

*Prepared for:*

City of Aztec  
201 West Chaco  
Aztec, New Mexico 87410  
*and*  
San Juan County  
305 South Oliver Drive  
Aztec, New Mexico 87410

NPDES Phase II Small MS4  
Annual Report 2019-2020

*for*

San Juan County  
and City of Aztec  
San Juan County, New Mexico  
June 1, 2021

*Prepared by:*

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# NPDES Phase II Small MS4 Annual Report 2019-2020

San Juan County and City of Aztec  
San Juan County, New Mexico

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## 1.0 General Information

Animas Environmental Services, LLC has completed this National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Separate Storm Sewer System (MS4) General Permit Annual Report on behalf of the San Juan County and City of Aztec, located in northwest New Mexico. This report is submitted as a requirement of [NPDES MS4 Permit NMR040000](#), effective July 1, 2007 and administratively continued since July 1, 2012.

**Municipality/Organization:** San Juan County and City of Aztec

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**EPA NPDES Permit Number:** NMR040000

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**Reporting Period:** July 1, 2019 – June 30, 2020

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## *1.1 Executive Summary*

The *Stormwater Management Plan: San Juan County and the City of Aztec* (COA and SJC, 2008) outlines the City of Aztec (COA) and San Juan County (SJC) program to comply with the U.S. Environmental Protection Agency (USEPA) [Phase II Stormwater Final Rule](#) (64 CFR 6872, 8 Dec 1999) to improve stormwater quality in accordance with the Clean Water Act of 1972. This program also serves to develop, implement, and enforce a stormwater management program designed to reduce the discharge of pollutants to the maximum feasible extent. The USEPA has identified six minimum control measures which must be specifically addressed within this plan. COA and SJC must show measurable goals and improvements in these six control areas, which are listed below and outlined in the report. Implementing these six control measures involves several departments within City of Aztec and San Juan County government. There are numerous outfalls located in the City and County which discharge into the Animas and San Juan Rivers, which are jurisdictional Waters of the United States. By following these six control measures, COA and SJC benefit from reductions in pollutants being discharged to these Waters. A record of these results and improvements will be the responsibility of each department.

Over the reporting period, July 1, 2019, through June 30, 2020, San Juan County and City of Aztec have been working with City of Farmington and New Mexico Department of Transportation (NMDOT) to develop and implement a Memorandum of Agreement (MOA) and associated cost sharing agreement as part of facilitating compliance with MS4 NPDES General Permit NMR040000.

## *1.2 Stormwater Management Plan: Six Minimum Control Measures*

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention and Good House Keeping for Municipal Operators

## *1.3 Permit Coverage Area*

The Stormwater Management Plan (SWMP) encompasses the urbanized areas within COA and SJC and covers approximately 44 square miles. The COA has a population of approximately 6,369, and SJC has a population of approximately 123,958 (U.S. Census Bureau, 2020).

## 1.4 Reporting Requirements

The MS4 Annual Report includes the status of compliance with the permit conditions, an assessment of the appropriateness of the Best Management Practices (BMPs) selected, and progress towards achieving the measurable goals for each of the six minimum control measures. The report also summarizes activities undertaken by COA and SJC during the reporting cycle, any changes to the plan or its measurable goals, and all relevant data obtained during the reporting period. Additionally, any changes made to BMPs or the measurable goals will be addressed.

## 1.5 Certifications

Contact Person: Nick Porell, San Juan County Public Works Director

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Telephone #: (505) 334-4520

Email: nporell@sjcounty.net

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Mailing Address: 305 South Oliver Drive, Aztec, New Mexico 87410

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

Signature (San Juan County):

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Printed Name: Nick Porell

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Title: Director of Public Works

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Date:

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Contact Person: Paul Eckart, Aztec City Manager

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Telephone #: (505) 334-7600

Email: PEckart@aztecnm.gov

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Mailing Address: 201 West Chaco, Aztec, New Mexico 87410

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

Signature (City of Aztec):

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Printed Name: Paul Eckart

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Title: City Manager

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Date:

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## 2.0 Self-Assessment

COA and SJC have a SWMP in place which is used as a guide to improve stormwater quality and implement compliance with the EPA Phase II Final Rule and the Clean Water Act of 1972.

The COA and SJC SWMP emphasizes Public Education and Outreach, and Public Involvement and Participation as control measures in stormwater management. Public education and involvement are effective tools that reach across many socio- and economic boundaries, and the effect on public behavior can last indefinitely. The City and County stress these control measures in an effort to increase awareness and prevention, thereby reducing the number of stormwater pollution incidents which may occur. Throughout the year, COA and SJC sponsor clean-up efforts and recycling programs, which receive high participation rates by the public and interest groups.

COA and SJC have a Stormwater Hotline (505-334-4560) to report spills, illicit discharges, and general comments or complaints from the public regarding stormwater runoff. The Stormwater Hotline has been a useful resource, although the City and County would like to see more participation and reporting by the public.

Both COA and SJC require the approval of submitted construction plans and land use plans that comply with USEPA regulations for all construction projects at least one acre in size. No Notices of Intent (NOI) for Aztec construction stormwater permits were filed with COA as owner/operator for construction sites during this permit period. In contrast, three NOIs were filed during this time with SJC named as the owner/operator for construction sites: Glade Trails, Harvest Gold Water System, and Kirtland Walking Path.

COA and SJC provide a good example regarding stormwater management with regular inspections and maintenance of their vehicles, street sweeping, working with the Adult Detention Center in efforts to help clean up roadways and outfalls, and continuation of a sound Pesticide Management Plan, among other measures.

The City and County also provide a number of resources available for the public, such as access to the [GeoHub](#) interactive mapping website, the Stormwater Hotline at 505-334-4560, listings of solid waste dumping locations, recycling centers, and hosting hazardous waste collection days.

The "[Clean Up San Juan](#)" mobile app was launched in 2018 to report illegal dumping. Between July 1, 2019, and June 30, 2020, SJC had 533 reports. A total of 234 sites were cleaned up. COA had two reports of illegal dumping, both of which were cleaned up.

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## 3.0 Summary of Minimum Control Measures

### 3.1 Public Education and Outreach

#### 3.1.1 Target Audiences

COA and SJC use a variety of methods to reach a diverse audience, such as utilizing mass media campaigns and a mix of resources to promote pollution awareness relevant to the SWMP. The industrial outreach program builds upon existing programs such as setting up a booth at the COA National Night Out, mailing out educational brochures, and recycling to target businesses and industries which significantly impact storm drains and/or conveyances.

#### 3.1.2 Education Materials and Strategies

The public education effort informs residents about COA and SJC recycling programs, including proper disposal of used motor oil, chemicals, solvents, and other hazardous household products. Citizen watch groups are encouraged to identify areas regarding stormwater pollution. A Stormwater Hotline has been established to aid the community in reporting illicit discharge and potential spills, and a Clean Up San Juan mobile app has been launched to aid in reporting illegal dumping.

COA maintains stormwater webpages at:

- <http://www.aztecnm.gov/stormwater/bmps.html>,
- <http://www.aztecnm.gov/stormwater/tips.html>, and
- [http://www.aztecnm.gov/stormwater/illicit\\_discharges.html](http://www.aztecnm.gov/stormwater/illicit_discharges.html).

These strategies involve using various public service announcements, including multilingual posters, brochures, and flyers to help promote awareness in stormwater pollution management.

#### 3.1.3 Pesticide Management/Community Awareness

An integrated Pest Management brochure for City and County residents to find alternatives for traditional pesticides has been offered. San Juan County Vector Control and New Mexico State University's (NMSU's) Extension services have been consulted to address urban pest management. A community education program teaches residents xeriscaping, non-chemical pest control, and removal of pests by non-chemical means. Lawn (and household) pesticide application brochures are available to City and County employees and residents through the existing Pesticide Awareness Program. Public notice is provided of the time and locations of pesticide application.

Table 1. Public Education and Outreach

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./ Person Name</b>	<b>Measurable Goals</b>	<b>Progress on Goal(s) – Permit Year 2019-2020</b>	<b>Planned Activities – Permit Year 2020-2021</b>
1.1	Public notice of upcoming meetings and event schedules	County Public Works	Submit notices to area newspapers and post on county website (sjcounty.net).	Public has been notified via newspaper articles, fliers, webpages, etc. of upcoming meetings and events.	Continue notifying public through various means of upcoming meetings and events.
1.2	Stencil drain program and mark outfalls	Public Works	Design and post Storm Drain Markers.	Storm Drain Marker conditions were monitored.	Storm drain markers are replaced as needed each spring as weather improves.
1.3	Employee Guide on Stormwater	Public Works	Train all new City and County employees on preventing stormwater pollution.	Any new employees were trained in 2019-2020 permit period for SJC and COA (Employee Training Guide).	Continue training new employees. Update the Guide as needed and improve tracking.
1.4	Stormwater Management Training of COA and SJC personnel	Public Works	Attend training programs and classes attend local interest group meetings.	COA did not conduct stormwater training during the period.	Send COA/SJC representative to appropriate conferences, training classes, and group meetings. Attend upcoming USEPA MS4 workshops.
1.5	Education through displays at public events such as SJC Fair	Public Works	Set up booth with educational brochures and pamphlets. Submit social media posts.	Booth set up at COA National Night Out event in July 2019. Handed out brochures and pamphlets at COA City Hall, Animal Shelter, and Minium Park. See Appendix.	Submit social media posts regarding stormwater education.

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./ Person Name</b>	<b>Measurable Goals</b>	<b>Progress on Goal(s) – Permit Year 2019-2020</b>	<b>Planned Activities – Permit Year 2020-2021</b>
1.6	Floodplain Management Education	Public Works	Hand out Floodplain Management Brochure to City and County residents. Education of personnel.	SJ County Office of Emergency Mgmt. updated flood education brochure. Brochures made available at county offices and sent annually with utility bills. See Appendix. S.J. County Floodplain map available at <a href="http://data-sjcounty.opendata.arcgis.com">http://data-sjcounty.opendata.arcgis.com</a>	Continue educating public on flood management and safety.
1.7	Hazardous Products Education	Public Works	Hand out Safer Alternatives to Hazardous Products Brochure at County Fair.	Extras saved and handed out at other educational outreach programs.	Continue educating public on haz. products and disposal methods.
1.8	Stormwater Newspaper Articles and/or Web Page Announcements	Public Works	Announcements notifying public of COA and SJC Stormwater Program, Stormwater Hotline, Hazardous Waste Disposal locations and dates, etc.	Flyers distributed by mail and social media. See Appendix. COA stormwater websites ( <a href="http://www.aztecnm.gov/stormwater/tips.html">http://www.aztecnm.gov/stormwater/tips.html</a> , <a href="http://www.aztecnm.gov/stormwater/illicit_discharges.html">http://www.aztecnm.gov/stormwater/illicit_discharges.html</a> ) maintained.	Submit newspaper articles as needed. Update stormwater pages for SJC and for COA.
1.9	Stormwater Flow Chart	Public Works	Education through the use of a SWMP Flow Chart.	Evaluate if a SWMP Flow Chart would be useful and what it all would entail ( <i>hold while pursuing MS4 collaborative group for next MS4 permit</i> ).	Design SWMP Flow Chart if deemed useful for new employees and COA/SJC residents.
1.10	Pesticide Management Plan	Public Works	Inform/educate residents of pesticide management and offer alternative methods to controlling pests/weeds.	Brochures and pamphlets are made available to public through the SJC Pesticide Awareness Program. Notice is provided of mosquito spraying times and locations. See Appendix.	Continue educating the public through the Pesticide Awareness Program.

## 3.2 *Public Involvement and Participation*

The COA and SJC public participation control measure has a large public component and involves all socio-economic groups. Support by residents is crucial to the success of the SWMP. Broader public support in the development and decision-making process minimizes potential legal challenges and maximizes acceptance and cooperation.

### 3.2.1 **Volunteer Educators/Speakers**

Volunteer educators and speakers are encouraged to provide their expertise in the areas of stormwater maintenance and pollution prevention. COA and SJC also have resources available at San Juan College in the fields of water and wildlife conservation, engineering, and hydrology to help support the stormwater infrastructure. Relevant meetings during the reporting period included:

- [Animas and San Juan Watersheds Week: Managing and Improving Water Quality in a Multijurisdictional Watersheds](#), June 15 to 19, 2020. Several local water professionals presented at this virtual conference, and local citizens participated in this virtual conference.

### 3.2.2 **Public Meetings/Community Outreach**

Public meetings present an opportunity to discuss various topics and provide input concerning appropriate stormwater management policies and BMPs. Community clean-up events and activities are City and County sponsored. A telephone hotline has been set up to aid enforcement authorities in the identification of polluters. The program seeks to contact groups such as the City of Aztec Chamber of Commerce, Rotary Clubs, River Walk groups, rafting groups, Glade Recreation Area users, and the Girl Scouts.

### 3.2.3 **Recycling**

Recycling programs have been instituted to recycle yard waste, newspapers, cardboard, plastic, oils, and antifreeze. A recycling program that targets these materials encourages proper disposal and should further reduce pollution of the river and waterways. COA opened a single stream Recycle Center in July 2017, open six days per week. San Juan County offers single stream recycling at all 12 of its solid waste convenience stations. Allowable recyclable materials, station locations, and hours are presented on the County's webpage (<https://www.sjcounty.net/government/public-works/solid-waste-dump-stations>).

A swapping center could be used for residents to drop off unused items, such as paint or scrap metal parts, which other residents may be able to use. The feasibility of a swapping center may be re-evaluated in the near future. These efforts will help reduce the amount of usable materials that end up in landfills, as well as provide an affordable alternative disposal method for residents.

Table 2. Public Involvement and Participation

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./ Person Name</b>	<b>Measurable Goals</b>	<b>Progress on Goal(s) – Permit Year 2019-2020</b>	<b>Planned Activities – Permit Year 2020-2021</b>
2.1	Hazardous Waste Collection	Public Works	Set dates and locations for hazardous waste collection.	COA Hazardous Waste Collection days: Held March 2020. Hazardous waste pamphlets provided.	Schedule Hazardous Waste Collection days for 2021.
2.2	Stormwater Hotline	Public Works	Establish Stormwater Hotline to report spills and illicit discharges.	Stormwater Hotline at (505) 334-4560 successfully operating.	Keep Stormwater Hotline available to public. Increase advertisement of hotline and encourage reporting.
2.3	Reporting Illegal Dumping	Public Works	Establish hotline to report illegal dumping activities. Launch Clean up San Juan app.	Hotline to report illegal dumping activities in the County or City Municipalities at (505) 334-6622 successfully operating.	Increase public awareness of City and County Ordinances regarding illegal dumping. Encourage reporting illegal dumping activities.
2.4	Community Clean-Up Days and Free Dump Day	Public Works	Community clean-up days for curbside pickup, freon removal, tree branch/limb recycling, and dump convenience center. Services are free to county residents.	Free Dump Days held Oct. 2019 and April 2020. Regular open dumpster is available to public at COA Recycle Center.	Schedule clean-up days for 2021.

<i><b>BMP ID #</b></i>	<i><b>BMP Description</b></i>	<i><b>Responsible Dept./ Person Name</b></i>	<i><b>Measurable Goals</b></i>	<i><b>Progress on Goal(s) – Permit Year 2019-2020</b></i>	<i><b>Planned Activities – Permit Year 2020-2021</b></i>
2.5	County Adult Detention Facility and other roadside and yard waste cleanup programs	Public Works	Inmates of the Adult Detention Facility assist in roadside and yard cleanup of trash and debris.	<b>73.25 tons</b> of trash removed, totaling <b>5,644</b> man-hours utilized. An additional <b>16.9 tons</b> were removed after COVID-19 protocols eliminated inmate help in April 2020.	Continue working with the County Adult Detention Facility and encouraging volunteer hours from the inmates. Resume inmate help when COVID-19 situation allows.
2.6	National Public Lands Day	Public Works and U.S. Department of the Interior	Clean up illegally dumped trash in the BLM Glade Run Recreation Area.	Not held in 2019-2020.	Continue to host National Public Lands Day and encourage additional volunteers.
2.7	Animal Waste Collection	COA Parks Department	Provide dog waste bag stations.	Dog waste bag stations are located in all Aztec city parks.	Stock stations as needed.

### **3.3 *Illicit Discharge and Detection Elimination***

#### **3.3.1 Visual Inspection/Screening**

The illicit discharge detection measure involves City and County staff as well as local citizens. COA and SJC locate illicit discharge problem areas through visual inspections, public complaints, visual screening, and dry weather screening methods. The program works to detect and eliminate illicit discharges. COA and SJC catalog data pertinent to the NPDES program. The data is available to interested parties. Visual inspection of storm drains is integral in identifying those areas of the City and County that have frequent occurrences of illicit discharges.

#### **3.3.2 Geographic Information System (GIS) Mapping**

GIS is utilized by COA and SJC to map the location of all storm sewer drain lines, ponds, and other waters that receive stormwater discharges. This information is made available through the City and County network and ArcGIS software. All outfalls which discharge into a recognized water body are accurately mapped using Global Positioning Systems (GPS) survey equipment. Thus, an accurate map of the various aspects of the stormwater system (catch basins, pipes, culverts, and other stormwater structures) can also be depicted. This enables the City and County to accurately locate sources of illicit discharges and the affected downstream waterways. SJC also hosts a GeoPortal page (<https://webmaps.sjcounty.net/portal/home/>), which presents interactive web maps displaying educational tools such as land use plans, waterways, floodplains, and SJC road statuses.

As SJC and COA work on collaborative plans for integrated and cooperative sampling as the next small MS4 Permit is finalized, there are tentative plans to include analytical sampling for caffeine in select samples to help identify areas where there may be illicit discharge issues (and it help distinguish between human and animal impacts). Additionally, sampling results may also be incorporated into the GIS database maintained by the [San Juan Watershed Group](#).

#### **3.3.3 Correct Illicit Discharges**

If illicit discharges are discovered, reported, or suspected, the City and County address each discharge on a case-by-case basis, where an educational method to approaching illicit dischargers is first used to help prevent future non-compliance by that person or persons. The City and County will submit a written letter, call, or personally talk to the individuals, with an emphasis on educating them about their actions' impacts to waterways, wildlife, and property value. In the event of re-occurring or illicit discharges with notable consequences, proper authorities are notified, and legal action is taken in accordance with applicable ordinances.



#### **3.3.4 Documentation**

Because COA and SJC are currently working with other collaborative members in the urbanized area in shifting the sampling focus from an outfall-based program to a watershed-based program, no sampling data was collected during the permit period with regards to potential illicit discharges.

Table 3. Illicit Discharge Detection and Elimination

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goals</b>	<b>Progress on Goal(s) – Permit Year 2019-2020</b>	<b>Planned Activities – Permit Year 2020-2021</b>
3.1	Stormwater Hotline	Public Works	Increase participation of Stormwater Hotline.	Stormwater Hotline advertised in local papers, pamphlets, fairs, and educational outreach programs.	Continue advertising hotline. Encourage reporting of illicit dumping and spills.
3.2	Visual inspections and monitoring	Public Works	Locate and report illicit discharges, illegal dumping, and spills.	Clean Up San Juan mobile app reported 533 illegal dumping incidents and 234 have since been cleaned. SJC Sheriff's Office had 96 reported incidents. COA had 2 incidents, both of which were cleaned up.	Continue tracking and educating offenders. Continue promoting the use of the Stormwater Hotline for reporting illegal dumping and discharges. Monitor for illicit discharges during pond cleanup.
3.3	Storm drains, outfalls, and problematic areas monitoring	Public Works, AES	Visual inspection of storm drains and potential problematic areas.	COA visually inspects and monitors on a yearly basis. SJC visually inspects and monitors on a quarterly basis.	COA will inspect and monitor annually or as needed. SJC will inspect and monitor every quarter.
3.4	City Ordinance on discharges and illegal dumping	Public Works	Update County or City Ordinances on prohibition of illicit discharges.	No ordinances currently under consideration.	No ordinances currently under consideration.

<i><b>BMP ID #</b></i>	<i><b>BMP Description</b></i>	<i><b>Responsible Dept./Person Name</b></i>	<i><b>Measurable Goals</b></i>	<i><b>Progress on Goal(s) – Permit Year 2019-2020</b></i>	<i><b>Planned Activities – Permit Year 2020-2021</b></i>
3.5	Roadside Trash Cleanup	Public Works	Clean up trash from roadside and known dump sites	Approximately 73.25 tons of trash were collected representing approximately 5,644 man-hours using County crews and inmate labor. An additional <b>16.9 tons</b> were removed after COVID-19 protocols eliminated inmate help in April 2020.	Continue roadside cleanup activities—may become restricted, as inmate labor has become limited due to pre-trial release of non-violent inmates and COVID-19 protocols. Explore partnerships with other non-profit groups who may want to participate in cleanup activities (i.e. scouts and other groups).

## **3.4 Construction Site Stormwater Runoff Control**

### **3.4.1 Site Plan Review**

COA and SJC recognize that construction sites can deposit a significant amount of sediment in a short period of time. The Phase II Rule, according to 40 CFR 122.34(b)(4) (USGPO 2021) and the NPDES Construction General Permit (CGP) requires the City and County to develop and enforce a stormwater management program to address stormwater runoff from construction sites one acre or greater in area. COA currently requires the approval of submitted construction plans and a land use plan that complies with USEPA regulations. In 2010, the County adopted Ordinance 9 – Construction Code Ordinance, which adopts the codes adopted by Construction Industries Division (Title 14 NMAC); however, the County current does not have a regulatory mechanism to conduct site plan review prior to construction.

### **3.4.2 Erosion Awareness**

COA is adopting smart growth initiatives, such as Low Impact Development (LID) designs, xeriscaping, and rain gardens, to promote open space and native landscaping to help reduce erosion.

### **3.4.3 Non-Structural BMPs**

Non-structural BMPs for stormwater runoff from construction sites implemented by COA and SJC include: education and awareness to construction personnel, minimizing disturbance to native soil and vegetation, establishing buffers along streams and waterways, minimizing disturbances of high slope areas, and encouraging sheet flow to vegetated areas. Stream buffer guidance will be encouraged by the Public Works Department staff such that riparian stream areas are restored with native vegetation. The zone will be 100 to 150 feet wide on both sides of the bank. The buffer includes the 100-year floodplain delineation and is governed by the Flood Plain Manager for COA and SJC. To reduce severe flood-related erosion losses, no permanent structures shall be placed in the setback area, a distance equal to 60 times the average annual long-term recession rate at a site. COA and SJC will determine whether proposed site alterations and improvements will be reasonably safe from flood-related erosion and will not cause flood-related erosion hazards.

### **3.4.4 Structural BMPs**

Structural BMPs encouraged by COA and SJC include: check dams, geotextile silt fences, berms, and sediment basins. Native seeds are often incorporated into berms to help stabilize the structure and reduce runoff. This technology has the benefit of being retrofitted in the developed portions of the City and County.

Table 4. Construction Site Stormwater Runoff Control

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goals</b>	<b>Progress on Goal(s) – Permit Year 2019-2020</b>	<b>Planned Activities – Permit Year 2020-2021</b>
4.1	Documentation of construction activities one acre or greater in size	Public Works	Record construction activities which result in construction site runoff. Train City and County staff (inspectors and plan reviewers) and construction operators.	Tracked all construction activity related to stormwater runoff. Documented sites with inadequate BMPs. Educating construction workers and responsible parties on stormwater runoff management. COA filed no NOI for construction projects), and SJC filed no construction NOIs.	Continue to document construction site compliance as needed and continue educating construction personnel. Training for new requirements under the current Construction General Permit.
4.2	Stormwater Management Plan	Public Works	Construction sites greater than one acre must submit a SWPPP.	SWPPPs were prepared and followed, and CGP coverage was obtained prior to construction for applicable sites.	Continue enforcing SWPPP compliance. Revise ordinances as needed.
4.3	Education and Implementation of Structural and Non-Structural BMPs	Public Works, Engineering	Educate and encourage construction personnel and contractors to implement BMPs aimed at reducing stormwater runoff and erosion.	Observed BMPs and stormwater management practices for construction sites.	Continue with education and encouragement of BMP installation and practices. Partner with City of Farmington and SJ College for any new training.

### 3.5 Post-Construction Stormwater Management in New Development and Redevelopment

#### 3.5.1 Post-Construction Runoff Control

COA and SJC address post-construction stormwater runoff with structural and non-structural BMPs. The controls seek to reduce the amount of impervious cover by increasing natural land and vegetation, and to utilize pervious areas for more effective stormwater management. The City and County encourage regional ponds and parks, which provide additional pervious areas and native flora and fauna. The net increase of scenic features will positively impact neighborhood aesthetics and increase residential property values.

Table 5. Post-Construction Stormwater Management in New Development and Redevelopment

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./ Person Name</b>	<b>Measurable Goals</b>	<b>Progress on Goal(s) – Permit Year 2019-2020</b>	<b>Planned Activities – Permit Year 2020-2021</b>
5.1	Education and Awareness	Public Works	Visit post-construction sites and ensure compliance of existing ordinances.	Visited recent post-construction sites. Inspected to ensure compliance with ordinances.	Continue to visit post-construction sites on an as-needed basis or when compliance issues arise.
5.2	Education and Implementation of Structural and Non-Structural BMPs	Public Works, Engineering	Educate and encourage implementation of BMPs aimed at reducing stormwater runoff and erosion.	Continued to implement BMPs into plans and designs.	Continue with education and encouragement of BMP installation and practices. Offer more CGP training.
5.3	Post-Construction Training	Public Works, Engineering	Attend trainings and seminars on post-construction stormwater.	Individual continuing education.	Continue attending educational classes and workshops.

### ***3.6 Pollution Prevention and Good Housekeeping in Municipal Operations***

#### **3.6.1 Municipal Maintenance**

The COA and SJC Pollution Prevention and Good Housekeeping in Municipal Operations Program goals are to reduce pollutant runoff from City and County operations. A vehicle maintenance program requires that all City and County -owned vehicles be regularly inspected to eliminate the amount of oil, grease, and fluid leaks. Street sweeping is performed on all city streets at a frequency based on the most traveled streets and busiest intersections. All street cleaning is performed using vacuum-equipped sweepers. Outfalls are regularly inspected and analyzed according to a standardized checklist. Trouble outfalls are inspected and maintained after every storm event.

#### **3.6.2 Pesticide General Permit for San Juan County**

San Juan County was covered under the Pesticide General Permit during the reporting period and re-applied for coverage in November 2016. Coverage is valid through October 31, 2021. All COA Parks Department personnel are certified herbicide and pesticide applicators. All equipment used for application is cleaned in a wash bay and all products are stored in a controlled access area.

#### **3.6.3 City-Wide Clean-Up Days**

City-wide clean-up days are held twice a year (April and October) throughout the area for community residents to help clean roadways, side streets, yards, parking lots, ditches, and parks.

Table 6. Pollution Prevention and Good Housekeeping in Municipal Operations

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./ Person Name</b>	<b>Measurable Goals</b>	<b>Progress on Goal(s) – Permit Year 2019-2020</b>	<b>Planned Activities – Permit Year 2020-2021</b>
6.1	Municipal Maintenance	Public Works	Inspect and maintain City and County vehicles. Sweep streets on a regular basis; sweeping more often on the most traveled and busiest streets. Inspect and maintain outfalls.	Government-owned vehicles are regularly inspected and maintained. About 46 miles of paved roads are swept in COA, and 13.7 miles of dirt roads are treated with MgCl <sub>2</sub> for erosion treatment. Sweeper dirt is disposed of at Bondad landfill. 225 miles of paved roads are swept in SJC. Storm drains and outfalls are regularly inspected and maintained.	Continue inspections and maintenance operations. Continue street sweeping on a regular basis, increase frequency as needed.
6.2	Municipal – Pesticide Permit	SJC Public Works	Follow Pesticide Management Plan; complete required reporting.	Submitted required reports.	Submit required Annual Reports.
6.3	Multi-Sector Stormwater Permit (MSGP)	Public Works	Permit sites under MSGP; implement SWPPPs.	COA WWTP and Water Treatment Plants coverage under 2021 permit.	Submit required Annual Reports.
6.4	City-Wide Cleanup Days	Public Works	Hold city-wide public cleanup days.	Spring and Fall clean-up “dumpster” days held annually.	Public cleanup days are scheduled on a semi-annual basis.



---

## 4.0 Stormwater Inspections

During development of the SWMP, there were initially 12 identified outfall locations within COA and the urbanized areas of San Juan County. Both Aztec and San Juan County have conducted their own periodic inspections of outfalls of concern during this reporting period.

### 4.1 Stormwater Runoff Observations, Sampling and Laboratory Analyses

During development of the MOA with COF and NMDOT, a review of outfall locations was made, and several possible changes to the inspection and sampling strategy have been discussed, as the emphasis has changed from an outfall emphasis to a watershed-based focus. Preliminarily, improved monitoring locations include:

1. From Animas River, upstream of UA boundary in Aztec;
2. From Animas River, upstream of its confluence with San Juan River;
3. From San Juan River, upstream of its confluence with Animas;
4. From La Plata River, upstream of the UA boundary in Farmington;
5. From San Juan River, just below (downstream) of confluence with Animas River;
6. From La Plata River, upstream of its confluence with San Juan River;
7. From San Juan River, just below (downstream) of confluence with La Plata River;
8. From San Juan River, just below (downstream) of the UA boundary west of Farmington/Kirtland; and
9. From San Juan River, upstream of UA boundary in Farmington.

Additionally, consideration will also be made of the irrigation systems/canals that are present within the San Juan, Animas and La Plata watersheds and that exist within the Urbanized Area. Aztec and San Juan County are working with COF and NMDOT to develop a preliminary sampling approach. The Final MS4 Permit may still have some additional modifications, and the sampling plan will be modified accordingly.

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## 5.0 Summary

### 5.1 *Public Outreach and Education*

COA and SJC have used a number of outreach tools and mass media campaigns to educate the public on stormwater management. Examples of such control measures include setting up booths at the County Fair, mailing out educational brochures and fliers, and submitting stormwater related articles to the local newspapers. Storm drain markers, which have been placed throughout the City and County to inform the public which drains flow directly to nearby rivers or waterways, are checked and replaced as needed. A Pesticide Management Plan is utilized to educate the public on proper spraying methods as well as alternative methods to controlling weeds and insects.

### 5.2 *Training, Conferences, and Continued Collaboration with other MS4 Entities*

COA and SJC personnel have attended and will continue attending training sessions, meetings, and conferences on stormwater. New employees to the City or County are educated by their peers and through reading the Employee Guide on Stormwater.

COA and SJC continue to work with COF, NMDOT, and the NMED Surface Water Quality Bureau (SWQB) in developing a collaborative agreement to meet permit requirements. Additionally, the San Juan Watershed Group and the San Juan Soil and Water Conservation District have also been helpful in offering assistance. During the reporting period, cooperative MS4 meetings are held once per month.

### 5.3 *Public Involvement and Participation*

The City and County sponsor recycling programs several times a year to collect chemicals and hazardous household wastes, a city-wide clean-up twice per year, and the set-up of dumpster in the Glade Recreational Area two to three times per year. Citizen watch groups and general members of the public are encouraged to report spills or illicit discharges through the use of the Stormwater Hotline.

With the help of the SJC Adult Detention Center, COA and SJC were able to collect 73.25 tons of roadside trash and debris, which was taken to the landfill. An additional 16.9 tons collected over 798 hours were removed after COVID-19 protocols eliminated inmate labor in April 2020. The City routinely sweeps approximately 46 miles of paved roads and treats 13.7 miles of dirt roads with magnesium chloride dust control, while the County sweeps 225 miles of paved roads. Government vehicle operated are regularly inspected and maintained to prevent fluid leaks.

## 5.4 Construction and Post-Construction

Construction sites equal to or greater than one acre in size are required to submit a stormwater pollution prevention plan in accordance to EPA regulations and City and County ordinances. The City and County encourage and educate proper installation and maintenance of structural and non-structural BMPs for construction and post-construction sites. LID implementation, xeriscaping, and preservation of natural land and vegetation are also encouraged by COA and SJC. COA and SJC will review and incorporate BMP practices and recommendations from the recently released [New Mexico Department of Transportation \(NMDOT\) National Pollutant Discharge Elimination System Manual](#) (2020).

## 5.5 Stormwater Inspections and Monitoring

Stormwater outfalls were inspected throughout the year to ensure they were in good operating condition and to help identify impending structural failures, maintenance needs, and water quality issues of the storm drain system. SJC and COA will continue routine inspections and sampling events to ensure BMPs are met and they are in good operating condition.

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## 6.0 References

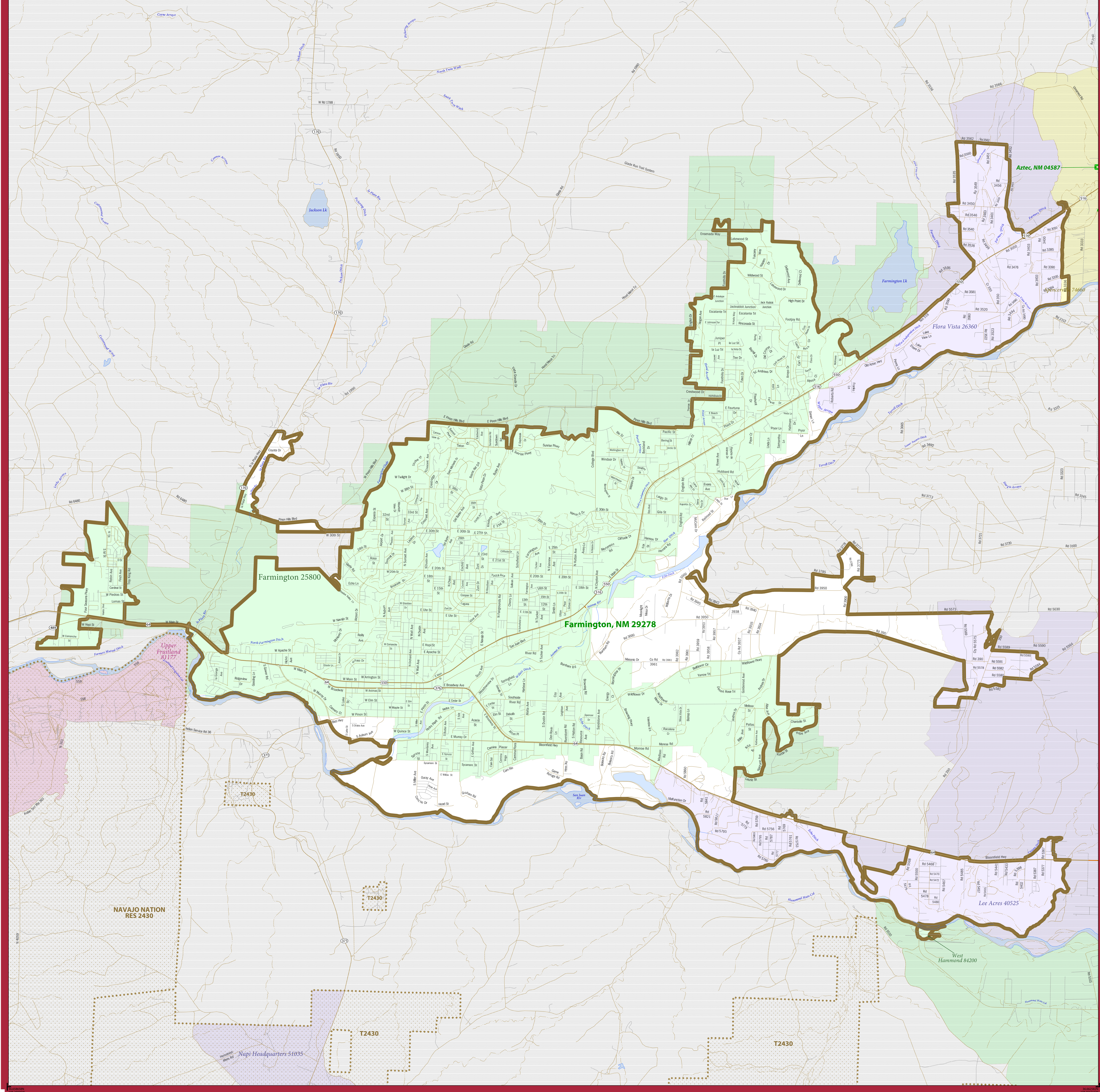
Aztec, San Juan County and City of. *Stormwater Management Plan*. Storm Water Management Plan, Aztec: San Juan County and City of Aztec, 2008.

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<https://www.census.gov/quickfacts/fact/table/US/PST045219>.

U.S. Government Printing Office. *Electronic Code of Federal Regulations*. May 28, 2021.  
[http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr122\\_main\\_02.tpl](http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr122_main_02.tpl)  
(accessed May 28, 2021).

## Figures

# 2010 CENSUS - URBANIZED AREA REFERENCE MAP: Farmington, NM



LEGEND		
SYMBOL DESCRIPTION	SYMBOL	LABEL STYLE
International	--- ---	CANADA
Federal American Indian Reservation	.....	L'ANSE RES 1880
Off-Reservation Trust Land	.....	T1880
Urbanized Area	█	Dover, DE 24580
Urban Cluster	█	Toolee, VT 88057
State (or statistically equivalent entity)	--- ---	NEW YORK 36
County (or statistically equivalent entity)	---	ERIE 029
Minor Civil Division (MCD) 1,2	---	Bristol town 07485
Consolidated City	.....	MILFORD 47500
Incorporated Place 1,3	.....	Davis 18100
Census Designated Place (CDP) 2	.....	Incline Village 35100

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
Interstate	—+—	Water Body	■ Pleasant Lake
U.S. Highway	—+—	Military	■ Fort Belvoir
State Highway	—+—	Outside Subject Area	■
Other Road	—+—		
Railroad	—+—		
Perennial Stream	—+—		
Intermittent Stream	—+—		

Where international, state, county, and/or MCD boundaries coincide, the map shows the boundary symbol for only the highest-ranking of these boundaries.

1 A "\*" following an MCD name denotes a false MCD. A "\*" following a place name indicates that a false MCD exists with the same name and FIPS code as the place; the false MCD label is not shown.

2 MCD boundaries are shown in the following states in which some or all MCDs function as general-purpose governmental units: Connecticut, Illinois, Indiana, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, and Wisconsin. (Note that Illinois and Nebraska have some counties covered by nongovernmental precincts and Missouri has most counties covered by nongovernmental townships.)

3 Place label color corresponds to the place fill color.  
Label colors: Davis Davis Davis Davis Davis

**SUBJECT AREA COUNTIES ON MAP SHEET**  
35045 San Juan

**OFF-RESERVATION TRUST LAND NAMES**  
T2430 Navajo Nation

All legal boundaries and names are as of January 1, 2010. Urban areas are based on results from the 2010 Decennial Census. The boundaries shown on this map are for Census Bureau statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement.

Geographic Vintage: 2010 Census (reference date: January 1, 2010)  
Data Source: U.S. Census Bureau's MAI/TIGER database (TIGER10)  
Map Created by Geography Division: March 08, 2012

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau

Projection: Albers Equal Area Conic  
Datum: NAD 83  
Spheroid: GRS 80  
1st Standard Parallel: 32 16 36  
2nd Standard Parallel: 36 03 20  
Central Meridian: -106 01 31  
Latitude of Projection's Origin: 31 19 55  
False Easting: 0  
False Northing: 0

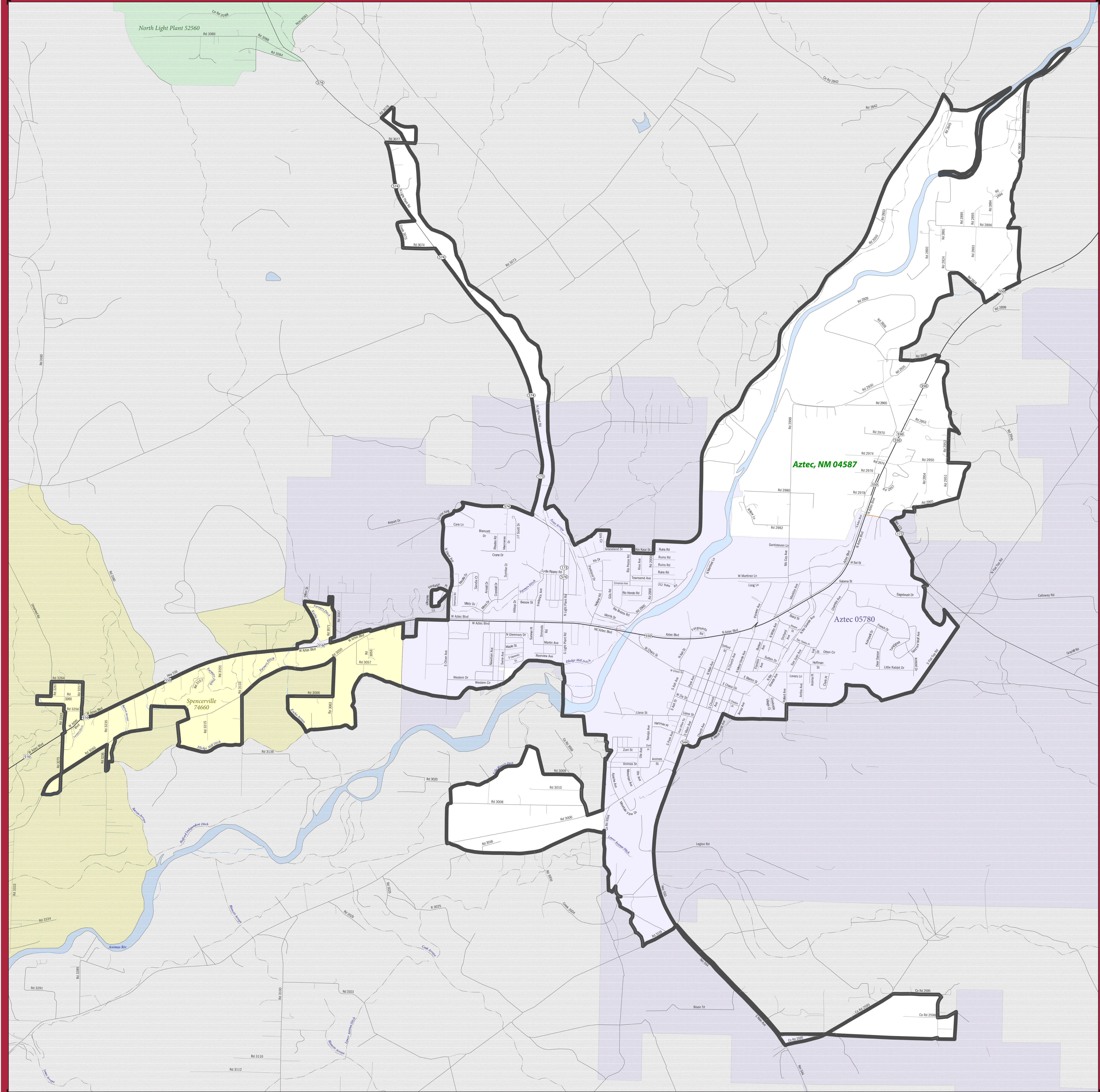
Scale: 1:250,000  
The plotted map scale is 1:284,320



PARENT SHEET 1  
Total Sheets: 1  
Index Sheets: 0  
Parent Sheets: 1

UA NAME: Farmington, NM  
UA CODE: 29278  
ENTITY TYPE: Urbanized Area (UA)  
ST: New Mexico (35)

# 2010 CENSUS - URBAN CLUSTER REFERENCE MAP: Aztec, NM



**LEGEND**

SYMBOL DESCRIPTION	SYMBOL	LABEL STYLE
International	— — — — —	CANADA
Federal American Indian Reservation	■ ■ ■ ■ ■	L'ANSE RES 1880
Off-Reservation Trust Land	■ ■ ■ ■ ■	T1880
Urbanized Area	■ ■ ■ ■ ■	Dover, DE 24580
Urban Cluster	■ ■ ■ ■ ■	Toolee, VT 88057
State (or statistically equivalent entity)	— — — — —	NEW YORK 36
County (or statistically equivalent entity)	— — — — —	ERIE 029
Minor Civil Division (MCD)1,2	— — — — —	Bristol town 07485
Consolidated City	● ● ● ● ●	MILFORD 47500
Incorporated Place 1,3	■ ■ ■ ■ ■	Davis 18100
Census Designated Place (CDP) 2	■ ■ ■ ■ ■	Incline Village 35100

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
Interstate	— — — — —	Water Body	■ ■ ■ ■ ■
U.S. Highway	— — — — —	Military	■ ■ ■ ■ ■
State Highway	— — — — —	Outside Subject Area	■ ■ ■ ■ ■
Other Road	— — — — —		
Railroad	— — — — —		
Perennial Stream	— — — — —		
Intermittent Stream	— — — — —		

Where international, state, county, and/or MCD boundaries coincide, the map shows the boundary symbol for only the highest-ranking of these boundaries.

1 A "\*" following an MCD name denotes a false MCD. A "\*" following a place name indicates that a false MCD exists with the same name and FIPS code as the place; the false MCD label is not shown.

2 MCD boundaries are shown in the following states in which some or all MCDs function as general-purpose governmental units: Connecticut, Illinois, Indiana, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, and Wisconsin. (Note that Illinois and Nebraska have some counties covered by nongovernmental precincts and Missouri has most counties covered by nongovernmental townships.)

3 Place label color corresponds to the place fill color.  
Label colors: Davis Davis Davis Davis Davis

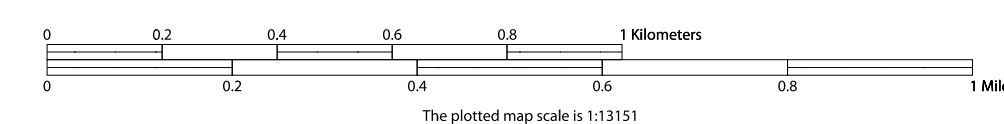
**SUBJECT AREA COUNTIES ON MAP SHEET**  
35045 San Juan

All legal boundaries and names are as of January 1, 2010. Urban areas are based on results from the 2010 Decennial Census. The boundaries shown on this map are for Census Bureau statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement.

Geographic Vintage: 2010 Census (reference date: January 1, 2010)  
Data Source: U.S. Census Bureau's MAI/TIGER database (TAB10)  
Map Created by Geography Division: March 08, 2012

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau

Projection: Albers Equal Area Conic  
Datum: NAD 83  
Spheroid: GRS 80  
1st Standard Parallel: 32 16 36  
2nd Standard Parallel: 36 03 20  
Central Meridian: -106 01 31  
Latitude of Projection's Origin: 31 19 55  
False Easting: 0  
False Northing: 0



PARENT SHEET 1  
Total Sheets: 1  
Index Sheets: 0  
Parent Sheets: 1

UC NAME: Aztec, NM  
UC CODE: 04587  
ENTITY TYPE: Urban Cluster (UC)  
ST: New Mexico (35)

## Appendix A



# *Dumpster Day!*

OCTOBER 19, 2019



October 19, during normal business hours  
County Transfer Stations will accept normal  
loads from county residents for **FREE!**

GO TO [SJCOUNTY.NET](http://SJCOUNTY.NET) FOR MORE INFO!





# *Dumpster Day!*



April 4, during normal business hours  
all County Transfer Stations will  
accept normal loads from county  
residents for **FREE!**

GO TO [SJCOUNTY.NET](http://SJCOUNTY.NET) FOR MORE INFO!

# Household Hazardous Waste Collection Event!

Safely dispose of household hazardous waste - for free!

## Save the Date!

Saturday, March 14

9:00 am- 1:00 pm



San Juan County  
Administration Building  
100 S. Oliver  
Aztec, NM



### Bring

- Used Batteries
- Light bulbs
- Auto Fluids
- Gas
- Brake Fluid
- Antifreeze
- Household cleaners
- Gardening Chemicals
- Insecticides
- Weed killers
- Fertilizers
- Aerosols
- Paints

### DO NOT Bring

- Biomedical or Medical waste
- Explosives
- Compressed gasses
- 55-gallon drums
- Yard waste
- Ammunition
- Appliances
- Tires
- Electronic Waste
- Business or industrial Waste

Bloomfield | Kirtland  
San Juan County

*Please bring proof of residency*

NO WASTE FROM AZTEC OR FARMINGTON ACCEPTED

FARMINGTON RESIDENTS visit <http://bit.ly/COFSanitation>

for curbside hazardous waste pickup options

SJCounty.net | Facebook.com/OEMSJC | (505) 334-7700

## HISTORY OF FLOODING IN SAN JUAN COUNTY

Floods in San Juan County result from general rainstorms, snowmelt, and rain from cloudburst storms. General rain floods have been the cause of severe damage along the Animas and La Plata Rivers and have usually occurred during the months of September and October. This type of flood results from prolonged heavy rainfall over tributary areas and is characterized by high peak flows of moderate duration.

Major rain floods occurred on the La Plata River in 1904 and 1909. On the Animas and San Juan Rivers, Spring snowmelt flooding occurred in 1884 and rain flooding in 1909. During the latter part of June 1927, melting snow augmented by general rain over the San Juan River basin created the highest flows and most widespread flooding on the La Plata, Animas, and San Juan Rivers since the flood of October 1911, which is counted as the historic basis for the 1% annual chance flood, also known as the 100-year flood.

More recent floods include: 1995 and 2005 on the Animas River due to high Spring run-off; 2006 flash floods on the La Plata Highway (NM 170); 2008 thru 2014, flash flooding occurred in the area of Blanco; and in 2008 and 2011 flash flooding occurred on Sullivan Road in Bloomfield. In 2009, a flash-flood event occurred near the Colorado border on NM 170. A 2015 storm brought flooding to Aztec with high winds and intense rain. Flooding from Peek Release flows on the San Juan River in 2016 caused an abandoned manufactured home to slide off the bank and also damaged storage buildings.

Flash-flooding events throughout San Juan County have continued to cause damage to infrastructure and private property. A major flash-flooding event in 2013 deposited several feet of sediment for residents to dig out from under and remove.



### San Juan County Office of Emergency Management PLAN-PREPARE-PREVENT

**209 S Oliver—Aztec, NM 87410**  
**www.sjcoem.com**  
**Facebook—@oemsjc**



San Juan County.....  
Building a Stronger Community

## RESOURCES AND CONTACTS

### LOCAL FLOOD RESOURCES

San Juan County Floodplain Management	505-334-7700 505-334-4719
City of Aztec Planning and Zoning	505-334-7605
City of Bloomfield Planning and Zoning	505-632-6319
City of Farmington Engineer's Office	505-599-1306



### SAN JUAN COUNTY COMMUNITY DEVELOPMENT

#### CODE COMPLIANCE

For information regarding the San Juan County Cleanup Program or the land use ordinances, please contact the Code Compliance Officer at 505-333-3130 or 505-334-4552.

#### RURAL ADDRESS/ E9-1-1 UPDATE

All residents should complete an E9-1-1 addressing update. Accurate addressing is vital to the Emergency 9-1-1 system. Verification of a physical address for emergency services is required before building permits can be issued or new electrical service obtained. All new addresses that will access a County Maintained Road or a State or US Highway must have a permit for construction of the driveway within the Right-of-Way before an E9-1-1 address may be issued.

To obtain or verify your E9-1-1 address, contact us at (505)334-4314/334-4713 rural.addressing@sjcounty.net

#### DIVISION OF LAND, MANUFACTURED HOME/RV PARKS

For information on divisions of land, Manufactured Home Parks, or RV Parks in the unincorporated areas of San Juan County, please contact us at 505-334-4248.

#### BUILDING PERMITS/ INSPECTIONS

For building permits and information on building codes in the unincorporated areas of San Juan County and the Cities of Aztec and Bloomfield, contact us at 505-334-4313 or on line at: <http://www.sjcounty.net/departments/athruq/community/building>

### OTHER FLOOD RESOURCES

#### FEMA—National Flood Insurance Program

[msc.fema.gov](http://msc.fema.gov) (flood maps)  
[www.FloodSmart.gov](http://www.FloodSmart.gov)  
[www.ready.gov](http://www.ready.gov)

#### Turn Around Don't Drown—NOAA

<http://tadd.weather.gov>  
[www.stormready.noaa.gov](http://www.stormready.noaa.gov)

#### Flood Vent Suppliers

#### USA FOUNDATION FLOOD AIR VENTS

[www.usafloodairvents.com](http://www.usafloodairvents.com)

#### SMART VENT

[www.smartvent.com](http://www.smartvent.com)

#### FACT:

San Juan County Floodplain Management has information available on historic flooding, arroyo inundation studies, and other unpublished documentation to assist homeowners.

### DROUGHT RESOURCES

#### NMSU EXTENSION

#### Home Gardening and Landscape

[http://aces.nmsu.edu/pubs/\\_drought/#homegarden](http://aces.nmsu.edu/pubs/_drought/#homegarden)

#### DITCH SAFETY

#### Ditch the Ditches

<https://ditchtheditches.com/>

#### FACT:

HOMEOWNERS INSURANCE DOES NOT COVER OUTSIDE FLOODING



**San Juan County  
Fire  
Department**  
**JOIN OUR TEAM**

209 S OLIVER DR  
AZTEC, NM 87410  
(505)334-1180



FACEBOOK

## WHO WE ARE

San Juan County Fire Department is comprised of 23 paid staff that supports over 200 volunteers and serves the unincorporated portions of San Juan County. We operate out of 23 stations covering 4500 sq. miles with 175 apparatus/equipment.

Annual call volume

- ◆ Over 7,000

2019 Total Hours of Service

- ◆ Over 100,000 hours
- ◆ Saving the taxpayers of San Juan County over \$8 Million per year

### Vision Statement

Provide professional and progressive volunteer emergency services

**We need Volunteers!**

Visit our website at

[www.sjcfcd.com](http://www.sjcfcd.com)

to request more information about how to make a difference in your community.



### HOW DO I KNOW IF MY PROPERTY IS IN THE FLOODPLAIN?

To set up a site visit on drainage or flooding issues call the San Juan County Floodplain Management Office (505) 334-4719.



For map information go to:  
[www.sjcoem.com](http://www.sjcoem.com)

Or

Visit the FEMA Map Store:

<http://msc.fema.gov/portal>

<https://webapps.usgs.gov/infrm/estbfe/>

### TIPS TO AVOID FLOOD DAMAGE

- ☂ The main electric panel board (electric fuses or circuit breakers) should be at least 12" above the projected flood elevation for your home.
- ☂ Elevate all electric outlets, switches, light sockets, baseboard heaters, electric service lines, and wiring at least 12" above the projected flood elevation for your home.
- ☂ Build a floodwall around large appliances or elevate on masonry or pressure-treated lumber.
- ☂ Furnaces and water heaters can be placed on masonry blocks or concrete, moved inside a floodwall, or moved to a higher floor.
- ☂ Outside air conditioning compressors, heat pumps or package units can be placed on a base of masonry, concrete, or pressure treated lumber.
- ☂ Fuel tanks can float or be rolled by the force of water during a flood. Tanks must be securely anchored to cement slabs. Vents and fill line openings should be above projected flood levels.
- ☂ To prevent flood waters from entering the sewer system and forcing sewage into your home, install an interior or exterior backflow valve.
- ☂ Build drainage systems or levees around your property.
- ☂ Seal openings such as low windows.
- ☂ Construct exterior floodwalls around basement doors and window wells.

*ELEVATE OR RELOCATE STRUCTURES OUT OF THE FLOODPLAIN*

### SAN JUAN COUNTY PERMIT REQUIREMENTS FOR NEW CONSTRUCTION, SUBSTANTIAL IMPROVEMENTS, AND MANUFACTURED HOME PLACEMENT IN FLOOD HAZARD AREAS

Structures in an area where the Base Flood Elevation has been established—Zone AE:

1. Lowest floor will be at least **one foot above** the Base Flood Elevation.
2. An Elevation Certificate **must** be submitted and a Floodplain Permit obtained before project begins.

*It is suggested that elevation be confirmed prior to framing.*

3. A final Elevation Certificate will be required prior to final inspection of the structure.

Structures in an area where the Base Flood Elevation has not been established—Zone A:

1. Lowest floor will be at least three feet above the Highest Adjacent Grade to the structure walls.
2. An Elevation Certificate must be submitted and a Floodplain Permit obtained before project begins.
3. A final Elevation Certificate will be required prior to final inspection of the structure.

*It is suggested that elevation be confirmed prior to framing.*

### WHAT IS AN ELEVATION CERTIFICATE?

FEMA Form 81-31 Elevation Certificate is used to provide elevation information necessary to ensure compliance with floodplain ordinances to determine the proper insurance premium rate, and to support a Letter of Map Amendment or Revision (LOMA-LOMR).

**ANYONE CAN GET FLOOD INSURANCE**  
Even if you **don't** live in a special flood hazard area or you are renting, you can still get flood insurance.



# MOSQUITO SPRAYING

VECTOR HOTLINE (505) 334-4526

Spraying takes place Wednesday nights from  
10:00 pm to 8:00 am Thursday morning.

## May 13 & 14, 2020

West Hammond  
U.S. 64 (Bloomfield to Farmington) Corridor  
City of Aztec  
Cedar Hill (Aztec to state line including Road 2900)

For more information please call San Juan County Vector Control at (505) 334-6775



# MOSQUITO SPRAYING

VECTOR HOTLINE (505) 334-4526

Spraying takes place Wednesday nights from  
10:00 pm to 8:00 am Thursday morning.

## May 20 & 21, 2020

Kirtland  
La Plata  
Blanco  
Sullivan

For more information please call San Juan County Vector Control at (505) 334-6775

# MOSQUITO SPRAYING



VECTOR HOTLINE (505) 334-4526

Spraying takes place Wednesday nights from  
10:00 pm to 8:00 am Thursday morning.

## June 10 & 11, 2020

City of Aztec  
U.S. 64 (Bloomfield to Farmington) Corridor  
West Hammond  
Cedar Hill (Aztec to state line, Road 2900 included)

For more information please call San Juan County Vector Control at (505) 334-6775

# MOSQUITO SPRAYING



VECTOR HOTLINE (505) 334-4526

Spraying takes place Wednesday nights from  
10:00 pm to 8:00 am Thursday morning.

## June 17 & 18, 2020

Kirtland  
La Plata  
Blanco, Sullivan  
Flora Vista, Southside River Road (Rd.3000)

For more information please call San Juan County Vector Control at (505) 334-6775

# MOSQUITO SPRAYING



VECTOR HOTLINE (505) 334-4526

Spraying takes place Wednesday nights from  
10:00 pm to 8:00 am Thursday morning.

## **June 24 & 25, 2020**

City of Aztec

U.S. 64 (Bloomfield to Farmington) Corridor  
Cedar Hill (Aztec to state line, Road 2900 included)

For more information please call San Juan County Vector Control at (505) 334-6775

## Appendix B





July 13, 2020

RECEIVED

AUG 03 2020

SAN JUAN COUNTY N.M.  
ADMINISTRATION

Ms. Brenda A McGaha  
100 S Oliver  
Aztec, NM 87410

Dear Ms. Brenda A McGaha,

The National Association of Counties (NACo) is pleased to grant San Juan County a 2020 Achievement Award for its program titled "Clean Up San Juan" in the category of Information Technology.

Congratulations to everyone involved in developing this innovative program! Your hard work will yield positive results for San Juan County residents.

2020 NACo Annual Conference

In light of the coronavirus (COVID-19) pandemic and after much thoughtful discussion, including concerns about large gatherings, the National Association of Counties (NACo) Board of Directors made the difficult decision to cancel the 2020 NACo Annual Conference and Exposition and proceed with a virtual Annual Business Meeting and Town Hall.

Unfortunately, there will not be an in-person Achievement Awards Luncheon this year. We will, however, list award-winning programs on NACo.org and encourage you to celebrate your award-winning achievements locally.

Congratulations and thank you for your continued work to promote the betterment of county services and programs. We hope your county is staying safe and healthy.

Thanks,

Lindsey Maggard  
Senior Public Affairs Coordinator  
National Association of Counties (NACo)  
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## Briefly Noted

### Saint Louis University Partnership to Create Solutions for Security Issues

A new partnership between Esri and Saint Louis University (SLU) will advance geospatial research and innovation in the university's Geospatial Institute (GeoSLU). The institute encourages students and staff from various fields to explore how GIS can provide insight into issues such as climate change, access to food and clean water, and economic stability. The partnership will also focus on creating national security solutions for critical customers like the National Geospatial-Intelligence Agency (NGA).

### OSI Integrates Utility Network into Its Solution

Open Systems International, Inc. (OSI), a leading supplier of automation solutions for electric, oil and gas, transportation, and water utilities, will now leverage the ArcGIS Utility Network data model in its platform. "We are very excited about our partnership with Esri, as it will enable us to provide the best technical solutions to our joint customers," said OSI president and CEO Bahman Hoveida.

### Property Assessors Gain More Access to GIS Capabilities

Under a new partnership with Esri, all new members of the International Association of Assessing Officers (IAAO) have access to ArcGIS. This will give them the ability to visualize and share Esri's property assessment data using modern, map-based technology. Details of the program are available at [go.esri.com/esri-iaao-grant](http://go.esri.com/esri-iaao-grant).

### Esri Launches New Company in Myanmar

This new team will support a growing user community across government and in the nongovernmental organization (NGO) sector. See page 3 for more details.

## Dashboards Give Geographic Perspective to Coronavirus

As the new coronavirus (COVID-19) began to spread in the first few months of 2020—initially in Wuhan, China, and then quickly to other countries around the world—the health-care community rushed to understand how the disease was advancing. This potentially lifesaving information was changing fast, so many Esri users, including local and global authorities, built maps and dashboards to display data about the virus.

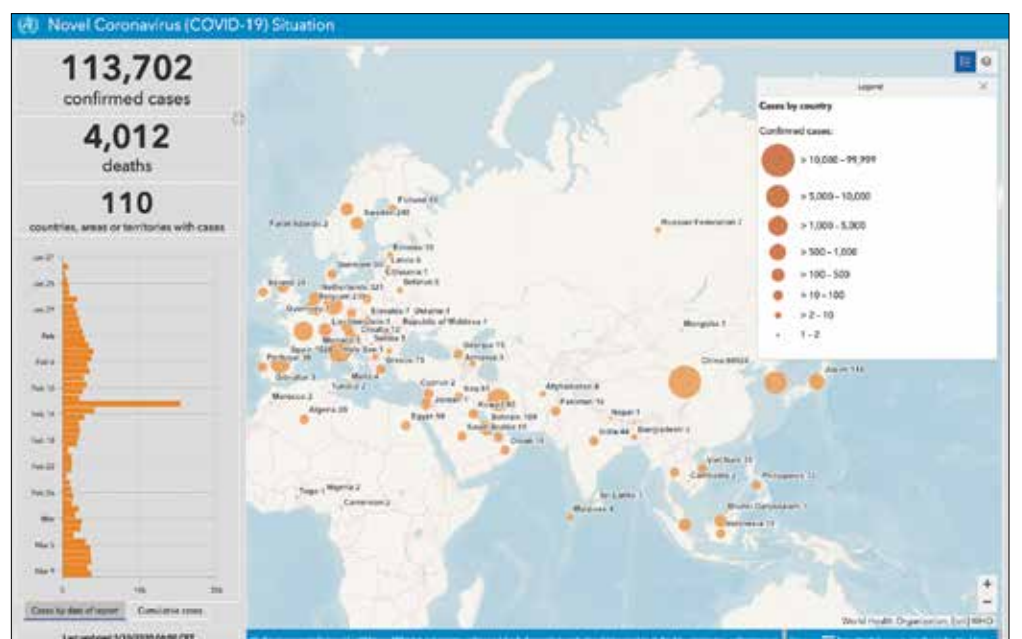
At Johns Hopkins University in Baltimore, Maryland, a team consolidated data from authoritative sources, such as the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC), in a dashboard that shows where the disease is cropping up around the world. The dashboard—which has an interactive map that displays the number of confirmed infections, fatalities, and recoveries in each location—went viral.

Other organizations have been using GIS to address similar needs. WHO, which maintains a near real-time dashboard of all global health-related events, has created a derivative dashboard that tracks confirmed cases of COVID-19. GIS specialists from Esri China produced a dashboard that also includes suspected but unconfirmed reports of the disease, complete with links to related news stories

about those cases. Another interactive dashboard tracks confirmed coronavirus cases in Hong Kong down to the building level. And the International Civil Aviation Organization put together an animated dashboard that displays how typical air traffic compares to where cases of COVID-19 are

occurring. It's a strong visual of how quickly the virus can spread in our hypermobile world.

All this data taken together is giving the best possible picture of where—and how—the new coronavirus is spreading in near real time. This geographic perspective is invaluable for trying to manage the disease.



↑ This World Health Organization (WHO) dashboard shows all confirmed cases of COVID-19 as of March 10, 2020.

## How GNSS Data Is Helping a National Park Clear Snow from Unmarked Alpine Roads

By Timothy Smith, National Park Service



↑ Lassen Volcanic National Park (LAVO) gets snow as early as September and as late as March. (Photo courtesy of the National Park Service.)

A three-story building is about 40 feet high. That's how much snow can fall and cover Route 89, the main highway that runs through Lassen Volcanic National Park (LAVO) in Northern California. The park, which lies about 50 miles east of Redding near the northern edge of the Sacramento Valley, gets snow as early as September and as late as March.

"It's a whole different world up here in wintertime," said LAVO roads and trails supervisor Mark Welch.

When spring comes, a field crew has to find—and clear—Route 89. The highway includes 13 miles of road above the tree line, the altitude above which trees stop growing. Up there, few clues indicate where Route 89 lies beneath the snow.

"A lot of our work relies on having faith in our GPS and GIS," said Welch.

The consequences of not finding the road range in severity. Best case scenario, if crew members are a few inches off, they might have to move  
continued on page 14

## Real-Time GIS Apps Quicken Response to Earthquake in Albania

At 3:54 a.m. on November 26, 2019, a 6.4-magnitude earthquake jolted people awake across central Albania. It was the most powerful earthquake to hit the southeastern European country since 1979—and its deadliest. Fifty-one people died, and approximately 2,000 were injured.

The destruction was extensive, especially in Durrës, the town closest to the epicenter. About 900 buildings in the coastal city were damaged, and many, including the seven-story Vila Palma hotel, collapsed.

"We were in a panic situation," said GIS specialist Glen Olli, who works for Esri's official distributor in southeastern Europe, GDi. His office, in Albania's capital of Tirana, is located about 25 miles from Durrës. "It was a workday, so as soon as we got to the office [later that morning], we grabbed our laptops and went outside to be safe. Then we started developing apps."

continued on page 10



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The Bureau of Land Management, has a national office, 12 state offices, and hundreds of field offices. Its business needs are as diverse as the geography of the United States. That's why the organization is applying a people-first change management approach to introducing new technology.



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ArcNews (ISSN 1064-6108) is published quarterly by Esri at 380 New York Street, Redlands, CA 92373-8100 USA. ArcNews is written for the Esri user community as well as others interested in mapping and geographic information system (GIS) technology. It contains material of interest to planners, foresters, scientists, cartographers, geographers, engineers, business professionals, and others who use spatial information.

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# AppStudio for ArcGIS Gives County Leg Up in Finding Illegal Dumping Sites

With a rich history that set the backdrop for the Wild West in the 1800s, San Juan County, New Mexico, has grown into a thriving region with more than 125,000 residents. The burgeoning population means that demands have grown for the local government, which strives to provide residents with the best in services and public safety.

Protecting the environment is one of the local government's top priorities to promote residents' well-being and keep the county's scenic rivers, mountains, mesas, and badlands healthy and flourishing for years to come. One significant issue that was impacting San Juan County's environment was the illegal dumping of trash, which residents expressed concerns about during a public forum on the local recreation industry.

Due to a lack of residential garbage service, residents of the county's rural communities take their trash to local transfer stations, and the county then takes it to a landfill. But illegal dumping was—and still is—widespread.

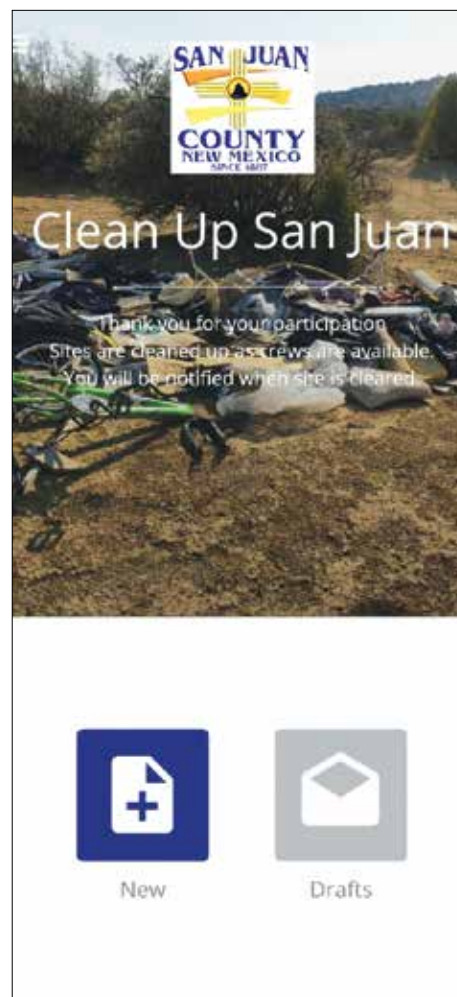
To curb this problem and prevent illegal dumping, the county's GIS team used AppStudio for ArcGIS to create a new app that helps residents more easily report illegal dumping sites. With the accurate location information the app provides, these citizen reports enable the county to engage in targeted cleanup efforts and more swiftly prosecute wrongdoers.

## Initial App Left Users Wanting More

In response to the concerns of illegal dumping, Sherice Snell, the GIS manager for San Juan County, developed the Clean Up San Juan app to report illegal dumping sites. The initial Clean Up San Juan app was a crowdsourced story map to help citizens report illegal dumping from their mobile devices. Though popular with residents, it had several notable limitations for users.

Law enforcement officers use the app to investigate incidents of illegal dumping and prosecute offenders. Dumping on public land is a criminal offense in the county, punishable by a \$1,000 fine and/or a maximum of 90 days in jail. As such, the information provided by users is crucial to investigations. According to Snell, the original form didn't fit the needs of officers, who wanted residents to complete different fields than what the story map provided.

Also, the initial app was not easy to access. Users had to bookmark the URL on their devices and try to access it wherever they were. If there was no cell service at an illegal dumping



↑ The new Clean Up San Juan app has helped the county clean up more than 127,000 pounds of trash from illegal dumping sites.



↑ When submissions are timely and have site details, the county sheriff's office can more easily apprehend violators.

**"AppStudio for ArcGIS is easily my favorite tool to have in my back pocket. It makes me look like a rock star!"**

**Sherice Snell**  
GIS Manager  
San Juan County, New Mexico

site, the user had to hope he or she remembered where the site was to report it later, according to Snell. This meant that many illegal dumping sites went unreported and, for the ones that were, the location could have been inaccurate, causing setbacks in investigations.

In 2018, Snell set out to revamp the app and tailor it to the needs of both law enforcement and general users.

## Creating a Native App with Very Little Coding

To increase accessibility and improve reporting, Snell decided to create a new app using AppStudio for ArcGIS. The platform allows users to create native apps with little to no coding and has tools for everything from testing to deployment. Snell chose this solution because she was already an ArcGIS Online user, so she

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↑ With accurate location information coming in from the Clean Up San Juan app, the county is able to engage in targeted cleanup efforts.

↑ For submissions that don't have enough detail for the sheriff's department to do an investigation, the county sends a cleanup crew, which can include (from left to right) Carlos Sanchez, Matt Basinger, and Greg Williams.

knew the tool would seamlessly integrate into her existing platform.

Snell had also previously used the online version of AppStudio and found it simple to use. Employing the desktop version this time around, she retooled the original app and included unique customizations, such as the county's logo.

"I was able to make little changes to make it look more like it belonged to San Juan County, which was great," Snell said.

Snell read the documentation and watched YouTube videos to learn how to better use the solution. She noted that online tutorials were key for helping her get the revamped app into app stores, including Google Play and the App Store.

"I'm not the type of person to download the source code and [create a new app]. I need something easy, and AppStudio for ArcGIS was easy for me to use," said Snell. "Since I'm not a very technical person, this was a huge step for me."

The new Clean Up San Juan app launched in May 2019. Now, once illegal dumping sites are reported by the public, Snell and other staff members evaluate the claim based on the user's

completed form and an uploaded photo or video. They then turn submissions in, complete with details like GPS coordinates, to the sheriff's department for further investigation. For submissions without these details, county staff dispatch cleanup crews to clear the sites.

"AppStudio for ArcGIS is easily my favorite tool to have in my back pocket," said Snell. "It makes me look like a rock star!"

#### New App Is Easier to Use and More Accurate

With the new Clean Up San Juan app's improved accessibility and reporting, more than 127,000 pounds of trash have been cleaned up from illegal dumping sites across the county. Because users can download the new app from an app store, they no longer have to find the link on the county's website and try to save it for later use.

"AppStudio for ArcGIS really took out a lot of the hoops that people had to jump through to use it," said Snell.

San Juan County officials are receiving positive feedback from residents and county visitors

who have used the app. The app has been downloaded more than 500 times between the Android and iOS platforms, and that number continues to rise.

"It's a great tool for the community, and it's amazing how supportive everyone has been," said Snell. "The community loves it."

The new app is also helpful to local law enforcement and San Juan's public works department, giving them more information to better do their jobs. When submissions have specific site details, the county sheriff's office can more easily investigate claims, which also helps the district attorney build successful cases against alleged violators.

For years, citizen reporters had to call the county to provide the latitude and longitude of a dumping site, and county staff had to enter the coordinates in a mapping program to try and locate it. AppStudio streamlines that process with electronic submissions. When users add a photo or video to their submission, the map automatically retrieves the person's exact location, which improves accuracy for finding sites. Snell also receives submissions in a timely

manner and is better able to direct requests to the appropriate stakeholders.


"AppStudio for ArcGIS is pretty accurate. Depending on where the cell towers are, we're probably 95 percent accurate on [locating sites]. And now our cleanup crews have everything they need on their phone," said Snell. "If they need to contact the person that submitted [the site], and [he or she] entered contact information, they can call [the person] while they're out in the field [to get] more information."

Data about the Clean Up San Juan initiative is also available online in a dashboard that shows which sites are waiting for an evaluation, which ones have been cleaned up, and whether they're on private property or on Navajo Nation land. This has greatly improved transparency, which Snell said has boosted morale.


"For the most part, people are just very appreciative that we are trying to make this place better," said Snell. "AppStudio for ArcGIS is helping us make a difference in the community."

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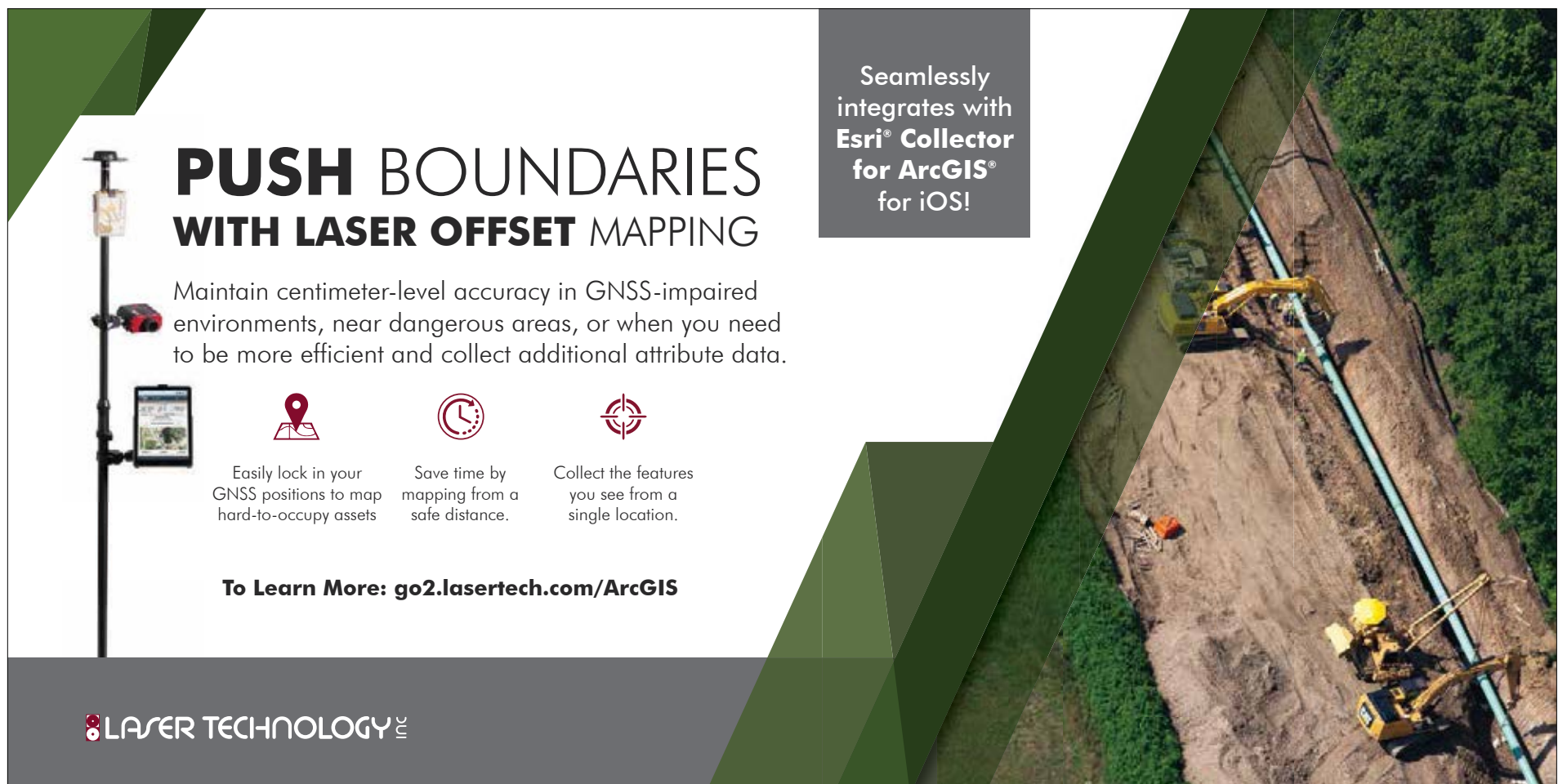
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## Appendix C

# Storm Water Monitoring Form

## Wet Weather and Sampling

\*\*\*To be completed quarterly & filed with SWPPP

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<http://www.animasenvironmental.com>

Tel. (505) 564-2281 Fax (505) 324-2022

Project: Storm Water Quarterly Monitoring  
 Client: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Inspector: \_\_\_\_\_  
 Inspector's Title: \_\_\_\_\_

Project No.: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Weather: \_\_\_\_\_  
 Air Temperature: \_\_\_\_\_  
 Amount of Rainfall (in): \_\_\_\_\_

OUTFALL Location:	Condition	Storm Water Accumulation? (Y/N)	Recent Spill (Y/N)	Notes & Actions Taken

1. Is there visible standing water at outfall location? If no, go to next question.

Check all that apply:

- Colored Water
- Murky
- Stains
- Odor
- Floating Objects
- Notable Difference in Plant Life
- Oily Sheen
- Sludge Present
- Clear Water
- Suds

Comments/Notes: \_\_\_\_\_

2. If no visible standing water at outfall location, check all that apply:

- Sludge Present
- Notable Difference in Plant Life
- Stains

Comments/Notes: \_\_\_\_\_

3. Describe any storm water flows and estimate flow rate:

4. Describe storm water samples collected, if any:

5. Describe any corrective actions to be taken:

6. Additional Notes and Water Quality Data:

Temp: \_\_\_\_\_ DO: \_\_\_\_\_ pH: \_\_\_\_\_ Cond: \_\_\_\_\_ ORP: \_\_\_\_\_

7. Next Inspection Scheduled for: