

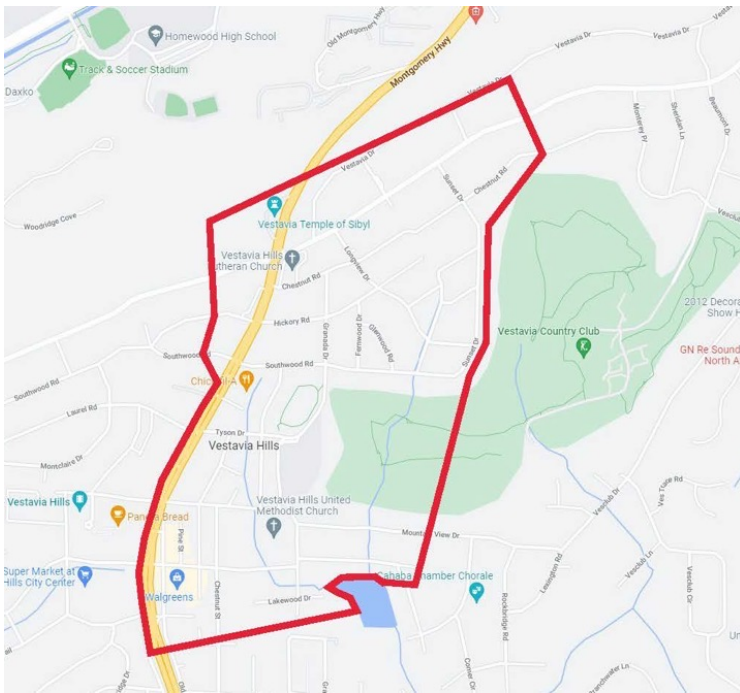
# Overview of City-Wide Storm Drainage Projects

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CITY COUNCIL WORK SESSION – JULY 18, 2022

# Upper Hwy 31/Shades Crest/Vestavia Lake

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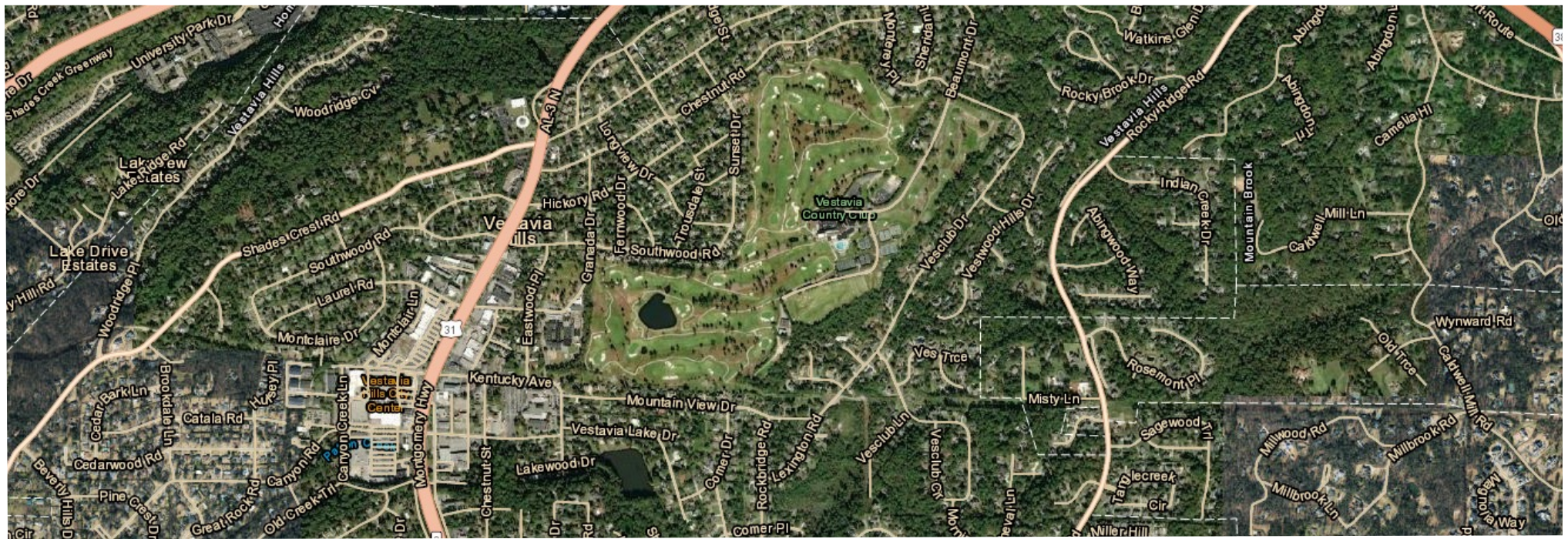
## Scope of Work:

Stormwater Masterplan to inventory and analyze existing storm drainage system and develop plans to improve deficiencies

## Consultant:

Schoel

## Project Status Update:



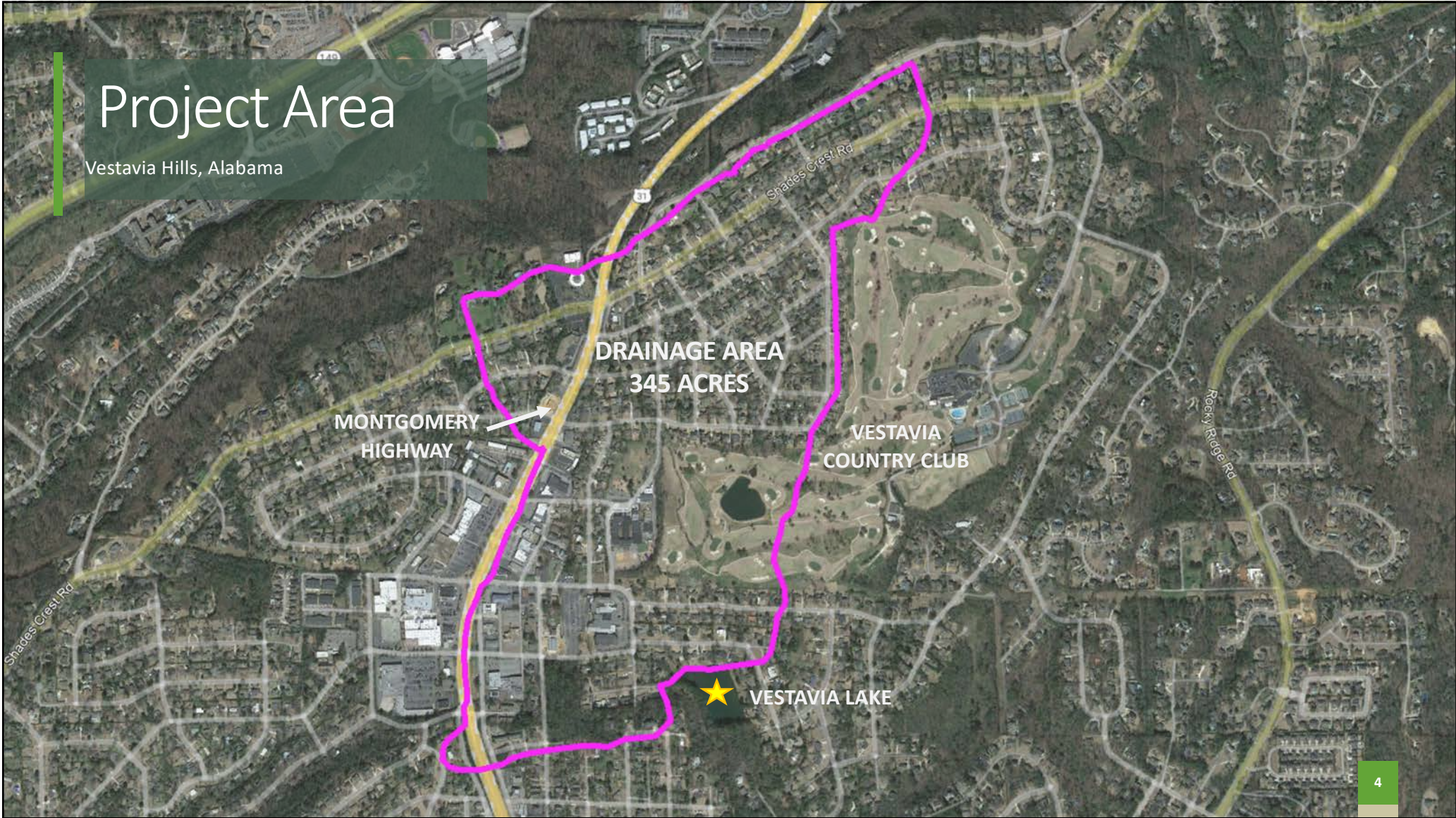
# VESTAVIA HILLS LAKE WATERSHED

DRAINAGE ASSESSMENT - VESTAVIA HILLS, AL



# Project Area

Vestavia Hills, Alabama





# Study Methodology

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## Identify the problems

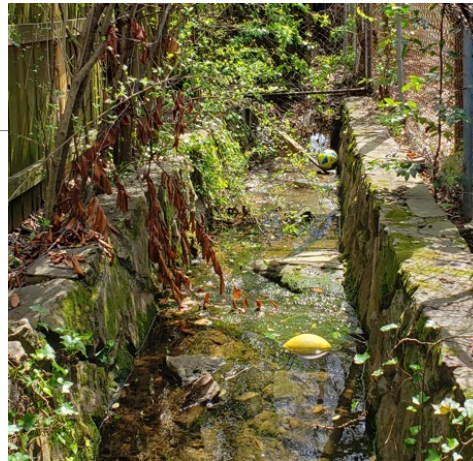
- What are the complaints?
- Site Visit

## Model the Storm Drainage System

- Field survey storm drainage system
- Develop model of the watershed and storm infrastructure

## Identify Restrictions

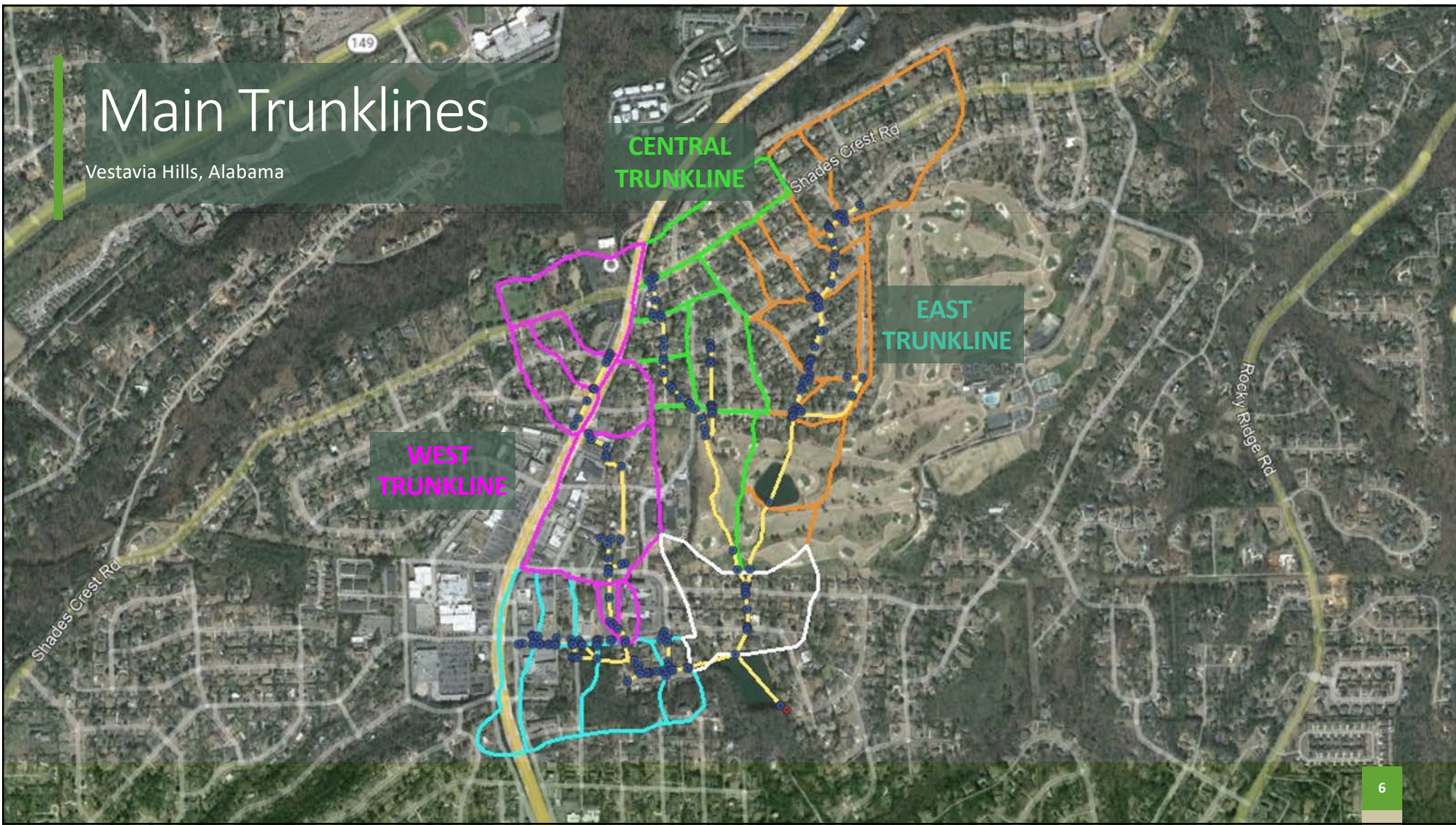
## Evaluate Improvements





# Main Trunklines

Vestavia Hills, Alabama





# East Trunkline

Vestavia Hills, Alabama

- Undersized Pipes
- Cannot Contain 1 YEAR, 6 HOUR storm event



# Central Trunkline

Vestavia Hills, Alabama

- Undersized Pipes
- Carries the 1 YEAR, 6 HOUR storm event
- Fernwood Drive carries the 2 YEAR 6 HOUR storm event



# West Trunkline

Vestavia Hills, Alabama

- Some undersized Pipes
- Chick-Fil-A drainage network and Vestavia Lake Drive culvert crossing carries the 25 YEAR, 6 HOUR storm event
- Remaining system carries the 1 YEAR, 6 HOUR storm event.



# Lakewood Drive

Vestavia Hills, Alabama

- Some undersized pipes
- System carries the 5 YEAR, 6 HOUR storm event.



# Next Steps

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## Development of Final Components of Report

- Include Cost Estimates
- Prioritization of Improvement Areas
- Development of Regulations Review

## Public Involvement Meetings Scheduled with Staff

## Field Maps for Stormwater Asset Collection

- Final QA/QC







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**William Thomas, PE, CFM**  
**Senior Project Manager**  
**Schoel Engineering**

**Mark Simpson, PE, CFM**  
**Project Manager**  
**Schoel Engineering**

**Kaitlin Braun, CFM**  
**Project Hydrologist**  
**Schoel Engineering**



# Update & Input of Stormwater Ordinance Reviews

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# Stormwater Ordinances



VESTAVIA  
HILLS

STORM WATER MANAGEMENT PROGRAM PLAN  
JANUARY 2022

- Stormwater Quality, not Quantity

- MS4 Permit *ADEM issuance date 7/11/22*

## City Ordinances

- Erosion and Sediment Control / “Land Disturbance”
- Illicit Discharge
- Post-Construction BMPs

## Promotion of Low Impact Development

Zoning Ordinance Updates *(June 2022)*

- “developable area”
- pervious vs impervious surfaces
- New Development and Redevelopment Provide Opportunities to Implement Stormwater Infrastructure that does not pre-exist



# Stormwater Management Efforts

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PERMITTING & INSPECTIONS OVERVIEW

A solid green horizontal bar at the bottom of the slide.

# Stormwater Management

## Low Impact Development Handbook for the State of Alabama



## Engineering Permitting and Inspections

- Land Disturbance Permits/ OPEN GOV
- Development Reviews
- PreConstruction Meetings
- Inspections and Reporting

## Public Works

- maintenance of public infrastructure
- inspection of drainage infrastructure

## Floodplain Management

- FEMA mapped flood hazard areas
- Patton Creek/lower 31, Little Shades Creek



# Ongoing & Future Project Status

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# Ridgedale Drive

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## Scope of Work (public):

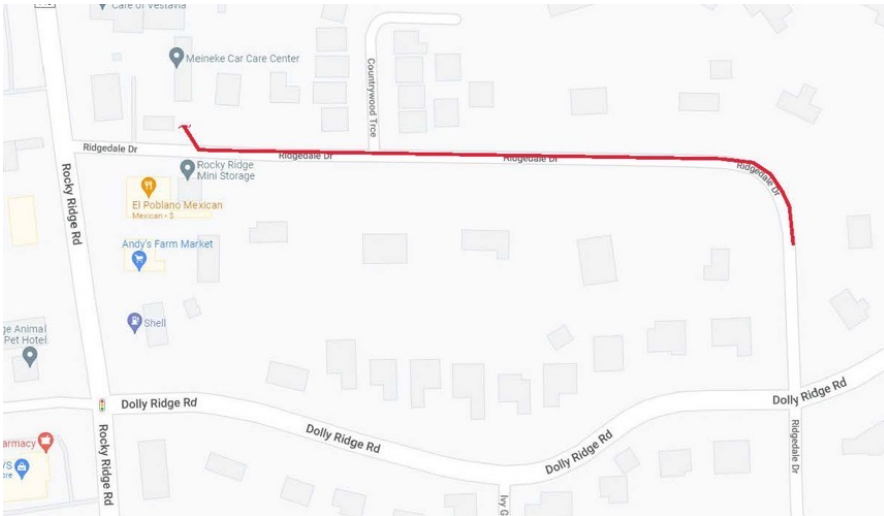
- (1) Install approx. 880 LF of new 18" pipe
- (2) Install 4 new curb inlets
- (3) Install approx. 1,100 LF of new 30" valley gutter

## Consultant:

Sain Associates

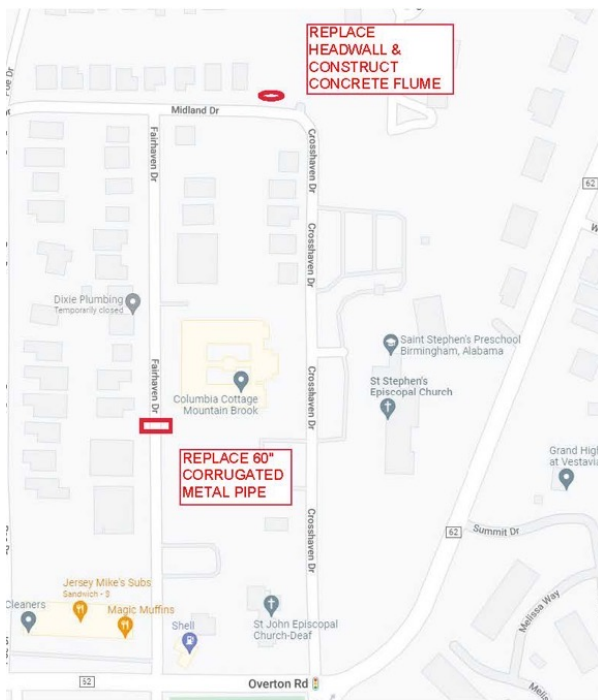
## Project Status Update:

Sain has presented a preliminary design plan and cost estimate. Private improvements are required on the downstream end for project success. Next steps: (1) Presentation of findings to property owner to discuss coordination (2) Survey and utility investigation to finalize construction plans





# Fairhaven/Midland/Poe



## Scope of Work:

- (1) Replace concrete headwall and construct a new concrete flume
- (2) Replace existing 60" corrugated metal pipe

## Consultant:

Engineering Design Group, LLC

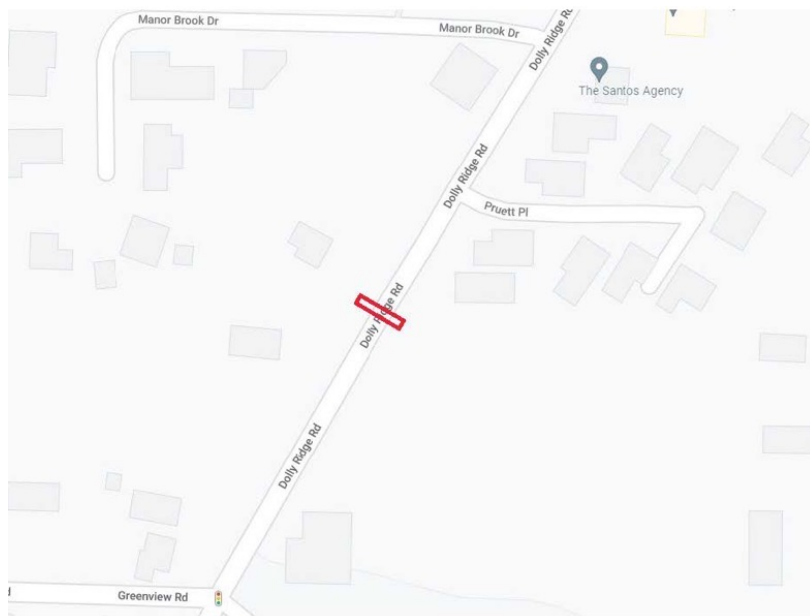
## Project Status Update:

These are initial 2 improvements recommended as part of stormwater masterplan study for the area. Study is ongoing.

Work ready to be scheduled.

# Dolly Ridge Road

---



## Scope of Work (public):

- (1) Install 37 LF 28" x 18" RCP
- (2) Install new Type-S single wing inlet
- (3) Install 2 new junction boxes

## Consultant:

Caprine Engineering

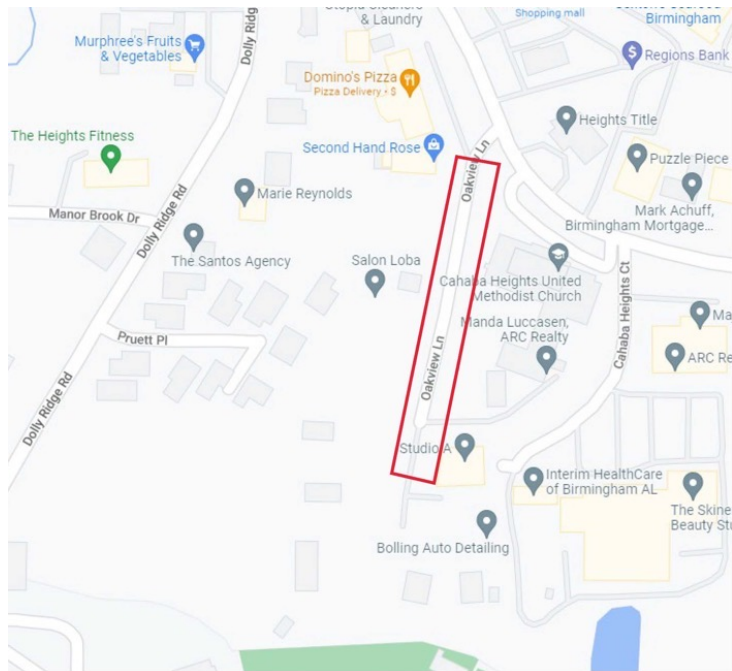
## Project Status Update:

Construction drawings have been completed.

Public Works has pipe available. Work ready to be scheduled.



# Oakview Lane



## Scope of Work (Phase III):

Replace old metal pipe that has collapsed along Oakview Lane and perform associated inlet box and roadway repairs

## Consultant:

Caprine Engineering

## Contractor:

Tomahawk Construction

## Project Status Update:

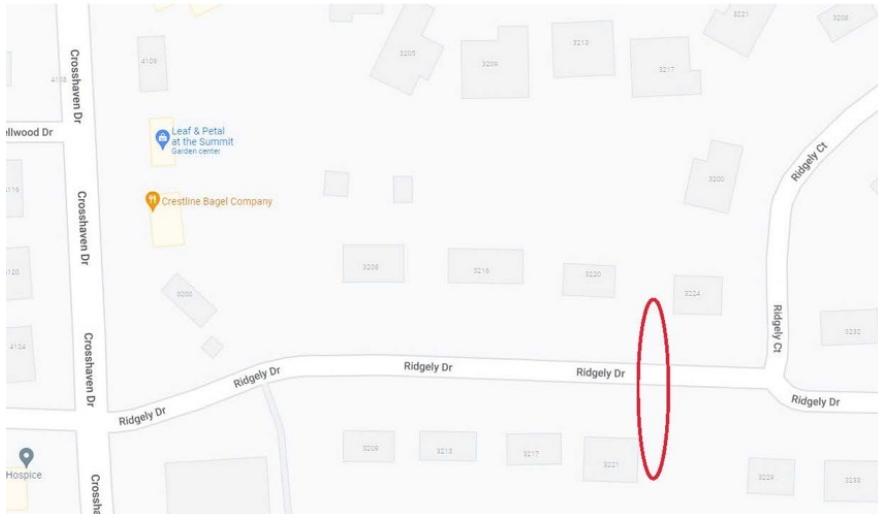
Phase I & II Complete

Phase III – construction scheduled to begin 7/18/22

Phase IV – future

# Ridgely Drive

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## Scope of Work:

Planning study to review existing conditions and develop improvement recommendations to address deficiencies (will likely involve public and private improvements)

## Consultant:

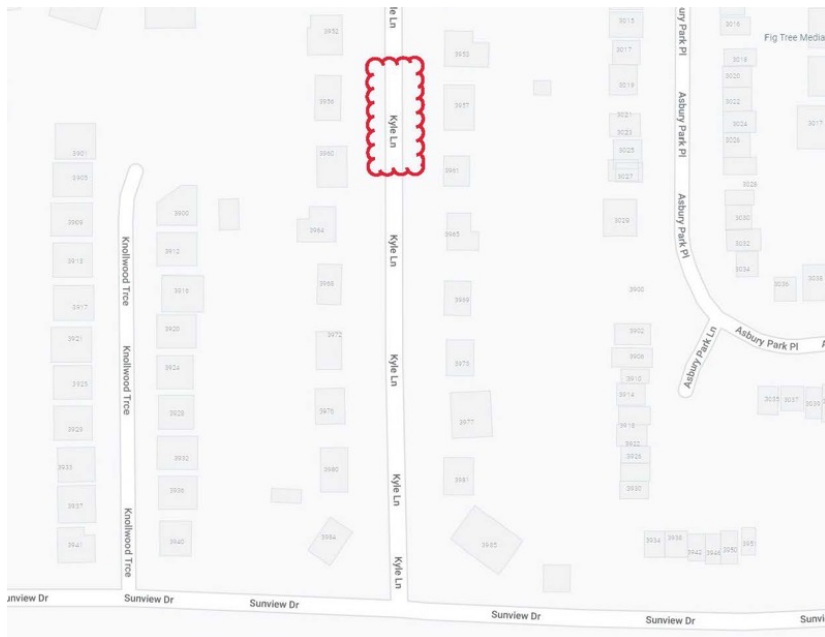
Sain Associates

## Project Status Update:

Consultant to provide improvement plan to City for review and comment



# Kyle Lane



## Scope of Work:

- (1) Replace 45 LF of existing 48" pipe with 3' x 7' box culvert
- (2) Replace 2 existing inlets
- (3) Replace 29 LF of existing 15" pipe with 28" x 18" arch pipe
- (4) Install 54 LF of 28" x 18" arch pipe

## Consultant:

Sain Associates

## Contractor:

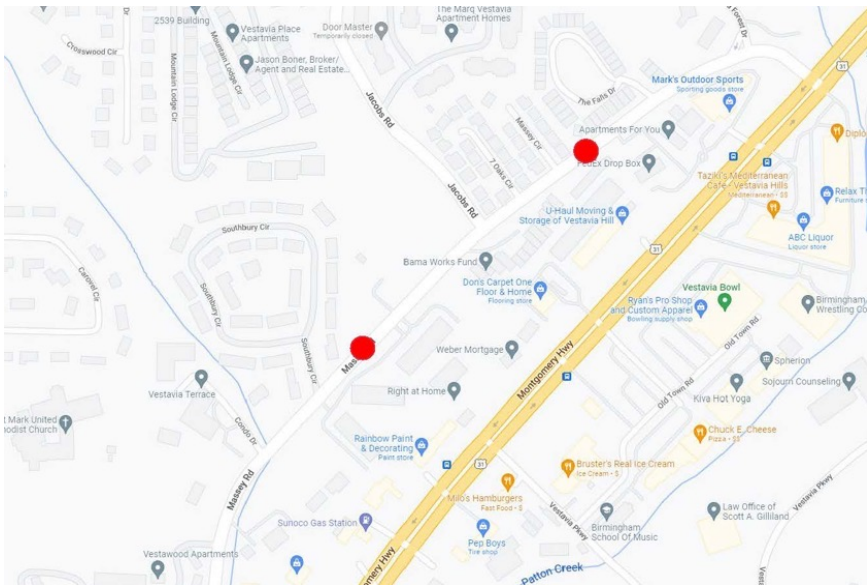
Southeastern Sealcoating

## Project Status Update:

Project bid and awarded in late 2021.

Delay due to culvert procurement – anticipate project to begin September 2022

# Massey Road



## Scope of Work:

Local projects to be completed prior to ALDOT bid

- (1) Replace existing 18" corrugated metal pipe with new 29" x 18" reinforced concrete arch pipe
- (2) Replace existing 18" reinforced concrete pipe with new 18" reinforced concrete pipe

## Consultant:

In-house, Neel-Schaffer survey (ALDOT project)

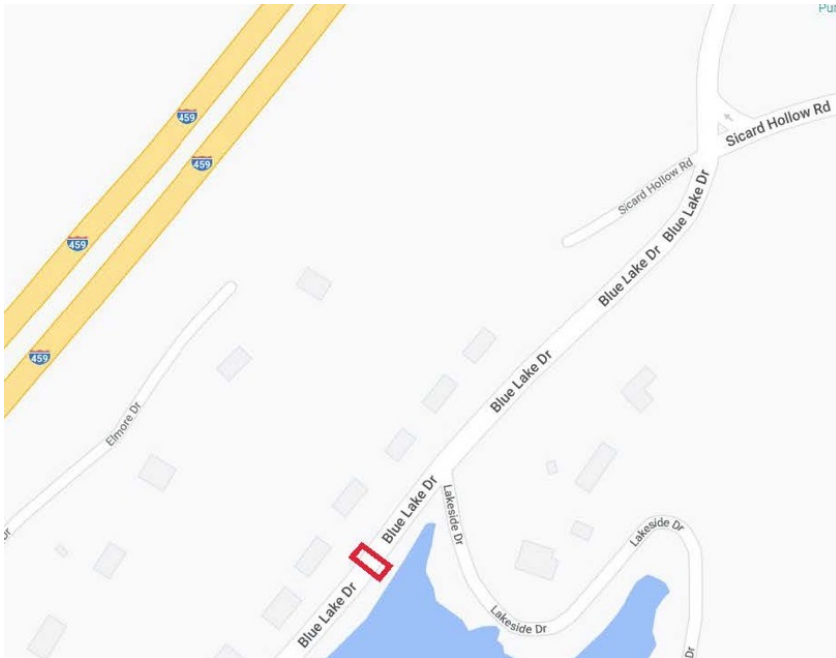
## Project Status Update:

Public Works has pipe available. Work ready to be scheduled.



# Blue Lake Drive

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## Scope of Work:

Replace existing 15" pipe with 22" x 13" RCP and construct 2 headwalls

## Consultant:

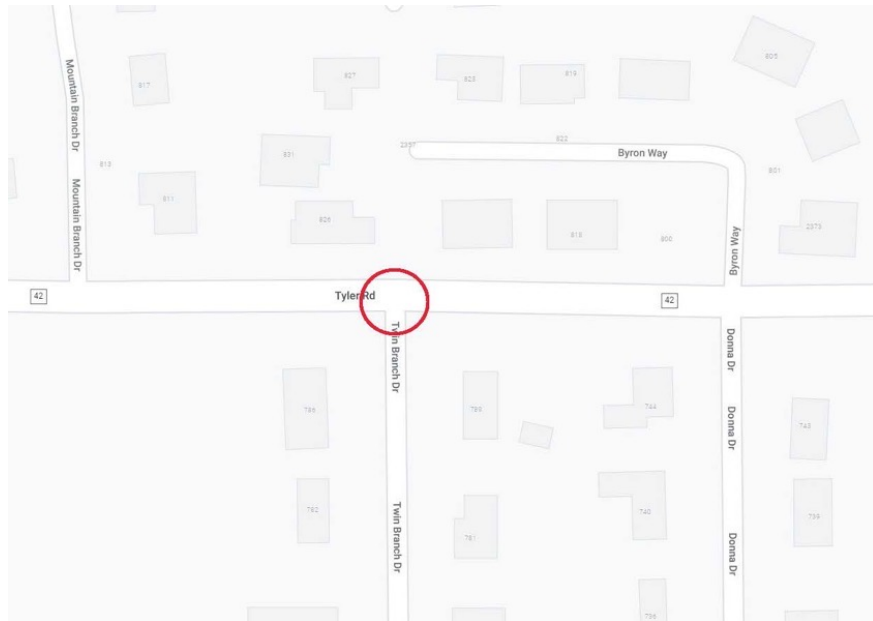
In-house

## Project Status Update:

Public Works has pipe available. Work ready to be scheduled.

# Tyler Road at Twin Branch

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## **Scope of Work:**

Survey and design services to assist with replacement of storm pipe failure at intersection

## **Consultant:**

TTL

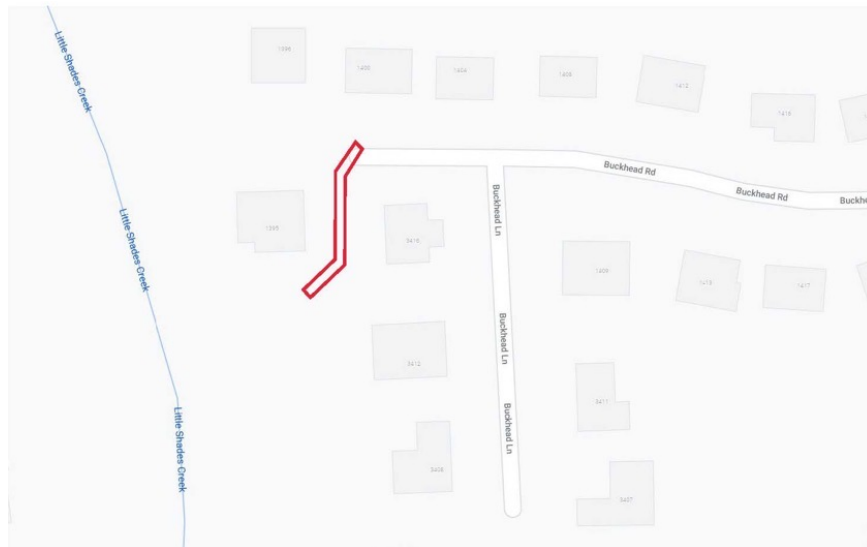
## **Project Status Update:**

City has received Consultant's proposal for survey and design services



# Buckhead Road

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## Scope of Work:

- (1) Install 2 new inlets and 18" pipe under road
- (2) Grade in grass swale and install rip rap

## Consultant:

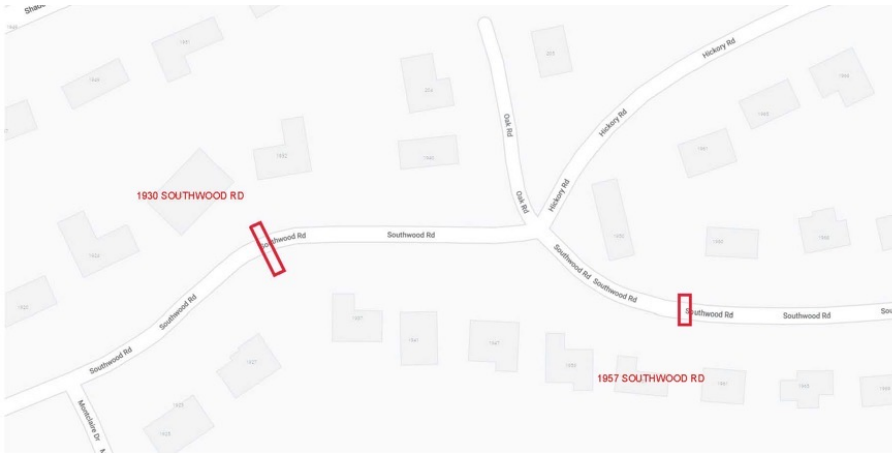
In-house

## Project Status Update:

Public Works has pipe available. Work ready to be scheduled.

# 1957 Southwood Road

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## Scope of Work:

- (1) Replace approx. 34 LF of existing 24" pipe under roadway
- (2) Install new inlets, approx. 26 LF of new 24" pipe & headwall w/ rip rap
- (3) Replace approx. 130 LF of valley gutter

## Consultant:

Sain Associates

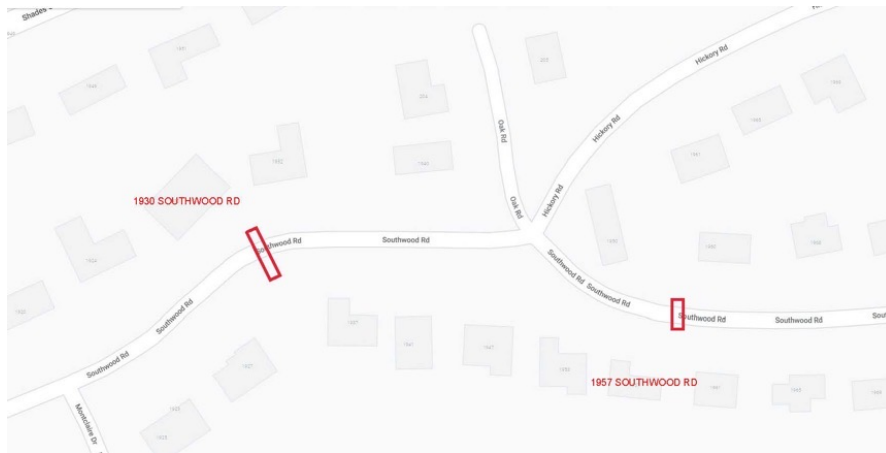
## Project Status Update:

Public Works has pipe available. Work ready to be scheduled.



# 1930 Southwood Road

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## Scope of Work:

- (1) Replace approx. 62 LF of existing 18" RCP in right-of-way
- (2) Install headwall and rip rap at outfall

## Consultant:

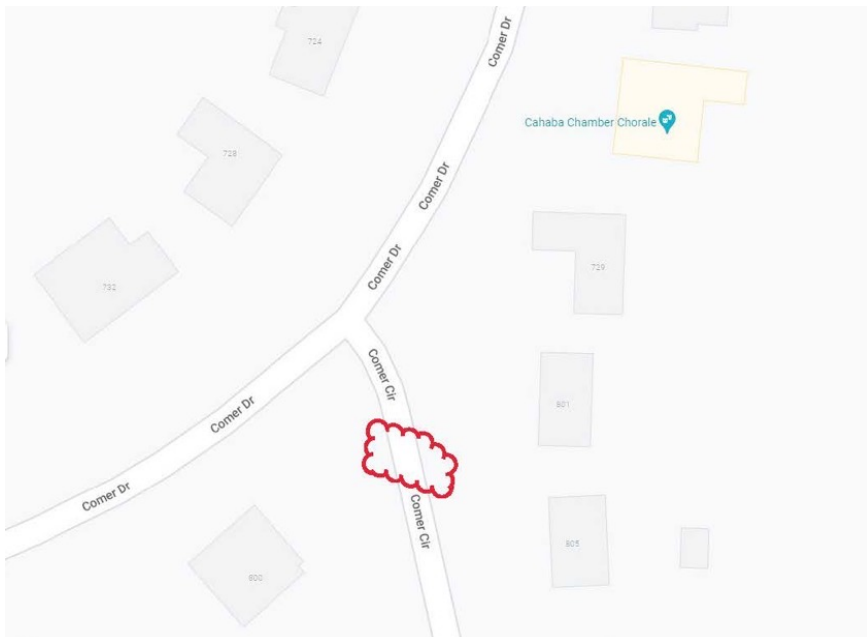
Sain Associates

## Project Status Update:

Next steps are to coordinate with property owners and schedule work

# Comer Circle

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## Scope of Work:

- (1) Remove existing 18" collapsed pipe and replace with new 22" x 13" RCP
- (2) Construct 2 new inlets

## Consultant:

In-house

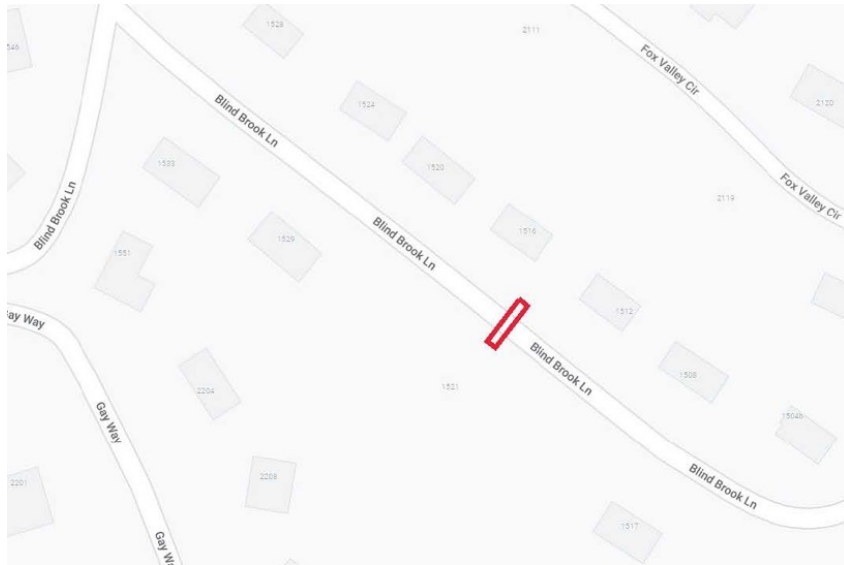
## Project Status Update:

Work ready to be scheduled.

Lesser priority project at the current time

# Blind Brook Lane

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## Scope of Work (based on conceptual in-house review):

Install approx. 60 LF of 22" x 13" RCP and two new inlets

## Consultant:

In-house

## Project Status Update:

Next step should project move forward would be engaging a Consultant to complete survey and design services to determine feasibility and costs



# Autumn Lane

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## Scope of Work (public):

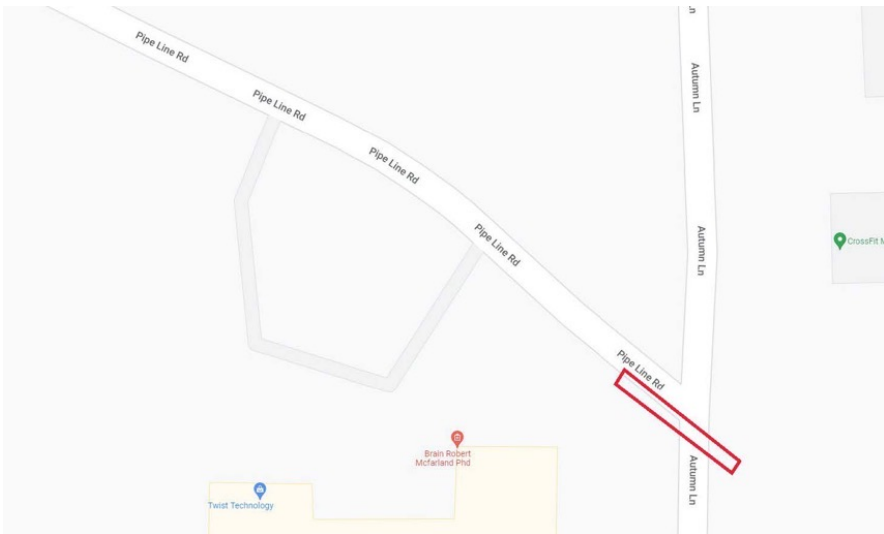
Install new 48" pipe under Autumn Lane

## Consultant:

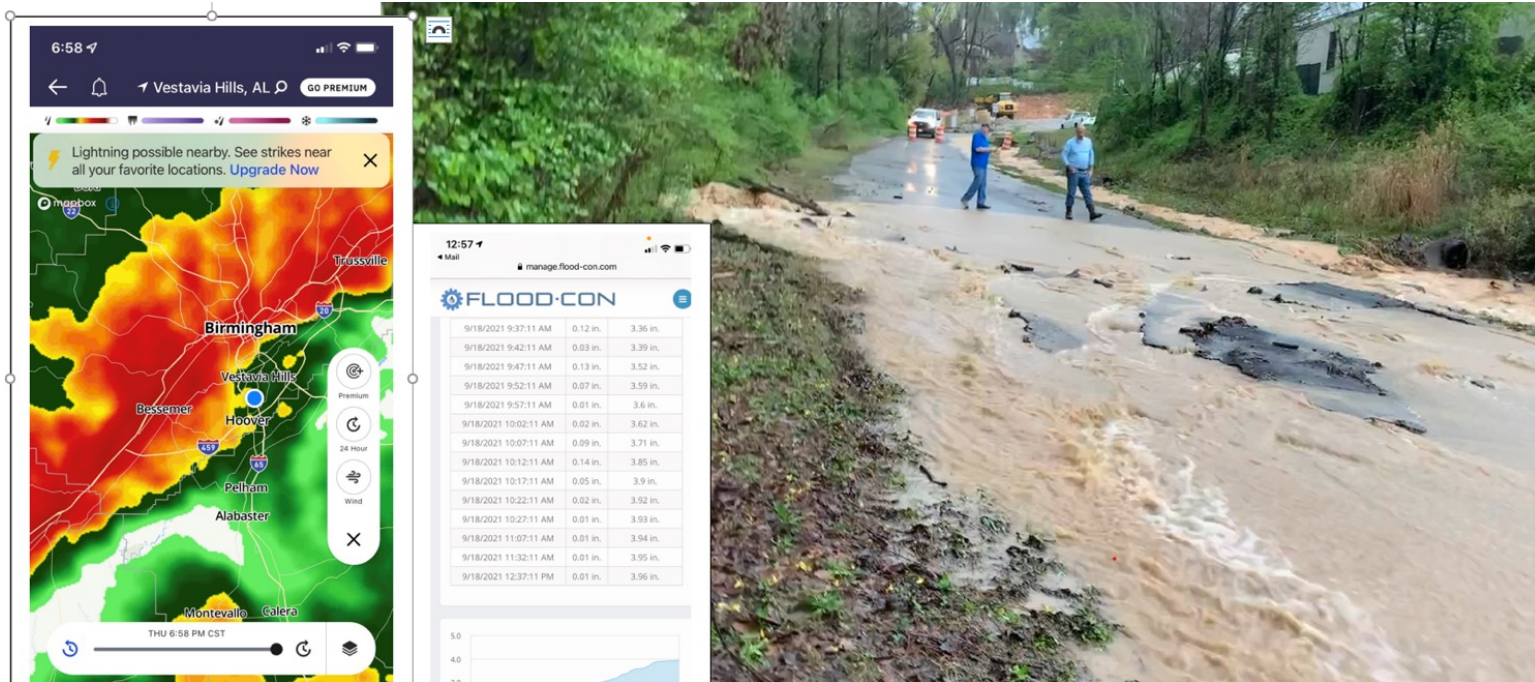
Sain Associates

## Project Status Update:

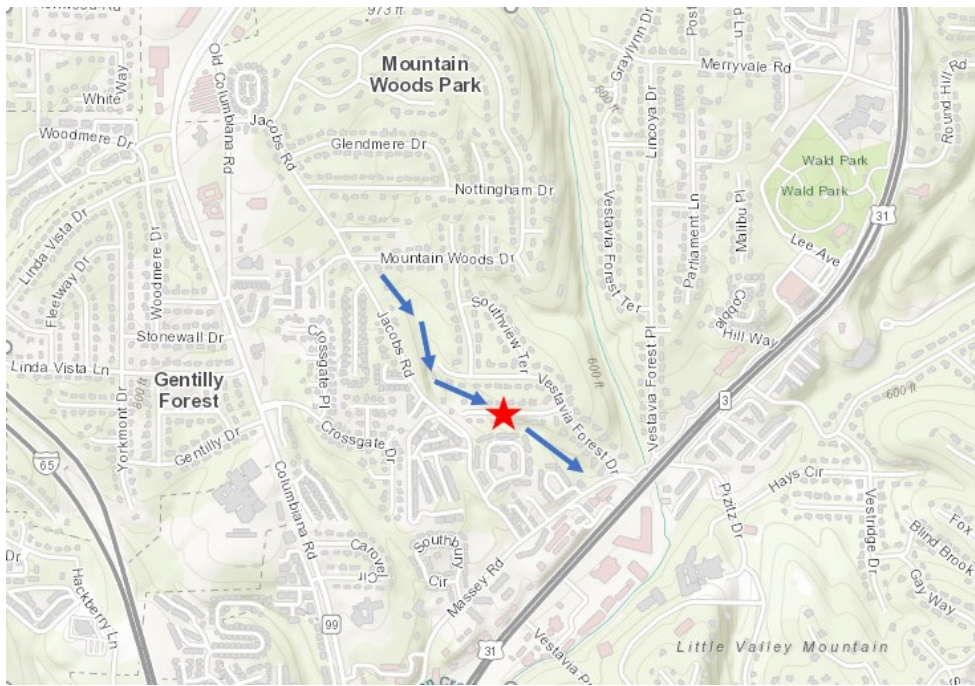
Project has been put on hold due to private property upgrades required in order for project to be successful.



# Impacts of Recent Flooding Events



# Vestavia Forest/Forest Haven Lane



Approximately 114 acre drainage area



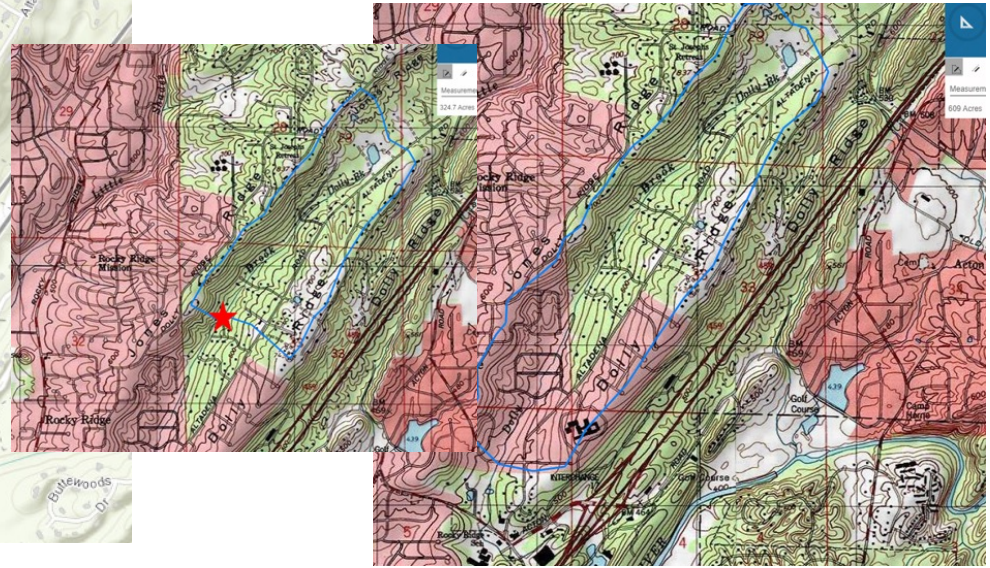


# April Drive / Altadena Road area



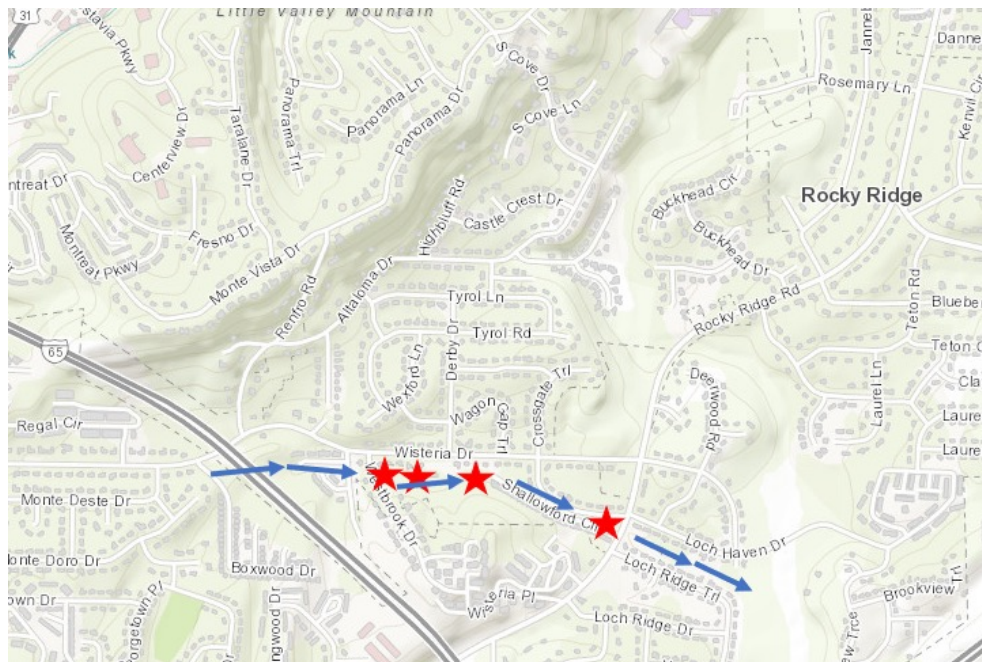
**324+ acres upstream of April Drive**

**609+ acres upstream of Altacrest Drive**

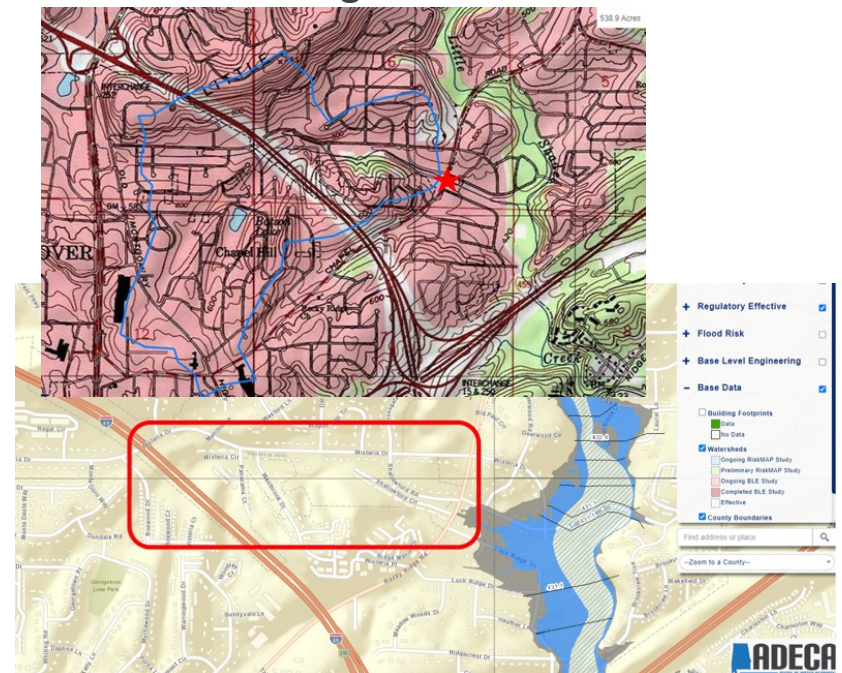




# Wisteria / Shallowford Circle



540+ acres drainage area



# Prioritization of Public Roadway Impacts

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Mapping, inspections, assessments





# Overview of Recently Completed Drainage Projects

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CITY OF VESTAVIA HILLS  
MAINTENANCE AREA MAP  
COMPLETED PIPE PROJECTS

**Completed Pipe Replacement Projects (2018-current)**

**MAINTENANCE AREA 1**

- Hickory Road
- Tyler Place
- Mission Road
- Graylynn Drive
- Vestavia Place
- Balfour Drive

**MAINTENANCE AREA 2**

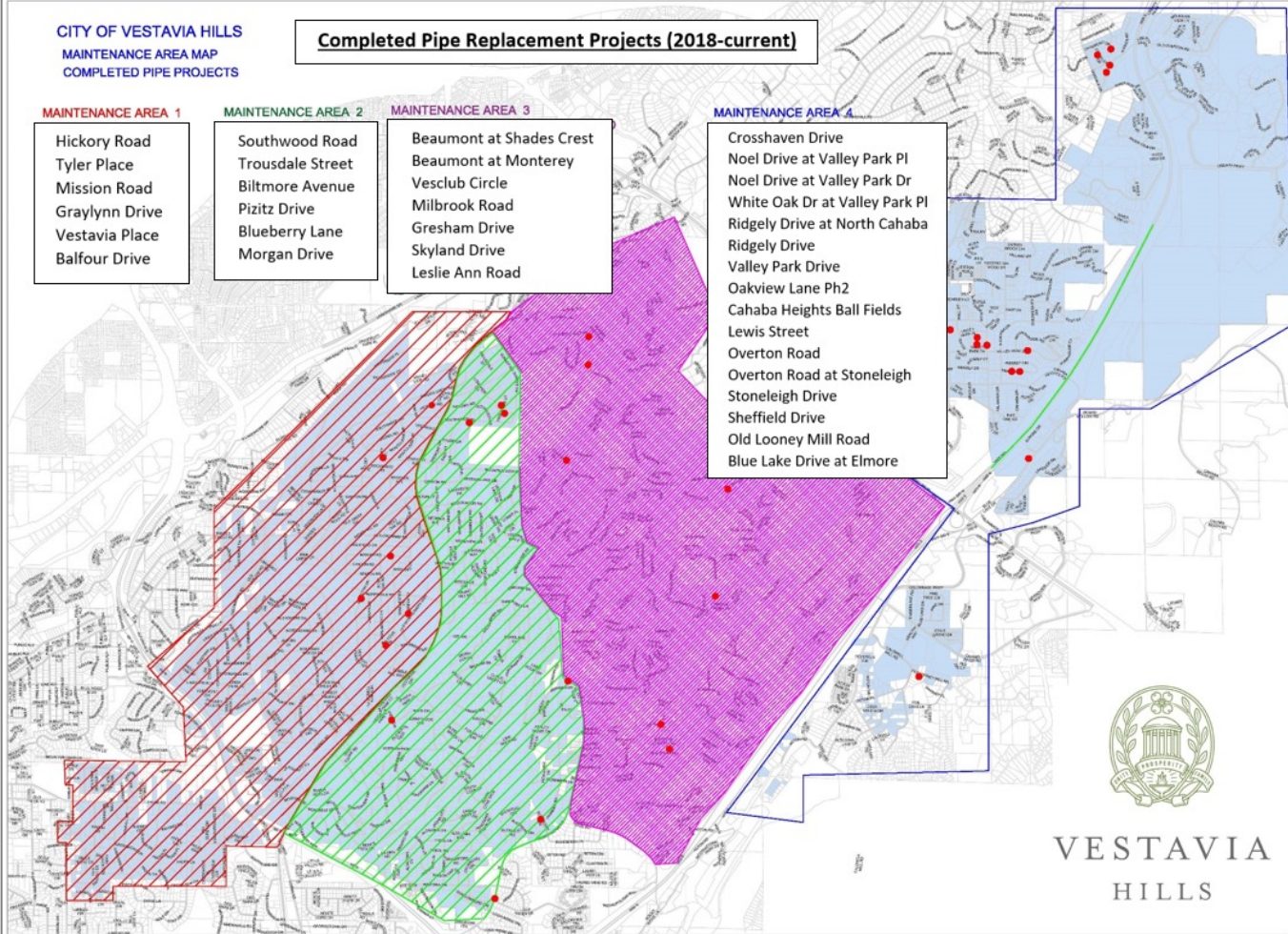
- Southwood Road
- Trousdale Street
- Biltmore Avenue
- Pizitz Drive
- Blueberry Lane
- Morgan Drive

**MAINTENANCE AREA 3**

- Beaumont at Shades Crest
- Beaumont at Monterey
- Vesclub Circle
- Milbrook Road
- Gresham Drive
- Skyland Drive
- Leslie Ann Road

**MAINTENANCE AREA 4**

- Crosshaven Drive
- Noel Drive at Valley Park Pl
- Noel Drive at Valley Park Dr
- White Oak Dr at Valley Park Pl
- Ridgely Drive at North Cahaba
- Ridgely Drive
- Valley Park Drive
- Oakview Lane Ph2
- Cahaba Heights Ball Fields
- Lewis Street
- Overton Road
- Overton Road at Stoneleigh
- Stoneleigh Drive
- Sheffield Drive
- Old Looney Mill Road
- Blue Lake Drive at Elmore



VESTAVIA  
HILLS



# City Drainage Projects Completed Within Last 5 Years

## Maintenance Area 1

- Hickory Road
- Tyler Place
- Mission Road
- Graylynn Drive
- Vestavia Place
- Balfour Drive





# City Drainage Projects Completed Within Last 5 Years

Maintenance Area 2  
Southwood Road  
Trousdale Street  
Biltmore Avenue  
Pizitz Drive  
Blueberry Lane  
Morgan Drive

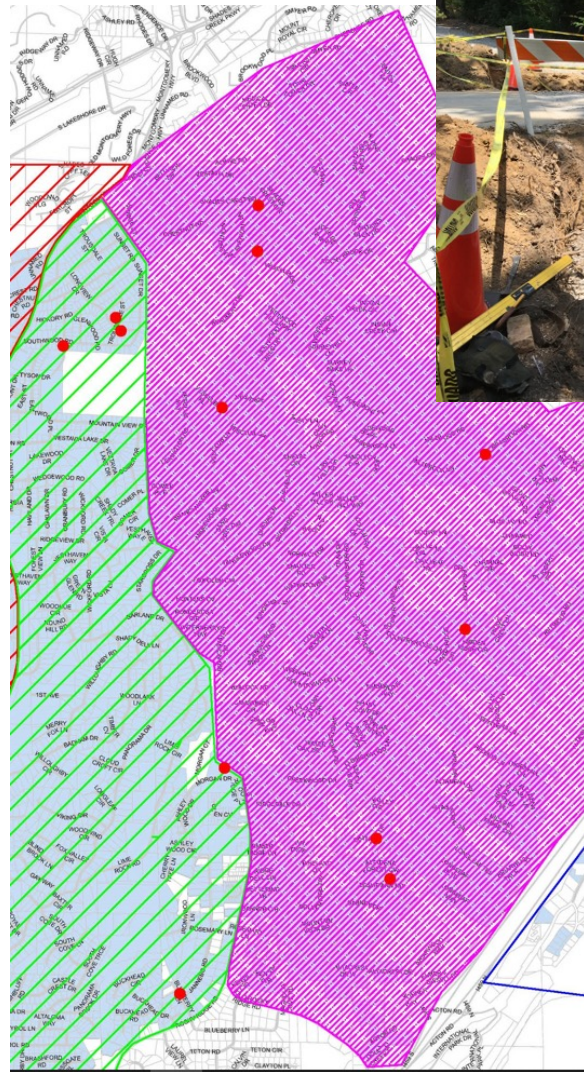




# City Drainage Projects Completed Within Last 5 Years

## Maintenance Area 3

Beaumont at Shades Crest  
Beaumont at Monterey  
Vesclub Circle  
Milbrook Road  
Gresham Drive  
Skyland Drive  
Leslie Ann Road

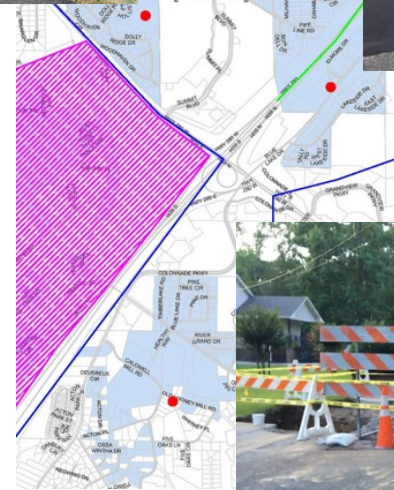




# City Drainage Projects Completed Within Last 5 Years

## Maintenance Area 4

Crosshaven Drive  
Noel Drive at Valley Park Pl  
Noel Drive at Valley Park Dr  
White Oak Dr at Valley Park Pl  
Ridgely Drive at North Cahaba  
Ridgely Drive  
Valley Park Drive  
Oakview Lane Ph2  
Cahaba Heights Ball Fields  
Lewis Street  
Overton Road  
Overton Road at Stoneleigh  
Stoneleigh Drive  
Sheffield Drive  
Old Looney Mill Road  
Blue Lake Drive at Elmore





# Conclusions and Budget Planning

## Questions

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BRIAN DAVIS, DIRECTOR OF PUBLIC SERVICES

CHRISTOPHER BRADY, CITY ENGINEER

LORI BETH KEARLEY, ASSISTANT CITY ENGINEER