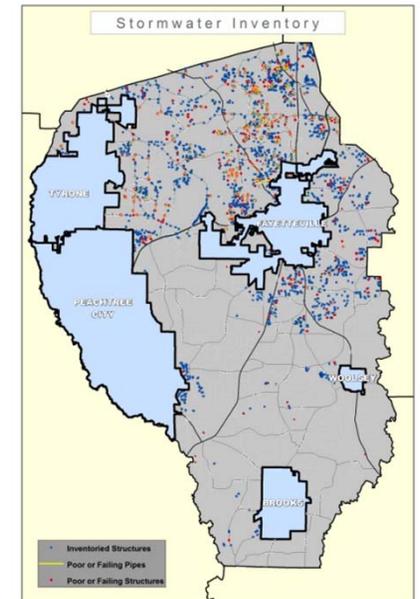
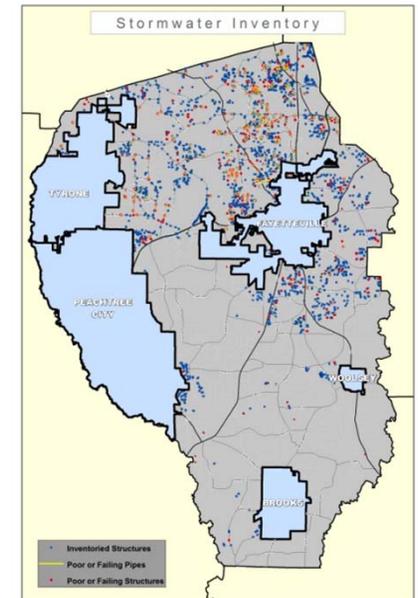


Fayette County Stormwater Management Overview

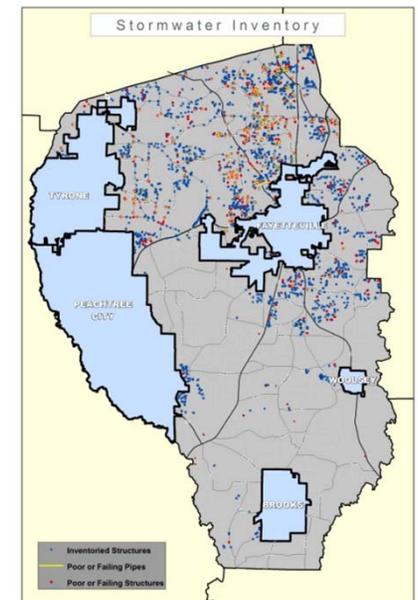


Stormwater Overview - Agenda

- Regulatory Requirements
- Stormwater Basics
- Stormwater Management
- Stormwater Completed Projects
- Stormwater High Priority Projects
- Stormwater Utility



Fayette County Stormwater Management Federal & State Regulations



Federal and State Regulations

Require County Action

- **Federal Clean Water Act of 1972**
- **Georgia Erosion and Sedimentation Act of 1975**
- **Georgia Growth Strategies Act of 1989**
- **Georgia Water Quality Control Act of 1994**
- **Metropolitan North Georgia Water Planning Act
(Senate Bill 130) of 2001**

Federal and State Regulations

Require County Action

- **Federal Clean Water Act of 1972**
 - NPDES
 - MS4
 - Industrial (Construction)
 - Wetlands
 - TMDL
- **Georgia Erosion and Sedimentation Act of 1975**
- **Georgia Growth Strategies Act of 1989**
 - Water Supply Watersheds
 - Wetlands
 - Groundwater Recharge
- **Georgia Water Quality Control Act of 1994**
 - Watershed Assessment
 - Watershed Protection Plans
- **Metropolitan North Georgia Water Planning Act (Senate Bill 130) of 2001**

FAYETTE COUNTY STORMWATER MANAGEMENT

METROPOLITAN WATER DISTRICT

NPDES PERMITTING

LOCAL REGULATIONS

OPERATIONS & MAINTENANCE

Watershed Protection

Plan Review/
Permitting

Public Involvement

Pollution Prevention

Work Orders

Capital Improvement Projects

Public Education

Erosion & Sediment

Good Housekeeping

Customers Service Requests

Floodplain Management

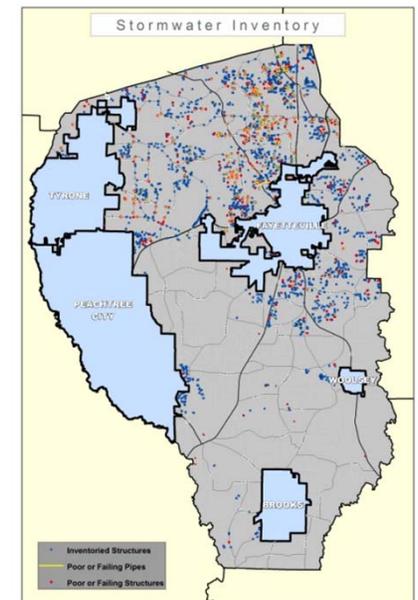
Stormwater Utility

Illicit Discharge

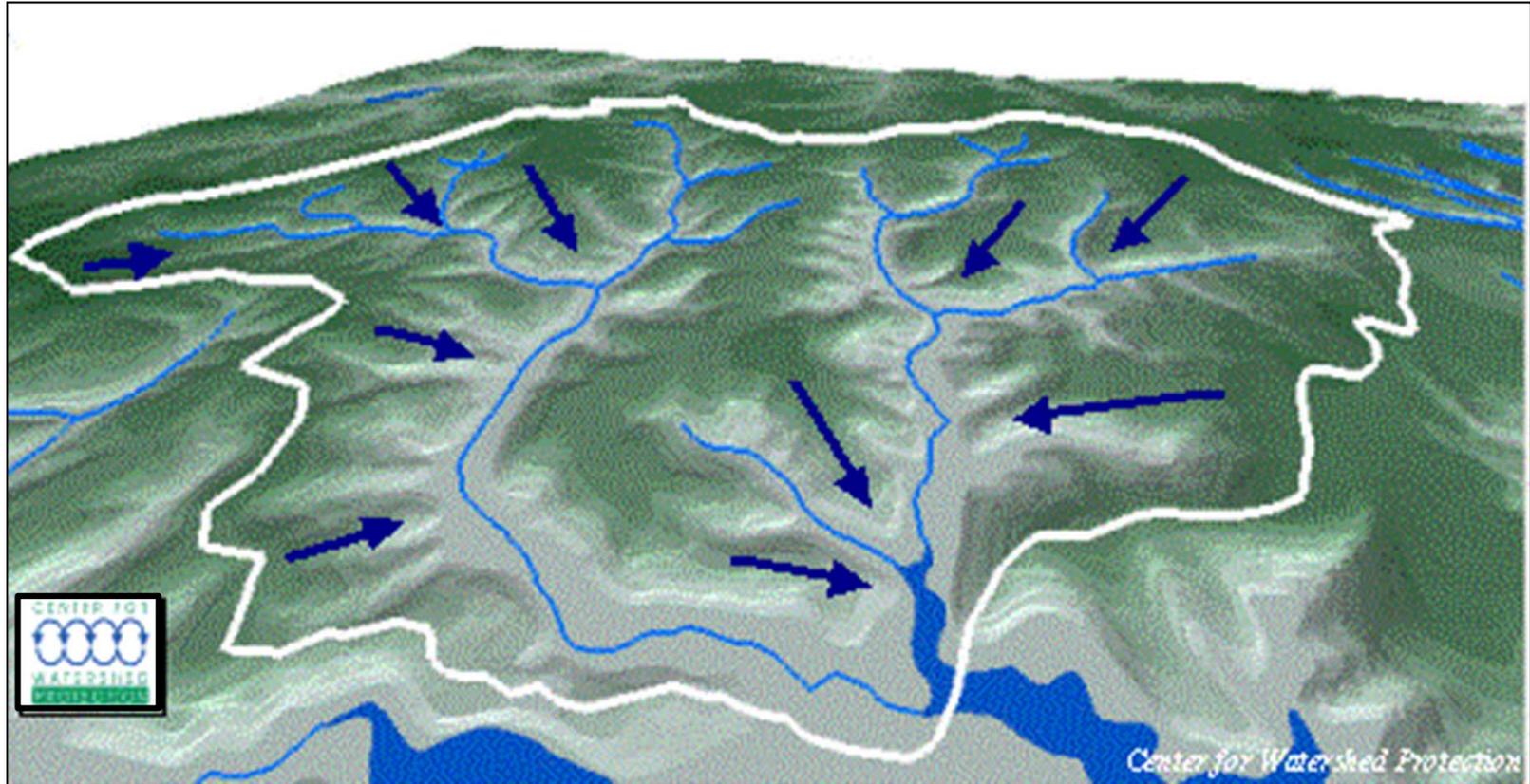
Facility Maintenance



Fayette County Stormwater Basics



What is a Watershed

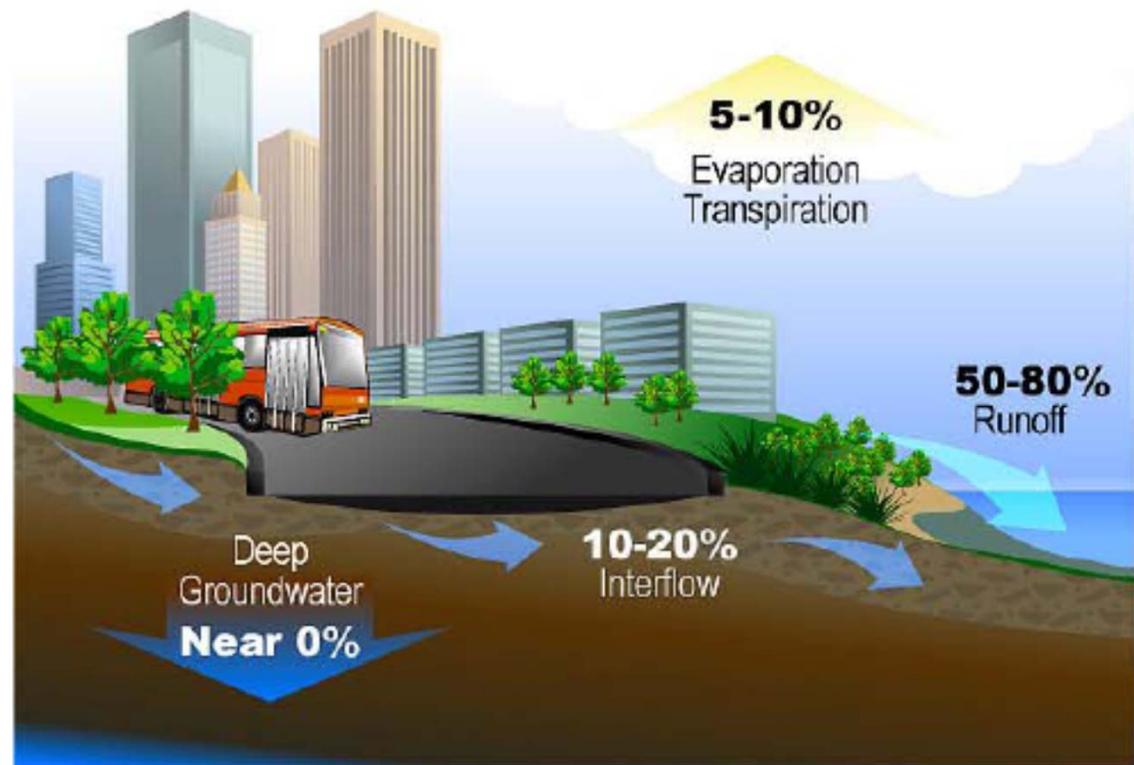


A watershed is the area of land that drains to a particular point along a stream or lake

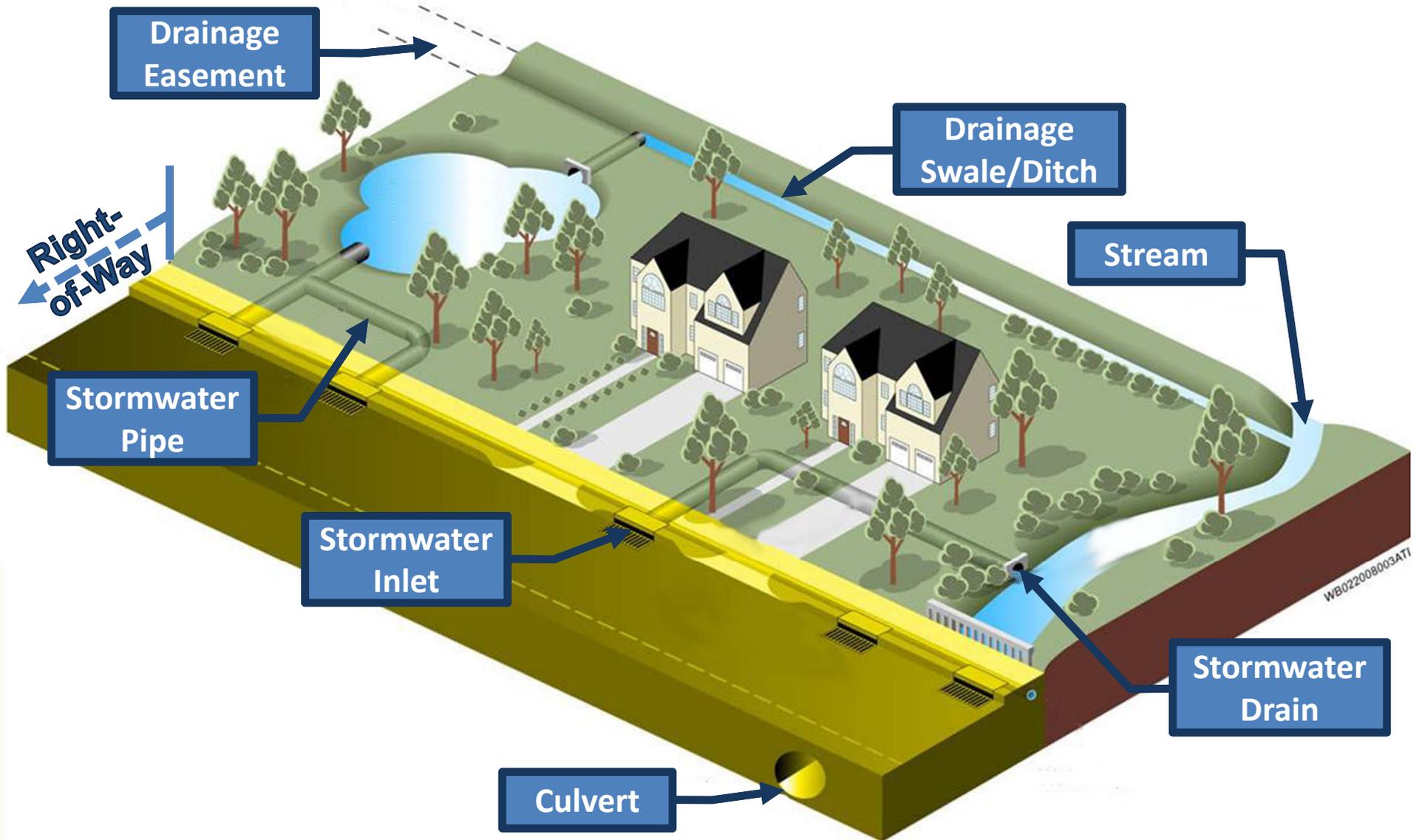
What is Stormwater runoff

- Stormwater runoff is a term used to describe the flow of water, from rain, snowmelt, or other sources, over the land surface

Effect of
impervious
surfaces



What is a Stormwater System



Stormwater Infrastructure

- Catch Basins



Annelise Park Drive



Ginger Cake Trail

Stormwater Infrastructure

- Inlets



Buck Horn Trail



Whitney Way

Stormwater Infrastructure

- Culverts
- Headwalls



Bayberry Run



Adam Park Drive

Stormwater Infrastructure

- Ditches and swales
- Driveway Pipes



Grooms Road



Sims Road

Stormwater Infrastructure

- Detention Ponds
- Water Quality Ponds

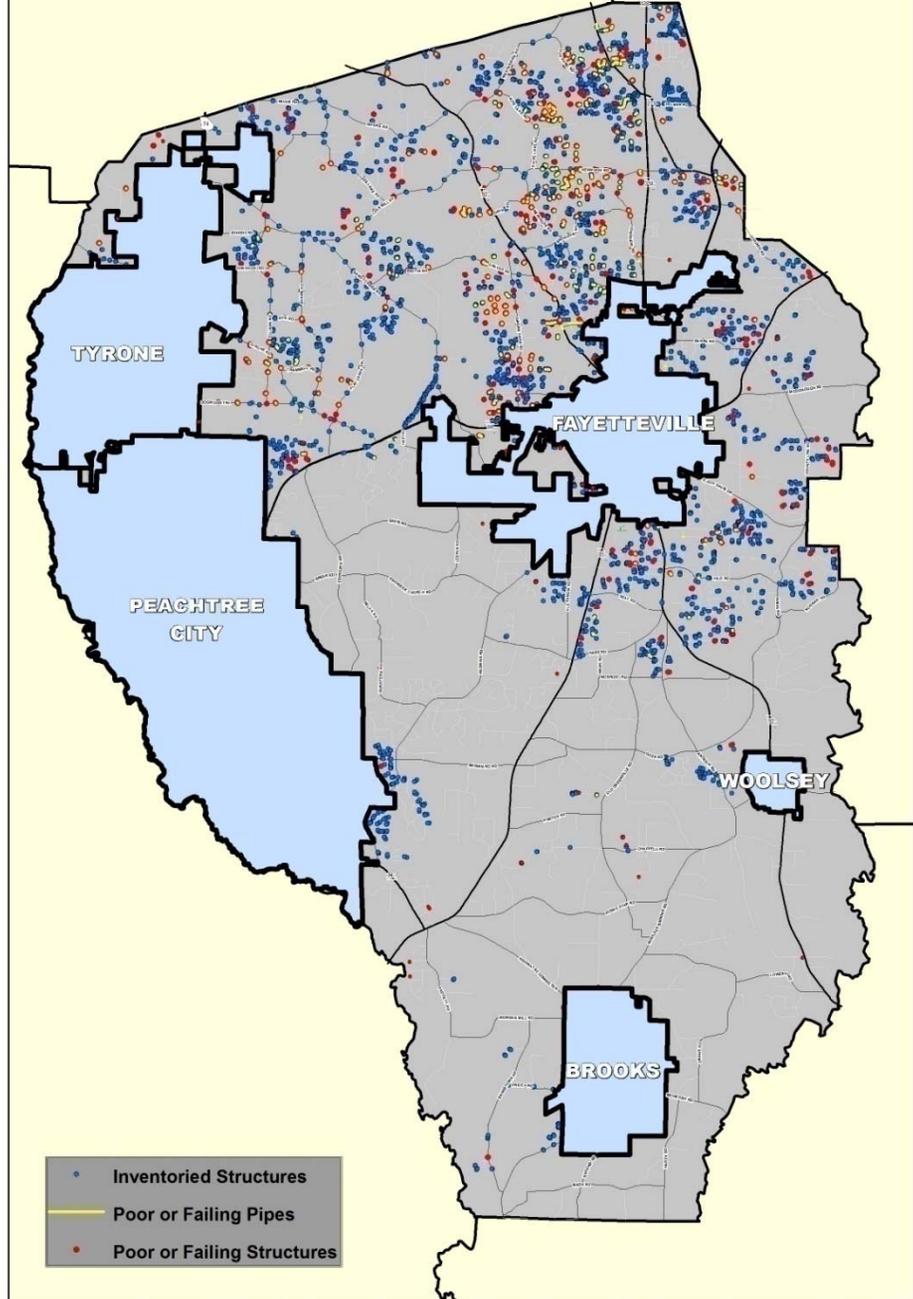


**Race Trac -Underground
Detention/Water Quality**



River Park Subdivision

Stormwater Inventory



Stormwater Infrastructure

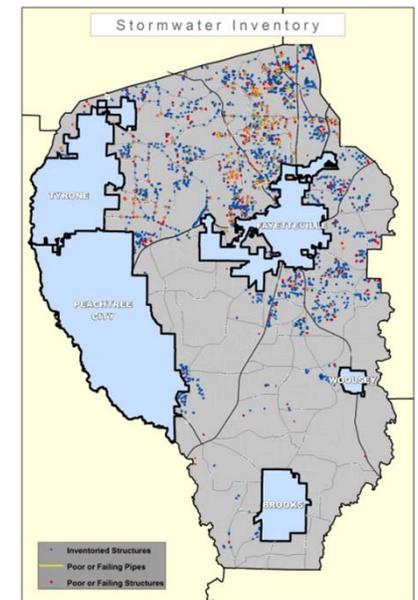
Total Structures		
Structure	Count	Poor Condition ¹
Double Wing CB	673	57
Drop Inlet	64	5
End of Pipe	990	248
Flared End Section	90	13
Flume	36	4
Head Wall	611	53
Hooded Grate Inlet	22	0
Junction Box	105	10
Mitered End of Pipe	63	16
Other	159	8
Raised Lid Inlet	67	12
Safety End Section	4	0
Single Wing CB	420	18
Total Structures	3304	444
% of Structures	100%	13%

Total Pipes			
Pipe	Count	Poor Condition ¹	>50% Clogged ²
Other	128	23	37
12"	17	2	0
18"	792	109	121
24"	490	67	29
30"	226	27	6
36"	197	32	4
42"	65	15	3
48"	51	7	3
54"	11	6	0
60"	21	8	0
72"	20	7	0
84"	4	1	0
96"	3	2	0
Total	2025	306	203
% of Pipes	100%	15%	10%

1 - Poor Condition includes Ratings of 4 & 5

2 - Includes Sediment and Debris Blockage

Fayette County Stormwater Management



Stormwater Management Staff

DESIGN REVIEW AND PROGRAM IMPLEMENTATION

VANESSA BIRRELL
Director

BRYAN KELLER
Environmental Programs Engineer

INSPECTIONS, ENFORCEMENT, AND DOCUMENTATION

TONY HICKS
Environmental Technician

NANCY HOWARD
Environmental Technician

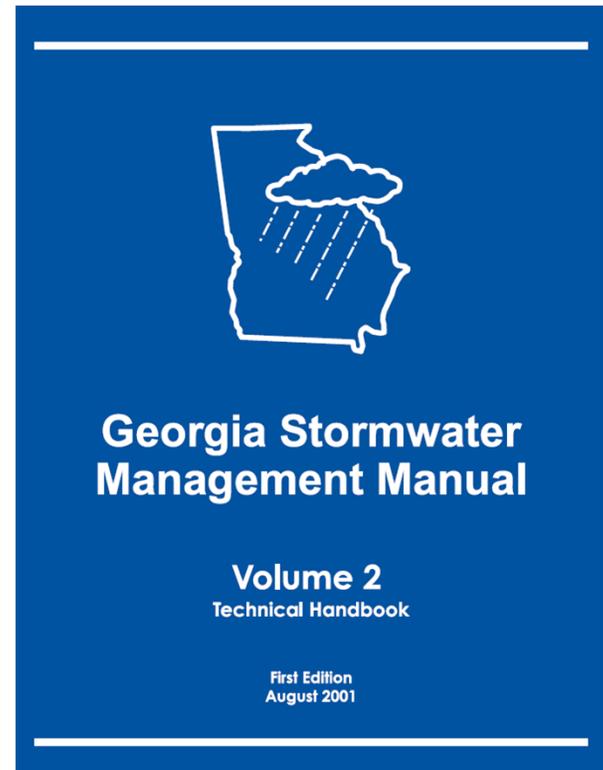
DEBORAH SIMS
Engineering Technician

Craig Skelton
Water Resource Intern



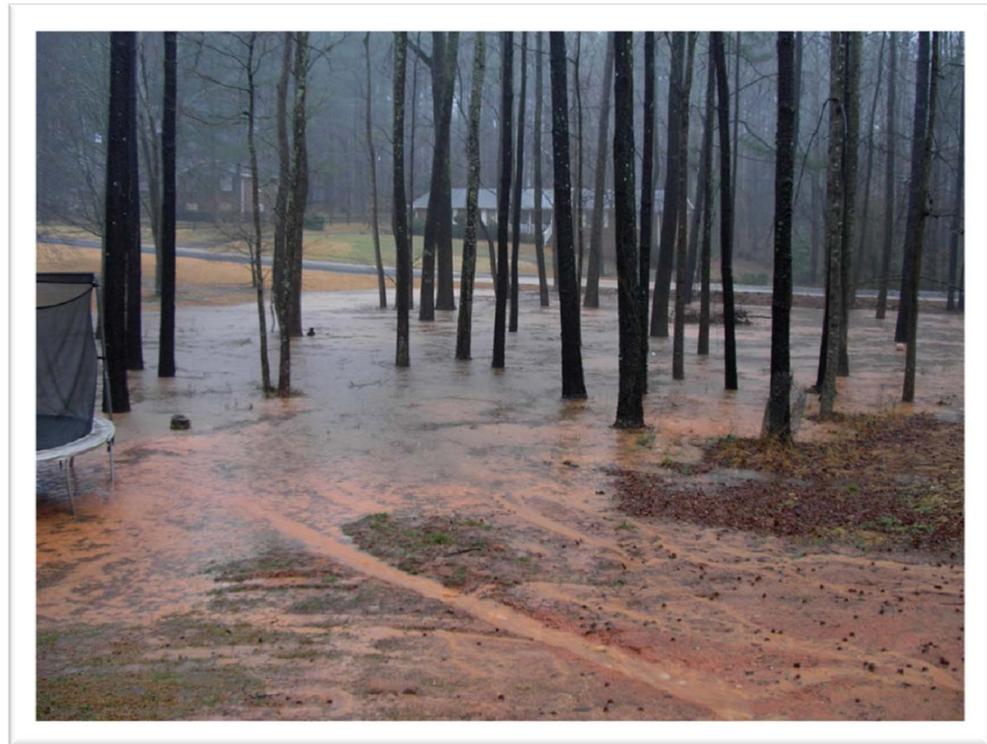
Stormwater Management

- **Get the water flowing.** Provide channels and pipes to get stormwater off the site as soon as possible.
- **Stop the flooding** – Collect the stormwater and slow it down in detention ponds.
- **Clean up the water** – Add Best Management Practices to remove pollutants before discharging.
- **Holistic approach** – Address water quantity and quality – encourage conservation of natural areas and low-impact development.



Stormwater Management

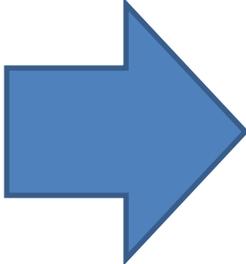
- **Environmental concerns**
 - Channel erosion and sedimentation
 - Water quality
 - Biology
- **Regulatory requirements**
 - Federal
 - Georgia
- **Flooding and drainage problems**
 - Maintenance
 - Construction



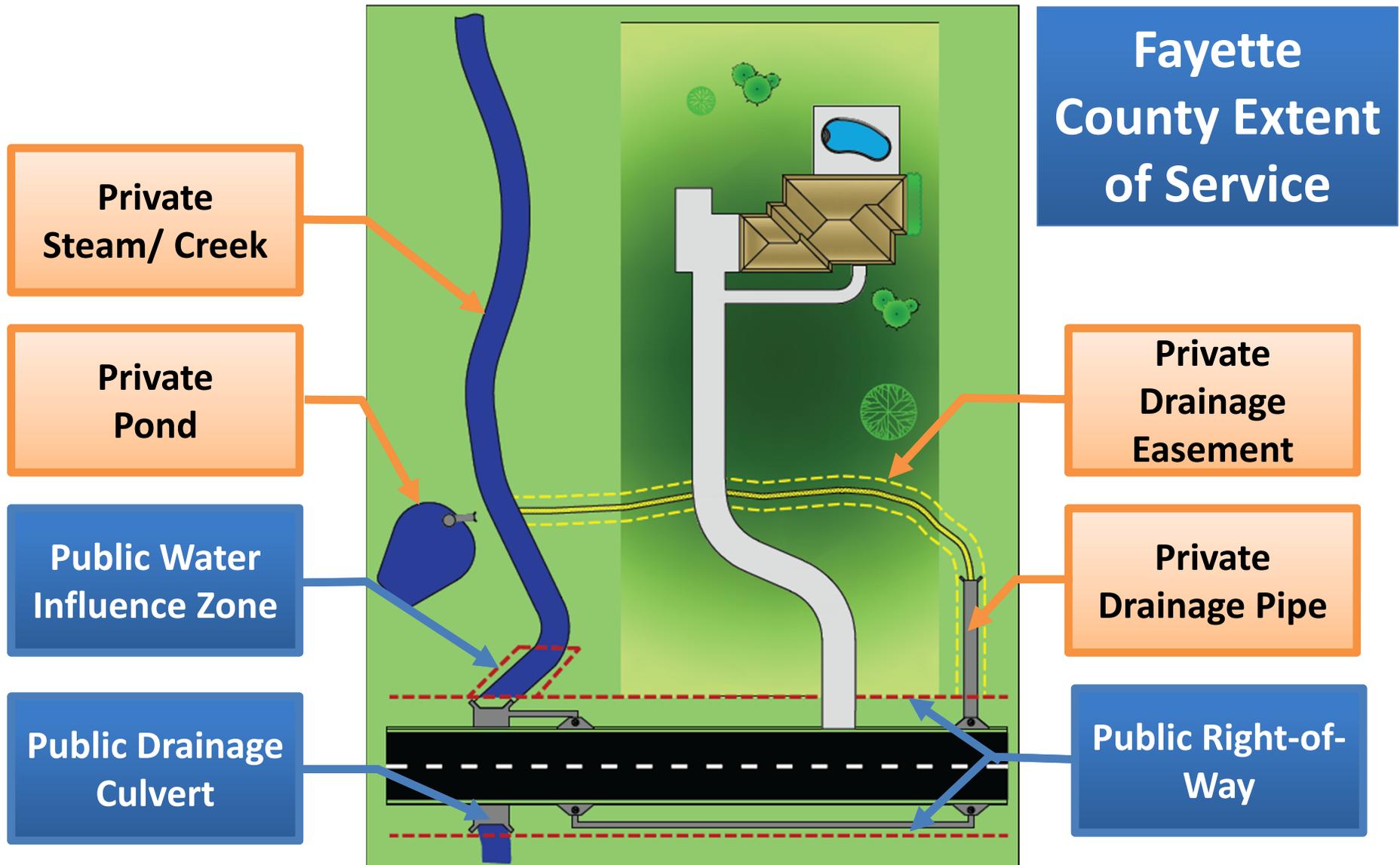
Brittany Way

Stormwater Management

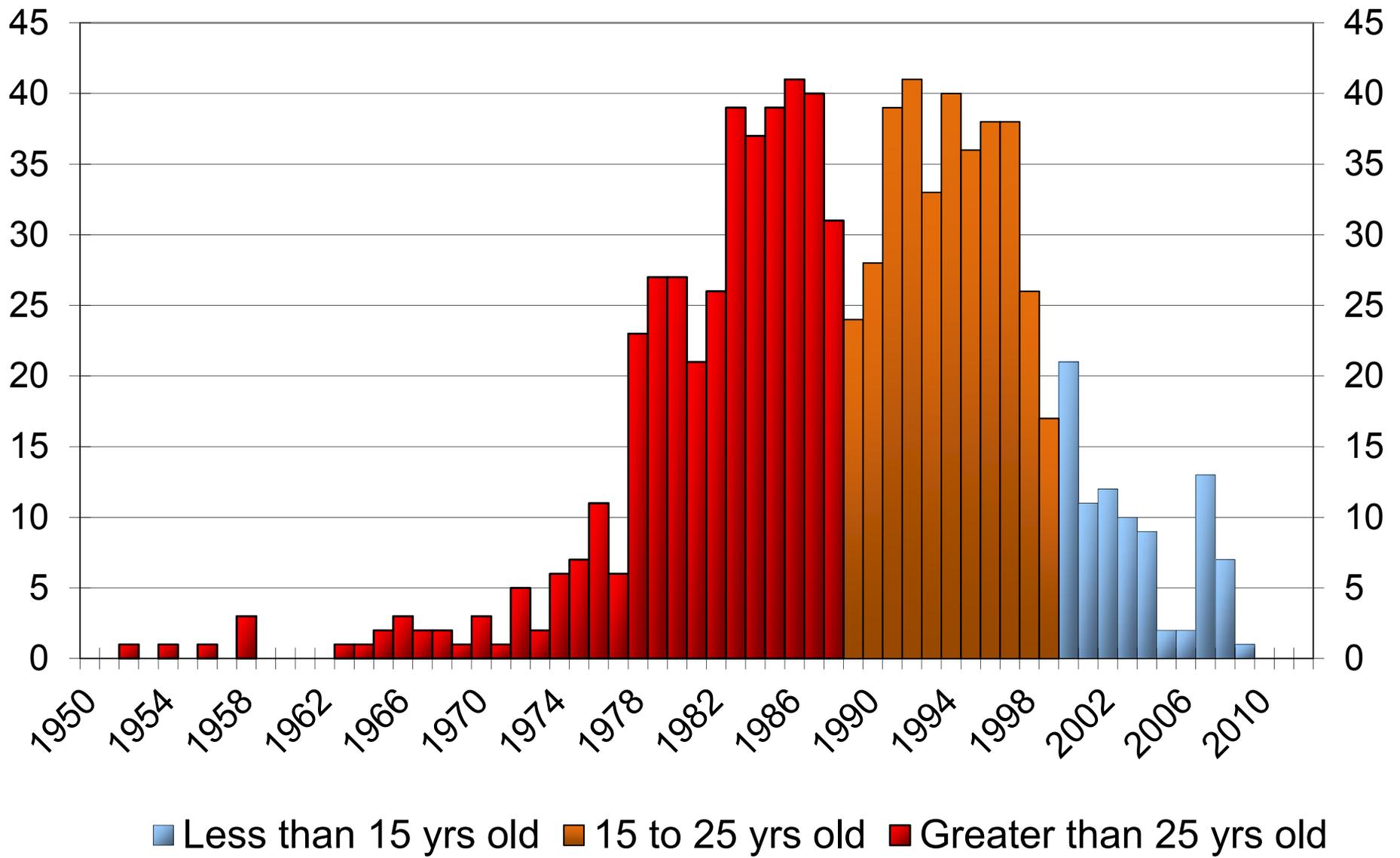
WATER QUALITY, QUANTITY AND CONSERVATION FOR THE COMMUNITY

- Metropolitan North Georgia Watershed Planning District (MNGWPD)
 - NPDES Permitting
 - Local Regulations
 - Operations and Maintenance
- 
- Floodplain Management
 - Erosion and Sediment
 - Watershed Protection
 - Illicit Discharge
 - Pollution Prevention
 - Plan Review and Permitting
 - Public Involvement
 - Public Education
 - Infrastructure Maintenance
 - Capital Improvement Projects

Fayette County's Responsibility

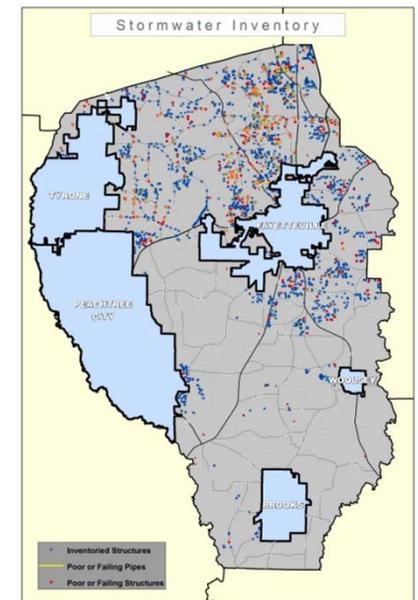


Subdivisions Ages

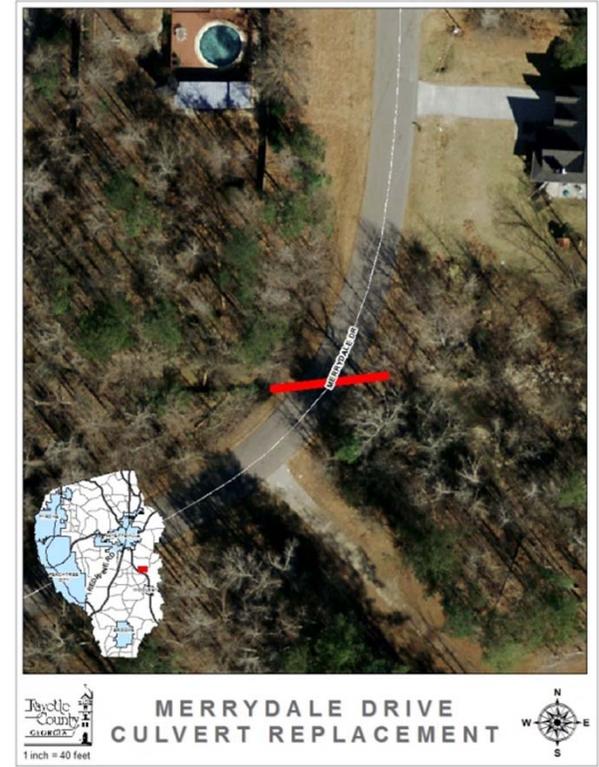




Fayette County Stormwater Completed Projects



MERRYDALE DRIVE



In-House
Project Cost: \$92,224

KARI GLEN REHABILITATION

36 inch Metal Pipe
5 Parcels Effected



42 inch Metal Pipe
8 Parcels Effected

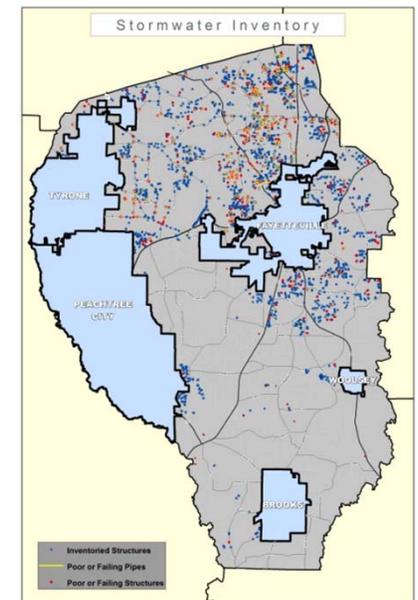
Two metal pipes 19 feet under the road starting to fail.

Rated severe public safety problem if pipes were to fail – 8 homeowners would be stranded for days while temporary road constructed. No fire or EMS access.

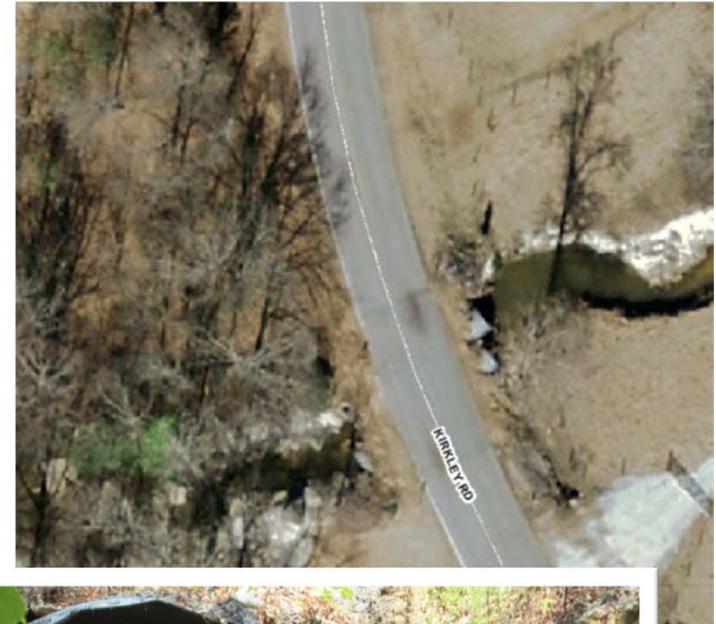
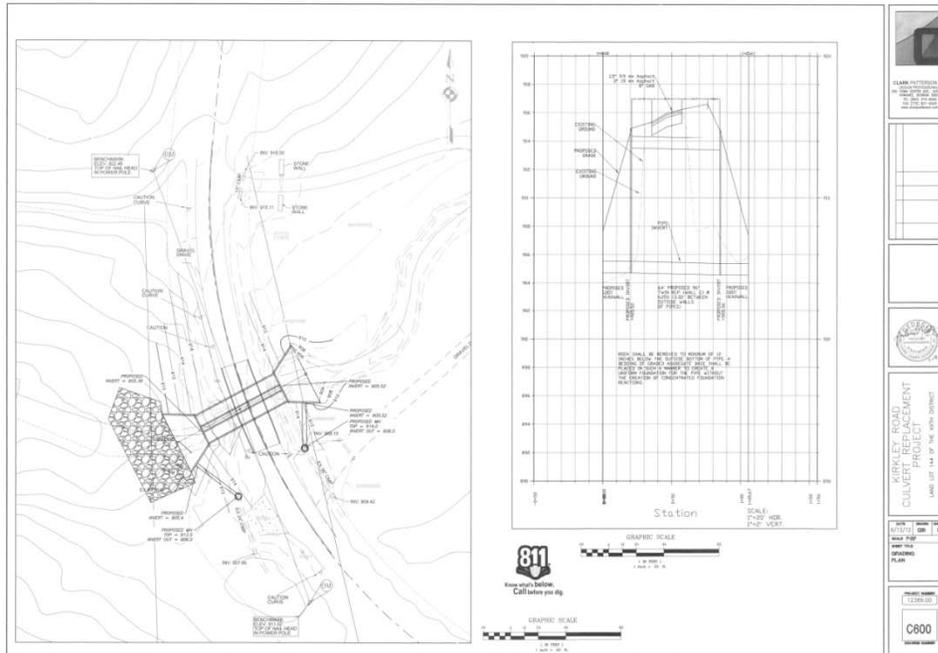
Estimates to build temporary road and replace pipe approached \$1,000,000.

Rehabilitation performed by lining pipe with concrete – costs \$46,743.

Fayette County Stormwater High Priority Projects



KIRKLEY ROAD



2 – 96 inch metal pipes

Design Cost: \$24,591

Construction Estimate: \$204,579

Total: \$229,170

FLAT CREEK TRAIL



Joint Separation/
Physical Damage

Moderate Corrosion

2– 72 Inch
Metal Pipes

Erosion Under the
Pipe ~5 feet



MORNING DOVE DRIVE



Joint
Separation/
Physical
Damage

Severe
Corrosion



Erosion at the
outlet

84 Inch &
72 Inch Metal
Pipes

PATRICIA LANE



Joint
Separation/
Physical
Damage



Severe
Corrosion

60 Inch
Metal Pipe

Erosion at the
outlet

Starrs Mill Drive



Erosion at the outlet

24 Inch
Metal Pipe



Severe
Corrosion

Dixon Circle



Riley Court



Severe
Corrosion



Westbridge Circle

Kite Lake Road



Mill Run



Etowah Trace



Carnes Drive



Northwind Trail



Buckhorn Trail



Revenna Trail



Plantation Road



Dorsett Drive

Biggest Stormwater Problem

- Corrugated metal piping, reaching end of its lifespan (25 years)
- Current infrastructure estimate:
 - Within County right-of-way
 - **6500+ stormwater structures**
 - **Estimated 32 miles of pipe**
 - (The Distance to travel from Fayetteville to Lenox Mall)
- Inventory and assessment of the system needed to define the problem

Stormwater Ranking Criteria

- **Tier 1** – maintenance or cosmetic repair
- **Tier 2** – rapidly degrading to a dangerous condition
- **Tier 3** – posing an immediate danger or threat to public safety



FAYETTE COUNTY
STORMWATER MANAGEMENT
STORMWATER IMPROVEMENT PROJECT

SIP Ranking

Tier 3

SIP No.	8
---------	---

Print

Project Name:	135 Merrydale Dr
Project Location	135 Merrydale Drive
Month/Year Added:	N/A
Condition of System:	3.25
Public Property Rating:	3
Private Property Rating:	0
Public Safety Rating:	5



Description:
 Merrydale Drive crosses over Gay Creek. The crossing was made using a 72" coated CMP. The pipe has collapsed to a point where damage to the roadway is occurring. There is invert damage due to rust, Corrosion & scour.

Existing System

Proposed System
 Replace existing system with equivalent sized system

SIP NUMBER:			
DATE COMPELTED:			
Parameter	Score	Weight	Weighted Average
Damage to Public ROW	0	0.25	0
System Condition	0	0.15	0
Damage to Private Property	0	0.1	0
Public Safety	0	0.4	0
Project Location	0	0.1	0
Ranking:		Tier 1	
Higher Score = Higher Priorety			
Completed By:			

Print

Project Name:

Project Location:

Month/Year Added:

Description:

Project Location	
0	
-5	All Private
0	Public/Private with Easments
5	All public property

Public Safety Ranking	
1	
1	Minimum
3	Moderate
5	Severe

Public Damage Ranking	
0	
0	No Damage/Not within close proximity
1	Cosmetic
2	Slight Damage
3	Moderate Damage
4	Structural Damage
5	Road Closure

Private Damage Ranking	
0	
0	No Damage/Not within close proximity
1	Cosmetic
2	Slight Damage
3	Moderate Damage
4	Structural Damage
5	Spetic Tank Failure/Home Damage

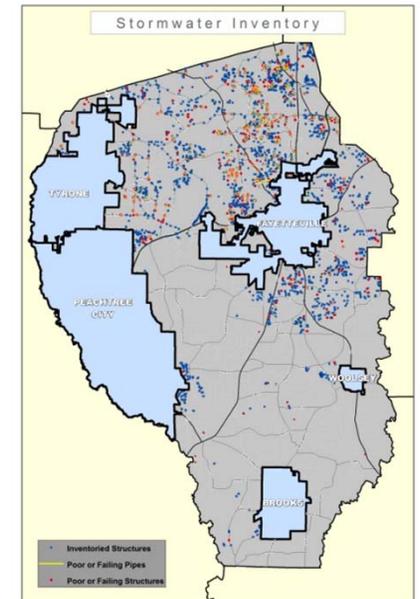
Structure Rating	
Structure	Rating
Structure 1	0
Structure 2	0
Structure 3	0
Structure 4	0
Structure 5	0
Structure 6	0
Structure 7	0
Structure 8	0
Structure 9	0
Structure 10	0
Avg Structure Rating	0

Pipe Rating		
Name of Indicator	Entry (x _i)	In Range?
Age of Culvert	25	yes
Degree of Scour	0	yes
Evidence of Major Failure	0	yes
Degree of Corrosion	0	yes
Invert Worn Away	0	yes
Sedimentation	0	yes
Physical Blockage	0	yes
Joint Separation	0	yes
Physical Damage	0	yes
Road Classification	1	yes
Detour Length Class	1	yes
Return to Overall Score		
Condition Index =	5	
SIP Rating =	1	

Stormwater Current Needs Cost Estimate

ITEM	Cost
Pipe System Replacements	\$11,843,171
Stormwater Structures	\$3,108,208
Maintenance	\$175,125
TOTAL COST	\$15,110,850

Fayette County Stormwater Utility



How Are Stormwater Utility Bills Calculated?

The amount of impervious area is the most equitable way to calculate a stormwater user fee and used by most of the utilities.

Increased impervious area increases the amount of runoff a parcel produces.

Most utilities use a tiered system based on an average impervious of a sample of parcels.

Fayette County was unable to be equitable using a tiered system...

Fayette County Stormwater Utility *Rate Structure*



Residential parcels in Fayette County vary too widely in impervious area to adopt a flat rate.

Cherry Blossom Ridge Subdivision

Stormwater User Fee Credits

Residential

- Environmental Technology
- Rain Barrels
- Over 2 acres
- Over 5 acres
- Non-impact Parcel
- Watershed Stewardship
- Septic Tank Maintenance
- Natural Area Preservation

Non-Residential

- Water Resources Education
- NPDES Industrial Permit
- Water Quality
- Channel Protection
- Overbank Flood Protection
- Extreme Flood Protection

Questions?