pinnacle Laboratories
2709 D Pan American Freeway NE
Albuquerque, NM 87107

PO #: 702144
Client Project #: AES
Date Sampled: Feb 12, 2007
Feb 26, 2007; Invoice: 34468

Narrative Report

Sample Handling

Sample handling and holding time criteria were met for all samples. Samples collected by submitter. No unusual events occurred during analysis. Results are reported on a wet weight basis for aqueous matrices and on a dry weight basis for sludge and soil matrices unless otherwise noted. Sample results reported as dissolved were field filtered.

Quality Control

Enclosed analyses met method or FCL criteria, unless otherwise denoted on the sample results. Applied data qualifiers are defined below.

Attachments

Chain of Custody

Table with 2 columns: Qualifier and Meaning. Lists various qualifiers (U, J, J1, J2, J3, J4, Q, L, V, ZTNTC, A, P, T, M, G, S, O, I, B, Y) and their corresponding meanings.





UTAH | COLO.  
ARIZ. | N.M.



## CITY OF FARMINGTON

800 Municipal Drive  
Farmington, NM 87401-2663

Fax: (505) 599-1299  
<http://www.farmington.nm.us>

March 30, 2007

Ms. Diane Smith  
Water Quality Protection Division (6WQ-NP)  
U.S. Environmental Protection Agency  
1445 Ross Avenue  
Dallas, TX 75202

**RE: Submittal of Notice of Intent for Application for Coverage Under the USEPA  
NPDES Phase 2 MS4 Permit**

Dear Ms. Smith:

The City of Farmington, located in San Juan County, New Mexico, intends to apply for coverage under the U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) Phase 2 Permit for Small Municipal Separate Storm Sewer Systems (MS4s), which was finalized on September 29, 2006, and became effective January 1, 2007.

In accordance with Section 3.2 of the Permit, the City of Farmington presents the following information:

1. Legal Name of MS4 Operator: City of Farmington
2. Mailing Address: City of Farmington  
800 Municipal Drive  
Farmington, New Mexico 87401  
(505) 599-1301
3. Contact Person: Michael D. Sullivan  
Director of Community Development  
(505) 599-1285
4. Topographic Location Map – is presented within the enclosed Storm Water Management Plan (SWMP).
5. Area of Land within City of Farmington – 32.92 square miles
6. The MS4 is located within the San Juan County New Mexico Urbanized Area (Farmington, San Juan County and Aztec). Latitude and longitude within the approximate center of the City of Farmington was recorded as: N36°44'3.762" and W108°12'10.704".
7. Major receiving waters are: **San Juan River, Animas River, and La Plata River.**

**COMMUNITY DEVELOPMENT**

8. City of Farmington is not relying on any other entity to satisfy any portion of the permit obligations.
9. A description of the storm water management plan (SWMP), including best management practices (BMPs) that will be implemented and the measurable goals for each of the storm water minimum control measures specified in Part 5.3 of the this permit, the month and year in which the MS4 operator will start and fully implement each of the minimum control measures or the frequency of the action, the name of the persons or positions responsible for implementing or coordinating the SWMP, and supporting documentation required by Parts 1.5 and 1.6 is attached. **See the attached Storm Water Management Plan.**
10. **Eligibility Criteria for Listed Species and Critical Habitat** – In accordance with Section 1.5 of the Permit, the City of Farmington is in the process of evaluating eligibility criteria with regard to listed threatened and endangered species which may be impacted by storm water discharges from the Farmington's MS4. The City of Farmington has elected **not** to engage in agency consultation as a non-Federal representative (50 CFR § 402.08). Rather, City of Farmington retained Ecosphere Environmental Services (Ecosphere) in January 2007 to complete a Biological Assessment on behalf of the City. The Biological Assessment is currently in process and will be forwarded to USEPA upon completion—estimated date, April 30 2007. USEPA can then complete agency consultation with U.S. Fish and Wildlife Service to finalize eligibility criteria for the City of Farmington. **See Section 14** of the SWMP for more information.
11. **Eligibility Criteria for Historic Properties** – City of Farmington retained San Juan College (SJC) Cultural Resources Management Program (CRMP) in January 2007 to assist in identifying properties listed or eligible for listing that will be affected by MS4 storm water discharges. As required in Section 1.6 of the Permit, the City of Farmington has initiated consultation with the State Historic Preservation Office (SHPO) in order to determine whether City of Farmington is in compliance with the National Historic Preservation Act (NHPA). Please see **Section 15** of the SWMP for further information.
12. The City of Farmington MS4 discharges to the San Juan, Animas, and La Plata Rivers, all of which have had Total Maximum Daily Loads (TMDLs) developed for reaches within or adjacent to City of Farmington limits. According to the NMED TMDL Program staff, TMDLs do not currently specify a wasteload allocation applicable to storm water discharges. Therefore, in accordance with Section 1.4.6 of the Phase II MS4 Permit, adherence to a SWMP that meets the requirements of the Permit will generally be assumed to be consistent with any currently approved TMDL. If any EPA-approved or established TMDL specifically precludes such discharges in the future, the MS4 operator may not be eligible for coverage. **See Section 4** of the SWMP for more information.

According to the current CWA § 303(d) List for New Mexico, the TMDL Program established TMDLs for fecal coliform (E. coli) and sedimentation/siltation for stretches of the Animas and San Juan Rivers on August 31, 2005. The NMED SWQB and the San Juan Watershed Group are currently developing TMDLs for

Ms. Diane Smith  
March 30, 2007  
Page 3 of 3

eutrification (i.e. nutrients) and for mercury in fish tissue. Current TMDL standards for portions of the San Juan, Animas, and La Plata Rivers are summarized in Table 1 of the SWMP.

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 persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,



Michael D. Sullivan, Director  
Community Development Department  
City of Farmington

Enclosure: City of Farmington Storm Water Management Plan  
City of Farmington Consultation Correspondence with SHPO

Cc: Program Manager  
Point Source Regulations Section  
Surface Water Quality Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, New Mexico 87502

# **BIOLOGICAL ASSESSMENT**

**for the**

**CITY OF FARMINGTON  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL  
SEPARATE STORM SEWER SYSTEMS  
SAN JUAN COUNTY, NEW MEXICO**

**Prepared for:**

**City of Farmington  
Farmington, New Mexico**

**Prepared by:**



**ECOSPHERE ENVIRONMENTAL SERVICES**

**May 2007**

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## **1.0 INTRODUCTION**

Ecosphere Environmental Services (Ecosphere) was contracted by the City of Farmington (COF) to prepare a Biological Assessment (BA). The BA was conducted in support of permitting requirements of the Clean Water Act (CWA) of 1977 [33 U.S.C. §1251 et seq.]. Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES), requires that all small municipal separate storm sewer systems (MS4s) comply with the NPDES Phase II Stormwater regulations by developing and implementing a Stormwater Management Program (SWMP). The COF has been designated as a regulated small MS4 pursuant to 40 CFR 122.32. The COF has submitted a Notice of Intent to the U.S. Environmental Protection Agency (USEPA) Region 6 for authorization to discharge stormwater to waters of the U.S. under the NMR040000 general permit for an MS4.

Clean Water Act Section 402 permitting requires compliance with the Endangered Species Act (ESA) of 1973, as amended [16 U.S.C. 1531 et seq.]. A BA is the means to review, analyze, and document the direct, indirect, and cumulative effects on U.S. Fish and Wildlife Service (USFWS) federally listed endangered and threatened, and proposed or designated critical habitats thereof, as a result of development actions.

## **2.0 DESCRIPTION OF THE PROPOSED PROJECT**

The proposed project would authorize the COF MS4 to discharge stormwater to waters of the U.S. in accordance with the conditions and requirements set forth in the general permit NMR040000. Small MS4s serve a population of less than 100,000 people in urbanized areas. The COF MS4 action area encompasses the entire city limits (including areas outside the Urbanized Area as defined by the U.S. 2000 Census) and portions of the San Juan, Animas and La Plata rivers that would be discharged to and are located outside the city limits. The COF is located within San Juan County, New Mexico. A project area map (Map 1) is provided in Attachment A. Discharge locations (outfalls) into the San Juan, Animas and La Plata rivers within the area of effect are shown on Map 2 in Attachment A.

The COF MS4 discharges stormwater into the San Juan River Basin watershed. The San Juan River Basin is the second largest of three sub-basins of the upper Colorado River Basin and drains approximately 38,000 square miles of southwestern Colorado, northwestern New Mexico, northeastern Arizona, and southeastern Utah. Specifically, stormwater discharges would enter into the Animas (HUC [hydrologic unit code]-14080104) and the Middle San Juan (HUC-14080105) watersheds. These two watersheds converge within the southwestern portion of the Farmington city limits as shown on Map 3 in Attachment A.

## **3.0 ACTION AREA PHYSICAL AND BIOLOGICAL CHARACTERISTICS**

This analysis is limited to those physical and biological characteristics which have relevance to ESA listed species. Farmington is considered an urban area with industrial, residential and business development. Coal extraction and electrical generation, along with oil and gas extraction, are the largest industries in the region. Within the Farmington city limits there are approximately 134 active natural gas wells.

Vegetation along the riparian corridor has been heavily disturbed by development in many areas refer to Map 2 in Attachment A. However, small strips of riparian vegetation do occur along the corridor. Typically, these riparian areas contain large cottonwoods (*Populus fremontii*) with an understory dominated by invasive species such as Russian olive (*Elaeagnus angustifolia*) and saltcedar (*Tamarix* spp.). The COF and the non-profit organization, the River Reach Foundation, collaborated to develop a recreational river corridor park system. Farmington's River Trail System extends for 3.25 miles along the Animas River from Berg Park on the west to Animas Park on the east. The River Trail System creates open space and a protective corridor for riparian vegetation along the Animas River.

The action area has an arid to semi-arid desert climate characterized by generally clear, sunny skies and large daily temperature fluctuations. Table 1 below provides average climate data for Farmington from 1918 to 1978. Annual precipitation is 8 inches per year, ranging from five inches in the lower elevations to 10 inches in the higher elevations. At least 55% of annual precipitation occurs during the winter months, November through April. Winters are cold, dry and windy. Summer rains (July-September) are tropical, originating in the Gulf of Mexico and are convective, usually brief, intense thunderstorms. Cool season moisture tends to be frontal, originating in the Pacific and Gulf of California, and falling in widespread storms with long duration and low intensity. May and June are the driest months of the year. Humidity is generally very low and the highest moisture evaporation is usually during June and July (Western Regional Climate Center 2007).

**Table 1: Average Climate Data for Farmington, New Mexico from 1918 through 1978.**

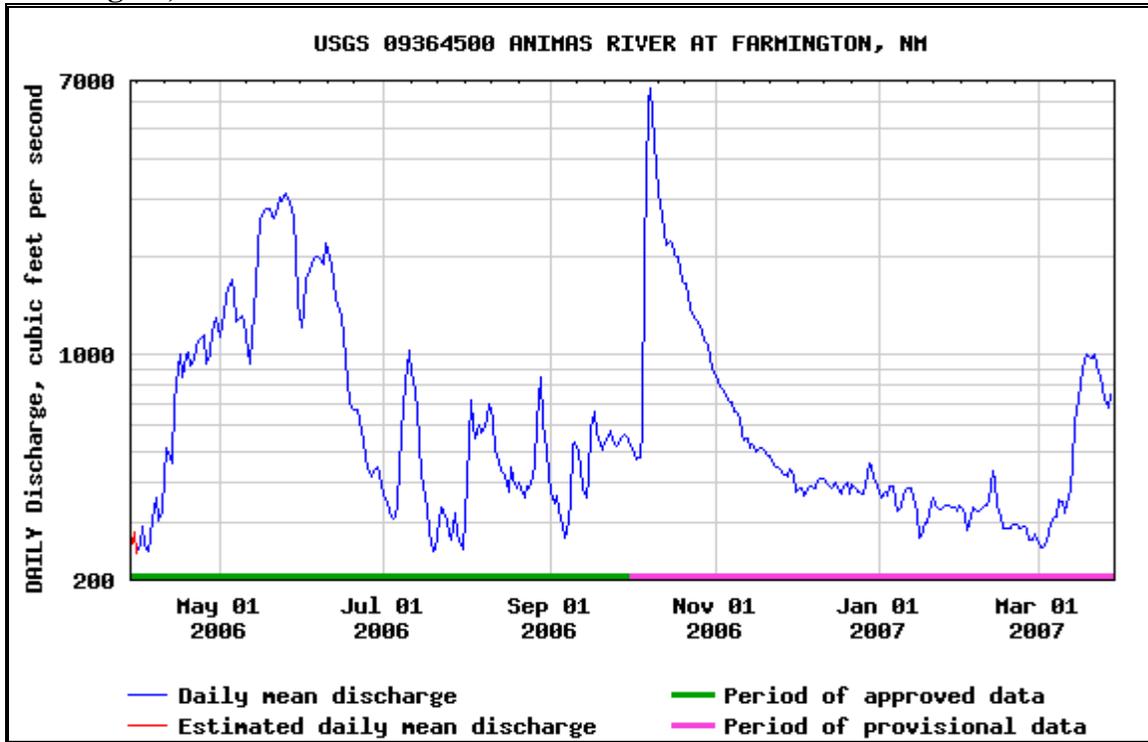
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
<b>Average Max. Temperature (F)</b>	42.0	49.9	58.2	67.6	78.7	88.8	93.5	90.4	83.3	71.2	55.7	43.8	68.6
<b>Average Min. Temperature (F)</b>	13.7	19.7	24.4	31.0	40.0	48.4	57.2	54.9	45.7	34.2	23.4	15.8	34.0
<b>Average Total Precipitation (in.)</b>	0.60	0.55	0.58	0.53	0.48	0.40	0.77	1.08	0.96	0.99	0.46	0.65	8.04
<b>Average Total Snow Fall (in.)</b>	2.3	1.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	3.2	8.1
<b>Average Snow Depth (in.)</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Western Regional Climate Center

The San Juan River Basin is the second largest of three sub-basins of the upper Colorado River Basin. Three rivers, the Animas, San Juan and La Plata, meet within the action area in the southwestern portion of the Farmington city limits. The Animas River originates in the San Juan Mountains of Colorado and flows unimpeded generally south through the towns of Silverton and Durango, Colorado. The Florida River is the Animas' largest perennial tributary which feeds into the stream, south of Durango, Colorado and north of Aztec, New Mexico. The majority of stormwater runoff in the action area discharges to the Animas River which bisects Farmington from the northeast to the southwest. The primary use of water from the Animas River is irrigation; however it also provides water for municipal and industrial use. The daily mean discharge in cubic feet per second (cfs) at the gauging station in Farmington for the period of

March 2006 to March 2007 is shown in Figure 1 below. Note that some of the data presented is provisional.

**Figure 1: Daily mean discharge in cubic feet per second on the Animas River at Farmington, New Mexico from March 2006 to March 2007.**



Source: USGS 2007

The monthly mean discharge in cfs over a five year period from 2001 to 2006 for the Animas River at Farmington is provided in Table 2 below. The monthly mean is variable from year to year as displayed during the month of September when the mean ranged from a low of 145.6 cfs in 2001 to a high of 629.5 cfs in 2003. Highest discharge occurs during spring runoff in the months of May and June.

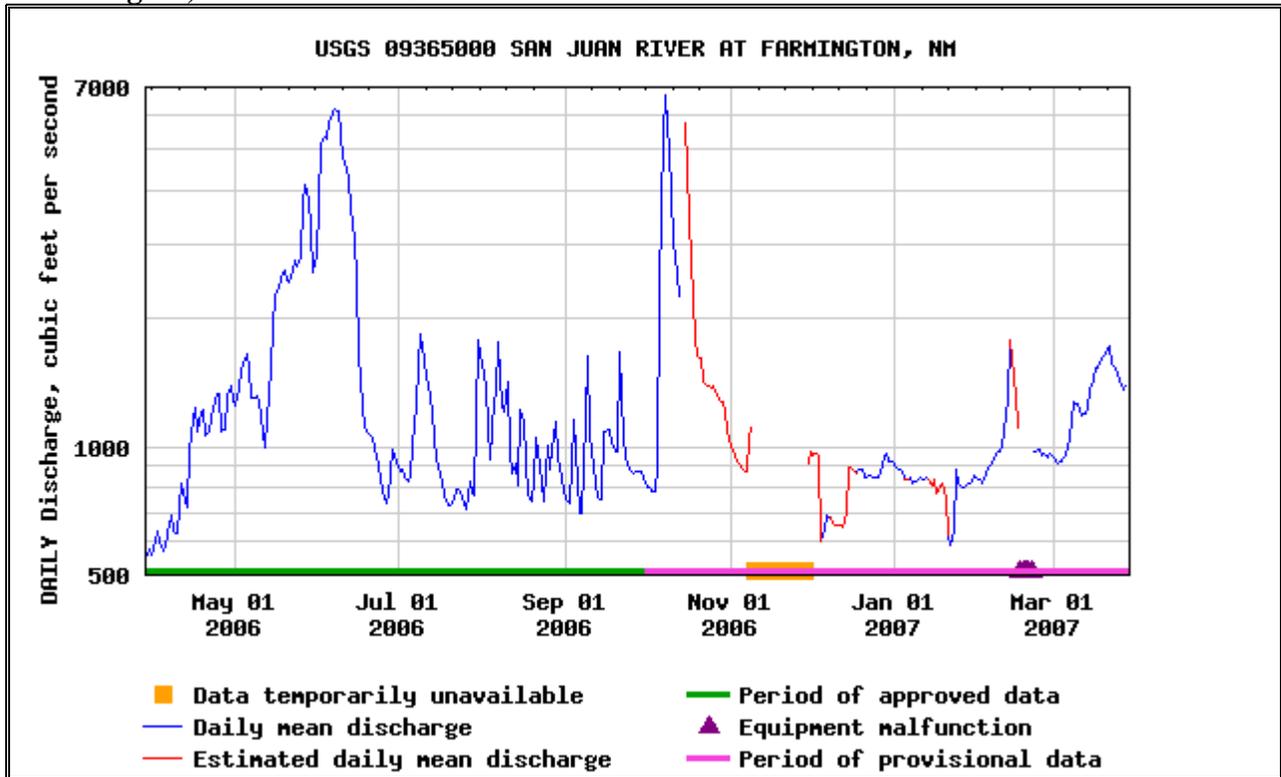
**Table 2: Discharge in cubic feet per second from the Animas River at Farmington, New Mexico from September 2001 to September 2006.**

<b>Animas River at Farmington Discharge in cubic feet per second,</b>												
<b>YEAR</b>	<b>Monthly mean in cfs (Calculation Period: 2001-09-01 - 2006-09-30)</b>											
	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>2001</b>									145.6	165.8	234.4	284.6
<b>2002</b>	244.5	210.2	176.6	106.1	279.0	170.5	14.1	4.69	240.8	242.9	289.3	261.8
<b>2003</b>	215.9	204.1	282.2	375.5	1,325	1,373	113.1	178.5	629.5	211.5	309.9	242.2
<b>2004</b>	236.8	280.8	755.4	1,267	2,342	1,771	455.5	129.2	584.2	587.9	553.0	415.0
<b>2005</b>	535.0	676.1	762.9	2,200.	4,238	3,448	1,321	487.0	274.8	652.8	403.7	292.5
<b>2006</b>	248.6	212.9	227.0	726.9	2,009	1,182	422.3	504.5	467.9			
<b>Mean of Monthly Discharge</b>	296	317	441	935	2,040	1,590	465	261	390.	372	358	299

Source: USGS 2007

The San Juan River originates in the San Juan Mountains of southwestern Colorado and flows approximately 31 miles south to the Colorado/New Mexico border, 190 miles westward to the New Mexico/Arizona border, and then continues another 136 miles into Lake Powell. The river has few perennial tributaries, the Animas River being the largest, and it receives substantial seasonal flows from a number of ephemeral drainages. In 1962, Navajo Dam was constructed just south of the Colorado border in New Mexico to store San Juan River water, as well as flows from the Los Piños and Piedra River. Since that time, the natural hydrograph of the river has been controlled and stabilized. In 1991, experimental flows were initiated to assist in the recovery of endangered fish species. Since that time, the reservoir has been operated to mimic a natural hydrograph as part of the recovery process. Late winter flows have been increased to increase reservoir storage space and high spring releases peak at approximately 5,000 cfs (San Juan Basin Recovery Implementation Program 2006). Figure 2 and Table 2 provide discharge flows from the San Juan River. Flow from the San Juan is diverted primarily for irrigation, municipal and industrial uses. The San Juan River flows from Navajo Reservoir through Bloomfield, New Mexico and continues flowing generally west to Farmington, where it abuts the southern portion of the city limits.

**Figure 2: Daily mean discharge in cubic feet per second of the San Juan River at Farmington, New Mexico from March 2006 to March 2007.**



Source: USGS 2007

**Table 3: Discharge in cubic feet per second from the San Juan River at Farmington, New Mexico from September 2001 to September 2006.**

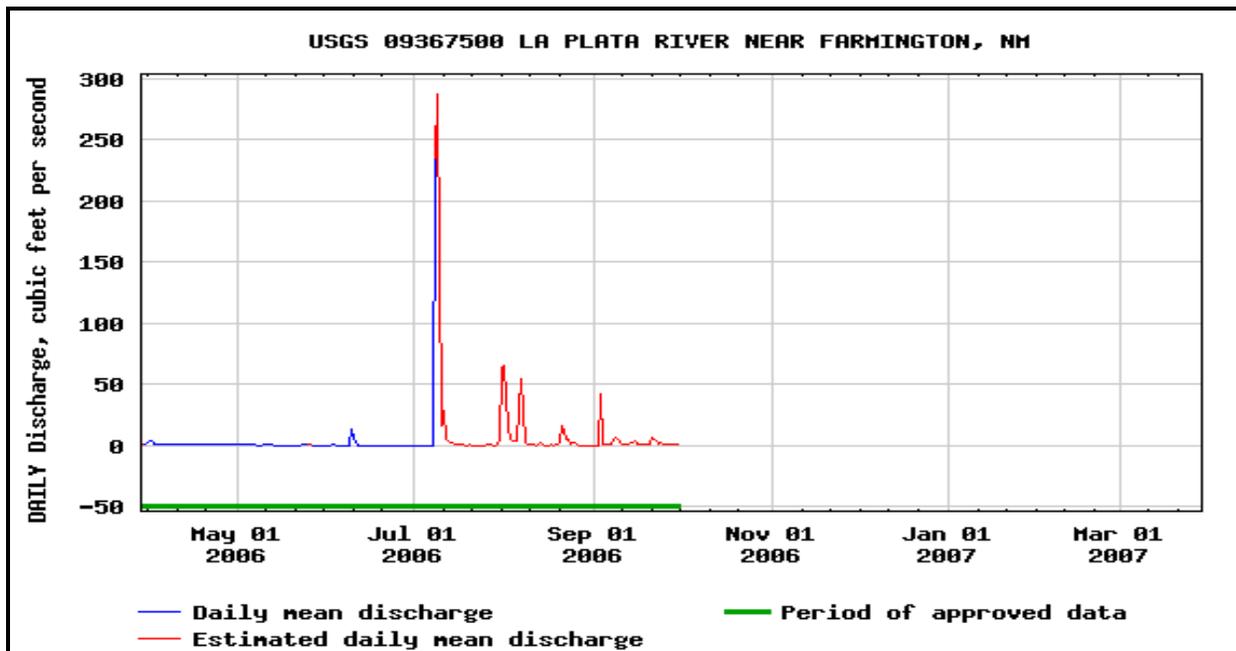
San Juan River at Farmington Discharge in cubic feet per second,												
YEAR	Monthly mean in cfs (Calculation Period: 2001-09-01 - 2006-09-30)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2001									745.1	774.1	691.8	821.7
2002	692.5	717.0	650.6	698.5	893.6	768.2	710.5	748.7	898.9	757.5	713.1	668.8
2003	641.1	640.3	688.5	672.1	1,654	1,496	866.0	787.1	1,033	562.5	518.2	510.6
2004	511.4	591.3	979.9	1,622	2,408	1,863	751.0	631.8	1,049	848.3	766.8	683.9
2005	823.2	1,059	1,111	2,625	7,969	6,430.	1,635	883.8	789.2	1,280.	914.7	805.7
2006	754.3	638.0	621.1	962.4	2,146	2,902	1,026	1,051	962.5			
<b>Mean of Monthly Discharge</b>	684	729	810.	1,320	3,010	2,690	998	820.	913	844	721	698

Source: USGS 2007

The La Plata River originates in the La Plata Mountains of southwestern Colorado and flows south into the basin merging with the San Juan River at the western edge of the COF. The La

Plata is fed by several ephemeral drainages including Cherry Creek, McDermott Arroyo, and Long Hollow. Stream flows are extremely variable as show in Figure 3 and Table 3 below. Considered an intermittent stream, the La Plata historically had permanent flow. The primary use of La Plata River water is irrigation.

**Figure 3: Daily Mean Discharge in Cubic Feet Per Second of the La Plata River at Farmington, New Mexico from March 2006 to March 2007.**



Source: USGS 2007

**Table 4: Discharge in cubic feet per second from the La Plata River near Farmington, New Mexico from September 2001 to September 2006.**

La Plata River Near Farmington Discharge in cubic feet per second,												
YEAR	Monthly mean in cfs (Calculation Period: 2001-09-01 - 2006-09-30)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2001									0.859	0.676	0.633	2.66
2002	6.96	5.08	2.35	0.272	0.773	0.582	0.051	0.000	2.91	0.477	0.216	0.202
2003	0.187	0.135	0.289	0.694	2.27	1.67	0.281	2.32	38.5			
2005							2.28	0.013	0.002	0.917	6.35	7.21
2006	5.25	4.44	1.10	0.540	0.135	0.621	20.8	6.83	2.84			
<b>Mean of monthly Discharge</b>	4.1	3.2	1.2	0.50	1.1	0.96	5.9	2.3	9.0	0.69	2.4	3.4

Source: USGS 2007

Portions of the San Juan, Animas and La Plata rivers have been identified by the New Mexico Surface Water Quality Bureau (SWQB) as being impaired by one or more pollutants (SWQB 2005). Under Section 303(d)(1) of the CWA, states are required to develop a list of waters in

that state which are impaired and establish a total maximum daily load (TMDL) for each pollutant. Total maximum daily load is defined as a “written plan and analysis established to ensure that a waterbody will attain and maintain water quality standards including consideration of existing pollutant loads and reasonably foreseeable increases in pollutant loads” (USEPA 1999).

The La Plata River is impaired for dissolved oxygen, sedimentation/siltation, and fecal coliform from the San Juan River to McDermott Arroyo primarily from animal feeding operations, drought, water diversions, loss of riparian habitat, rangeland grazing, onsite treatment systems (septic systems) and stream bank modifications. The San Juan River from the Navajo Reservation boundary to the Animas River is impaired for mercury in fish tissue and fecal coliform attributed to drought, municipal point source discharges, onsite treatment systems, and rangeland grazing. Additionally, the San Juan River from the Animas River upstream to Largo Canyon is impaired for mercury in fish tissue, sedimentation/siltation and fecal coliform. The Animas River from the confluence with the San Juan upstream to Estes Arroyo is impaired for nutrients (eutrophication) and fecal coliform (SWQB 2005). According to Rich Powell of the New Mexico SWQB, the State’s TMDLs do not include a Waste Load Allocation (WLA) for stormwater. Therefore, COF’s compliance with the permit is considered to be consistent with TMDLs.

The surficial geology of the analysis area contains several geologic formations. Channel and flood plain alluvium (Holocene) is a yellow-brown and gray-brown poorly sorted clay, silt and sand. It contains pebbles, cobbles, and boulders. The soil unit consists of coarse gravel composed of well-rounded resistant rocks along the San Juan River and its tributaries. Clasts consist of sandstone and siltstone derived from local sources. It has a thickness of 10 meters or more along the San Juan River and less than 3 meters along tributaries. Naha and Tsegi Alluviums, undifferentiated, is a well-stratified, yellowish-gray and grayish brown silt and sand. Thickest exposures (6-7 meters) are in the Farmington Glade and around the banks of the San Juan River and its tributaries. Arroyos in the west are developed mostly in Mancos Shale and expose an average thickness of only 1-2 meters of Naha and Tsegi Alluviums. Nacimiento Formation is Paleocene in origin and consists of gray and brown shale and tan, medium-grained and conglomerate sandstone. Thickness is as much as 240 meters. Ojo Alamo Sandstone occurs in limited sections of the action area. This formation is tan, fine to coarse-grained, conglomeratic sandstone. Thickness is as much as 22 meters. Kirtland Shale (upper Cretaceous) Upper Shale Member is a greenish-gray shale, minor black carbonaceous shale and soft sandstone; irregularly bedded; fluvatile. The Farmington Sandstone Member is found along the extreme southern portion of the project area. It is a tan, fine to medium-grained, soft and unresistant in lower parts and harder above, fluvatile. Thicknesses of the Farmington Sandstone Member are as much as 180 meters (Ward 1990).

#### **4.0 STORMWATER DISCHARGES QUANTITY AND QUALITY**

Stormwater has two main components, quantity and quality, which can affect surface water quality by modifying aquatic and riparian habitat, decreasing biological diversity, increasing erosion and sedimentation, and introducing chemical pollutants, litter, trash and debris. The magnitude of stormwater discharges varies widely based on numerous factors including season, wet or dry weather, and land use (Burton 2002).

Contaminants enter stormwater runoff from impervious areas such as parking lots, streets, construction sites, and industrial, commercial, and residential areas. Heavy metals in stormwater runoff originate from streets, parking areas, and natural erosion processes of certain soils. Other heavy metal sources include wood preservatives, road salt, batteries, paint and corrosive materials. Studies have shown that parking areas are the greatest contributors of nickel while vehicle service areas contribute the highest concentrations of cadmium and lead concentrations. Construction sites, residential households, roads, golf courses, service stations, parks, and sewage disposal systems are typical pollution sources. However, sediment is the main pollutant from construction areas. Agricultural activities contribute sediment, pesticides, salts, fertilizers, and hydrocarbons. Stormwater discharges are periodic and chaotic in nature. Stormwater runoff can contribute to dredging, channelization, and bank destabilization during flood events. Stormwater may affect the oxygen demand, suspended solids, dissolved solids (including salts), nutrients, pathogens, pH, and temperature of receiving waters (Burton 2002).

Chemical pollutants in stormwater can accumulate in waterways, adversely impacting aquatic and riparian vegetation. Chemical water pollutants can inhibit processes such as photosynthesis, water regulation and respiration, which can reduce growth and development of plants. Stormwater pollution discharged into waterways can also directly impact wildlife, including aquatic species and those species that depend on aquatic species. Sediment deposited into waterways can negatively impact aquatic plants in a number of ways. Sediment in water reduces light penetration, which can reduce the ability of plants to photosynthesize. Reduction in the ability of plants to photosynthesize can slow their growth and development. Sediment deposited in waterways can directly impact wildlife. For example, sedimentary particles can suffocate fish by clogging their gills and can also reduce respiratory efficiency of amphibians by adhering to their skin. Indirectly, sedimentation of waterways can reduce vegetation available as forage for wildlife when photosynthesis is impaired (USEPA 1999).

Stormwater is discharged from the COF through approximately 55 outfall locations (Map 2 in Attachment A), the majority of which discharge into the Animas River. Outfall locations are typically natural drainages, irrigation return ditches, or culvert systems. The quantity of stormwater discharge from Farmington is currently unknown. A Master Drainage Study was conducted in 1978; however Farmington has grown extensively and changed significantly since then. Stormwater that flows through the action area follows altered drainage patterns due to development. A new Master Drainage Study is scheduled to begin in late 2007 or early 2008 and will require two years to complete. Accurate stormwater flow data will be available when the new Master Drainage Study is complete. The quantities of stormwater discharges from the city are expected to be variable dependent on precipitation events. For example, snow melt would likely result in a much lower volume of discharge over a longer time frame than an intense rainfall event.

The COF has not conducted stormwater quality analyses in the past. Stormwater quality baseline sampling was initiated by Animas Environmental Services in February of 2007 at representative outfall locations throughout the city. Sampling locations are shown on Map 4 in Attachment A. Samples were measured for pH, temperature, dissolved oxygen and specific conductivity. Laboratory analyses were conducted for chemical oxygen demand (COD), total suspended solids (TSS), oil and grease, aluminum, arsenic, cadmium, copper, iron, lead, nickel and zinc concentrations. Results of sampling and analysis are provided in Table 5. Sampling was

conducted in accordance with the Standard Operating Procedures for Sample Collection and Handling (SWQB 2004).

Baseline sampling indicated that analyte concentrations were below USEPA stormwater benchmarks, except for two locations near Farmington's Municipal Operation Center (MOC) (Outfall Locations 1 and 2). Elevated pH, specific conductivity and COD readings were identified at these locations. From both outfall locations pH readings were slightly elevated at 9.13 and 9.62. At Outfall Location 1, specific conductivity was measured at 13.88 mS/cm (milliSiemens per centimeter), approximately one order of magnitude higher than other samples collected. Specific conductivity reflects total dissolved solids (TDS) and these elevated readings could be attributed to materials, like magnesium chloride, stored at the MOC. Outfall Location 1 also had an elevated COD concentration of 193 mg/L (milligrams per liter). The USEPA general stormwater benchmark for COD is 120 mg/L. Following the baseline sampling, nitrogen based nutrients (nitrate/nitrite, kjeldahl nitrogen and ammonia) were added to the analyte list and will be sampled in the future. The COF has not identified any other stormwater discharges of concern at this time. At a minimum, quarterly stormwater sampling and analyses will be conducted for the next two years and is outlined in further detail within the COF Storm Water Management Plan (SWMP).

**Table 5: City of Farmington Baseline Stormwater Sampling Locations and Parameters. February 2007.**

Sample Location and Description	Sample Date	Aluminum	Arsenic	Cadmium	Copper	Iron	Lead	Nickel	Zinc	TSS*	Oil & Grease	COD*
<b>Benchmark Values in mg/L</b>		<b>&lt;0.75</b>	<b>&lt;0.16854</b>	<b>&lt;0.0159</b>	<b>&lt;0.0636</b>	<b>&lt;1.0</b>	<b>&lt;0.0816</b>	<b>&lt;1.417</b>	<b>&lt;0.117</b>	<b>&lt;100</b>	<b>&lt;15</b>	<b>&lt;120</b>
Arroyo West of Lowe's Parking Lot	12-Feb-07	NO FLOW - NOT SAMPLED										
El Paso/Middle Fork Square	8-Feb-07	<0.0200	<0.00100	<0.00100	0.0131	0.153	<0.00100	0.01020	0.035	1.60	<1.0	<20
Berg Park Location	8-Feb-07	<0.0200	<0.00100	<0.00100	0.010	0.0216	<0.00100	0.00803	0.0223	<1.00	<1.0	<20
MOC - Sewer Outfall # 1	8-Feb-07	NO FLOW - NOT SAMPLED										
MOC - Sewer Outfall # 1	12-Feb-07	0.367	0.0120	<0.00100	0.0139	0.876	0.00598	0.00453	0.0655	42	<1.0	193
MOC - Sewer Outfall # 2	8-Feb-07	NO FLOW - NOT SAMPLED										
MOC - Sewer Outfall # 2	12-Feb-07	0.355	0.00145	<0.00100	0.00559	0.477	0.00268	0.00220	0.0190	24	<1.0	47.2
MOC - Sewer Outfall # 3	8-Feb-07	NO FLOW - NOT SAMPLED										
Murray Dr. Bridge Settling Pond	8-Feb-07	<0.0200	<0.00100	<0.00100	0.00772	0.0202	<0.00100	0.00219	<0.0100	<1.00	<1.0	<20
South Side Lift Station # 2	8-Feb-07	0.342	<0.00100	<0.00100	0.0192	0.476	0.00218	0.00466	0.0292	22.8	<1.0	32.9
Cannery Court	8-Feb-07	0.142	<0.00100	<0.00100	0.0106	0.147	<0.00100	0.00779	<0.0100	6	<1.0	<20
Intersection of Gooding/Riverview	8-Feb-07	NO FLOW - NOT SAMPLED										
Intersection of Gooding/Riverview	12-Feb-07	NO FLOW - NOT SAMPLED										
Baseball Fields on Pinon Hills (Inlet of 30-inch North HDPE Pipe)	8-Feb-07	NO FLOW - NOT SAMPLED										
Baseball Fields on Pinon Hills (Outlet of 30-inch South HDPE Pipe)	8-Feb-07	NO FLOW - NOT SAMPLED										
Glade Arroyo Culvert.	8-Feb-07	NO FLOW - NOT SAMPLED										
Glade Arroyo Culvert	12-Feb-07	NO FLOW - NOT SAMPLED										

Source: Animas Environmental Services 2007. \*TSS =Total Suspended Solids; COD =Chemical Oxygen Demand

Ecosphere conducted onsite surveys of Farmington's stormwater sampling sites on March 8, 2007. Additional outfall locations into the Animas and San Juan rivers were surveyed on March 26. Not all outfall locations were surveyed as many are located on private lands and therefore were not accessible. The sampling and outfall locations were visually evaluated for signs of excessive or obvious chemical pollution. Stormwater discharges were examined for abnormalities in odor, color, sheen, or other physical/chemical properties. Vegetation at the sites and in the surrounding area was evaluated for discoloration or other damage, signs of poor health or diminished growth, and excessive erosion or sediment deposition. There were no indications of adverse impacts from stormwater discharges at any of the sites surveyed.

## **5.0 CITY OF FARMINGTON STORMWATER MANAGEMENT PLAN BEST MANAGEMENT PRACTICES**

The COF has developed a NPDES Phase II SWMP which outlines a program to implement and enforce best management practices (BMPs) and mitigative measures to reduce the discharge of pollutants to the maximum extent possible. The plan identifies specific goals to be implemented for each of the six minimum control measures in compliance with USEPA requirements (Animas Environmental Services 2007).

Non-structural BMPs include planning and implementing procedures which promote improved water quality by encouraging community growth in non-sensitive areas, and by preserving and maximizing open space. Educating local governmental environmental, civic and industrial organizations, as well as the general public on stormwater quality issues is also an effective non-structural BMP. Structural BMPs are based on storage, infiltration and vegetative practices. Storage or detention BMPs control stormwater by gathering runoff in wet ponds or dry basins and then controlling its release to either receiving waters or treatment facilities. Stormwater retention also allows for contaminants to settle out for removal. Infiltration BMPs facilitate the percolation of runoff through the soil to ground water resulting in reduced stormwater quantity and mobilization of pollutants. Landscaping with optimal design enhances pollutant removal, maintains and improves natural site hydrology, promotes healthier habitats and increases aesthetic appeal.

The following outlines the applicable stormwater BMPs that the COF currently implements as well as those practices that will be implemented in the future for each minimum control measure.

### **Public Education and Outreach on Stormwater Impacts (Minimum Measure #1)**

- Annual Water Fair – continue to develop and distribute additional informational materials about protection of rivers and lakes and water conservation.
- Partnerships – initiate partnerships with interested groups and organizations.
- Library of BMPs - available at the COF Building Permit Desk and online at Farmington web site.
- NPDES Phase II Training – City Government - to include City Council and relevant departments.
- NPDES Phase II Training – Construction Activities – to focus on erosion control and BMPs associated with construction activities.
- NPDES Phase II Training – Industrial Activities – to focus on BMPs, stormwater runoff, and illicit discharge or connections to City sewer or storm drains.

- NPDES Phase II Training – Residential – to focus on educating public about xeriscaping, proper fertilization, rainwater harvesting, and minimizing irrigation runoff.
- Distribute utility bill information sheets or brochures on stormwater and protection of surface water and available educational resources.

### **Public Involvement/Participation (Minimum Measure #2)**

- Continue the Code Compliance Hot Line for reporting stormwater complaints or reports of illicit discharges. Data to be included within SWMP Annual Reports.
- Coordinate with Farmington Clean and Beautiful to continue cleanup weekends.
- Coordinate, implement, and track volume of waste disposed of through the Household Non-Hazardous Waste Programs.
- Coordinate, implement, and track volume of waste disposed of through the Household Hazardous Waste Programs.
- Hold annual public meetings to solicit feedback on the SWMP. Personnel from Farmington’s Community Development, Planning and Zoning, Parks and Recreation, Water/Wastewater departments to be present.
- Continue storm drain labeling to raise awareness that water or materials entering storm drains ultimately discharges to the San Juan, Animas and La Plata rivers.
- Farmington web page – to include posting the most recent SWMP, NOI, useful links, BMP library, and a feedback/contact link.

### **Illicit Discharge Detection and Elimination (Minimum Measure #3)**

- Implement quarterly stormwater sampling program of representative outfall locations for at least 2 years. Re-evaluate sampling plan after 2 years and possibly change frequency (not less than semiannual).
- Implement camera inspection program where 1/5<sup>th</sup> of drains are inspected via camera each year. Approximately \$300,000 budgeted during Fiscal Year 2008 for cleaning storm drains.
- Start conducting quarterly dry weather outfall inspections on a routine basis. Sample locations to include outfall locations at rivers and major arroyos.
- Review existing ordinances to ensure that they effectively prohibit illicit discharges or dumping. Ensure that appropriate enforcement mechanisms are in place.
- Incorporate stormwater collection map into geographic information system (GIS).
- Develop budget and timeline for implementation of structural BMPs relating to illicit discharge/connection. To be developed within 18 months after completion of Master Drainage Study.
- Develop partnership efforts with local irrigation ditch boards.
- Identify or track industrial facilities within the City (by business licensing or other means) which are required to have Industrial Multi-Sector General Permits for the NPDES Program. Once identified, develop a protocol for inspecting and certifying that no illicit connections to sanitary or storm sewers are present.
- Continue public outreach and educational efforts to keep public employees, businesses, and general public informed about hazards and impacts of illegal discharges and improper waste disposal.

### **Construction Site Stormwater Runoff Control (Minimum Measure #4)**

- Review and amend existing grading ordinance to address erosion control and other BMPs at construction sites greater than or equal to 1 acre.

- Conduct annual internal training of City staff regarding stormwater permitting requirements for construction activities. To include training of Construction Inspection, City Engineering, Planning and Zoning, Streets and Parks and Recreation departments.
- Develop budget for hiring additional personnel to conduct inspection and enforcement of construction site activities and applicable BMPs.
- Make available a guide of BMPs for construction site controls. Guide may be available for purchase from the City or downloading off the web site by contractors and developers.
- Hire/Subcontract a Certified Construction Site Erosion Control Inspector to conduct construction site inspections.
- Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new requirements.

**Post-Construction Stormwater Management in New Development and Redevelopment (Minimum Measure #5)**

- The COF and River Reach Foundation have developed a river corridor park system along the Animas River which provides a protective buffer and preserves the riparian zone, aiding in improving surface water quality.
- Several stormwater detention ponds have been constructed since the 1990s within the Foothills residential area. These ponds lessen the potential for stormwater overflow downstream and at outfalls discharging into arroyos and rivers.
- An infiltration pond was constructed adjacent to the Miller Street Bridge in the 1990s to reduce sediment and other pollutant loading into the Animas River.
- Structural controls were installed in the 1980s and 1990s resulting from the 1978 Master Drainage Study. Examples include the 30<sup>th</sup> Street Dam on College Arroyo and Martin Arroyo Dam.
- Develop an ordinance addressing post-construction stormwater runoff control of construction sites greater than or equal to 1 acre.
- Develop a map/guide to existing successful post-construction stormwater controls within the City.
- Make available a guide of BMPs of structural and nonstructural post-construction site controls.
- Hire/Subcontract with a Certified Construction Site Stormwater Inspector to conduct post-construction inspections.
- Conduct outreach and education to contractors, homebuilders, developers, and engineers about the new post-construction requirements.
- Begin work on a Master Drainage Study.
- Identify potential retrofit of existing structural controls for enhanced pollutant removal within 18 months after completion of the Master Drainage Study.

**Pollution Prevention/Good Housekeeping for Municipal Operations (Minimum Measure #6)**

- The COF Waste Water Treatment Plant has a lined stormwater pond which collects stormwater runoff from the facility. After collection, the water is piped to the treatment plant headworks and then treated and discharged along with other treated waster water under the plant's NPDES permit. No untreated stormwater leaves the facility.
- The city currently has a street sweeping program in place in which all city streets are cleaned on a regular basis. Collected waste is disposed of properly. The City will

develop written protocols for existing street sweeping and drain inlet cleaning program and continue these programs.

- Continue storm drain cleaning program, with a percentage of storm drains cleaned each year. Include summary of efforts within SWMP Annual Report.
- Continue dust abatement on non-paved roads on an as-needed basis.
- Review and modify good housekeeping and structural BMPs for MOC. Review personnel training content and protocol.
- Continue to conduct quarterly stormwater sampling at MOC outfalls for 2 years (then reevaluate). Include results in SWMP Annual Report.
- Ensure airport continues coverage under new Multi-Sector General Permit (MSGP) when re-issued. Industrial portions of the airport drain to a series of detention ponds. The Four Corners Regional Airport maintains coverage under the MSGP (Notice of intent [NOI] tracking #NMR05B016).
- Ensure hydroelectric plants continue coverage under new MSGP when re-issued. Two hydroelectric plants, the Animas Power Plant and the Bluffview Power Plant are currently covered under the MSGP 2000. NOI tracking #MNR05B219 and NMR05B222 (Animas Power Plant) and NOI tracking #NMR05B335 (Bluffview Power Plant).
- Obtain coverage for recycling center when new MSGP is re-issued
- Re-evaluate and modify (if necessary) routine training program for City personnel on pollution prevention and good housekeeping.

Additional measures have been identified and will be implemented to address the exceedance of benchmark values identified during baseline sampling efforts. Two locations near Farmington's MOC (Outfall Locations 1 and 2) had elevated pH, specific conductivity and COD readings during baseline sampling. The additional measures will include the following.

- Continue quarterly stormwater sampling and dry weather inspections at these outfall locations.
- Complete a thorough inventory and inspection at the MOC to observe storage practices, good housekeeping, and site activities.
- Work with MOC to improve secondary containment around areas that store/use magnesium chloride and other chemicals.
- Review training protocols/content for MOC employees with regard to good housekeeping and other BMPs.

No other non-stormwater discharges of concern have been identified. Should any develop during stormwater sampling or dry weather inspections, then the SWMP will be modified and additional mitigative measures will be developed.

## **6.0 CITY OF FARMINGTON STORMWATER DISCHARGE EFFECTS**

The COF has minimal data concerning the quality and quantity of stormwater discharges. The quantity and quality of stormwater discharges from the City are expected to be highly variable. For example, a brief intense summer rainfall event would likely introduce more sediment than a winter snow melt. Farmington receives an average annual precipitation of less than 10 inches. In general, stormwater discharges would be linked to precipitation events. However, dry weather discharges occur primarily from irrigation runoff or events such as individuals washing cars. Illegal dumping or illicit discharges are expected to be limited, but would result in an unknown

amount of contaminants or other waste reaching the river system. High volume stormwater discharges would typically be of short duration and would normally not exceed a 24 hour period.

Stormwater discharges from the COF would incrementally add sediment and other suspended solids, concentrations of pollutants such as oil and grease, heavy metals, and other chemicals to existing levels within the Animas, San Juan and La Plata rivers. Increases in sediment levels from stormwater discharges may incrementally affect river channel dynamics. However, these effects may not be noticeable since the quantity of stormwater discharges from Farmington would be much less than the total volume of water carried by the local stream system.

Concentrations of chemicals, suspended solids, or heavy metals in stormwater discharges from Farmington would be diluted in the volume of water in the Animas, San Juan and La Plata rivers. However, some chemical pollutants can accumulate in waterways, river sediments and aquatic species. Baseline sampling indicated that analyte concentrations were below USEPA stormwater benchmarks, except for two locations near MOC (Outfall Locations 1 and 2). Elevated pH, specific conductivity and COD readings were identified at these locations. Best management practices have been identified and implemented to address the elevated readings recorded at these locations. Best management practices are described above under Section 5.0. Overall, the general quality of COF stormwater discharges appears at least initially, to be of good quality. The COF has not identified any other non-stormwater discharges of concern at this time. Should any develop as a concern during stormwater sampling or dry weather inspections, then the SWMP will be modified and additional mitigative measures will be developed. Stormwater discharges from the COF would be in accordance with the conditions and requirements set forth in the NPDES Phase II general permit.

## **7.0 LISTED SPECIES AND DESIGNATED CRITICAL HABITATS**

The USFWS was contacted in March 2007 to request a species list for San Juan County. Ecosphere was instructed by the USFWS to obtain a listing of federally listed species with the potential to occur in San Juan County and listed critical habitat on the USFWS New Mexico Ecological Services website.

Information used to compile this section was also gathered from data collected during field-based evaluations of outfall locations accessible from COF administered lands in March of 2007. Additional data was obtained from the San Juan Watershed Group, which has been collecting water quality data from the Animas River and assisting the New Mexico Environment Department (NMED) in developing TMDLs. The watershed group has also developed a comprehensive monitoring strategy and the San Juan Basin Watershed Management Plan (January 2005). A review of existing data sources was conducted prior to field work. No species-specific surveys for federally listed flora and fauna were conducted for the proposed action. The USFWS conducts annual monitoring of fish species in support of the San Juan Recovery Implementation Plan, providing an adequate baseline for listed fish species.

### **7.1 ESA Listed Species with Potential to Occur in the Action Area**

There are nine threatened (T) and endangered (E) species with potential to occur in San Juan County. The list includes one mammal, three birds, two fish, and three plants. The federally threatened and endangered species considered in this BA include:

- Black-footed ferret (*Mustela nigripes*), E
- Bald eagle (*Haliaeetus leucocephalus*), T
- Mexican spotted owl (*Strix occidentalis lucida*), T
- Southwestern willow flycatcher (*Empidonax traillii extimus*), E
- Colorado pikeminnow (*Ptychocheilus lucius*), E
- Razorback sucker (*Xyrauchen texanus*), E
- Knowlton's cactus (*Pediocactus knowltonii*), E
- Mancos milkvetch (*Astragalus humillimus*), E
- Mesa Verde cactus (*Sclerocactus mesaeverdae*), T

## 7.2 ESA Listed Species Eliminated From Detailed Evaluation

Due to the absence of suitable habitat or recorded presence of listed species within the action area, five of the nine federally listed species are eliminated from detailed evaluation in this BA. Species eliminated from further analysis are the black-footed ferret, Mexican spotted owl, Knowlton's cactus, Mancos milkvetch, and Mesa Verde cactus. Table 6 provides the reasoning for eliminating each species from further evaluation.

**Table 6: Species listed by the USFWS under the authority of the ESA with potential to occur in San Juan County, New Mexico, but eliminated from further analysis.**

SPECIES	STATUS	HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR IN THE ACTION AREA
<b>MAMMALS</b>			
Black-footed Ferret ( <i>Mustela nigripes</i> )	E	Open grasslands with year-round prairie dog colonies.	No prairie dogs colonies of sufficient size (>100 hectares) identified in the action area.
<b>BIRDS</b>			
Mexican Spotted Owl ( <i>Strix occidentalis lucida</i> )	T	Nests in caves, cliffs, or trees in steep-walled canyons of mixed conifer forests.	No potential habitat in the action area due to lack of mixed conifer forests or forested canyons.
<b>PLANTS</b>			
Knowlton's Cactus ( <i>Pediocactus knowltonii</i> )	E	Alluvial deposits that form rolling, gravelly hills in piñon-juniper and sagebrush communities (6,200-6,400 ft).	Not known to occur in the action area. The area is heavily developed. The only known population of this species is approximately 35 miles northeast of the action area.
Mancos Milkvetch ( <i>Astragalus humillimus</i> )	E	Cracks of Point Lookout Sandstone of the Mesa Verde series (5,000-6,000 ft).	Point Lookout Sandstone does not occur in the action area.
Mesa Verde Cactus ( <i>Sclerocactus mesae-verdae</i> )	T	Highly alkaline soils in sparse shale or adobe clay badlands of the Mancos and Fruitland formations (4,000-5,550 ft).	No Mancos or Fruitland shale derived soils occur in the action area.

Source: USFWS Southwest Region Ecological Services Endangered Species Lists (<http://ifw2es.fws.gov/EndangeredSpecies/lists/default.cfm>; accessed March 2007).

### **7.3 Designated Critical Habitat in the Action Area**

Designated critical habitat for the Colorado pikeminnow occurs within the San Juan River through the western portion of the action area (Federal Register 1991). The action area does not contain critical habitat for any other ESA listed species.

In March 1994, the Department of the Interior designated 1,980 miles of the Colorado River as "critical habitat" for Colorado pikeminnow and razorback sucker. These fish have similar habitat requirements and historically lived in the same rivers. In Colorado and Utah, critical habitat covers the Colorado River from Rifle, Colorado, to Lake Powell; the Gunnison River from Delta, Colorado, to Grand Junction; the Yampa River from Craig, Colorado, to the Green River; the White River from Rio Blanco Dam to the Green River; and the Green River from Dinosaur National Monument to Lake Powell. The critical habitat also includes a 100-year flood plain of the Gunnison River from its confluence with the Colorado River and upstream to the confluence with the Uncompahgre River. There are no proposed critical habitats in Wyoming or California. Legal coordinates of critical habitats for these species occurring within the project area are described below.

#### **7.3.1 Colorado Pikeminnow**

Critical habitat for the Colorado pikeminnow includes the San Juan River and its 100-year flood plain from the State Route 371 Bridge in Section 17, Township 29 North, Range 13 West, New Mexico Principal Meridian to Neskahai Canyon in the San Juan arm of Lake Powell in Section. 26, Township 41 South, Range 11 East, Salt Lake Principal Meridian up to the full pool elevation. Refer to Map 5 in Attachment A for the location of critical habitat within the action area.

## **8.0 EFFECTS TO FEDERALLY LISTED SPECIES**

### **8.1 Bald Eagle (*Haliaeetus leucocephalus*)**

Status: Federally Threatened

Distribution and Habitat: Bald eagles are associated with aquatic habitats with forested shorelines or cliffs throughout North America. Breeding populations of bald eagles in the Rocky Mountain region are increasing (Buehler 2000); however, there are no verified nesting pairs along the San Juan River in northwestern New Mexico. The southwestern U.S. (including northwestern New Mexico) does, however, support healthy populations of wintering bald eagles. Wintering habitats are typically associated with aquatic areas with some open water for foraging; however, eagles wintering in the southwestern U.S. may occupy arid habitats (Buehler 2000).

Winter habitat suitability is defined by food availability, presence of roost sites that provide protection from inclement weather, and absence of human disturbance (Buehler 2000). Wintering bald eagles are opportunistic foragers and winter diets may vary greatly across its range depending on food availability (Stalmaster 1987, Brown 1993). Forage may include a mix of live prey and carrion (Brown 1993) and consists of birds, mammals, or fish. Bald eagles prefer roost trees that are large and open (Keister and Anthony 1983, Buehler et al. 1991). In the western U.S., most roost trees are conifers (Keister and Anthony 1983, Buehler 2000), except in riparian areas where cottonwoods are typically used. While some wintering areas are absent of

human activity, bald eagles will tolerate some human activity in areas of high prey availability (Buehler 2000).

Potential to Occur in the Action Area: In San Juan County, bald eagles are most common during the winter months and there are no verified nesting pairs along the San Juan, Animas or La Plata rivers. The nearest known nesting sites occur approximately 35 miles northeast of the study area in southern Colorado. Bald eagles are considered winter migrants and are generally only present from November to March. Known bald eagle winter roost sites occur along the La Plata River, approximately 15 miles north of Farmington.

Within the study area, the San Juan and Animas rivers provide quality foraging habitat for wintering bald eagles, as this perennially flowing river provides a plentiful source of fish, a primary component of the bald eagle diet. In addition, cottonwood trees which occur along and near the San Juan, Animas and La Plata rivers provide wintering bald eagles with perching and roosting sites. Human activity can impact bald eagle distribution, causing bald eagles to avoid inhabiting developed areas (Buehler et al. 1991). Bald eagles typically fly along or perch within the river corridors and rarely venture into the adjoining urban areas. While bald eagles may incidentally occur anywhere in the action area, they would most commonly be expected to occur along the river corridors.

Project Effects to Bald Eagle: The quantity and quality of stormwater discharges from the City are expected to be highly variable. Stormwater discharges from the COF would incrementally add sediment and other suspended solids, concentrations of pollutants such as oil and grease, heavy metals, and other chemicals to existing levels within the Animas, San Juan and La Plata rivers. Increases in sediment levels from stormwater discharges may incrementally affect river channel dynamics. However, these effects may not be noticeable since the quantity of stormwater discharges from the COF would be much less than the total volume of water carried by the local stream system. High volume stormwater discharges would typically be infrequent, of short duration and would normally not exceed a 24 hour period. Baseline sampling indicated that analyte concentrations were below USEPA stormwater benchmarks, except for two locations near MOC (Outfall Locations 1 and 2). Elevated pH, specific conductivity and COD readings were identified at these locations. Best management practices have been identified and implemented to address the elevated readings recorded at these locations.

Stormwater discharges from the COF are not expected to result in a loss or modification of suitable roosting/perching or potential nesting habitat. Given the overall quality of stormwater discharges from the COF, no negative impacts to bald eagle prey base (i.e. fish) are expected. Stormwater discharges from the COF are not expected to result in adverse effects to bald eagle.

## **8.2 Southwestern willow flycatcher (*Empidonax traillii extimus*)**

Status: Federally Endangered with Designated Critical Habitat

Distribution and Habitat: Southwestern willow flycatchers are neotropical migrants that occur in dense riparian habitats along streams, rivers, and other wetlands where cottonwood, willow, boxelder, tamarisk, Russian olive, buttonbush, and arrowweed are present (USFWS 2002). Nests are found in thickets of trees and shrubs primarily 13 to 23 feet in height, among dense and homogenous foliage (USFWS 2002). Habitat occurs at elevations below 8,500 feet (USFWS

2002). This species breeds locally along the Colorado River in the Grand Canyon near the mouth of the Little Colorado River, and south of Yuma; at the Little Colorado River headwaters near Greer and Eagar; very locally along the middle Gila, Salt, and Verde rivers; at the middle to lower San Pedro River; and along the upper San Francisco River near Alpine (USFWS 2002). In addition to being protected under the ESA, this species also is protected by the Migratory Bird Treaty Act (MTBA).

Potential to Occur in the Action Area: Despite the presence of suitable habitat, no breeding southwestern willow flycatchers are known to occur in the action area. There is only one known historic breeding territory for southwestern willow flycatchers in San Juan County. This location occurs along the San Juan River approximately 30 miles west of Farmington on the Navajo Nation. Migrants have been commonly recorded along the San Juan River during Bureau of Land Management Farmington Field Office (BLM/FFO) surveys. The BLM/FFO has no documented occurrences of breeding southwestern willow flycatchers on BLM/FFO lands adjacent to the San Juan, La Plata or Animas rivers (Barney Wegener, BLM/FFO, pers. comm. 2006). Migrants have the potential to occur in the project area from May to August and are most likely to occur along the river corridors.

Project Effects to Southwestern Willow Flycatcher: The quantity and quality of stormwater discharges from the City are expected to be highly variable. Stormwater discharges from the COF would incrementally add sediment and other suspended solids, concentrations of pollutants such as oil and grease, heavy metals, and other chemicals to existing levels within the Animas, San Juan and La Plata rivers. Increases in sediment levels from stormwater discharges may incrementally affect river channel dynamics. However, these effects may not be noticeable since the quantity of stormwater discharges from the COF would be much less than the total volume of water carried by the local stream system. High volume stormwater discharges would typically be infrequent, of short duration and would normally not exceed a 24 hour period.

Stormwater discharges from the COF would not result in a loss or modification of suitable southwestern willow flycatcher nesting or migratory stopover habitat. Stormwater discharges from the COF are not expected to result in adverse effects to southwestern willow flycatcher.

### **8.3 Colorado pikeminnow (*Ptychocheilus lucius*)**

Status: Federally Endangered with Designated Critical Habitat

Distribution and Habitat: The Colorado pikeminnow is a cyprinid fish species endemic to the Colorado River Basin. The species was once distributed throughout the major rivers and tributaries of the Basin in Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada, and California. This species is the largest cyprinid native to North America. The American Fisheries Society changed the common name for the Colorado squawfish to Colorado pikeminnow in 1998 (Nelson et al. 1998). Adults attain a maximum size of about 1.8 meters (m) total length (TL) and weigh 36 kilograms (kg).

Adult fish inhabit large to medium rivers and are found in turbid, deep pools with a strong current and rocky or sand substrate. Juvenile fish use backwater and side channel habitats with silt and sand substrates and largely consume insects and crustaceans. Pikeminnow spawn when water temperatures approach 18° centigrade (C) in July or August. Preferred spawning sites are

riffles with gravel or cobble substrates (Lamara et al. 1985). Colorado pikeminnow have been collected over a 150 mile section of the San Juan River from Lake Powell to near Farmington, New Mexico (Ryden 2000).

Potential to Occur in the Action Area: Wild Colorado pikeminnow were generally believed to have been extirpated from the San Juan River after the closure of Navajo Dam in 1965, however, two adult pikeminnow were collected in 1987 from the San Juan River between Shiprock and the Four Corners area, confirming the species was still present (Platania 1990). Experimental stocking of Colorado pikeminnow in the San Juan River was initiated in 1996. From 1996 through 2000, approximately 832,000 larval pikeminnow were stocked in the San Juan River within designated critical habitat. The relative success of these efforts was high with an over winter retention rate of about 62%. Due to the success of this initial stocking effort, a 7 year pikeminnow stocking plan was initiated in 2002 which committed to the stocking of 300,000 juvenile pikeminnow in the San Juan River between Farmington and Shiprock (Ryden and McAda 2003). In 2004, six Colorado pikeminnow were collected from the lower 5 miles of the Animas River during the course of a fishery survey not directly tied to the San Juan Recovery Program indicating that the range of the Colorado pikeminnow may be expanding. This was the first fully documented occurrence of this species occurring in the Animas River (Zimmerman 2005).

In addition, the San Juan River Recovery Implementation Program released flow recommendations for the San Juan River in 1999 that were believed to be needed to allow for the natural recovery of the Colorado pikeminnow (Holden 1999). These flow recommendations essentially described flows that would mimic the natural hydrograph to include operating Navajo Dam in such a manner to enhance flow conditions throughout designated critical habitat.

Other pikeminnow recovery activities have been focused on allowing this species to more freely access upstream portions of the San Juan River. To facilitate this, the Cudei Diversion south of Shiprock, was removed and the Hogback Diversion structure was made freely passable in 2001. Also, in 2003 a selective fish passageway was completed at the Public Service Company of New Mexico (PNM) weir in Kirtland to allow for native fish, including Colorado pikeminnow, species to access the San Juan River above the weir.

The La Plata River's intermittent flow pattern and low water volume preclude it from providing potential habitat for Colorado pikeminnow.

Critical habitat for this species begins in the San Juan River in the western extent of Farmington. Colorado pikeminnow is expected to be present at certain times of the year, particularly during the summer months, within the San Juan and Animas river corridors in the action area.

Project Effects to Colorado Pikeminnow: The COF discharges stormwater into Colorado pikeminnow critical habitat. Primary constituent elements of critical habitat are physical and biological attributes essential to species conservation and include but are not limited to:

- Water – this includes a quantity of water of sufficient quality,
- Physical Habitat - includes areas of the Colorado River system that are inhabited or potentially habitable by fish for use in spawning, nursery, feeding, and rearing or corridors between these areas, and

- Biological Environment – food supply, predation and competition (Federal Register 1991).

Baseline sampling indicated that analyte concentrations in COF stormwater discharges were below EPA stormwater benchmarks, except for two locations near MOC (Outfall Locations 1 and 2). The COF has not identified any other non-stormwater discharges of concern at this time. Should any develop as a concern during stormwater sampling or dry weather inspections, then the SWMP will be modified and additional mitigative measures will be developed. Stormwater discharges from the COF would be in accordance with the conditions and requirements set forth in the general permit. High volume stormwater discharges would typically be infrequent and of short duration. In general, stormwater discharges would be linked to precipitation events. However, small discharges could result at any time primarily from irrigation runoff or events such as individuals washing cars. Illegal dumping or illicit discharges are expected to be limited, but could result in an unknown amount of contaminants or other waste reaching the river system.

Stormwater discharges from the COF would incrementally add sediment and other suspended solids, concentrations of pollutants, heavy metals, and other chemicals to existing levels within the Animas, San Juan and La Plata rivers. Sediment particles can suffocate fish by clogging their gills. Increases in sediment levels from stormwater discharges may incrementally affect river channel dynamics. However, these effects may not be noticeable since the quantity of stormwater discharges from Farmington would be much less than the total volume of water carried by the local stream system. These impacts are not expected to adversely modify Colorado pikeminnow designated critical habitat. Impacts to Colorado pikeminnow from increased sedimentation, minor changes to surface water quality, and increased water flows in the San Juan, Animas and La Plata rivers would be insignificant and discountable. City of Farmington stormwater discharges may effect, are not likely to adversely affect, Colorado pikeminnow.

#### **8.4 Razorback sucker (*Xyrauchen texanus*)**

Status: Federally Endangered with Designated Critical Habitat

Distribution and Habitat: This species is found in backwaters, flooded bottomlands, pools, side channels and other slower moving river habitats below 6,000 feet elevation. Razorback suckers have historically been found in large rivers near strong currents and once inhabited the Colorado, Gila, Salt, Verde, and San Pedro rivers. Razorback suckers spawn prior to spring runoff in late March or early April over sand or gravel substrates (BISONM 2007). Adult razorback suckers typically occur in deep areas of the river such as pool habitats and also large backwaters. Razorbacks feed primarily on algae, plant debris and a variety of invertebrates.

Potential to Occur in the Action Area: The only occurrences of wild razorback sucker from the San Juan River are from Bluff, Utah and occurred in 1978 and the late 1980's. Stocked razorback sucker can be found in the San Juan River from Farmington to Lake Powell. Initiated in 1994, razorbacks were reintroduced from rearing facilities to the San Juan River. It has continued annually through 2006. The reintroduced populations are reproducing based on the belief there are no remaining wild razorback suckers left in the system. Collections of larval and juvenile razorback suckers have occurred from the river as recent as 2006 (Brandenberg et al. 2002).

Stocked razorback suckers use a variety of habitats. During the winter, they tend to occupy highly diverse aquatic habitats while in the early summer they are more commonly found in areas of inundated vegetation. During the summer and extending into the fall they are found most often in fast run habitats.

Similar to what was described above under the Colorado pikeminnow section, efforts were initiated to augment populations of razorback suckers in the San Juan River through stocking practices first initiated in 1994. This augmentation program has been extended through 2011 (Ryden and McAda 2003). The goal of this program is to establish an adult population of 5,800 razorback sucker in the San Juan River. Several “grow out” ponds near the San Juan River have been established to meet stocking needs. As described above under the Colorado pikeminnow, additional recovery efforts include mimicking the natural hydrograph through the designated critical habitat reach, monitoring stocking success, control of non-native fish, habitat monitoring and removal of fish passage barriers.

As discussed above, removal of the Cudei Diversion, construction of free passage at the Hogback Diversion and construction of a selective fish passage at the PNM weir have already been completed. Razorback suckers were documented using the Nenahezad fish passage at the PNM weir in 2003 (Lapahie 2004).

Due to its intermittent nature and flow volumes, the La Plata River is not considered suitable habitat for razorback sucker. Critical habitat for the razorback sucker does not occur in the action area.

Project Effects to Razorback Sucker: Baseline sampling indicated that analyte concentrations in COF stormwater discharges were below USEPA stormwater benchmarks, except for two locations near MOC (Outfall Locations 1 and 2). Elevated pH, specific conductivity and COD readings were identified at these locations. Best management practices have been identified and implemented to address the elevated readings recorded at these locations. The COF has not identified any other non-stormwater discharges of concern at this time. Should any develop as a concern during stormwater sampling or dry weather inspections, then the SWMP will be modified and additional mitigative measures will be developed. Stormwater discharges from the COF would be in accordance with the conditions and requirements set forth in the general permit.

The COF has minimal data concerning the quality and quantity of stormwater discharges. The quantity and quality of stormwater discharges from the City are expected to be highly variable and would typically be linked to precipitation events. However, small discharges could result at any time primarily from irrigation runoff or events such as individuals washing cars. Illegal dumping or illicit discharges are expected to be limited, but would result in an unknown amount of contaminants or other waste reaching the river system. High volume stormwater discharges would typically be of short duration and would normally not exceed a 24 hour period.

Stormwater discharges from the COF would incrementally add sediment and other suspended solids, concentrations of pollutants such as oil and grease, heavy metals, and other chemicals to existing levels within the Animas, San Juan and La Plata rivers. Sediment particles can suffocate fish by clogging their gills. Increases in sediment levels from stormwater discharges may

incrementally affect river channel dynamics. However, these effects may not be noticeable since the quantity of stormwater discharges from the COF would be much less than the total volume of water carried by the local stream system. These impacts are not expected to adversely modify Colorado pikeminnow designated critical habitat. Impacts to Colorado pikeminnow from increased sedimentation, minor changes to surface water quality, and increased water flows in the San Juan, Animas and La Plata rivers would be insignificant and discountable. City of Farmington stormwater discharges may effect, are not likely to adversely affect, razorback sucker.

### 8.5 Cumulative Effects

Future development in the action area and surrounding region is expected to include business and residential construction, mineral extraction industries, and agricultural activities. The COF is likely to expand its boundaries as the area continues to experience population growth. Sustained development outside the Farmington city limits, in particular oil and gas extraction, would likely contribute to fluctuations in the quantity and quality of stormwater discharges. Since the quantity and quality of stormwater is highly variable and chaotic, it is difficult to quantify potential cumulative effects. As the COF continues to develop and implement its SWMP, BMPs would be implemented that could improve the quality and more effectively control the quantity of stormwater discharges. Continued stormwater sampling and completion of a new Master Drainage Study is expected to provide the COF with more accurate and complete data in which to better manage stormwater discharges.

Cumulative effects to listed fish species would result from continued development and growth in the area that may affect the quality and quantity of stormwater discharges from the COF and surrounding region. Increased sedimentation and decreased water quality are potential effects. However, better stormwater management and controls may result in decreased sedimentation and increased water quality within the local stream system. No cumulative effects to other listed species are expected from the authorization of stormwater discharges from the COF.

### 8.6 Summary of Determination of Effects for ESA Listed Species

Effect determinations for all nine species federally listed under the ESA with potential to occur in San Juan County and critical habitat present in the action area are provided in Table 7. Determinations of effect were based on evaluating the potential impacts of the proposed action if BMPs are implemented and the conditions of the general permit are followed.

**Table 7. Summary of Effect Determinations for Federally Listed Species.**

SPECIES	STATUS	DETERMINATION OF EFFECT
<b>MAMMALS</b>		
Black-footed ferret	E	No Effect
<b>BIRDS</b>		
Bald eagle	T	No Effect

Mexican spotted owl	T	No Effect
Southwestern willow flycatcher	E	No Effect
<b>FISH</b>		
Colorado pikeminnow	E	May Affect, Not Likely to Adversely Affect
Colorado pikeminnow critical habitat		No adverse modification
Razorback sucker	E	May Affect, Not Likely to Adversely Affect
<b>PLANTS</b>		
Knowlton's cactus	E	No Effect
Mancos milkvetch	E	No Effect
Mesa Verde cactus	T	No Effect

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## 11.0 BIBLIOGRAPHY

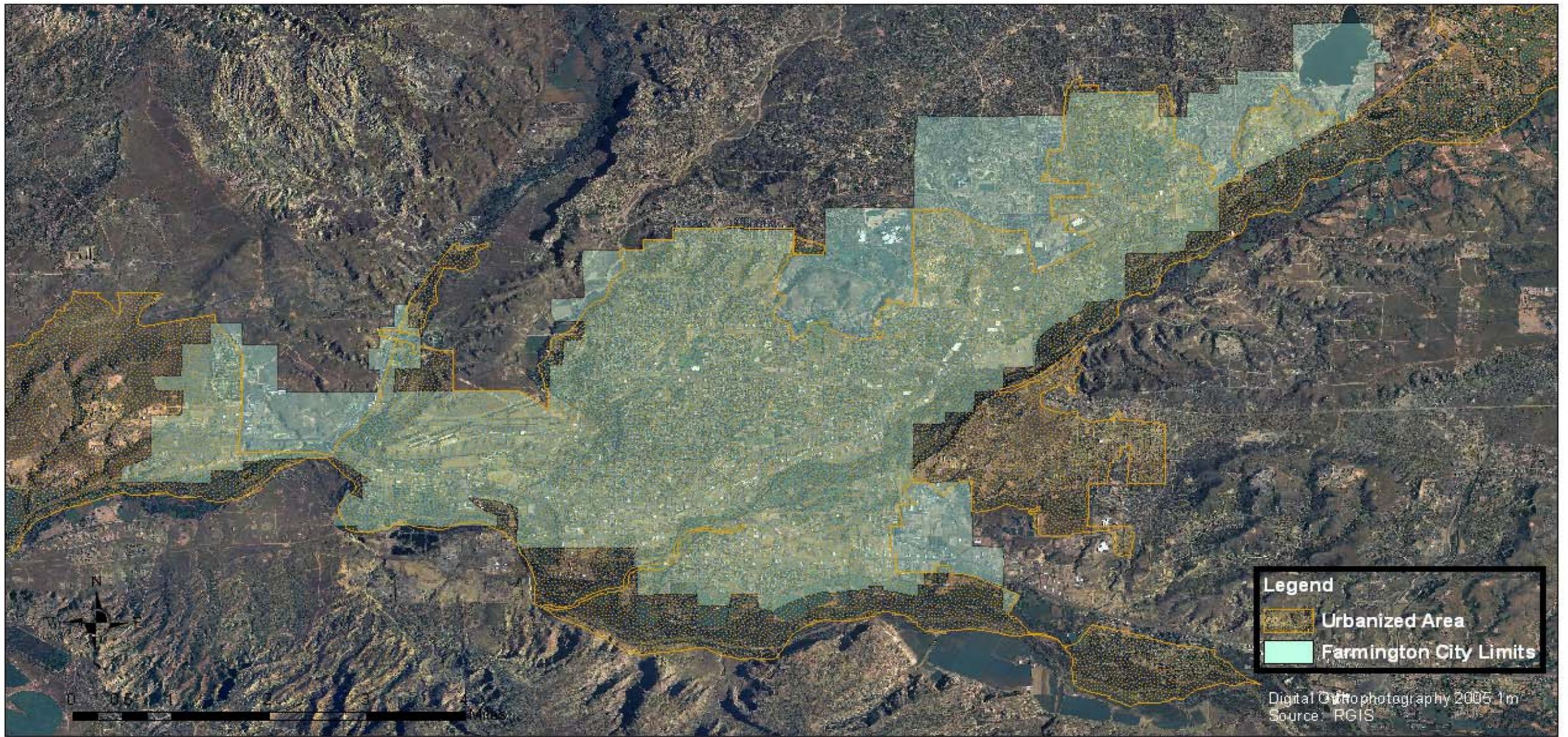
- Animas Environmental Services. 2007. City of Farmington NPDES Phase II Stormwater Management Plan (Draft). Prepared for the City of Farmington, Farmington, New Mexico. Unpublished document. March 2007 ver.
- BISONM (Biotic Information System of New Mexico). 2007. Species Reports. Available online at: <http://www.bison-m.org/>
- Brandenberg W., M. Farrington and S. Gottlieb. 2004. Razorback larval fish survey in the San Juan River during 1999-2002. Division of Fishes, Museum of Southwestern Biology, Department of Biology, University of New Mexico, Albuquerque, New Mexico.
- Brown, B. T. 1993. Winter foraging ecology of Bald Eagles in Arizona. *Condor* 95: 132–138.
- Buehler, D. A., T. J. Mersmann, J. D. Fraser, and J. K. D. Seegar. 1991. Nonbreeding Bald Eagle communal and solitary roosting behavior and habitat use on the northern Chesapeake Bay. *J. Wildl. Manage.* 55: 273–281.
- Buehler, D. A. 2000. Bald Eagle (*Haliaeetus leucocephalus*). In *The Birds of North America*, No. 506 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Burton, A. G. Jr. and R. E. Pitt. 2002. *Stormwater Effects Handbook: A Toolbox for Watershed Managers, Scientists and Engineers*. CRC Press, Washington, D. C.
- Carman, Stephanie. 2006. Colorado River Chubs Recovery Plan. Conservation Services Division New Mexico Department of Game and Fish. Santa Fe, New Mexico.
- Ecosphere Environmental Services. 1995. The Farmington District endangered, threatened and sensitive plant field guide. Bureau of Land Management, Farmington, NM.
- Federal Register. 1991. Endangered and Threatened Wildlife and Plants: Final rule determination of critical habitat for the Colorado River Endangered Fishes: Razorback sucker, Colorado squawfish, humpback chub and bonytail chub. 50 CFR 17, RIN 1018-AB91. March 21, 1994. 59 (54): 13374-13400.
- Fisher, C., D. Pattie, and T. Hartson. 2000. *Mammals of the Rocky Mountains*. Lone Pine Publishing, Vancouver, BC.
- Heil, K. D. and J.M Porter. 1994. *Sclerocactus* (Cactaceae): a revision. *Haseltonia* 2: 20-46.
- Holden, P.B. (Ed.). 1999. Flow recommendations for the San Juan River, San Juan River Basin Recovery Implementation Program, USFWS, Albuquerque, New Mexico.
- Keister, G. P., and R. G. Anthony. 1983. Characteristics of Bald Eagle communal roosts in the Klamath Basin, Oregon, and California. *J. Wildl. Manage.* 47: 1,072–1,079.

- Lamara, V., M. Lamarra and J.G. Carter. 1985. Ecological investigation of a suspected spawning site of Colorado squawfish on the Yampa River, Utah. *Great Basin Nat.* 45:127-140.
- Natural Heritage New Mexico (NHNM). 2007. Natural heritage New Mexico database. Natural Heritage New Mexico, University of New Mexico Biology Department, Albuquerque, NM. Available at [http://nmnhp.unm.edu/query\\_bcd/query.html](http://nmnhp.unm.edu/query_bcd/query.html).
- Nelson, J. S., E. J. Crossman, H. Espinosa-Perez, C. R. Gilbert, R. N. Lea, and J. D. Williams. 1998. Recommended changes in common fish names: pikeminnow to replace squawfish (*Ptychocheilus* spp.). *Fisheries* 23(9): 37.
- New Mexico Rare Plant Technical Council. 1999. New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page. <http://nmrareplants.unm.edu> (Version 2006).
- Page, L. M. and B. M. Burr. 1991. A field guide to freshwater fishes. Houghton Mifflin Company, Boston, MA
- Platania, S. P. 1990. Biological summary of the 1987 to 1989 New Mexico-Utah ichthyofaunal study of the San Juan River. Report to the New Mexico Department of Game and Fish, Santa Fe, and the U. S. Bureau of Reclamation, Salt Lake City, UT. 143 pp.
- Rees, David E., Jonathan A. Ptacek, and William J. Miller. 2005. Roundtail Chub (*Gila robusta robusta*): A Technical Conservation Assessment. Prepared for the USDA Forest Service, Rocky Mountain Region. Miller Ecological Consultants, Inc. Fort Collins, Colorado 80525-1275.
- Ryden, D. 2000. Adult fish community monitoring on the San Juan river, 1991-1997: Final report. U.S. fish and Wildlife Service, Grand Junction, Colorado. PDF document accessed from the San Juan River Basin Recovery Implementation Program Website (SJRIP).
- Ryden, D. and C. McAda. 2003. Stocking of fingerling Colorado pikeminnow in the San Juan River. US Fish and Wildlife Service. Grand Junction, Colorado. PDF document accessed from the San Juan River Basin Recovery Implementation Program Website.
- Stalmaster, M. V. 1987. The Bald Eagle. Universe Books, New York, NY.
- Stone, W. J., F. P. Lyford, P. F. Frenzel, N. H. Mizell and E. T. Padgett. 1983. Hydrogeology and Water Resources of the San Juan Basin, New Mexico. Hydrologic Report #6. New Mexico Bureau of Mines and Mineral Resources. Socorro, New Mexico.
- SWQB (Surface Water Quality Bureau) New Mexico Environment Department. 2005. Final Approved Total Daily Maximum Daily Load (TMDL) for the San Juan River Watershed Part 1: Navajo Nation Boundary to Navajo Dam. Albuquerque, New Mexico.

- \_\_\_\_\_. 2004. Standard Operating Procedures for Sample Collection and Handling. Albuquerque, New Mexico.
- USDI (U.S. Department of the Interior). 1980. Soil Survey of San Juan County, New Mexico - Eastern Part. U.S. Department of Agriculture, Soil Conservation Service in Cooperation with the U.S. Department of the Interior, Bureau of Indian Affairs and Bureau of Reclamation and the New Mexico Agricultural Experiment Station.
- USEPA (U.S. Environmental Protection Agency). 1999. Draft Guidance for Water Quality-based Decisions: The TMDL Process (Second Edition). EPA 841-D-99-001. Office of Water, Washington, D. d.
- \_\_\_\_\_. 1993. *Wildlife Exposure Factors Handbook*. Volumes I and II. Office of Research and Development, Washington, D.C. EPA/600/R-93/187.
- USFW (U.S. Fish and Wildlife Service). 1995. Recovery plan for the Mexican spotted owl: Vol. I. Albuquerque, New Mexico. 172 pp.
- \_\_\_\_\_. 1998. Black-footed ferret (*Mustela nigripes*) fact sheet. <http://endangered.fws.gov/i/A07.html>.
- \_\_\_\_\_. 2002. Southwestern Willow Flycatcher recovery plan. Albuquerque, New Mexico. i-ix + 210 pp., Appendices A-O.
- \_\_\_\_\_. 2007. <http://ifw2es.fws.gov/EndangeredSpecies/lists/ListSpecies.cfm>.
- USGS (U.S. Geological Survey). 2007. National Water Information System: Web Interface. Available online at: [http://waterdata.usgs.gov/nwis/dv?referred\\_module=sw&site\\_no=09364500](http://waterdata.usgs.gov/nwis/dv?referred_module=sw&site_no=09364500)
- Ward, A. W. 1990. Geologic Map Emphasizing the Surficial Deposits of the Farmington 30' X 60' Quadrangle, New Mexico and Colorado. Department of the Interior, U. S. Geological survey Miscellaneous Investigation Series, MAP I-1978. U. S. Geological Survey Map Distribution Center, Box 25286, Federal Center, Denver, Colorado 80225
- Wegener, Barney. 2006. Riparian Specialist, Bureau of Land Management Farmington Field Office. Personal communication on 10/30/06. Concerning documented species occurrences.
- Western Regional Climate Center. 2004. *New Mexico Climate Summaries*. Western Regional Climate Center. Web site: [www.wrcc.dri.edu/summary/climsmnm.html](http://www.wrcc.dri.edu/summary/climsmnm.html).
- Zimmerman, B. 2005. 2004 fish studies on the Animas River. Southern Ute Indian Tribe/Wildlife Division.

# **ATTACHMENT A**

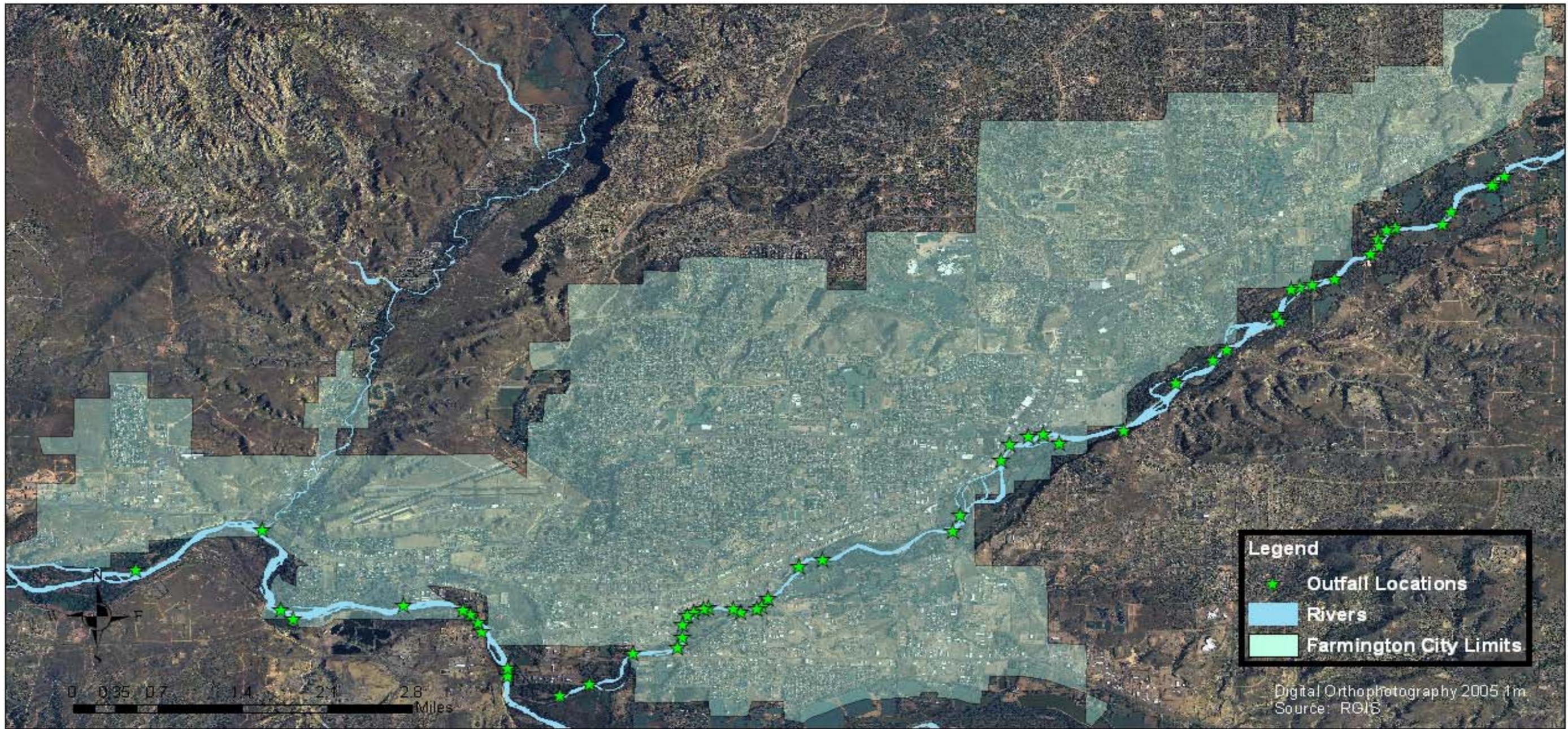
## **MAPS**



**ECOSPHERE**  
ENVIRONMENTAL SERVICES

CITY OF FARMINGTON  
 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
 GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS  
 SAN JUAN COUNTY, NEW MEXICO  
 MAP 1: PROJECT AREA

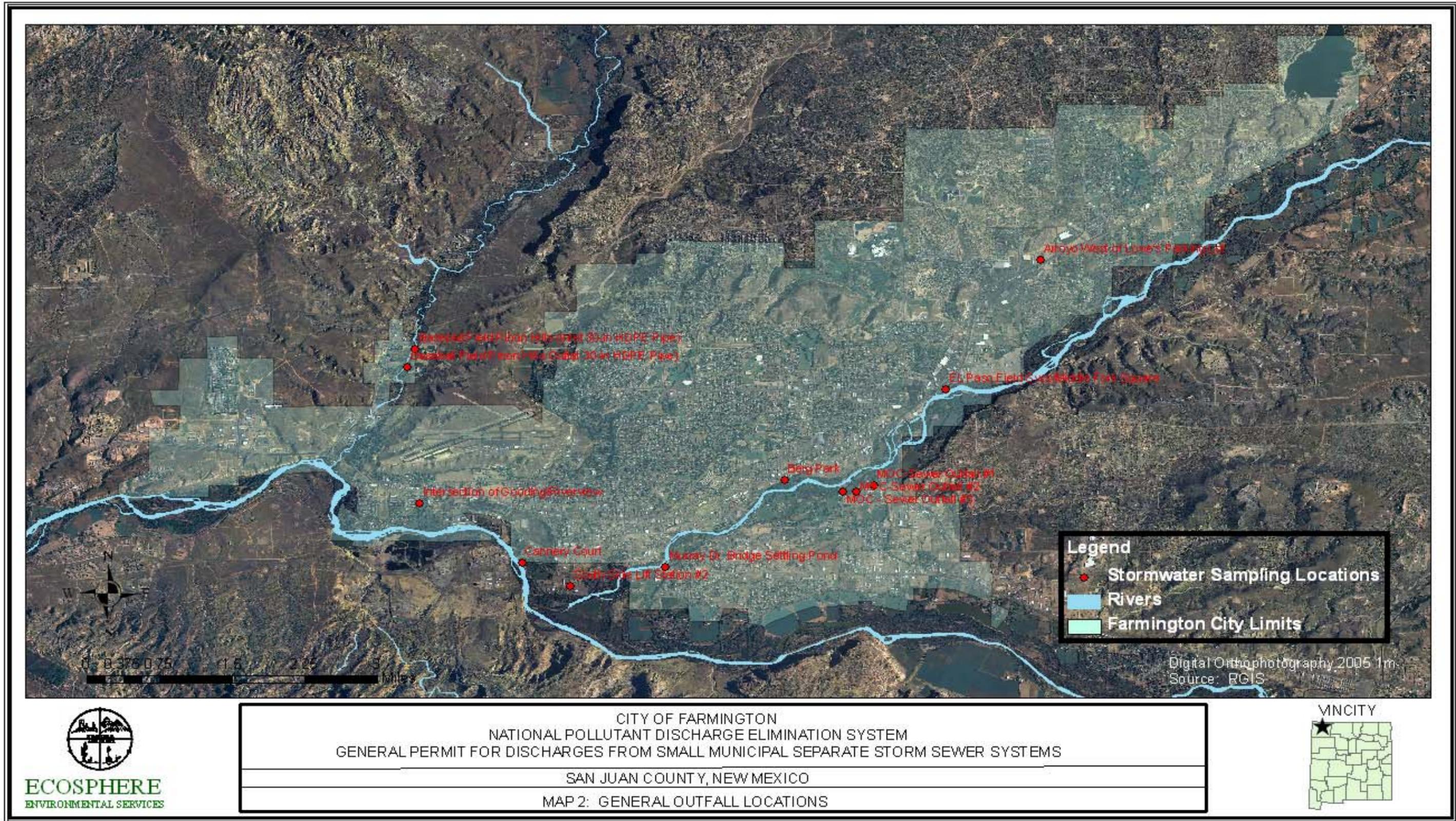




**ECOSPHERE**  
ENVIRONMENTAL SERVICES

CITY OF FARMINGTON  
 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
 GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS  
 SAN JUAN COUNTY, NEW MEXICO  
 MAP 2: GENERAL OUTFALL LOCATIONS

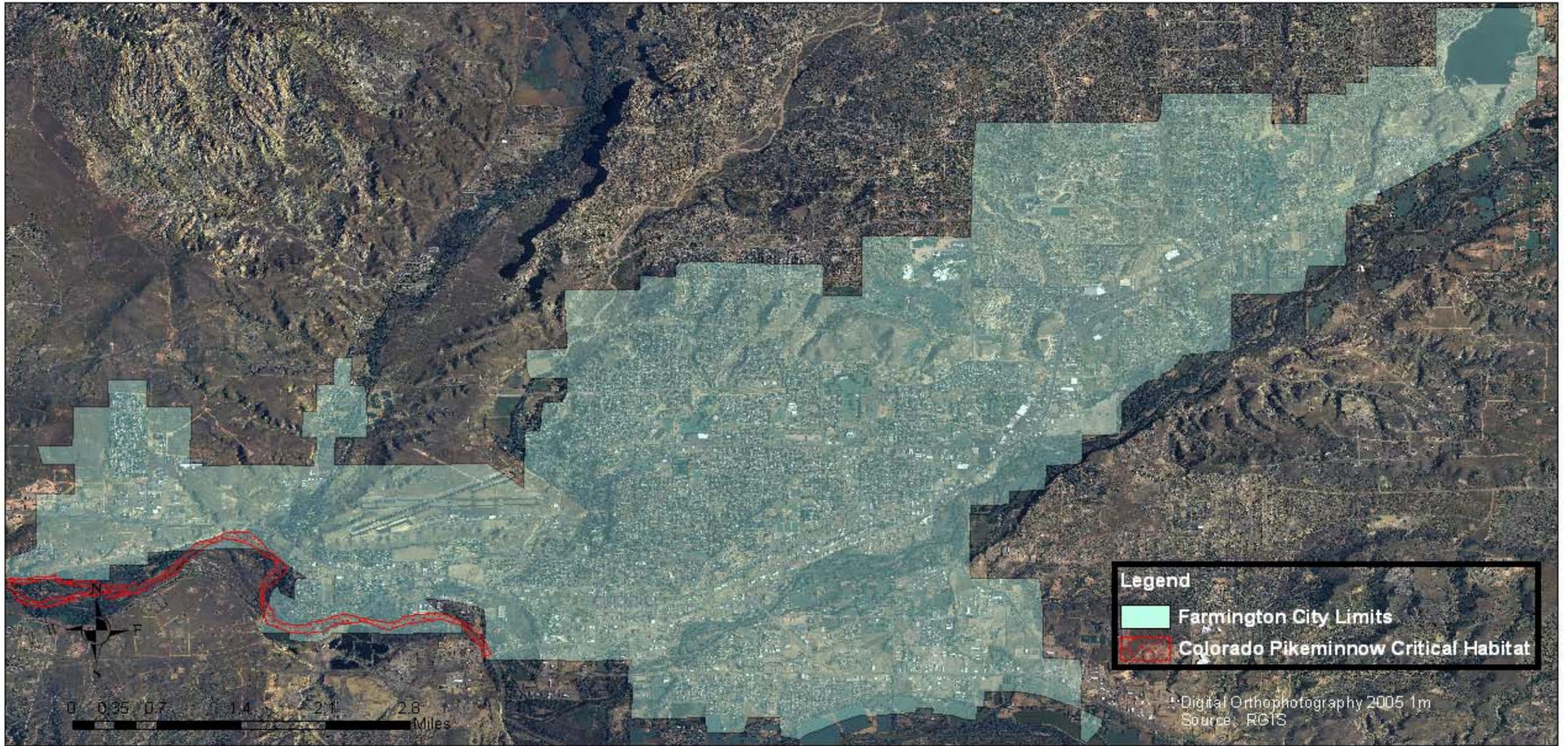




**ECOSPHERE**  
ENVIRONMENTAL SERVICES

CITY OF FARMINGTON  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS  
SAN JUAN COUNTY, NEW MEXICO  
MAP 2: GENERAL OUTFALL LOCATIONS





**ECOSPHERE**  
ENVIRONMENTAL SERVICES

CITY OF FARMINGTON  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

SAN JUAN COUNTY, NEW MEXICO

MAP 4: COLORADO PIKEMINNOW CRITICAL HABITAT

VNCITY





AES Cof MS4

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407 Galisteo Street, Suite 236  
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**RE: Determination of Effect – City of Farmington Existing Storm Water System and Farmington’s Application for Coverage Under the USEPA NPDES Phase 2 MS4 Permit**

Dear Ms. Ensey:

Animas Environmental Services, LLC (AES) recently received correspondence from the Historic Preservation Division (HPD) dated May 3, 2007. Noted within the HPD correspondence were references by HPD to two pieces of additional information that should be incorporated into the City of Farmington’s Storm Water Management Plan (SWMP).

First, AES has conducted additional database searches containing state and national registered properties to confirm that no registered properties are located in the areas of City of Farmington’s storm water outfalls. AES consulted the databases noted below and found that the following properties (located within the City of Farmington) were included on the National and State Registers.

**National Register**

Farmington Historic Downtown Commercial District, Approx. 8 blks, along Main St. and Broadway, from Auburn Ave. to Miller Ave. 2002-12-20  
(<http://www.nr.nps.gov/nrlc1.htm>)

**State Register**

1616 Andrews Building, 101 E. Main, Listed 10/20/1995  
715 Arrington House, 506 W. Arrington, Listed 6/22/1979  
1812 Farmington Downtown Historic District, Listed 4/5/2002 12/20/2002  
1591 Hopkins Place, 503 N. Auburn, Listed 5/6/1994  
1631 Farmington Rolling Waters Building, 101 W. Main, Listed 3/15/1996  
<http://www.nmhistoricpreservation.org/documents/PropertiesByCounty.pdf>

Review of the properties confirms that the properties are not likely to be impacted by municipal storm water discharges by the City of Farmington.

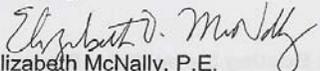
HPD also noted that one other state law, Section 18-6A-5 of the Cultural Properties Protection Act (18-6A-1 through 18-6A-6 NMSA 1978) states that state agencies shall cooperate with the State Historic Preservation Officer and exercise due caution to ensure that cultural properties are not inadvertently damaged or destroyed. Under this



law, the City of Farmington must consult with the SHPO if they plan any new construction or best management practices (BMPs) on city property. Reference to this provision will be incorporated into the City of Farmington's SWMP.

If you have any questions regarding the City of Farmington's SWMP, please do not hesitate to contact me at (505) 564-2281. We appreciate your assistance in providing consultation with the City of Farmington.

Sincerely,

  
Elizabeth McNally, P.E.  
Animas Environmental Services, LLC

Cc: Diane Smith  
Water Quality Protection Division (6WQ-NP)  
U.S. Environmental Protection Agency  
1445 Ross Avenue  
Dallas, TX 75202

Nica Westerling, P.E.  
City Engineer  
City of Farmington  
800 Municipal Drive  
Farmington, NM 87401



BILL RICHARDSON  
Governor

STATE OF NEW MEXICO  
**DEPARTMENT OF CULTURAL AFFAIRS**  
**HISTORIC PRESERVATION DIVISION**

BATAAN MEMORIAL BUILDING  
407 GALISTEO STREET, SUITE 236  
SANTA FE, NEW MEXICO 87501  
PHONE (505) 827-6320 FAX (505) 827-6338

May 3, 2007

Elizabeth McNally, PE  
Animas Environmental Services  
624 E. Comanche  
Farmington, NM 87401

Re: Request for Determination of Effect – City of Farmington MS4 Permit

Dear Ms. McNally:

Thank you for submitting the information that was prepared for Farmington's MS4 permit. We received this information April 4, 2007.

The State Historic Preservation Officer (SHPO) has determined that storm water discharges within the City of Farmington will not affect properties listed on the National Register of Historic Places or properties that are eligible for listing to the Register. However, two pieces of information was not included in the documentation that might have a bearing on future consultation with this office if the City of Farmington needs to construct new storm water structural controls or BMPs.

1. The documentation and map provided shows only archaeological sites. There are properties (buildings, ditches, etc.) listed on the National Register that are not archaeological sites. Although none of these other properties will be affected, it was not clear from the documentation provided if they were considered as part of the records review. In addition, not all registered properties are included in the New Mexico Cultural Resource Information System, so a separate database containing state or national register properties should have been consulted and referenced in the documentation that was compiled in order to ensure that there were no registered properties at the locations of storm water outfall.
2. There is one other state law that should be referenced under section 2.3, Mitigative Measures. Section 18-6A-5 of the Cultural Properties Protection Act [18-6A-1 to 18-6A-6 NMSA 1978] states that state agencies shall cooperate with the State Historic Preservation Officer and exercise due caution to ensure that cultural properties are not inadvertently damaged or destroyed. Under this state

law, the City of Farmington must consult with the SHPO if they plan any new construction or BMPs on city property.

Please do not hesitate to contact me if you have any questions on these comments. I can be reached by telephone at (505) 827-4064 or by email at [michelle.ensey@state.nm.us](mailto:michelle.ensey@state.nm.us).

Sincerely,

A handwritten signature in blue ink, appearing to read 'M. Ensey', is written above the typed name.

Michelle M. Ensey  
Archaeologist

Log: 80904