



# Storm Water Management Program



**TPDES Storm Water  
Phase II, Level II**

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# **Storm Water Phase II Program Texas Pollution Discharge Elimination System (TPDES) City of Azle, Texas, Storm Water Management Program**

## **I. Introduction**

Polluted storm water runoff is often transported to municipal separate storm sewer systems (MS4s) and ultimately discharged in local rivers and streams without treatment. The Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) Storm Water Program is intended to improve the Nation's waterways by reducing the quantity of pollutants that storm water picks up and carries into storm sewer systems during storm events. Under the NPDES program, the Storm Water Phase II Rule extends coverage to small MS4s in "urbanized areas" as designated by the U.S. Census Bureau. MS4 operators are required to design storm water management programs to:

- Reduce the discharge of pollutants to the "maximum extent practicable" (MEP);
- Protect water quality; and
- Satisfy the appropriate water quality requirements of the Clean Water Act.

## **II. State Regulation**

On September 14, 1998, the U.S. EPA and the Texas Commission on Environmental Quality (TCEQ) signed a memorandum agreement for the TCEQ to assume the regulatory authority for the NPDES as it applies to the State of Texas. This program has been named the Texas Pollutant Discharge Elimination System (TPDES).

The City of Azle was issued a storm water permit in December of 2007. The City published the required notices and held the required public meetings. The five year permit expired in 2012. Per TCEQ the City of Azle has continued to follow the requirements found in the original storm water plan. The new five year State permit was approved by TCEQ in December of 2013.

By submitting its Storm Water Management Program and Notice of Intent (NOI) to comply with the TPDES Phase II regulations before the deadline of June 2014, the City of Azle acknowledges the regulatory authority of the TCEQ and agrees to comply with TPDES TXR040000 permitting requirements to discharge directly into surface waters.

## **III. Program Overview**

The SWMP has been developed to prevent pollution in storm water to the maximum extent practicable and must prohibit illicit discharges into the system. The City of Azle has developed a menu of Best Management Practices (BMPs) that are specific actions to be implemented during this five-year permit period. Most of these BMPs were utilized in the first five-year permit. The BMPs that were found ineffective have been altered or removed from the new storm water plan. The approved BMPs will significantly reduce pollutants discharged into receiving water bodies.

The Minimum Control Measures (MCMs) are:

**① *Public Education, Outreach and Involvement***

Distributing educational materials and performing outreach to inform citizens about the impacts polluted storm water discharges can have on water bodies and steps the public can take to reduce pollutants in storm water runoff. Providing opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a local storm water management panel.

**② *Illicit Discharge Detection and Elimination***

Developing and implementing a plan to detect and eliminate illicit discharges to the storm sewer system (includes maintaining a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste).

**③ *Construction Site Storm Water Runoff Control***

Developing, implementing, and enforcing an erosion and sediment control program for construction activities that disturb one or more acres of land. This section includes the development and implementation of an ordinance or other regulatory mechanism as well as sanctions to ensure compliance to the extent allowable under state, federal and local law, to require erosion and sediment control.

**④ *Post-Construction Storm Water Management in New Development and Redevelopment***

Developing, implementing and enforcing a program to address discharges of post-construction storm water runoff from new development and redevelopment areas that discharge into the small MS4. This program will address projects that disturb one acre or more, including projects that disturb less than one acre that are part of a larger common plan of development or sale.

**⑤ *Pollution Prevention and Good Housekeeping for Municipal Operations***

Developing and implementing a program with the goal of preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff training on pollution prevention measures and techniques.

**⑥ *Industrial Stormwater Sources***

***This section for level 4 MS4s and does not apply to the City of Azle***

The City of Azle has evaluated the effectiveness of its chosen BMPs annually to determine whether they are reducing the discharge of pollutants from the MS4 systems to the maximum extent practicable. The City has assessed the progress in achieving the program's measurable goals, as set forth in the Storm Water Management Plan. The City will submit a yearly report each year to TCEQ. The report will be submitted after the end of the permit cycle in September.

## IV. Background on Azle, Texas

The City of Azle is a community of 11,040, and is included in the designated Dallas/Fort Worth Urbanized Area by the U.S. Census Bureau. The City must comply with Phase II Storm Water Rules for regulation of discharges from a regulated MS4 level two.

The City of Azle was incorporated in 1957. It covers approximately 8 square miles. Azle is located in northwest Tarrant County with a portion of the city being in Parker County. The City is approximately 649-feet above sea level.

The City is a chartered home-rule city, operated by a City Council / City Manager form of government. Elected officials include a Mayor and six at-large City Council Members.

The primary receiving waters for the City of Azle are Ash Creek and Walnut Creek, both of which flow into Eagle Mountain Lake.

The City storm water system is currently designed using open ditches or "bar ditches" with small sections of underground storm water systems in more recently developed areas. Runoff management, as well as street maintenance, is handled by the Street Department.

City of Azle ordinances and guidance that may be affected by the Storm Water Management Program are:

- Subdivision Ordinance
- Land Use Plan
- Zoning Ordinance
- Storm Drainage Design Criteria (City of Azle Storm Drainage Design Requirements)
- Storm Water Ordinance
- iSWM (integrated storm water manual)

Azle manages runoff issues through an ordinance that authorizes and regulates a storm water utility. The ordinances and guidance listed above may need revised from time to time to address elements of the Storm Water Management Program as it changes.

Azle has reviewed and adopted the iSWM. The manual is published in section 14 of the subdivision regulations. Placing the iSWM in the subdivision regulation gives the City control of storm water and drainage issues in the surrounding ETJ.

The City has adopted Building Codes and conducts building inspections through the Code Enforcement Department. There is currently one full time Code Enforcement Officer assigned to the department, which is supervised by the full time Storm water manager. Utility and Street Department personnel inspect private and public construction of infrastructure. The Storm Water Manager, Street Department and Fire Department respond to spills that occur in the City. If a responsible party is not located the City will clean up the spill and remove the pollutants. The Fire Marshal and Storm Water Manager investigate and enforce cases of illegal dumping and illicit discharges.

The Street Department handles runoff management, street drainage system maintenance and street maintenance. The City has mapped the existing drainage system in an AutoCad format. The Utility Maintenance Department maintains the sanitary sewer system. These operations are

housed at the Azle Utility Maintenance Center.

The City Council and Planning and Zoning Commission regulate development. The Community Development Department along with the Storm Water Manager, Utility Departments, Street Department and the Fire Marshal conduct regular pre-development reviews of proposed development projects. Site work and building permits are issued by the development services department.

The City has a fulltime position dedicated to storm water management. The storm water manager participates in development related reviews, conducts pre-construction inspections and conducts site inspections throughout the life of the project. The storm water manager also tracks the inspections and notifies the project managers of issues and works towards correcting any violations. The fire marshal's office and the storm water manager investigate cases of illegal dumping and spills that occur within the city of Azle. The storm water manager has obtained certifications in storm water management and continues to pursue training in the storm water field.

The City has developed a combined Storm Water Utility to pay for storm water quality and drainage management programs. The City has also adopted a comprehensive storm water ordinance as well as the iSWM. A copy of the storm water ordinance is included in Appendix A.

The City of Azle provides public education to residents on a variety of subjects using numerous methods, including the quarterly citizen newsletter, various pamphlets, the local newspaper and the city's website ([www.cityofazle.org](http://www.cityofazle.org)). Additional educational materials related to storm water quality will be designed and made available to the public. Many of the brochures are currently available at the permit clerk's office, Azle library and the Azle Chamber of Commerce.

The Program defines a menu of Best Management Practices (BMPs) to address the pollutants identified as most prevalent in the watershed served by the MS4. This list of pollutants was developed from observation and from review of records of violations and/or complaints concerning water quality. Those pollutants include:

- Floatables (litter, yard debris)
- Oils & Grease (hydrocarbons from parking lots, grease from food service operations)
- Pollutants from wastewater (sanitary sewer overflows)
- Household hazardous wastes (paint, automotive chemicals, lawn products)
- Suspended solids (sediment)

## **V. Storm Water Management Program Minimum Control Measures**

### **1.0 Public Education, Outreach and Involvement**

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:

- 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.

- Determine appropriate best management practices and measurable goals toward developing a public education and outreach program.

This Minimum Control Measure will target various stakeholder groups in the community by providing information about the City's pollution problems through educational materials and use of local media. The goal of each activity is to inform the public (citizens and businesses) about issues of environmental stewardship related to storm water and to encourage behavior to eliminate or clean up pollution.

The educational materials may include, but not be limited to, the following:

- Brochures
- Alternative information sources (websites, promotional items, etc.)
- Storm Drain Marking
- Television and radio messages (through participation with NCTCOG)
- Posters and billboards

The Public Education and Outreach program will use a variety of strategies to reach a diverse audience. Other audiences, such as various categories of businesses, industry and special interest groups (recreation groups, etc.) will be reached through appropriate material with specific messages about the kinds of pollution prevention activity to be encouraged or required.

One of the main target audiences in Azle are the students of the Azle ISD. The students are given educational items as well as different gifts such as Frisbees, yo-yos, pens and pencils, and coloring books at career days or other events. The City of Azle has a storm water demonstration trailer that is routinely used at various schools throughout the area to demonstrate the effects of storm water on the environment as well as the effects of pollution on the environment. The trailer is primarily used in the Azle school district but has been utilized by Texas A&M Agrilife and by the Tarrant Regional Water District.

The North Central Texas Council of Governments (NCTCOG) has created educational materials specifically for use in the region. As a member, the City of Azle plans to utilize some of these materials as well as developing additional information specific to issues in our community. Examples of these materials are included in Appendix B.

Topics included in informational materials and presentations will include, but not be limited to, the need for storm water management, the impacts of storm water pollution, lawn and garden activities, Texas SmartScape, water conservation practices, recycling, disposing of motor oil and other hazardous waste, pet waste management, low impact development, business specific issues and municipal good housekeeping.

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

The City of Azle encourages public participation in the storm water management process, as citizen support is a critical component of building a successful program. To achieve results under this minimum control measure, a variety of opportunities for involvement are provided for citizens.

Strategies include public meetings to provide information to the public on storm water issues as well as seek input in the decision-making process, creation of a citizen advisory committee, community & stream clean-up projects, recruitment of volunteers to participate in storm water programs and serve as volunteers and monitors, and developing communication systems for reporting and monitoring water quality and environmental concerns.

The City of Azle continuously assesses all program elements as necessary to continue to reducing the discharge of pollutants.

### BMPs & Measurable Goals – Public Education, Outreach and Involvement

Best Management Practices	BMP Description	Target Date	Measurable Goals
<b>BMP 1.1 City of Azle Storm Water Website</b>	Continue to update and modify the City of Azle website as necessary. The website includes storm water education for residents and businesses. The site also provides specific information regarding the City's NPDES Phase II program as well as links to other local, state and national storm water sites. A violation reporting component is also available on the website.	Year 1-5	*Update website as necessary
		Year 1-5	*Solicit feedback from users
		Year 1-5	*Continue to monitor the website and add new information as it becomes available. Verify advertised websites are current and available.
<b>BMP 1.2 Residential Storm Water Pollution Awareness Campaign</b>	Implement a 5 year campaign to inform residents of the dangers of pollution and the steps they can take to reduce storm water pollution. The campaign will consist of presentations at public meetings, to civic and neighborhood groups and distribution of informational brochures through utility bill inserts and direct mailings. The information will also be available through the storm water web site. Information will include topics such as recycling, Texas SmartScape, disposal of yard waste, use of and alternatives to lawn and garden chemicals, pet waste, disposal of household chemicals, disposal of vehicle fluids and vehicle washing.	Year 1-5	*Distribute 500 SmartScape bookmarks each year to the students throughout the Azle ISD.
		Year 1-5	*Mail informational brochures twice each year in approximately 4,600 utility bills.
		Year 1-5	*Review & update materials
		Year 1-5	*Make two presentations a year and request e-mail addresses and establish an e-mail distribution group.
<b>BMP 1.3 Commercial and Industrial Education</b>	Develop and implement a partnership program for providing educational material to commercial and industrial businesses.	Year 1-5	*Send information on storm water program to all commercial and industrial businesses.
		Year 1-5	*Distribute educational materials a minimum of one time each year.
<b>BMP 1.4 Storm Drain Markers</b>	Storm drains were marked with plastic markers during the first 5 year permit. During this permit cycle the inlets will be monitored and the markers will be replaced as necessary.	Year 1-5	*Inlets were marked during the first 5 year permit cycle. The inlet markers will be monitored and will be replaced as they become worn or damaged.
<b>BMP 1.5 Construction Site Education</b>	Continue program to educate developers and builders in erosion control and pollution prevention.	Year 1-5	*Provide education for developers and builders on storm water management at construction sites.
		Year 1-5	*Continue to provide construction site BMP informational brochure to all construction permit applicants.
<b>BMP 1.6 Public Meetings</b>	Conduct public meetings to present and solicit feedback on Azle's storm water management	Year 1-5	*Conduct at least one public meeting each year.

Best Management Practices	BMP Description	Target Date	Measureable Goals
	program.	Year 1-5	*Advertise and conduct the public meeting in accordance with local and state notice requirements.
<b>BMP 1.7 Citizens Advisory Committee</b>	The Citizens Advisory Committee was formed during the first 5 year cycle. The committee continues to meet at a minimum one time per year. The committee provides feedback and makes recommendations on educational items that are distributed to the citizens.	Year 1-5	*The committee was formed with various volunteers from within the City. The committee provides input on ordinance updates and reviews educational material.
		Year 1-5	*Conduct a minimum of one advisory committee meeting per year.
<b>BMP 1.8 Storm Water Hotline</b>	Continue to advertise the dedicated storm water hotline to solicit information related to illicit discharges and illegal dumping, complaints and general comments regarding Azle's storm water management program.	Year 1-5	*Provide alternate ways for citizens to contact the storm water department to report cases of illegal dumping and spills. This number will also be used for citizens to provide comments to the storm water department.
<b>BMP 1.9 Azle Cleanup Days</b>	Continue the existing community cleanup program in order to reduce floatables, etc. that make their way into the storm system.	Year 1-5	*Sponsor at least two citywide cleanup days each year.
		Year 1-5	*Sponsor at least one stream or neighborhood specific cleanup day each year.

## 2.0 Illicit Discharge Detection & Elimination

To eliminate illicit discharges into the public storm sewer system, permittees are 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, toxins, oil and grease, solvents, nutrients, viruses and bacteria. These untreated discharges have the potential to cause significant degradation to receiving water bodies. The following are typical examples of illicit discharges:

- Sanitary wastewater
- Effluent from septic tanks
- Car wash wastewater
- Mobile power washing
- Mobile carpet cleaning
- Improper oil disposal
- Radiator flushing disposal
- Spills from roadway accidents
- Laundry wastewaters
- Improper disposal of auto and household toxins
- Improper connections to storm drain system (floor drains, sanitary sewer lines, etc.)

Water quality problems previously identified in the City of Azle include contamination by grease and oils from poor housekeeping practices at restaurants and pollution from sanitary sewer overflows which sometimes are caused by grease or tree roots in the sanitary sewer system. The plan for this minimum control measure will address these two items as top priorities, as well as identify other pollution problems from illicit discharges.

The plan includes the following components:

- mapping of the city storm water system
- procedures for locating priority areas likely to have illicit discharges

- procedures for tracing the source of an illicit discharge
- procedures for removing the source of the discharge
- procedures for program evaluation and assessment

The City of Azle has already taken steps to address illicit discharges. First, the City has adopted a storm water ordinance that addresses illicit discharges, including those from commercial, industrial and construction sites. The City has mapped inlets, catch basins, pipes, culverts and other storm water structures using a Global Positioning System (GPS). The City also participates with the City of Fort Worth’s Household Hazardous Waste Program which allows Azle residents to dispose of hazardous wastes at the Fort Worth center. The City provides two “Extreme Green” cleanup events yearly. The city has constructed an oil recycling facility that is available to the public. During the cleanup events residents may drop off household hazardous waste material as well as tires, computers and other recyclables.

To detect and eliminate illicit discharges, the City will develop procedures for visually screening outfalls during dry weather. Training in detecting illicit discharges will be provided to city field employees and volunteer monitors to provide help in locating discharges. A hotline number is available on the City web site and will be advertised in the educational material that is distributed. This will allow citizens to report violations that they have observed.

The storm water manager and fire marshal investigate cases of illegal dumping within the Azle city limits. The cases are logged into the system so that they can be tracked. If there is a suspect the City will attempt to have the suspect mediate the problem by removing the material at his or her cost. Fines can be issued or a case can be generated and turned over to the courts for prosecution. The primary goal is to remove the problem and protect the environment.

During the course of the permit term, the City will develop procedures for field monitoring to measure progress in reducing pollutants that adversely affect water quality. Illicit discharge education actions will include storm drain marking; a program to promote, publicize and facilitate public reporting of illicit connections or discharges; and distribution of outreach materials as outlined in Section 1.

### Illicit Discharge Detection & Elimination

Best Management Practices	BMP Description	Target Date	Measurable Goals
<b>BMP 2.1 Storm Sewer System Map</b>	A storm water map was developed during the previous 5 year permit term. The inlets and outfalls are indicated on the map.	Year 1	* Verify that all storm water inlets, systems and outfalls have been identified with GPS locations.
		Year 1-5	*Update the storm system map as new data is collected.
		Year 1-5	*Update the system map as new development occurs.
<b>BMP 2.2 Dry Weather Screening</b>	Conduct visual dry weather screening of the City’s storm water outfalls. The section is not mandatory for a level II city. Azle will continue to monitor the outfalls to try and verify there are no issues occurring in the creeks and streams that feed in Eagle Mt. Lake.	Year 1-5	*Develop dry weather screening procedures and train appropriate personnel.
		Year 1-5	*Conduct visual dry weather inspections of 25% of the city’s storm water outfalls each year.
<b>BMP 2.3 Reduction of Sanitary Sewer Overflows (SSOs)</b>	Continue efforts to eliminate sanitary sewer overflows through inspection, maintenance and replacement of sewer lines, manholes and lift stations. Sanitary sewer overflows are reported to TCEQ and the storm water manager. The	Year 1-5	*Continue current program on routine inspection and treatment of sewer lines with history of grease or root problems.

Best Management Practices	BMP Description	Target Date	Measurable Goals
	overflows are tracked on the computer.	Year 1-5	*Continue current program to identify system components needing replacement through tracking of work orders, cleaning and maintenance.
		Year 1-5	*Replacement of sewer lines, manholes and lift stations as outlined in the City's Capital Improvement program.
		Year 5	*Identify projects to include in the Capital Improvement program for the next 5 years.
<b>BMP 2.4 Illicit Discharge Inspections</b>	Conduct inspections to determine the sources of illicit connections and illegal dumping activities.	Year 1-2	*Review and amend, if needed, existing storm water ordinance to insure it provides the City with authority to inspect suspected sites of illicit connections or illegal dumping activities.
		Year 1	*Develop standard inspection procedures and train appropriate personnel, including building inspectors.
		Year 2-5	*Conduct inspections in accordance with procedures for identified or suspected sources of illicit discharges or illegal dumping as identified from dry weather screening or tips received from the City's hot line or website.
<b>BMP 2.5 Elimination of Illicit Connections</b>	Eliminate illicit connections.	Year 1-5	*Develop standard verification procedures and train appropriate personnel.
		Year 1-5	*Assess regulatory authority and amend ordinances if needed to provide the City with authority to require the elimination of illicit connections or illegal dumping.

### 3.0 Construction Site Stormwater Runoff Control

Construction sites can be significant sources of sediment for MS4s, especially when installation and maintenance of erosion and sediment controls are not required or adequately enforced. Experience has shown that construction sites and associated activities can deposit a significant amount of silt, sediments and debris in a short time, causing localized flooding, property damage and natural resource harm, and potentially leading to costly clean-ups and repairs to the storm sewer system, local waterways and private property.

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.
6. The SWMP will be reviewed annually to verify that it is working and the requirements are having a positive impact on reducing storm water pollution. If changes are needed a NOC will be filed with the annual report.

The City has adopted a comprehensive ordinance to reduce construction site pollutant runoff. The City will work to educate contractors and require implementation of erosion and sediment control best management practices, and control of waste such as discarded building materials, concrete truck washout water, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality. A copy of the ordinance is included in the Appendix A.

The City has ordinances and procedures for development projects that require formal site plan review of construction plans, procedures to receive and respond to information submitted by the public, routine site inspection and enforcement of control measures. Additionally, during the permit term the City will examine options to reduce impervious cover and investigate smart growth initiatives to encourage preservation of green space and natural drainage.

The City financially participated in the development of the NCTCOG sponsored integrated Storm Water Management (iSWM) program. The City has evaluated and adopted the design manual for Construction and incorporated the program into Chapter 14 of the subdivision regulations.

### Construction Site Stormwater Runoff Control

Best Management Practices	BMP Description	Target Date	Measurable Goals
<b>BMP 3.1 Controlling Ordinances</b>	The City of Azle has an ordinance in place that addresses storm water requirements. The ordinance addresses the requirement for BMPs to be in place and working as well as providing a list of allowable and non-allowable discharges.	Year 1-5	*The ordinance will be reviewed and updated as necessary
<b>BMP 3.2 Requirements for Construction Site Contractors</b>	The City of Azle has a thorough existing construction site erosion control program. Ordinances that address construction site erosion control and site plan review have previously been adopted. Copies of the storm water ordinance is included in appendix A.	Year 1-5	*Continue enforcement of existing ordinances and implementation of existing programs.
		Year 1-5	*Review ordinances and programs annually and update as needed.
		Year 1-5	*Develop and provide construction site education as outlined in BMP 1.6.
<b>BMP 3.3 Site Plan Review</b>	City personnel will conduct pre-construction meetings to review the proposed construction project. The storm water pollution prevention plan will be reviewed and changes made prior to any construction at the proposed location.	Year 1-5	*Personnel will continue to review construction and storm water plans prior to any construction at the project site.
<b>BMP 3.4 Site Inspection and Enforcement</b>	Storm water manager will continue to conduct and record routine and non-routine inspections of constructions sites. The inspection results are recorded electronically and are available to City staff.	Year 1-5	*Personnel will conduct routine inspections of the site to verify BMPs are working and operating in an effective manner.

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

Post construction storm water management is necessary because runoff from areas undergoing development has significantly impacted receiving water bodies. 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 water body through stream bank scouring and downstream flooding.

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.

Non-Structural BMP's include:

*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 buffer strip and riparian zone preservation, minimization of disturbance and imperviousness and maximization of open space.

Structural BMPs include:

*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.

The City of Azle addressed this Minimum Control Measure by adopting the North Central Texas Council of Governments regionally developed Integrated Storm Water Manual (iSWM) for site Development. The City placed it in Chapter 14 of the subdivision regulations.

The design manual for site development addresses both non-structural and structural BMPs. The manual includes the following sections:

- Planning & Design
- Hydrologic Analysis
- Hydraulic Design of Streets and Closed Conduits
- Hydraulic Design of Open Channels, Culverts, Bridges, and Detention Structures
- Storm Water Controls

The City will continue to participate in locally-based watershed planning efforts which involve a diverse group of stakeholders including interested citizens. The planning process should:

- Identify the City's program goals (e.g., minimize water quality impacts resulting from post construction runoff from new development and redevelopment).
- Identify implementation strategies (e.g., adopt a combination of structural and/or non-structural BMPs).
- Identify operation and maintenance policies and procedures, and enforcement procedures.

In October 2012, the City adopted a new Comprehensive Master Plan and Land Use Map. The plan and map are evaluated annually and the ordinance adopting the plan requires updates when necessary, but at least every five years. The plan does address issues such as consideration of environment and terrain, preserving streams and floodplains, and providing open space/parks.

Additionally, the City utilizes a development review process which includes the use of a Development Review Committee (DRC). The DRC meets with developers early in the process to insure compliance with existing ordinances and regulations. Any changes made to existing ordinances as a result of SWMP will be incorporated into the development review process.

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

Best Management Practices	BMP Description	Target Date	Measurable Goals
<b>BMP 4.1 Manual Development Adoption &amp; Implementation</b>	The City adopted and implemented the integrated storm water manual (iSWM). It has been published in the Azle Subdivision Regulations, Chapter 14.	Year 1-5	*Continue to review the iSWM and update as necessary over the next 5 years.
<b>BMP 4.2 Development Review Process</b>	Continue existing development review process including engineering review to insure compliance with current master plan, zoning and development related ordinances.	Year 1-5	*Continue existing review process of all construction projects to verify compliance with the City's Storm Water Ordinance and Site Development Manual.
<b>BMP 4.3 Comprehensive Master Plan</b>	Continue to utilize the City's Comprehensive Master Plan and Land Use Map.	Year 1-5	*Continue the existing process of assessing proposed zoning changes in relation to the Comprehensive Master Plan.

## 5.0 Pollution Prevention and Good Housekeeping for Municipal Operation

The fifth 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 water bodies. 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 feels this measure could result in increased cost savings for municipalities through proper and timely maintenance of storm sewer systems.

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. This includes activities such as road and parking lot maintenance, bridge maintenance, cold weather operations and right of way maintenance.
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.
4. Inventory and map all facilities owned by the City. The inventory will include all applicable permit numbers, registration numbers, and authorizations for each facility or control.

The overall goal of the Pollution Prevention/Good Housekeeping program for the City of Azle is to reduce the risk of water pollution using proper maintenance and operation procedures, training City staff for awareness about the hazards, and internal audits to track the effectiveness of the program. Training materials, including those developed by the North Central Texas Council of Governments, will be used to develop training programs for City staff with responsibilities involving potential water pollution or protection of water quality. Control measures managed by the City will be properly installed and maintained. Any waste generated by City activities, particularly dredge materials, accumulated sediments and floatables, will be disposed of as provided by the regulations directing the disposal of dredge materials. The City of Azle personnel will conduct a thorough assessment of all City facilities, activities, policies, and other items having an impact on stormwater quality.

Accordingly, the City of Azle will develop a program to attain these goals. An internal committee has been established to formulate and implement the program. The committee will identify those departments and employees with responsibilities involving potential water pollution or protection of water quality. The committee will determine appropriate training materials and develop a training program. The committee will also audit municipal operations and maintenance to identify activities that have a potential to affect storm water quality. Activities include:

- Maintenance activities, including City vehicle and equipment maintenance, building maintenance, and municipal structures such as streets and storm drainage systems.
- Grounds Maintenance/Landscape Practices on municipal property, using strategies that encourage pesticide and fertilizer reduction, water conservation, and soil conservation.

- Source Reduction/Waste Management strategies used in municipal operations, including recycling and proper disposal of materials, disposal of sediments and floatables cleaned from structures, and disposal of street sweeping trash.

The City has developed a storm system maintenance program to identify those components of the system maintained by the City and has created a regular maintenance program to remove floatables, debris, sediment, etc. from the City's storm sewer system.

### Pollution Prevention and Good Housekeeping for Municipal Operation

Best Management Practices	BMP Description	Target Date	Measurable Goals
<b>BMP 5.1 Planning for Pollution Prevention</b>	The City of Azle has developed an internal committee, which consists of members from the Utility Department, Street Department, Parks Department, Community Development Department and the Storm Water Manager. The committee has regular meetings to discuss plans for municipal pollution prevention. The committee has identified departments and employees with responsibilities involving potential water pollution or protection of water quality. The committee has also developed a training program and maintenance activities that have a potential to affect storm water quality.	Year 1	* Internal committee has been formed with representatives from Utilities, Streets and Parks Departments and Community Development.
		Year 1-2	*Re-evaluate 5 year plan to implement pollution prevention and adjust if necessary.
		Year 1-5	*Committee to meet at least quarterly to evaluate/monitor implementation and make changes as needed.
<b>BMP 5.2 Employee Training</b>	Continue to implement a good housekeeping/pollution prevention training program for municipal employees with responsibilities involving potential water pollution or protection of water quality. The program will rely on various materials including those prepared by the NCTCOG regional storm water program.	Year 1-5	*Continue with employee training program.
		Year 1-5	*Provide initial training to all current employees with responsibilities involving potential water pollution or protection of water quality.
		Year 1-5	*Provide training to new employees in these departments within 180 days of employment.
			*Provide periodic refresher training to employees.
<b>BMP 5.3 Audit for Operations &amp; Maintenance Activities</b>	The internal committee will develop a list of activities with a potential to affect storm water quality as well as identify positions with oversight for those activities. The committee will then audit those activities and current practices. Activities that have a positive effect will be encouraged. Those activities that have a potential to degrade storm water quality will be evaluated and modified to ensure preventive measures are being followed.	Year 1	*Identify activities with a potential to affect storm water quality and those overseeing those activities.
		Year 1-5	*Group activities into improving or degrading activities.
		Year 1-5	*Determine measures needed to prevent storm water pollution.
		Year 1-5	*Implement measures to prevent storm water pollution in identified activities.
<b>BMP 5.4 Storm Water System Maintenance</b>	The City shall continue to assess the storm water infrastructure and identify those components maintained by the City. The City will continue with the program to remove floatables, debris, sediment etc. from the City's storm sewer system. The City utilizes the vacuum truck and operators to clean storm water inlets. The street maintenance staff	Year 1-5	*The City has identified the storm water system components that need to be maintained.
			*There is a schedule in place that utilizes the vacuum truck and utility maintenance personnel to clean the inlets.

Best Management Practices	BMP Description	Target Date	Measurable Goals
	conducts routine inspections and cleans the open channels as necessary.	Year 1-5	*Utility maintenance personnel track the inlets that are cleaned. *The schedule will continue for years 1-5 and will be updated as necessary
		Year 1-5	*Continue inspection and cleaning process. *Clean system in response to complaints or reported problems
<b>BMP 5.5 Street Sweeping</b>	Continue the existing curb and gutter street sweeping program using contract sweeping services. The street sweeping debris is deposited in roll offs and removed from the City by the waste company contracted by the City.	Year 1-5	*Develop program to track weight of debris collected or total linear feet swept.
		Year 1-5	*Continue quarterly sweeping of all curb and gutter streets in the City.

## 6.0 Industrial Stormwater Sources

*Reserved for level four and Phase 1 entities and does not apply to the City of Azle*

## VI. Measurable Goal Evaluation Process

The selected measurable goals for each BMP will be evaluated on an annual basis. Implementation of each BMP will be tracked as appropriate during each permit year in order to provide documentation of the BMP activities. Where possible, specific quantities or numbers will be tracked and included in the evaluation process. Relative success at achieving the measurable goals, as well as an assessment of the effectiveness of each BMP, will also be evaluated on an annual basis.

Multiple City departments will be responsible for implementing portions of the SWMP and for tracking and evaluating the City's success in meeting the plan's measurable goals. It is anticipated that the following City departments will be involved in the implementation and verification process:

- a. Water
- b. Wastewater
- c. Utility Maintenance
- d. Streets
- e. Parks
- f. Vehicle Maintenance
- g. Code Enforcement
- h. Community Development
- i. Administration

## VII. PARTICIPATING ENTITIES

Implementation of portions of the City of Azle SWMP relies upon activities performed by the North Central Texas Council of Governments (NCTCOG). A copy of all agreements between the City of Azle and the NCTCOG for performance of the activities described within the SWMP are provided in Appendix C. NCTCOG activities the City is relying on include the creation of

brochures and educational materials, employee training, SmartScape, and the integrated Storm Water Management Manuals for Construction and Site Development.

## **VIII. ASSESSMENT OF NON-STORM WATER DISCHARGES**

The following non-stormwater discharges may be discharged from the City of Azle and are not required to be addressed in the Illicit Discharge Detection and Elimination or other minimum control measure, unless they are determined by the City of Azle or TCEQ to be significant contributors of pollutants:

- a. water line flushing;
- b. runoff or return flow from landscape irrigation, lawn irrigation, and other irrigation; utilizing potable water, groundwater or surface water sources;
- c. discharges from potable water sources;
- d. diverted stream flows;
- e. rising ground waters and springs;
- f. uncontaminated ground water infiltration;
- g. uncontaminated pumped ground water;
- h. foundation and footing drains;
- i. air conditioner condensation;
- j. water from crawl space pumps;
- k. individual residential vehicle washing;
- l. flows from wetlands and riparian habitats;
- m. dechlorinated swimming pool discharges;
- n. street wash water;
- o. discharges or flows from fire fighting activities (fire fighting activities do not include washing of trucks, runoff water from training activities, test water from fire suppression systems, and similar activities), and;
- p. other similar occasional incidental non-stormwater discharges, unless TCEQ develops permits or regulations addressing these discharges.