



## **City of Clinton, Mississippi**

### **Storm Water Management Program**



**March 2003**

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## **Introduction**

Urban storm water is water that flows from an urban area to a waterbody such as a stream or lake after a rain event or other means. As rainwater flows across streets, parking lots, roofs, yards, and other typical urban ground cover, it can capture a wide variety of pollutants and deliver them to those water bodies. Typical urban runoff pollutants include sediment, nutrients from fertilizers, litter, oil and grease, bacteria, trace metals and other toxics, and thermal increases. The purpose of this program is to reduce the amount of these pollutants that reach receiving waterbodies to ensure their ecological health.

### **Legal Import**

This document establishes the Storm Water Management Program as official city policy and requires certain actions to be taken by the city and also by citizens and developers. It requires the city to pass a number of ordinances within the next six months that will establish penalties to ensure compliance with a number of these requirements.

This document designates the City Engineer as the SWMP Administrator. He must ensure that all stated requirements and goals are being met and that records are kept to document compliance with the program.

### **Statutory Requirements**

This program is required by EPA regulations. In 1987 the Clean Water Act was amended to include storm water rules in two phases. Phase I regulations went into effect in 1990 and applied only to cities with populations of 100,000 or more and developments of 5 acres or greater. Phase II regulations were promulgated in 1995, and then amended in 1999. They require all remaining municipalities located in urbanized areas and developments of 1 acre or greater to apply for permit coverage for storm water discharge. Clinton is located within the Jackson urbanized area and so is designated by the Mississippi Department of Environmental Quality to apply for a NPDES general permit for storm water discharge.

Under the general permit, MDEQ requires the city to “develop, implement, and enforce a Storm Water Management Program (SWMP) designed to reduce the discharge of pollutants from its Municipal Separate Storm Sewer System (MS4) to the maximum extent practicable (MEP) to protect water quality and to satisfy applicable water quality requirements of the Clean Water Act.” The permit specifically requires storm water to be free of the following pollutants:

- debris, oil, scum, and other floating materials other than in trace amounts
- eroded soils and other materials that will settle to form objectionable deposits in receiving waters

- suspended solids, turbidity and color at levels inconsistent with the receiving waters
- substances in concentrations that would cause violation of State Water Quality Criteria in the receiving waters

Regulatory language requires MS4s to ensure that no components of this program will adversely affect endangered species located in the watershed or cause damage to any properties listed or eligible for listing in the National Register of Historic Places. Because all aspects of the program are designed to reduce pollutants in receiving water bodies and reduce habitat altering peak flow events, aquatic habitat will be improved to the benefit of any populations of endangered species. Also, no direct construction is prescribed by this program, so no effect to a registered or eligible historic place is expected.

### **Program Development Process**

This program has been developed using the MDEQ general permit requirements, permit guidance manual, EPA regulations and guidance documents, and various Phase II workshops hosted by MDEQ. The goal of this program is to conform to all statutory requirements and also to address current storm water quality and quantity needs of the city. Specific aspects of the program were selected to give the greatest impact to storm water quality given the existing environment of the city.

Input from citizens and business owners within the city was involved in this process. Two advertised public meetings were held during the development phase of this document, the first on April 19, 2001, and the second on November 14, 2002. Attendees and comments from these meetings are located in the appendix.

## City of Clinton Information

The official population of the City of Clinton from the 2000 census is 23,347. With an area of 24 sq. miles, that gives a population density of 970 people per sq. mile. The following tables include other relevant demographic data.

### **2000 Census Data**

<b>CITY OF CLINTON</b>		
	<b>No.</b>	<b>%</b>
<b>TOTAL POPULATION</b>	<b>23,347</b>	<b>100</b>
<b>SEX AND AGE</b>		
Male	11,012	47.2
Female	12,335	52.8
Median age (years)	33.1	(X)
18 years and over	17,575	75.3
65 years and over	2,625	11.2
<b>RACE</b>		
White	17,492	74.9
Black or African American	5,259	22.5
Asian	359	1.5
Hispanic or Latino	203	0.9
Other	68	0.3
American Indian and Alaska Native	24	0.1
<b>HOUSEHOLDS BY TYPE</b>		
<b>Total households</b>	<b>8,328</b>	<b>100</b>
Family households (families)	6,076	73
With own children under 18 years	2,991	35.9
Married-couple family	4,660	56
With own children under 18 years	2,171	26.1
Female householder, no husband present	1,153	13.8
With own children under 18 years	687	8.2
Nonfamily households	2,252	27
Average household size	2.6	(X)
<b>HOUSING TENURE</b>		
<b>Occupied housing units</b>	<b>8,328</b>	<b>100</b>
Owner-occupied housing units	5,979	71.8
Renter-occupied housing units	2,349	28.2

***Income***

Median family income	\$47,716
Average family income	\$55,599
Per capita income	\$16,828

***Educational Attainment:***

High school education or more	85.4%
Bachelor's degree or more	37.3%

***Commercial Inventory***

Manufacturing Businesses	9
Gas Stations	18
Contractors	37
Restaurants	40
Other Non-Manufact. Bus.	697
<b>Total</b>	<b>801</b>

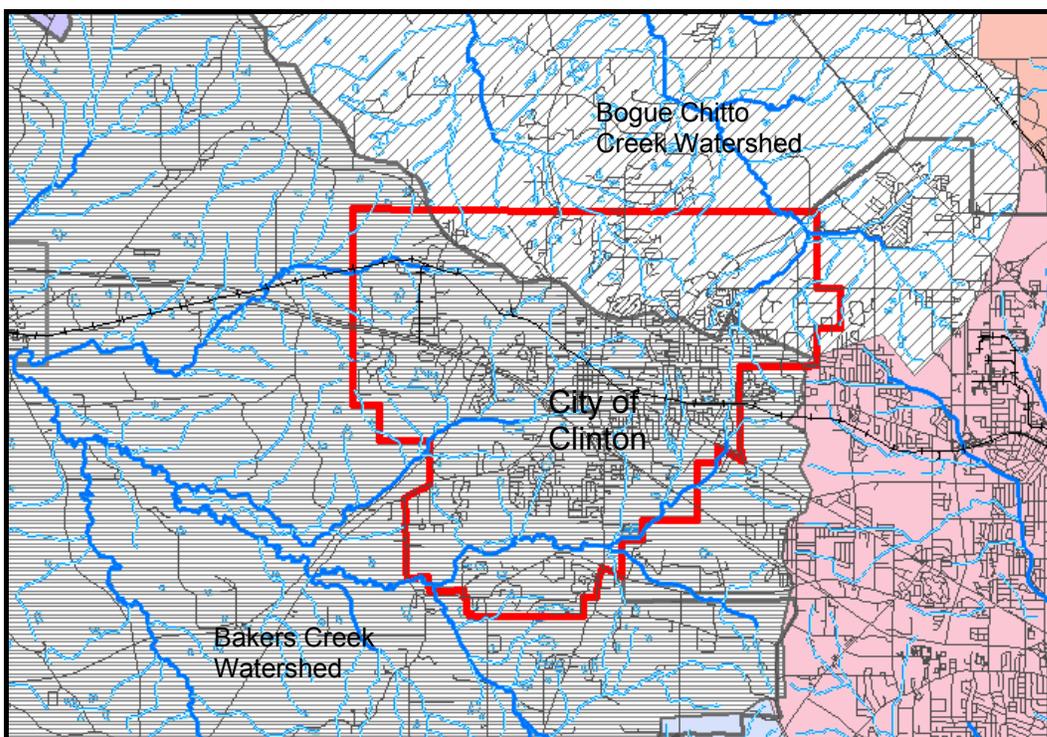
***Permit Average (2000-2002)***

Residential Building Permits	115
Commercial Building Permits	20
<b>Total</b>	<b>135</b>

## Catchment Description

### Waterbody Description

The two major water bodies which receive storm water runoff from the City of Clinton are Bakers Creek and Bogue Chitto Creek. Any other major stream within the city flows to one of these two creeks. The city is situated on a ridge, with the northeast side of town draining to the Bogue Chitto, and the rest of town draining to Bakers Creek. Northside Drive is generally the dividing line between the two watersheds. Both Creeks drain to the Big Black River.

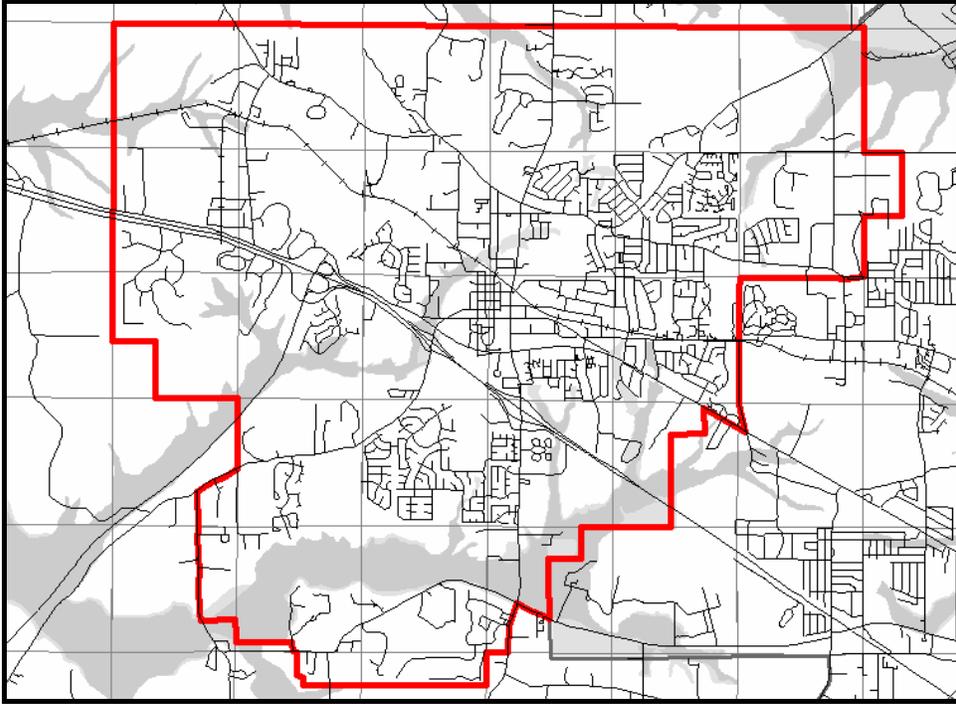


There are a number of intermittent streams in the city, many of which are still in natural condition, and many of which have been channelized and/or hardened with rip-rap or concrete. Very few intermittent streams have been totally enclosed for any significant length. There are approximately 55 man-made lakes within the city.

The official use designated by MDEQ of the Bogue Chitto is aquatic life support. This simply means that the primary use of the stream is to support the living organisms within the system. Bakers Creek is listed for aquatic life support use, and also for secondary contact recreation. Secondary contact indicates use by people without the full contact of swimming.

## Watershed Description

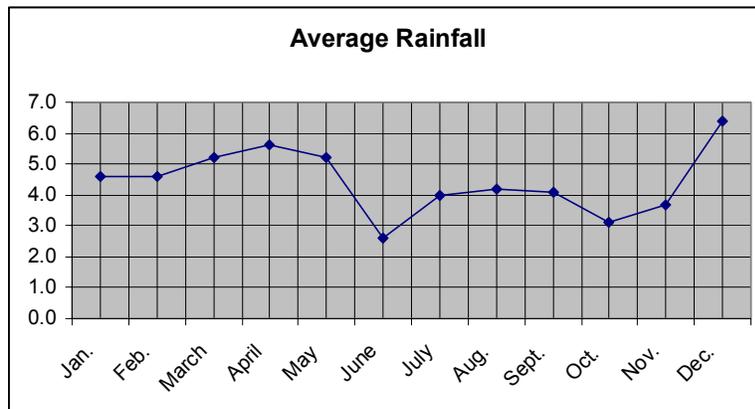
The city contains floodplain areas designated by FEMA. The following map displays the 100 and 500 year floodplains.



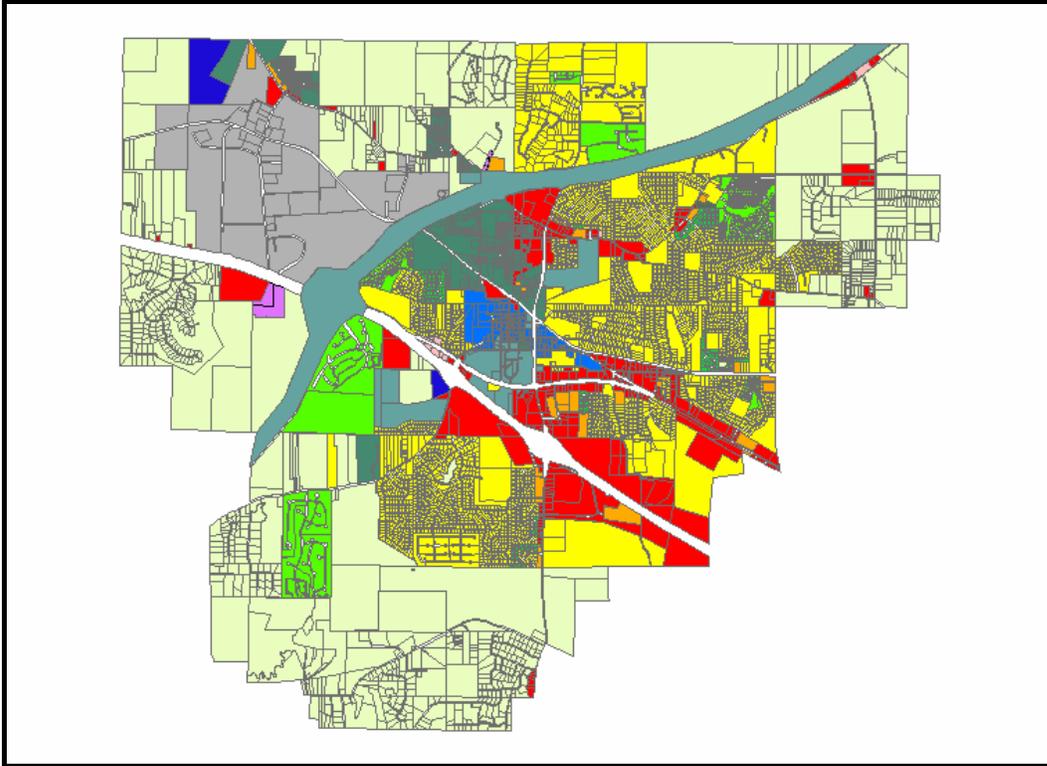
Land located within the floodplains and especially floodways will be more susceptible to contributing sediment and other pollutants to the water bodies.

The general topography of the two watersheds in Clinton is rolling hills with gentle slopes and flat flood plains. Average rainfall is 53.3 in., and average snowfall is 1.1 in. Rainfall is generally consistent year-round, with peaks in December and April and dips in June and October.

Month	Avg. Rainfall
Jan.	4.6
Feb.	4.6
March	5.2
April	5.6
May	5.2
June	2.6
July	4.0
Aug.	4.2
Sept.	4.1
Oct.	3.1
Nov.	3.7
Dec.	6.4
<b>Total</b>	<b>53.3</b>



Most of the land area in Clinton consists of moderately dense development. The following map represents the existing zoning in the city.



The darkest areas represent commercial development zones, while the lighter areas are generally moderately dense residential development. The lightest areas are zoned agricultural, which either contain large acre residential development, agricultural fields, or forest.

## Catchment Condition

Bogue Chitto Creek is listed on MDEQ's 303(d) List as an impaired waterbody for the following causes: organic enrichment-low DO, biological impairment, and pH. This means that monitoring data collected by MDEQ has indicated impairments to aquatic life support in the stream due to the causes listed. A Total Maximum Daily Load (TMDL) study has been performed by MDEQ for each of these impairments to determine the sources of these impairments. The pH TMDL concluded that pH deviations are being caused by natural conditions—soil and natural organic material acidity. The first phase of the TMDL for organic enrichment-low DO and biological impairment primarily addressed point sources (sewage treatment plants). Phase II of the TMDL will be conducted once more stream monitoring data and more non-point source (urban storm water runoff, agricultural runoff, etc.) data has been collected. Because of the impairment listing of the Bogue Chitto, the SWMP will consider it a priority to address storm water pollutants that can contribute to the causes of impairment in the stream: organic enrichment and biological impairment.

The Bogue Chitto is also listed on the 303(d) list as an evaluated waterbody with the following causes: pesticides, nutrients, and siltation. There is no direct monitoring data to cause the creek to be listed as impaired for these causes, but land use observations indicate that these causes may actually be a source of impairment. Bakers Creek is also listed on the 303(d) list as an evaluated waterbody with the following causes: organic enrichment-low DO, and pathogens. The pathogen cause is linked to the designated use of secondary contact recreation. Because all of these evaluated causes can be associated with urban storm water runoff, they will also be given priority in the SWMP objectives.

Pollutants common to urban storm water runoff include:

- sediment from eroding banks
- nutrients from fertilizer use
- nutrients from pet waste
- litter
- pesticide and herbicide runoff
- oil and grease
- trace metals and other toxics
- bacteria
- thermal increases

## **Storm Water Pollution Reduction Measures**

The measures on the following pages outline the requirements of the SWMP to reduce storm water pollution. The categories include public education and outreach, public involvement, illicit discharge detection and elimination, construction site storm water runoff control, post construction storm water management in new development and redevelopment, and pollution prevention/good housekeeping for municipal operations.

These measures require best management practices (BMP) that are designed to reduce storm water pollutants at every level of development:

- reduction in the amount of pollutants that enter the system
- hinder conveyance of the pollutants to the storm sewer system
- improve instream habitat

## **Public Education and Outreach**

Informing the general public on storm water quality issues is an important aspect of the Storm Water Management Program (SWMP). When citizens understand how their activities impact water quality in neighboring streams and lakes, considerable progress is made to improve and preserve the condition of those water bodies. For this reason the following Best Management Practices (BMP) will be implemented.

### **Residential Mailouts**

Brochures or fact sheets will be mailed to city residents explaining how domestic storm water pollution can be prevented. Topics covered will include use and disposal of household hazardous materials, proper use of landscape chemicals, backyard conservation, maintenance of individual wastewater systems, general storm water information, and others. A brochure or fact sheet will be mailed to each residential water customer every year, starting in 2004.

### **Commercial Mailouts**

Commercial and other non-residential facilities will receive information on the following topics related to storm water: hazardous material use and disposal, facility cleaning and waste management, utility maintenance, and others. A brochure or fact sheet will be mailed to each commercial water customer every year, starting in 2004.

### **Information display**

Brochures or fact sheets covering storm water issues will be displayed in city hall. The brochures or fact sheets will first be displayed on April 15, 2003, and will subsequently be continually restocked. A fact sheet detailing storm water public involvement activities for the city will also be available in City Hall. It will be on display in the post office and the library as well.

### **Public Storm Water Meetings**

Meetings will be held for the general public to discuss storm water issues and the SWMP. This is an opportunity for all stakeholders to learn more about storm water management and to provide input to the SWMP and its operation. One meeting will be held in January of every year which is timed to provide input before the annual report is submitted to MDEQ. The meeting will be advertised in the local newspaper, and contact will be made to all registered property owners associations, local environmental groups registered with the city, and anyone who requests in writing to be placed on a contact list.

## **Website Information**

A storm water page will be set up on the City of Clinton's website ([www.clintonms.org](http://www.clintonms.org)) which will provide the following information:

- general storm water information
- links to MDEQ and EPA storm water websites
- contact for questions or to report illegal discharges
- storm water public involvement activities
- household hazardous waste collection site information
- copy of SWMP
- construction BMP menu (Sept. 15, 2003)

The page will be online by April 15, 2003, and will be maintained at least quarterly.

These public education and outreach BMPs are designed to reduce storm water pollution by reducing some of its sources. Some pollutants they are designed to reduce include litter, excessive fertilizer, illegally dumped motor oil and other chemicals, sewage from unmaintained septic systems, and illegally dumped chemicals or grease from commercial establishments.

The SWMP Administrator is the responsible party for executing these BMPs.

## **Public Involvement**

The next step after educating residents and business owners and operators is to get them involved directly in the storm water management process. The following programs are designed to that end.

### **Adopt-a-Stream**

MDEQ currently has a successful program in which citizens can volunteer to take an active role in preserving water quality for particular streams and other water bodies. An individual or a group can sign up to adopt a stream and receive training from MDEQ to coordinate everything from watershed cleanup activities to actual monitoring and evaluation of the waterbody. The level of involvement depends on the volunteer. The city will serve as a liaison between interested citizens and MDEQ staff by advertising this opportunity on the city's storm water website page and posting the information at city hall, the post office, and the library.

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### **Tree Planting Week**

Trees enhance water quality by reducing water temperature in receiving water bodies, increasing infiltration, reducing soil erosion, and filtering out some pollutants. There are also many other benefits of trees in urban settings including reducing air and noise pollution. The city will provide a minimum of 50 trees to local citizens for planting within the city. The city will provide the trees during the week of the third Monday in February each year. This will be advertised in the local newspaper prior to the event. Any leftover trees will be planted by the city.

### **City Clean-Up Days**

The city will coordinate clean-up days to involve the public in picking up trash and debris from city right-of-way and other property. This effort will reduce the amount of debris that reaches the streams in town and increase the public desire to maintain clean streets and drainage ways. The first two Saturdays in April will be designated as clean-up days and the city will provide all necessary trash bags and dumpsters to dispose of the waste. The event will be advertised in the local newspapers and banners will be attached to dumpsters placed throughout town.

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The page will be online by April 15, 2003, and will be maintained at least quarterly.

These public involvement BMPs are designed to directly reduce pollution to local streams by preventing trash and other pollutants from reaching them. They are also designed to give citizens an increased awareness of the importance of local water quality and the steps they can take to make improvements and prevent future degradation. As residents and business people take ownership of these efforts to improve storm water quality, the impact will be far greater than that of the city government working alone.

The SWMP Administrator is the responsible party for executing these BMPs.

## **Illicit Discharge Detection and Elimination**

A significant source of storm water pollution is illicit discharge in the watershed. These non-storm water discharges can be in the form of failing septic systems, sewer connections to storm drain lines, dumping or stockpiling trash and scrap, dumping of hazardous materials such as motor oil into streams, or other forms. These sources either pollute receiving water bodies directly or indirectly through rain events.

MDEQ has identified exceptions to illicit discharges and permits the following non-storm water discharges under standard conditions:

- water line flushing
- landscape irrigation
- diverted stream flows
- rising ground waters
- uncontaminated ground water infiltration
- uncontaminated pumped ground water
- discharges from potable water sources
- foundation drains
- air conditioning condensate
- irrigation water
- springs water from crawl space pumps
- footing drains
- lawn watering runoff
- water from individual residential car washing
- flows from riparian habitats and wetlands
- dechlorinated swimming pool discharges
- street wash water
- discharges or flows from fire fighting activities
- fire hydrant flushings
- external building wash downs which do not use detergents

Any non-storm water discharge not listed above can be considered an illicit discharge, or any of the above items can be considered as such if they are judged to be impairing water quality.

The following steps provide a procedure to detect and eliminate illicit discharges within the city.

### **Storm Sewer System Maps**

The appendix to this document includes maps highlighting the names and locations of all waters of the United States and the major drainage structures which transport storm water to them.

### **Priority Area Targeting**

Areas with higher likelihood of illicit discharge will be identified on the storm sewer maps as well as areas of illegal dumping. The high priority areas are ranked from highest to lowest risk. Factors such as unsewered residences, commercial areas, and areas with older utilities will be taken into account in the targeting process. Priority areas will be added to the storm sewer map by May 13, 2003.

### **Dry Weather Field Screening**

During dry weather conditions, flow in streams in the priority areas will be monitored by city staff in order to detect any non-storm water flows. The field inspectors will then attempt to trace those flows to their sources. In an area marked as high priority for failing septic systems, for example, streams in neighborhoods will be examined for inadequately treated wastewater flows. This dry weather screening will be performed in early fall each year when stream flows are at their lowest, beginning in 2003. One-fifth of the priority areas will be screened each year so that by the end of the permit cycle, every priority area will have been investigated.

When illicit discharges are detected and confirmed, appropriate action will be taken by the city to remove them. The process for doing this will be outlined in a city ordinance.

### **Dumping Monitoring**

Areas where dumping of trash and scrap frequently occur will be monitored to reduce the occurrences of littering. Dumped materials will be removed and properly disposed of shortly after it is detected and signs will be installed to discourage potential dumpers when appropriate. Formal inspections will be conducted at least once every year, while informal inspections will be done periodically.

### **Illegal Discharge Ordinance**

The City Board of Aldermen will develop an ordinance creating penalties for illegal discharges and illegal dumping. It will be developed and passed by June 3, 2003, and will be joined to this document as an appendix.

### **Complaint System**

The most effective means of detecting illicit discharge is through the observation of the public. For this reason a system will be established to encourage and effectively process storm water complaints. The storm water page on the city's website will give telephone contact information and will enable anonymous

emails for complaints. City staff will be alerted to divert storm water complaint calls and letters to the SMWP administrator.

The SWMP Administrator is the responsible party for executing the illicit discharge detection and elimination process.

## **Construction Site Storm Water Runoff Control**

A significant source of storm water pollution in a developing community is silted runoff from construction sites. When dirt and silt is deposited in receiving streams, habitat for microorganisms is choked out which impacts animals higher in the food chain. Removal of all silt from construction site runoff is not possible, but substantial removal of silt and dirt from the storm water runoff can have a significant effect on preserving and promoting stream health.

### **Runoff Control Plan**

A Runoff Control Plan (RCP) is required for any construction or land grading or clearing activity that will result in land disturbance. Agricultural activities are exempt from these requirements. The RCP must include the following elements:

1. Narrative including the following:
  - a. project description
  - b. pre-construction site description
  - c. post-construction site description
  - d. adjacent property description
  - c. properties of existing and borrow soils
  - d. receiving waters to first named stream on quad map
  - e. adjacent row and easements
  - f. property owners adjacent to property, and adjacent to receiving stream up to 500 ft. downstream
2. Outline of project limits on USGS quad map copy
3. Planned temporary BMPs for erosion control, construction waste control (building materials, trash), and chemical control (concrete truck washout, construction chemical use and disposal)
4. Drawings and specifications of temporary BMPs with supporting calculations
5. Plan sheet showing the following:
  - a. existing and proposed contours
  - b. existing and proposed storm utilities
  - c. temporary BMPs
  - d. floodplains w/ flood elevations
6. Maintenance plan for temporary BMPs including scheduling of first installation, weekly maintenance, post rain event maintenance
7. Name, address, and telephone numbers of parties responsible for developing, implementing and maintaining the plan

## **RCP Administration**

The RCP administration will be integrated into the existing plan review process established by the city subdivision regulations and zoning ordinance. A developer or builder will be required to submit a RCP with the site plan or preliminary plat. An RCP will also be required before any major site grading or clearing of trees or vegetation is initiated on any property in the city. The SWMP administrator must give final approval for RCP acceptance for subdivision projects, and the city building official must give final approval for all other projects. Inspection for temporary BMP maintenance compliance will be conducted by the SWMP administrator for subdivision projects, and by the building official for all other projects. Projects will be inspected approximately weekly by city staff. Records will be kept of violations and city responses. Contractors may be issued a stop work order for lack of compliance to the RCP, or fines may be assessed according to city ordinance. All covered projects initiated in the city on or after September 15, 2003 will require a RCP.

## **BMP Menu**

The city adopts chapter 4, "Best Management Practice Standards" from the most current "Planning and Design Manual for the Control of Erosion, Sediment and Stormwater" from MDEQ as the official list and specifications for BMPs for selection and implementation in the Runoff Control Plan. BMPs not in the manual may be considered by the SWMP administrator. A copy of the BMP list with specifications will be provided on the city's storm water website page starting September 15, 2003.

## **Subdivision Regulation and Zoning Ordinance Revision**

The city's subdivision regulations and zoning ordinance must be revised to include RCP requirements. They must also be modified to address potential conflicts with the intent and requirements of the SWMP. The City Board of Aldermen must make these revisions by August 5, 2003.

## **Post Construction Storm Water Management in New Development and Redevelopment**

Developed land has a greater potential than undeveloped land to introduce storm water pollutants to a watershed. Parking lots accumulate oils, heavy metals, and debris that can be washed into a receiving waterbody. Developed land also increases the amount of water and the peak flow because of increased impervious surfaces. Increased flow in a stream can be as damaging as polluted flow because it destroys ecological habitat by altering channel structure.

### **Runoff Control Plan**

For any construction or land grading or clearing activity that will result in a land disturbance greater than or equal to one acre, the following elements are required to be added to the RCP. Agricultural and silvicultural activities are exempt from these requirements.

1. Planned permanent BMPs to limit the quantity of runoff pollutants and flow in order to prevent or minimize water quality impacts
2. Permanent BMP requirements
  - a. drawings and specifications of permanent BMPs with supporting calculations
  - b. description of how BMPs will prevent or minimize water quality impacts for downstream water bodies including the specific pollutants that will be reduced
  - c. post-construction runoff must be equal to or less than pre-construction runoff for 2, 10 and 50-year storm events
  - d.. use rational method as outlined in MDOT Design Manual (7-4.01) for hydraulic calculations or other method approved by SWMP administrator
  - e. provide the following for each storm event: stage-storage-discharge curves and inflow & outflow hydrographs of detention facilities
  - f. determine 100-year flood impact on storage volume
  - g. design emergency spillway w/ appropriate erosion control measures
3. Plan sheet showing existing and proposed contours, storm utilities, permanent BMPs, elev. of BMP features, landscaping of detention facilities, energy dissipation at outlet point if necessary, max pond slope 3:1 (dry) 4:1 (wet), min. depth of wet pond is 4ft.
4. Maintenance plan for permanent BMPs including maintenance schedule
5. Name, address, and telephone numbers of party responsible for implementing and maintaining permanent BMPs. Describe process for transfer of ownership of BMPs from developer to property owner association in subdivisions.
6. Seal, signature and certification of registered engineer who developed the plan

## **Runoff Control Plan Administration**

The RCP administration will be integrated into the existing plan review process established by the city subdivision regulations and zoning ordinance. Inspection for permanent BMP maintenance compliance will be conducted by the SWMP administrator for subdivision projects, and by the building official for all other projects. Projects under construction will be inspected regularly by city staff; completed projects will be inspected at least annually. Records will be kept of violations and city responses. Fines will be assessed according to city ordinance for noncompliance. All covered projects initiated in the city on or after September 15, 2003 will require a RCP.

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<b>Land Disturb.</b>	<b>Residential</b>	<b>Commercial</b>	<b>Grading Only</b>	<b>Silviculture</b>	<b>Agriculture</b>
<1ac.	temp. BMP only	temp. BMP only	temp. BMP only	temp. BMP only	exempt
≥1ac	temp. & perm. BMP	temp. & perm. BMP	temp. & perm. BMP	temp. BMP only	exempt

## **Pollution Prevention/Good Housekeeping for Municipal Operations**

### **Maintenance for Pollutant Reduction**

1. City streets and municipal parking lots will be cleaned with street sweeper with waste material disposed of in a proper facility. Every street in the city must be cleaned at least once every three months.
2. Storm drain inlets must be inspected and cleaned with a vacuum truck or other device. Each inlet must be inspected and cleaned at least once per year.

### **General Housekeeping**

1. The city must establish and maintain controls to prevent erosion of materials stockpiled outdoors.
2. All polluted debris, polluted sediments, etc. must be properly disposed of in permitted facility.
3. The city will apply for NPDES storm water permit coverage for all newly regulated facilities.

### **Construction**

1. A RCP is required on city projects that disturb greater than one acre.
2. Temporary BMPs are required for all other city projects that disturb land.

### **Staff education**

1. All public works staff will receive education at least once per year on proper handling and disposal of hazardous and non-hazardous waste materials.
2. All parks and recreation staff will receive education at least once per year on handling and applying landscaping chemicals.

The Public Works Director is the responsible party for executing all municipal operations BMPs.

## **Implementation**

An implementation schedule is included on the following page.

### **Annual Reports**

An annual report must be submitted to MDEQ by Jan. 28th of each year, and include:

1. Status of compliance with permit conditions and progress toward achieving stated goals
2. Summary of storm water activities during the next cycle
3. Proposed changes to the SWMP
4. Number of RCPs approved
5. Certification that the SWMP and NOI are up to date

Month	2003	2004	2005	2006	2007	2008
Jan.		Public meeting				
		Annual report				
Feb.						
		Tree planting week				
March						
		Res. mailout				
April	Trash cleanup	Trash cleanup	Trash cleanup	Trash cleanup	Trash cleanup	Trash cleanup
	Information Displ. Setup Website					
May		Comm. mailout				
	Add priority areas to map					
June	Illegal discharge ordinance dev.					
July						
August	Revise subd. and zoning regs.					
Sept.	RCPs required					
	Illicit disch. scr.	Illicit disch. scr.	Illicit disch. scr.	Illicit disch. scr.	Illicit disch. scr.	Illicit disch. scr.
Oct.						
	Perm. BMP insp.	Perm. BMP insp.	Perm. BMP insp.	Perm. BMP insp.	Perm. BMP insp.	Perm. BMP insp.
Nov.	Dumping monitor.	Dumping monitor.	Dumping monitor.	Dumping monitor.	Dumping monitor.	Dumping monitor.
Dec.						

## Definitions

**Best Management Practices “BMPs”:** schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Control Measures:** any Best Management practice or other method used to prevent or reduce the discharge of pollutants.

**CWA:** the clean water act (formerly referred to as the Federal Water pollution control Act or Federal water Pollution Control Act Amendments of 1972)

**Discharge-Related Activities include:** activities, which cause, contribute to, or result in storm water point source pollutant discharge and measures to control storm water discharge, including the siting, construction and operation of best management practices (BMPs) to control, reduce or prevent storm water pollution.

**Illicit Connection:** any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

**Illicit Discharge:** any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit.

**Major Receiving Water(s):** those waters of the state that are named on a United States Geological Quadrangle Map.

**Maximum Extent Practicable “MEP”:** the statutory standard that establishes the level of pollutant reductions that operators of regulated MS4s must achieve. The CWA requires that NPDES permits for discharges from MS4s “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, controls techniques and system, design and engineering methods.” Determination of this level takes into account factors such as condition of receiving waters, specific local concerns, and other aspects included in a comprehensive watershed plan. Other factors may include MS4 size, climate implementation schedules, finance issues, beneficial uses of receiving water, hydrology, geology, and capacity to perform operation and maintenance. The pollutant reductions that represent MEP may be different for each small MS4 given the unique local hydrologic and geologic concerns to satisfy each of the six minimum control measures through an evaluative process.

**MDEQ:** Mississippi Department of Environmental Quality

**Measurable Goals:** storm water program goals, which are intended to gauge permit compliance and program effectiveness.

**Municipal Separate Storm Sewer, MS4:** a conveyance or system of conveyance (including roads with drainage systems municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (I) Owned or operated by a State, City, Town, Borough, County, Parish, district, associations, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State Law such as a sewer district, Flood control district or drainage district. Or similar entity, or an authorized Indian tribal organization, or a designated and approval management agency under section 208 of the CWA that discharges to waters of the United States; (II) Designed or used for collecting or conveying storm water; (III) Which is not a combined sewer; and (IV) Which is not part of a Publicly Owned Treatment works (POTW).

**National Pollutant Discharge Elimination System “NPDES”:** refers to Section 402 of the federal Clean Water Act.

**NOI:** an acronym for “Notice of Intent”, the mechanism used to “register” for coverage under a general permit.

**Permanent BMPs:** practices installed to control storm water pollutants and storm runoff peaks after the site construction has been completed

**Phase II:** the second stage of the State and Federal storm water permit regulations.

**RCP:** Runoff Control Plan, plan submitted prior to construction development containing temporary and/or permanent BMPs.

**Regulated Entity:** a small MS4 within the State of Mississippi and located fully or partially within an urbanized area as determined by the latest Decennial Census pursuant to 40 CFR 122.32, or designated by MDEQ pursuant to 40 CFR 123.35.

**Silviculture:** The art and science of producing and tending a forest; the theory and practice of controlling forest establishment, composition, and growth.

**Storm water:** rainfall runoff, snowmelt runoff, and surface runoff.

**Storm Water Management Program “SWMP”:** a comprehensive program to manage the quality of storm water discharge from the municipal separate storm sewer system.

**Temporary BMPs:** practices installed to control erosion and sedimentation during the construction period; these will be removed after construction is completed and site is vegetated

**303(d) List:** Section 303(d) of the Clean Water Act requires that States develop a list of waterbodies needing additional work beyond existing controls to achieve or maintain water quality standards. This list, referred to as the Section 303(d) List, provides a comprehensive inventory of water bodies impaired by all sources, including point sources, nonpoint sources, or a combination of both.

**Total Maximum Daily Load “TMDL”:** the calculated maximum permissible pollutant loading to a waterbody at which water quality standards can be maintained. The sum of waste load allocations (WLAs) and load allocations (LAs) for any given pollutant.

**Urbanized Area “UA”:** a land area comprising one or more places (core and fringe) with urban limits defined by a population density of 1,000 people per square mile and its contiguous census tracts of 500 people per square mile, that together have a residential population of at least 50,000.

**Watershed:** The region draining into a river, river system, or body of water

## References

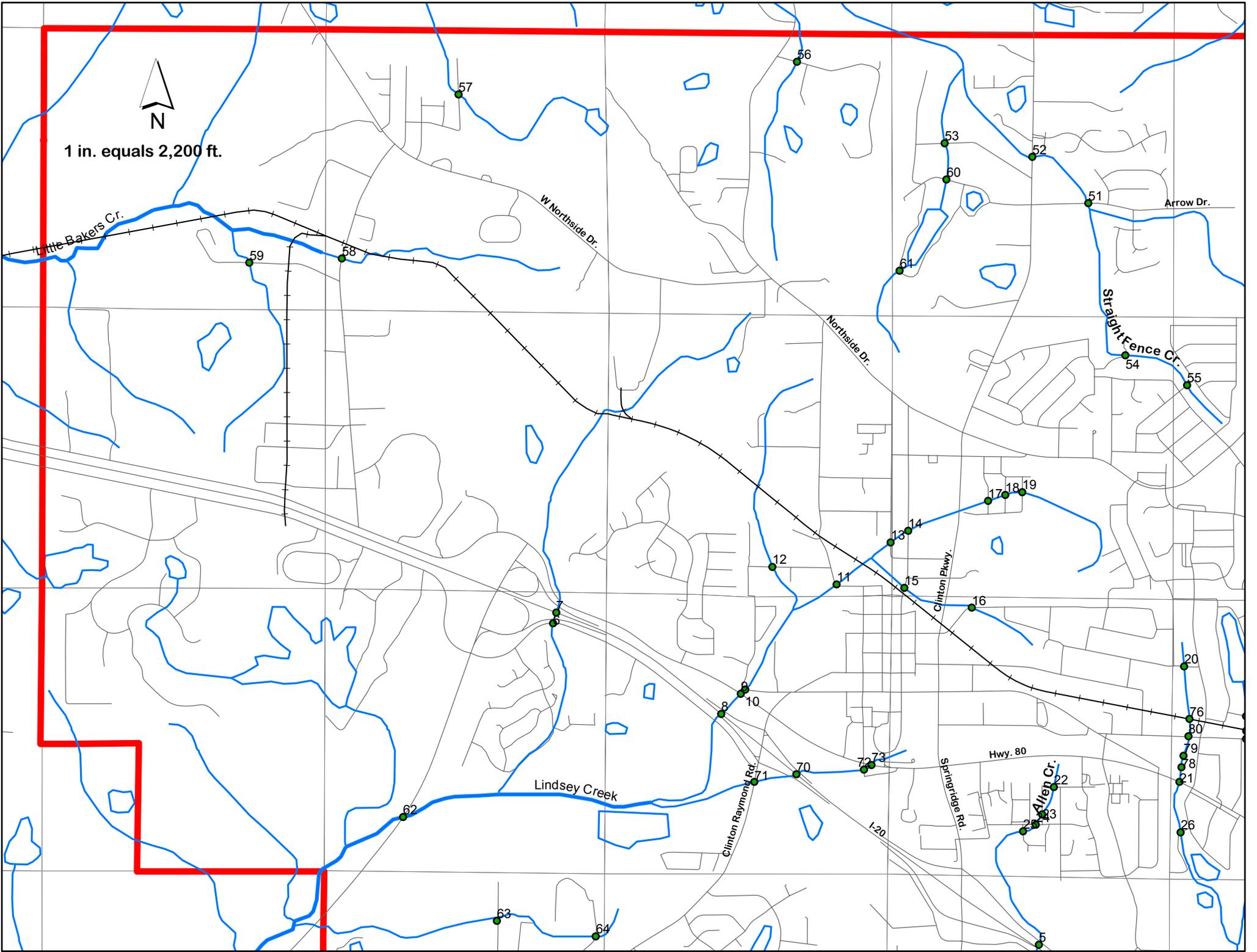
USDA SCS, "Soil Survey of Hinds County, Mississippi", 1979

MDEQ, "Planning and Design Manual for the Control of Erosion, Sediment & Stormwater", 1994

MDEQ, "Mississippi Small Municipal Separate Storm Sewer System (MS4) General Permit", 2003



1 in. equals 2,200 ft.



57

56

53

52

51

Arrow Dr.

Little Bakers Cr.

W Northside Dr.

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58

61

60

Northside Dr.

Straight Fence Cr.

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Clinton Pkwy.

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Hwy. 80

Lindsey Creek

Clinton Raymond Rd.

I-20

Straight Fence Cr.

Allen Cr.

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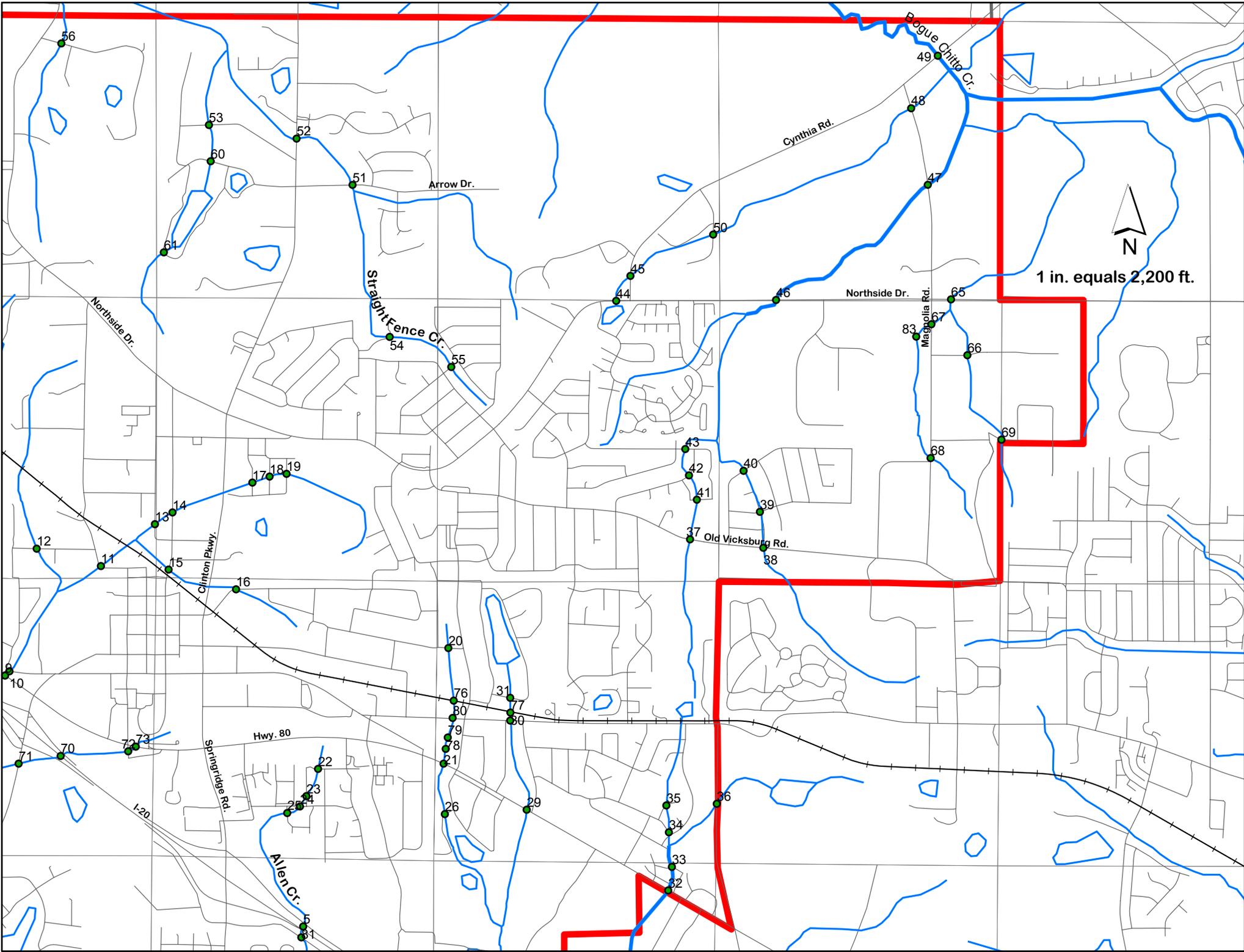
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5



1 in. equals 2,200 ft.



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Arrow Dr.

Straight Fence Cr.

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Cynthia Rd.

Bogue Chitto Cr.

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Northside Dr.

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Clinton Pkwy.

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Old Vicksburg Rd.

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Springhouse Rd.

Hwy. 80

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I-20

Northside Dr.

Allen Cr.



<b>ID</b>	<b>STRUCTURE</b>	<b>ID</b>	<b>STRUCTURE</b>
1	Precast Concr Bridge, 19-31-19, h=13'	51	precast concr. bridge, 31', h=9'
2	2 4' CMP	52	9x25 CM arch
3	4x6 RCB	53	3.5x5 RCB
4	36" RCP	54	2 60"x42" CMAP
5	8x8 RCB	55	2 60" RCP
6	2 6x5 RCB	56	60" CMP coated
7	10x6 RCB	57	2 48" CMAP
8	10x14 RCB	58	2 48" RCP
9	2 7x8 RCB	59	36" CMP
10	2 7x8 RCB	60	3.5x5 RCB
11	31' concr bridge, h=11.5', wood pil	61	x36" RCAP
12	2 30" RCP	62	precast concr. bridge, 42-42-42, h=13'
13	2 4x8 RCB	63	2 5x5 RCB
14	7x9 RCB	64	30" RCP
15	6x6 RCB	65	2 5x11 RCB
16	30" RCP	66	2 42" RCP
17	3.5x8 RCB	67	8x8 RCB
18	2 3.5x4 RCB	68	30" RCP
19	3.5x8 RCB	69	54" CMP
20	3.5x5 RCB	70	5x6 RCB
21	2 5x8 RCB	71	5.5x8 RCB
22	36" RCP	72	5x6 RCB
23	6' concr. arch	73	6x6 RCB
24	48" RCP	74	13x6 RCB
25	2 2' RCAP	75	10x6 RCB
26	5x12 RCB	76	4.5' stone arch
27	10x14 RCB	77	8.5' brick arch
28	9x15 RCB	78	7.5' CMP
29	2 8x8 RCB	79	6.5' CMP
30	7x9 RCB	80	8.5' CMP
31	5x8 RCB	81	8x10 RCB
32	2 6x8 RCB	82	6x8 RCB
33	4' CM arch	83	3 54" RCP
34	2 36" RCP		
35	30" RCP		
36	2 30" RCP		
37	concr. bridge, 14', h=9', wood piles		
38	2 4x6 RCB		
39	2 5x6 RCB		
40	2 5x6 RCB		
41	5x18 RCB		
42	5x17 RCB		
43	concr. bridge, 19-19-19, h=6.5', wood piles		
44	24" CMAP		
45	4' RC arch		
46	concr. bridge, 31', h=9.5'		
47	concr. bridge, 19-19-19, h=8.5'		
48	concr. bridge, 19', h=5'		
49	concr. bridge, 144', h=14.5'		
50	5' RC arch		

**Certification**

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

  
Rosemary Aultman, Mayor

## Storm Water Public Meetings

Date: April 19, 2001

Attendees:

Lew Prister	Tim Rogers
Robert R. Lee	John Perry
Lewis Lee	Tony Hisaw
Lee Sellers	Kenneth LeFleur
Robert H. Thayer	Jim Morris
John R Davis	Rosemary Aultman
Richard Broome	

General Comments:

-Concerns about flooding, quantity issues
-Lake in Easthaven neighborhood received sediment from recent adjacent residential development
-Questions about existing subdivision and zoning ordinances
-Better announcement of subdivision and other development projects, contact neighborhood association, flyers, radio announcements
-Questions about hosting a household waste amnesty day

Date: November 14, 2002

Attendees:

Larry and Jan Daniel	Mitch Crawford
Pat Acree	Richard Broome
Tom Mann	Joey and Samantha Chancellor
Johnny S. Courson	Chuck Herndon

General Comments:

-Suggestion box on website
-Notify home owners associations for storm water and other public meetings
-Evidence of someone dumping oil in ditch in Kentwood
-Buffer zones between commercial and residential developments, 25'
-Flooding concerns in neighborhood ditches
-Silt fence not installed correctly at existing commercial developments
-Erosion control for clearing projects
-Storm drain at the end of Oakhill St. clogging up and backing up
-Concerns with development that reduces the flood plain
-Concerns over ecological health of Bakers Creek
-Penalties for repeat illegal discharge offenses