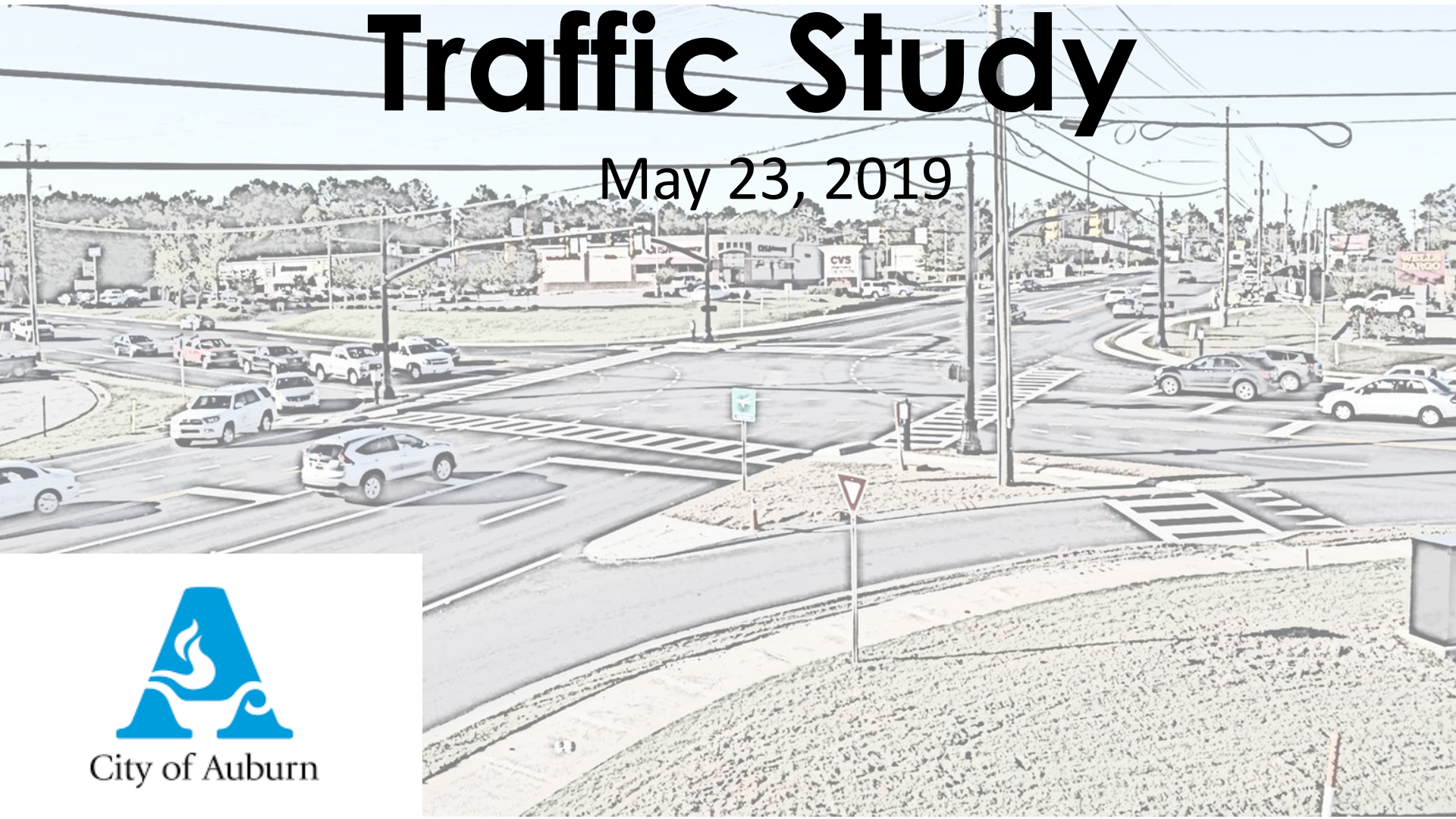


# CITY OF AUBURN

Comprehensive City-Wide

# Traffic Study

May 23, 2019



City of Auburn

# Project Team

**SKIPPER**  
CONSULTING INC

**alta**  
PLANNING + DESIGN

**HYDRO**  
**ENGINEERING**  
**SOLUTIONS** ▼  
A DIVISION OF HYDRO, LLC

# Scope of work

Task 1 - Data Collection

Task 2 - Corridor Evaluations

Task 3 - Isolated Intersection Evaluations

Task 4 - Signal System Evaluations

Task 5 - City-wide Crash Study

Task 6 - Cost Estimates

Task 7 - Project Prioritization

Task 8 - Public Involvement

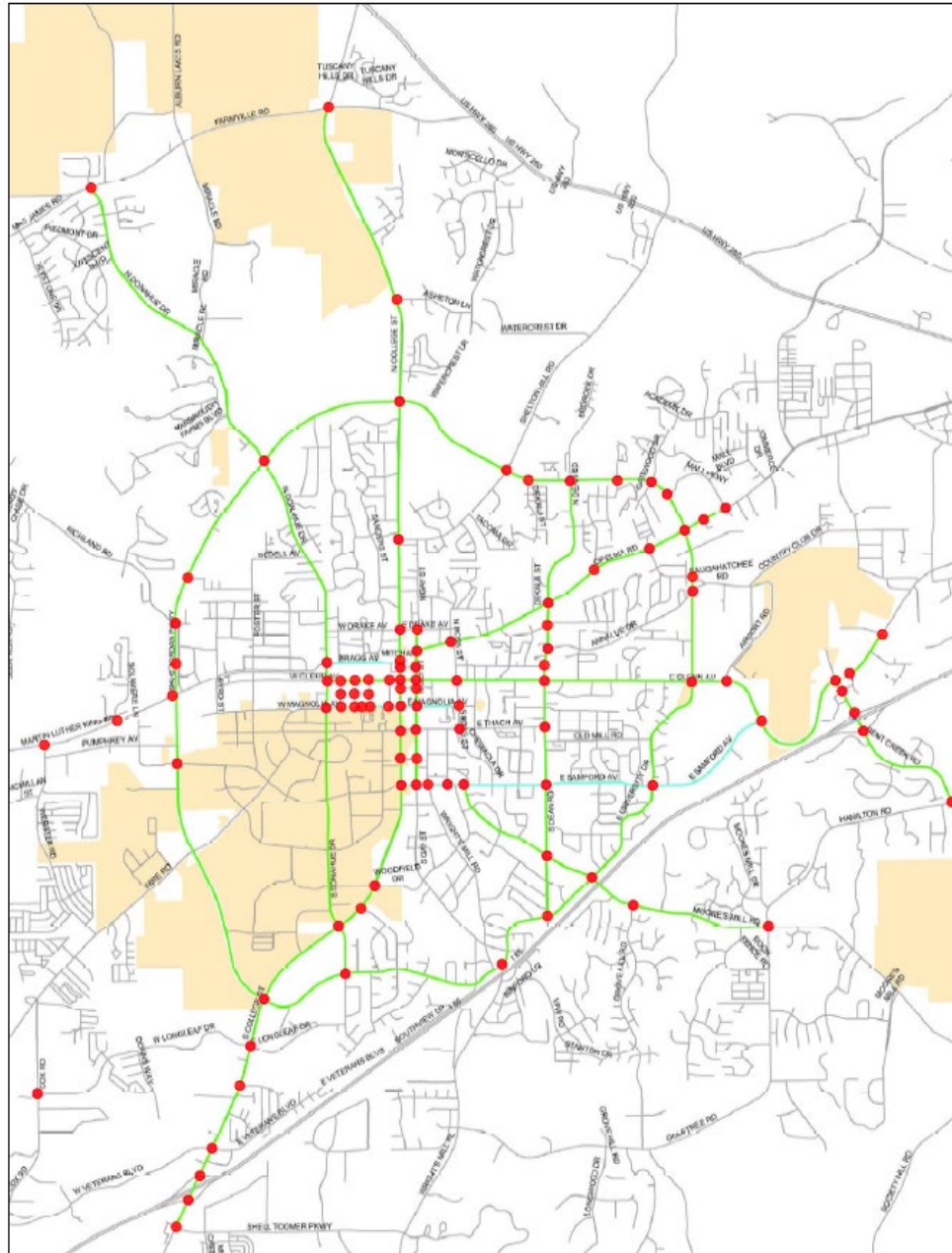
Task 9 - Final Documentation

Task 10 - Meetings/Presentations

# Study Corridors and Intersections

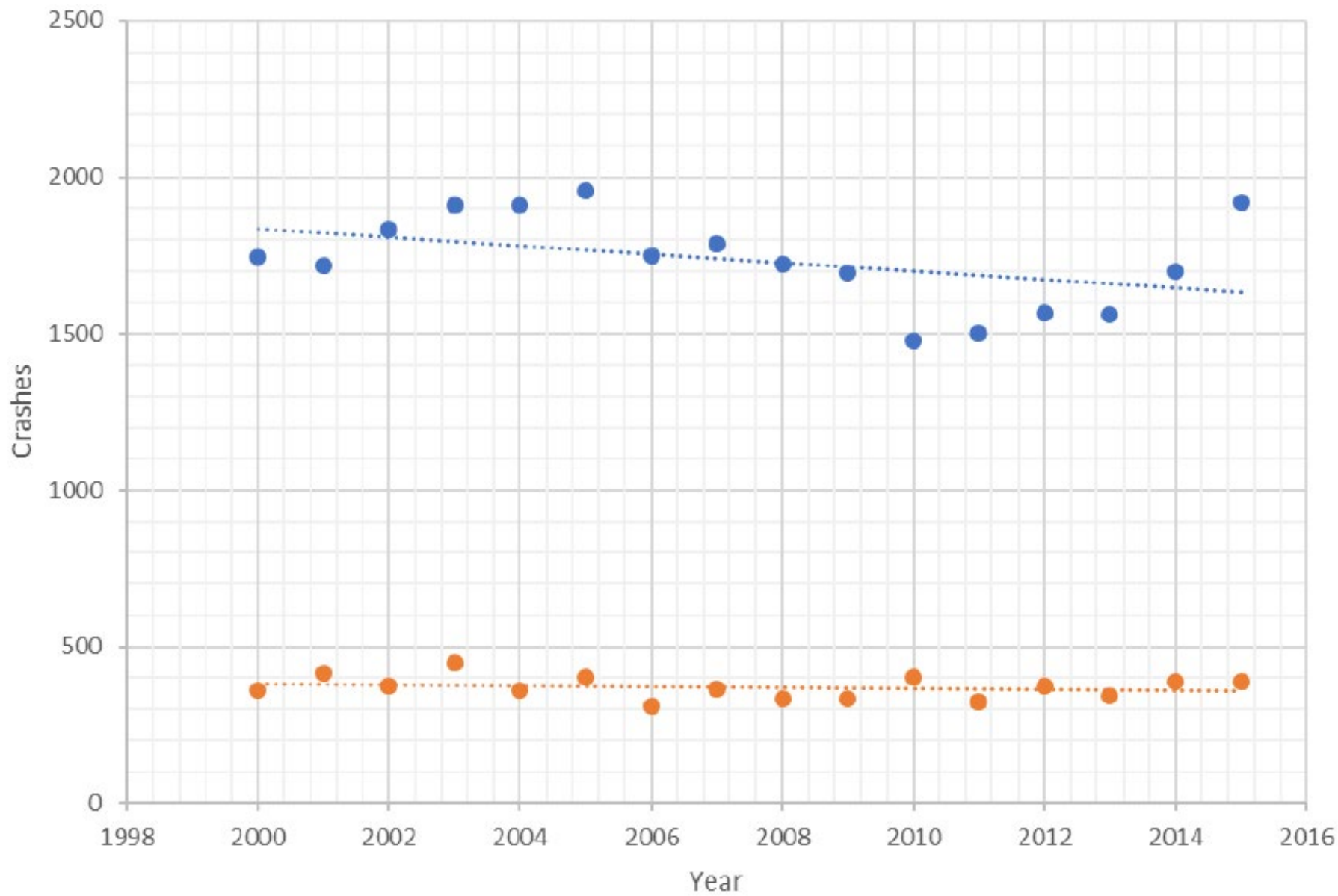
- ▶ College Street
- ▶ Donahue Drive
- ▶ Gay Street
- ▶ Dean Road
- ▶ Moores Mill Road
- ▶ Glenn Avenue
- ▶ Samford Avenue
- ▶ Bent Creek Road
- ▶ Opelika Road
- ▶ East University Drive
- ▶ Shug Jordan Parkway

# Study Corridors and Intersections



# City-wide Crash Study

City	2005 Citywide Crash Study Data					2018 Citywide Crash Study Data				
	2003 Population	2003 Total Crashes	2003 Crashes/1000 people	2003 Crashes with Injuries	2003 crashes with Fatalities	2015 Estimated Population	2015 Total Crashes	2015 crashes/1000 people	2015 crashes with injuries	2015 crashes with fatalities
Birmingham	236,620	13,679	57.8	2,569	47	212,543↓	15,723↑	74↑	3424↑	40↓
Montgomery	200,123	9,935	49.6	2,693	29	200,917↑	9,070↓	45.1↑	3171↑	29
Mobile	193,464	9,600	49.6	2,370	29	193,393	11,641↑	60.2↑	2801↑	16↓
Huntsville	164,237	7,669	46.7	2,216	23	190,943↑	7,960↑	41.7↓	2090↓	11↓
Tuscaloosa	79,294	4,642	58.5	1,156	11	98,368↑	5,322↑	54.1↓	1444↑	9↓
Hoover	65,070	3,102	47.7	413	6	84,715↑	3,135	37↓	501↑	6
Dothan	60,036	3,265	54.4	931	8	68,492↑	2,964↓	43.3↓	1125↑	4↓
<b>Auburn</b>	<b>46,923</b>	<b>1,911</b>	<b>40.7</b>	<b>361</b>	<b>4</b>	<b>61,979↑</b>	<b>1,922</b>	<b>31↓</b>	<b>389</b>	<b>2↓</b>
Decatur	54,239	2,311	42.6	570	6	55,354↑	1,944↓	35.1↓	463↓	3↓
Madison	34,080	865	25.4	187	2	46,970↑	1,257↑	26.8↑	293↑	3↑
Florence	35,852	1,527	42.6	272	3	39,964↑	1,447↓	36.2↓	336↑	5↑
Phenix City	28,444	1,493	52.5	459	3	37,129↑	2,296↑	61.8↑	684↑	6↑
Gadsden	37,619	1,759	46.8	515	2	36,024↓	1,807↑	50.2↑	549↑	4↑
Bessemer	29,108	1,794	61.6	544	4	26,722↓	1,673↓	62.6↑	451↓	8↑
Homewood	24,399	1,454	59.6	279	0	25,754↑	1,629↑	63.3↑	201↓	2↑
Prichard	27,983	606	21.7	185	5	22,282↓	837↑	37.6↑	259↑	8↑



● Total Crashes    ● Injuries    ..... Linear (Total Crashes)    ..... Linear (Injuries)

Primary Cause of Crash	% of Total Crashes Recorded
Follow too close	22%
Failed to Yield ROW	21.50%
Distracted Driving	16.00%
Improper Traffic Movement	12.30%
Other/Misc.	12%
Misjudge Stopping Distance	4.00%
DUI	3%
Ran Traffic Signal	3%
Unknown	3%
Driving too fast	2%
Swerved to avoid	2%
Fatigued/Asleep	0.85%
Ran off road	0.75%

# 22%

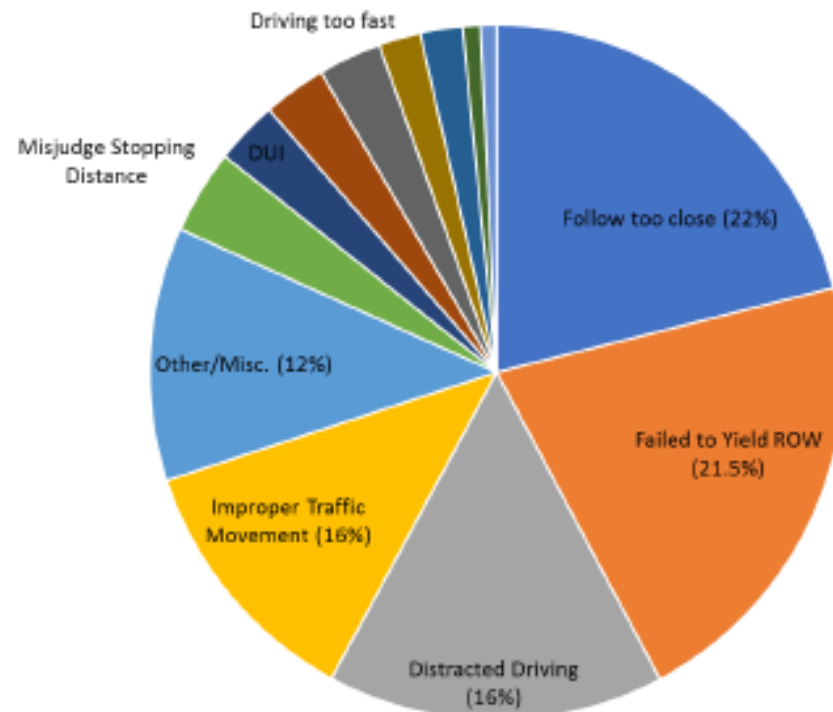
## Following too Close

### Most Common Primary Cause of Crashes

# 16%

## Distracted Driving

### Largest Increase in Primary Cause of Crashes





# High-Priority Crash Locations

1. South College Street at Longleaf Drive
2. South College Street at East University Drive/Shug Jordan Parkway
3. South College Street at Donahue Drive
4. College Street at Magnolia Avenue
5. North College Street at Glenn Avenue
6. North College Street at East University Drive/Shug Jordan Parkway
7. North College Street at Farmville Road
8. Opelika Road at North Dean Road
9. Opelika Road at East University Drive
10. West Glenn Avenue at Wright Street
11. East Glenn Avenue at Dean Road
12. Shug Jordan Parkway at North Donahue Drive
13. Shug Jordan Parkway at Ware Drive

# City-wide Crash Study

**Table 4 - High Priority Crash Locations**

Intersection	Predictive Method		Network Screening Results			
	Predicted Crashes	Observed Crashes	Predictive Rank	LOSS Priority	EPDO Rank	Crash Cost
South College St at Longleaf Dr	62	152	3	High	4	\$3,507,100
South College St at East University Dr/ Shug Jordan Pkwy (S)	67	194	1	High	1	\$9,104,590
South College St at Donahue Dr	44	96	5	High	6	\$3,123,080
North/South College St at Magnolia Ave	29	93	4	High	17	\$1,455,600
North College St at Glenn Ave	32	68	8	High	12	\$1,824,460
North College St at East University Dr/ Shug Jordan Pkwy (N)	54	81	12	Moderate	7	\$2,472,840
North College St at Farmville Rd	12	49	7	High	14	\$1,644,020
Opelika Rd at Dean Rd	47	75	10	Moderate	8	\$2,203,820
Opelika Rd at East University Dr	57	154	2	High	5	\$3,334,640
West Glenn Ave at Wright St	6	34	11	High	48	\$547,140
East Glenn Ave at Dean Rd	49	95	6	High	10	\$1,990,760
Shug Jordan Pkwy at North Donahue Dr	58	62	34	Moderate	9	\$2,197,600
Shug Jordan Pkwy at Ware Dr	19	54	9	High	11	\$1,913,900

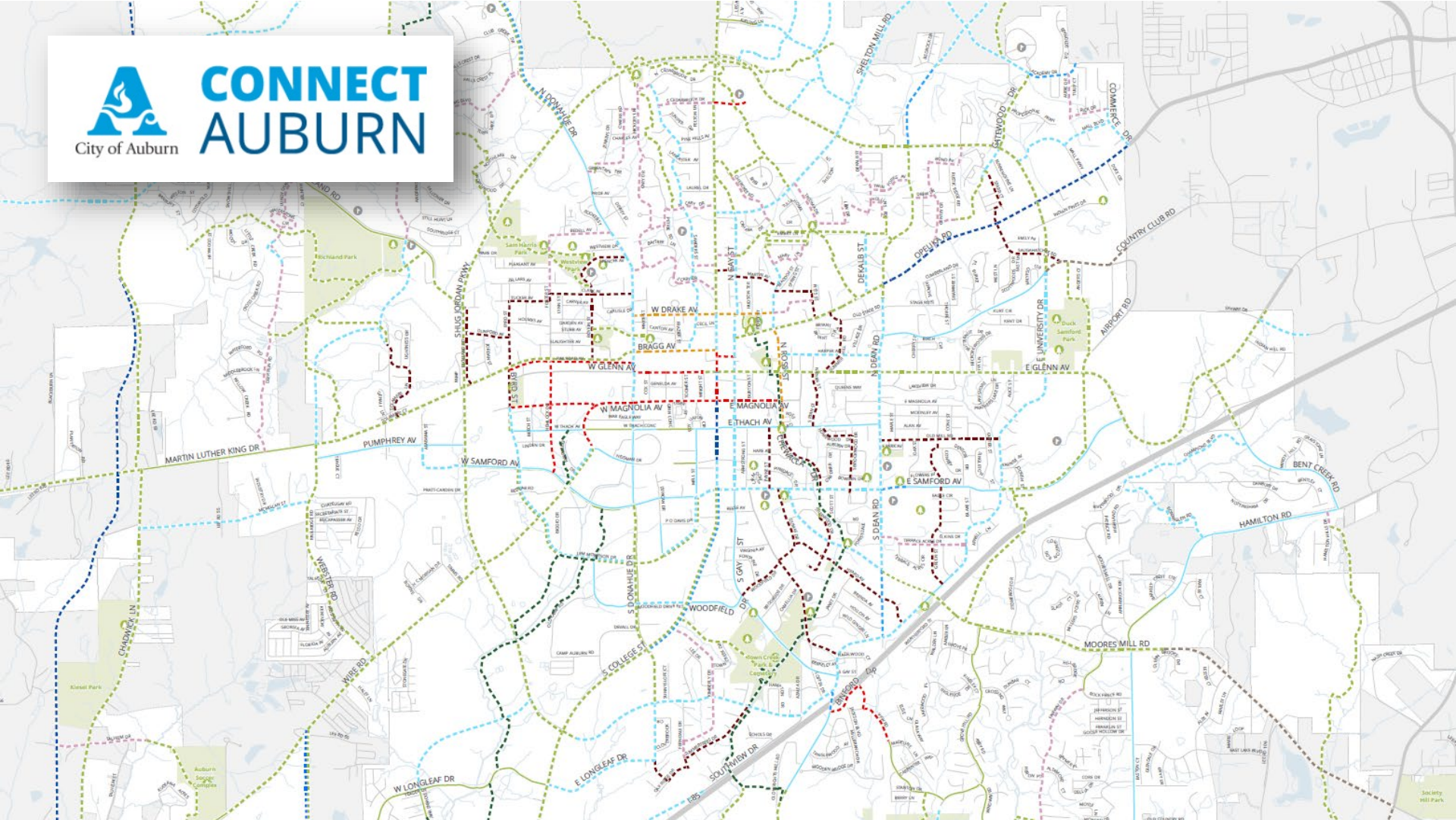
# Pedestrian and Bicycle Analysis and Recommendations



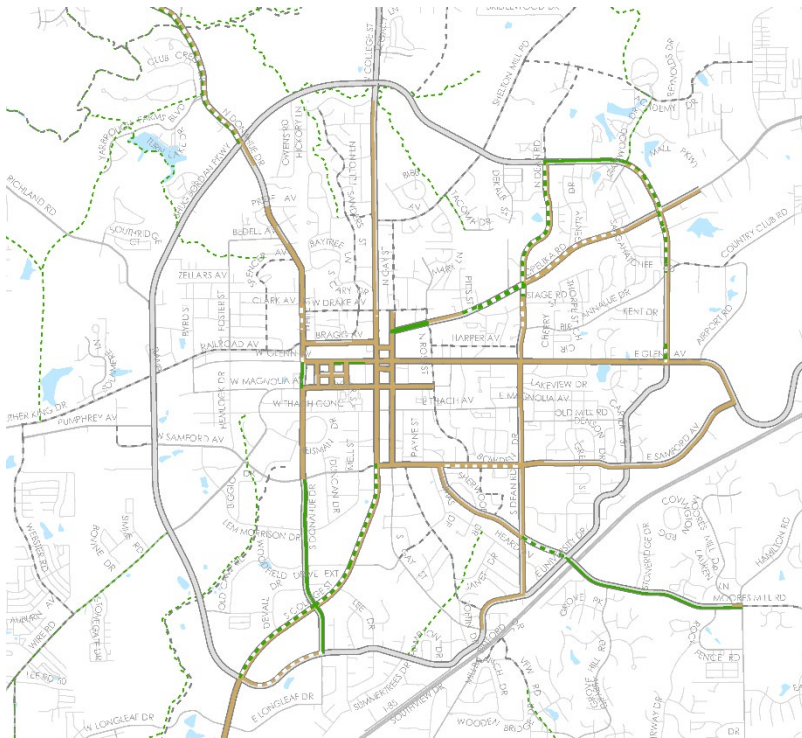


City of Auburn

# CONNECT AUBURN



# Walkway Recommendations



FOCUSED ON:

## Safety

Improving conditions along high-risk roadways

- Example: Multi-Use Path along a portion of S College

## Connectivity

Filling key gaps in the sidewalk network

- Example: Sidewalks along N Donahue

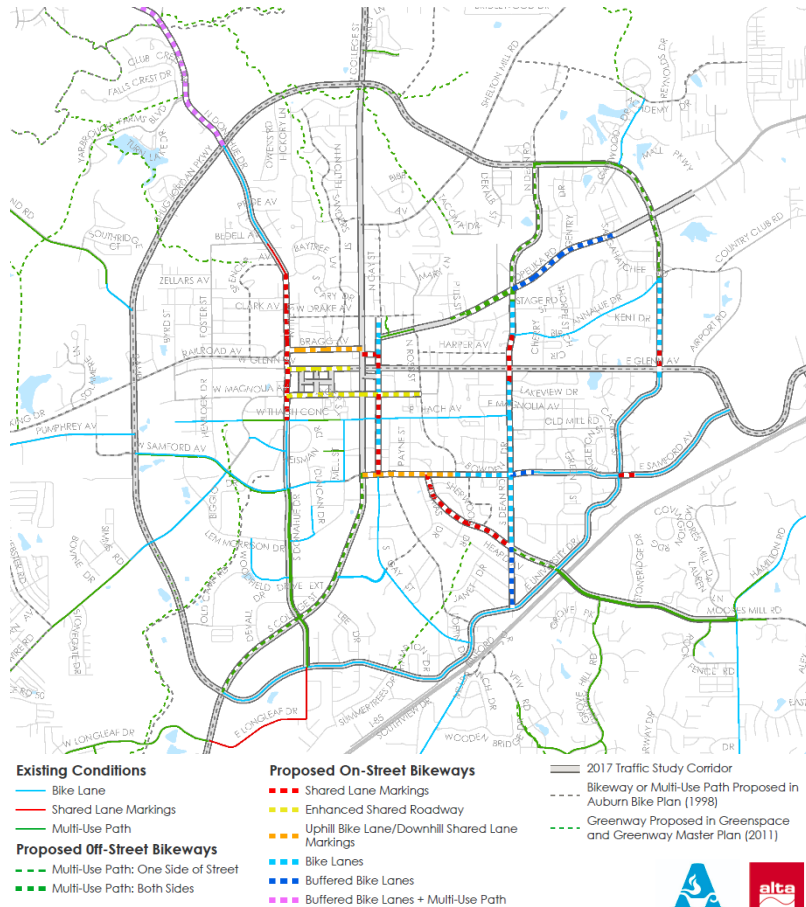
## Access

Providing walkways on roadways with a high density of destinations/activity generators

- Example: Sidewalks along Opelika Rd



# Bikeway Recommendations

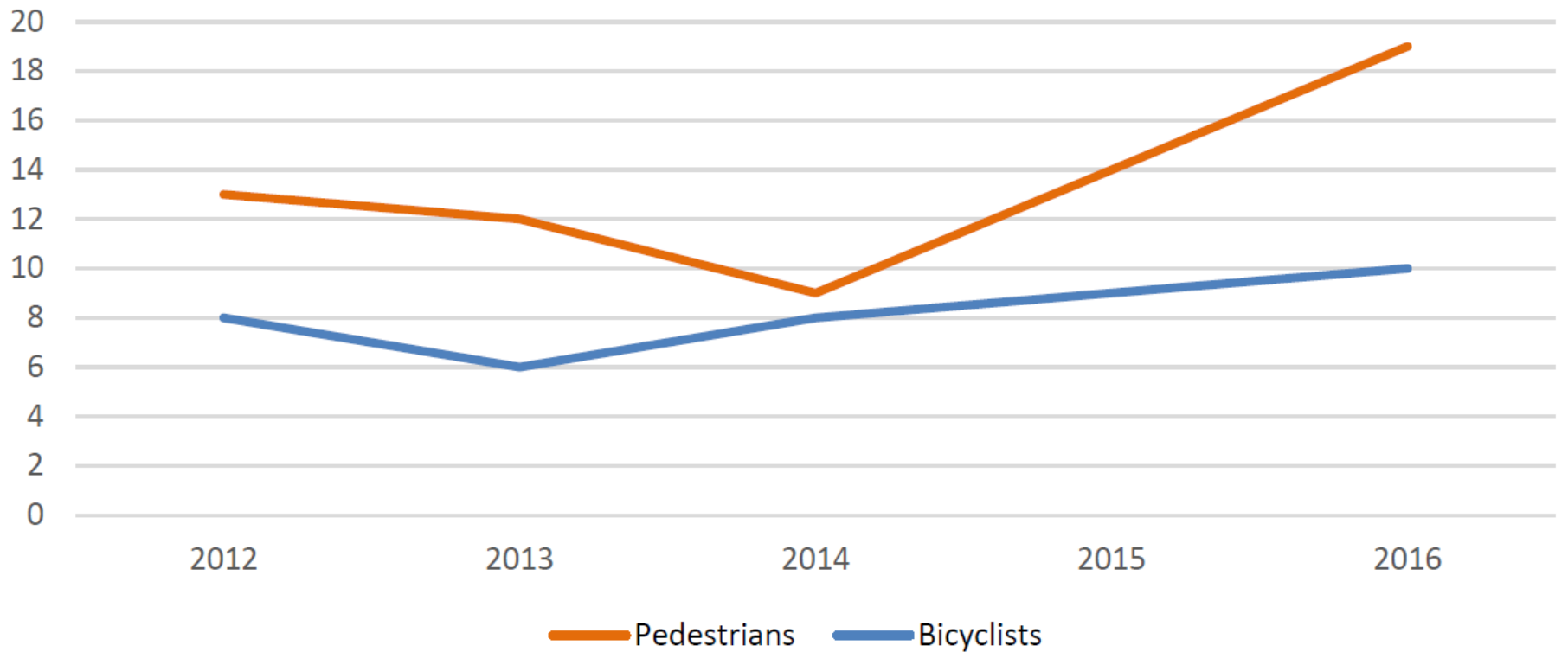


FOCUSED ON:

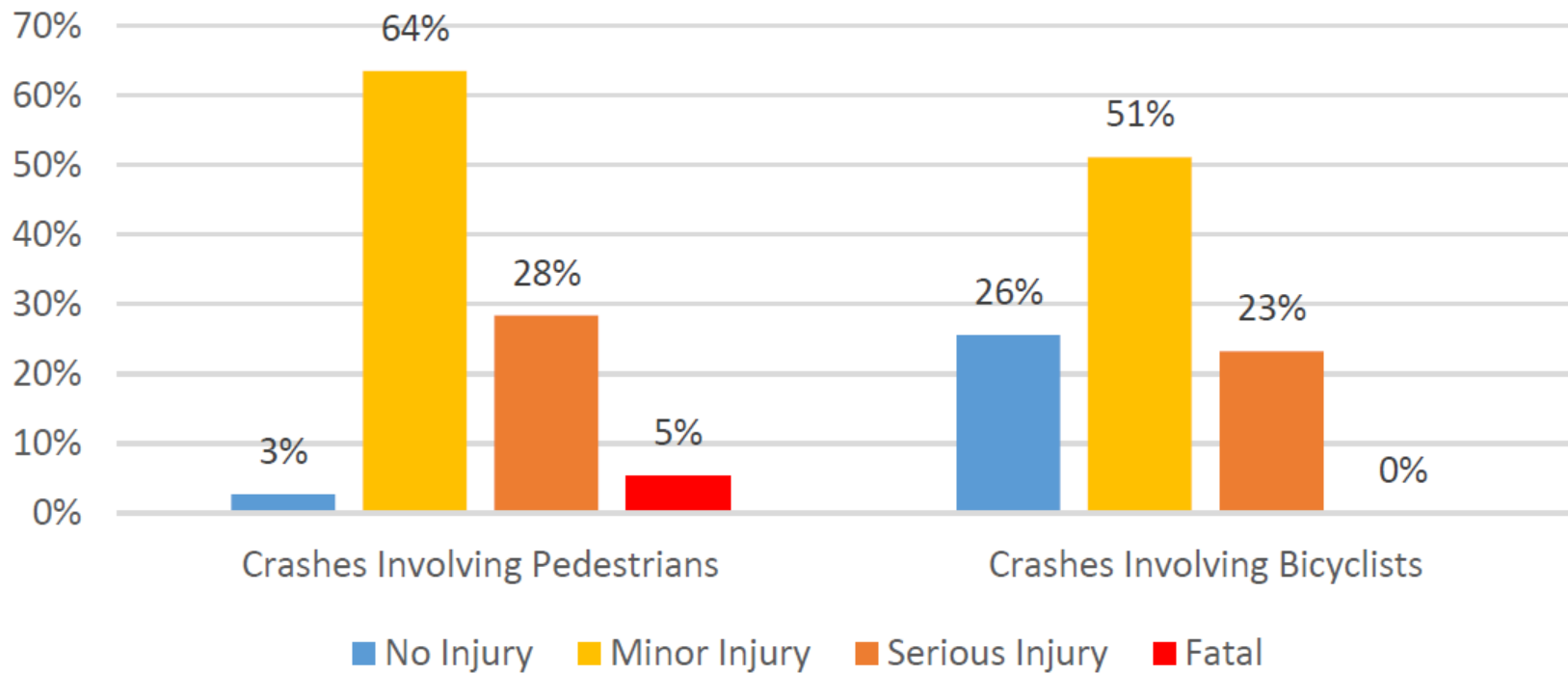
## Practical, Context-Sensitive Solutions

- Buffered bike lanes on Opelika Rd and N Donahue Dr
- Multi-Use Paths along S College and Dean Rd (north of Opelika)
- Traffic calming and shared lane markings on Magnolia to
- Right-sizing Dean Rd will improve safety for all users and add a bike lane
- Bike lane (where possible) on Gay St

## Annual Crashes Involving Pedestrians and Bicyclists, 2012-2016

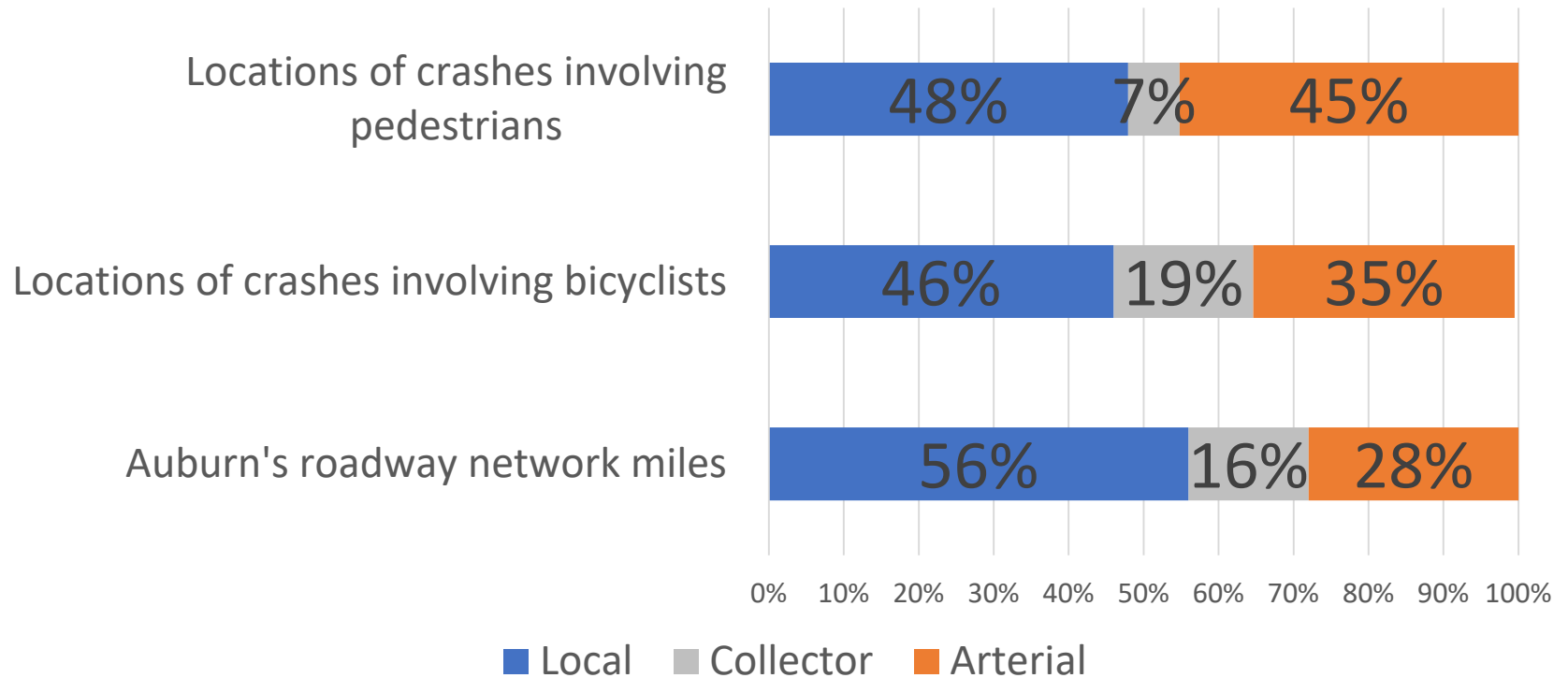


## Severity of Crashes Involving Pedestrians and Bicyclists, 2012-2016

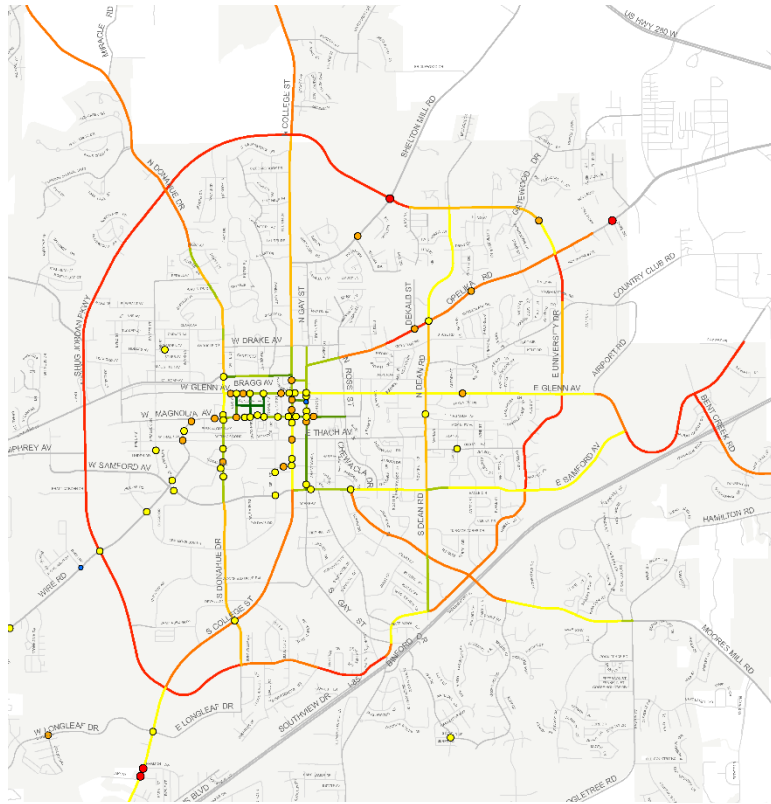




Crashes Involving Pedestrians and Bicyclists by Roadway Functional Classification, 2012-2016



# Pedestrian Safety Risk



**Crashes Involving Pedestrians, 2012-2016**

- Fatality
- Serious Injury
- Minor Injury
- No Injury

**Pedestrian Safety Risk**

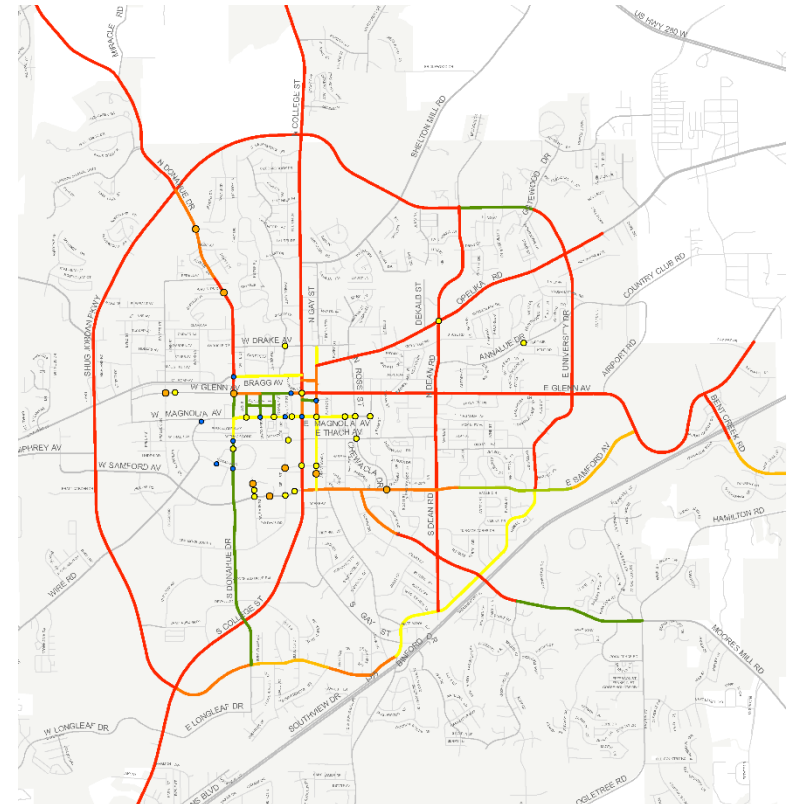
- Lowest Risk
- 
- 
- 
- Highest Risk

Factors included in the pedestrian safety risk analysis:

- Number of Vehicle Lanes
- Posted Speed
- Average Daily Traffic
- Presence of Sidewalk



# Bicycle Safety Risk



**Crashes Involving Bicyclists, 2012-2016**

- Serious Injury
- Minor Injury
- No Injury

**Bicyclist Safety Risk**

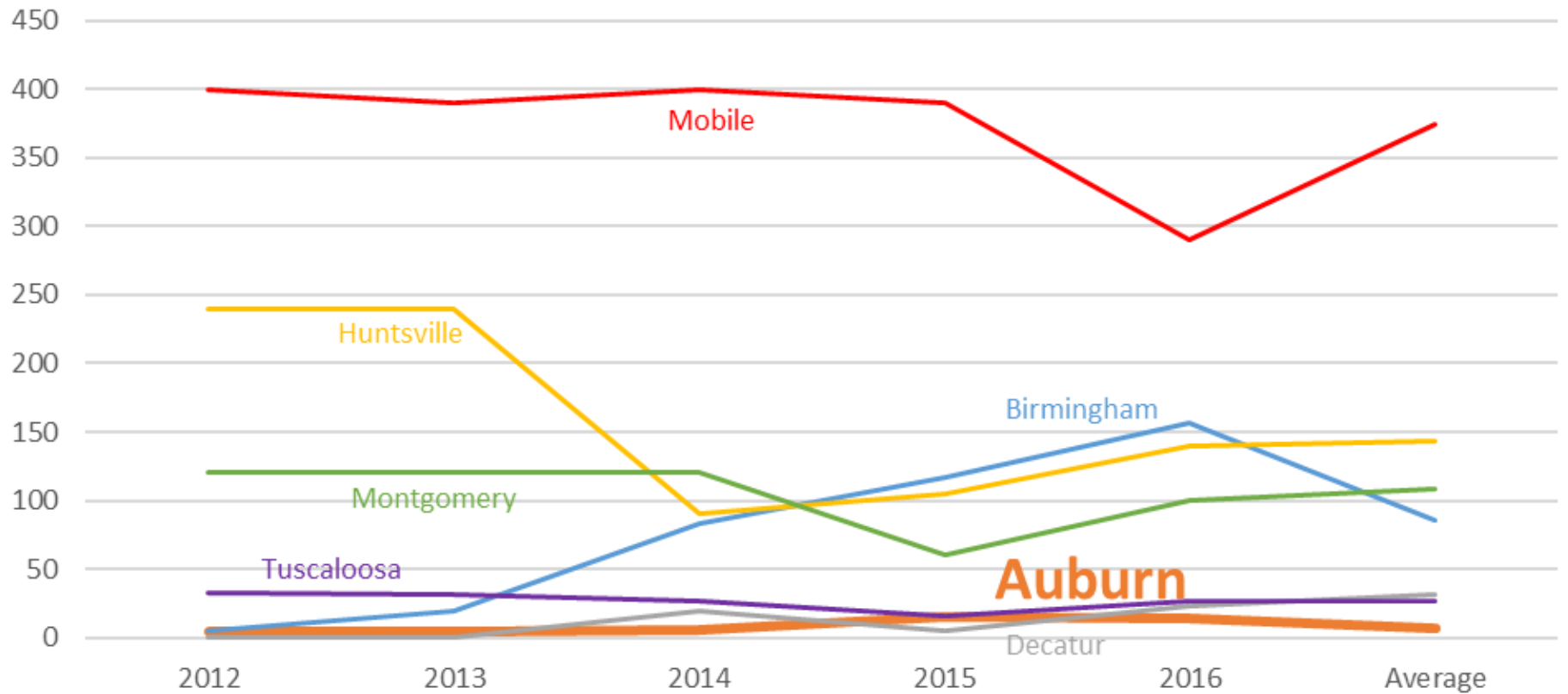
- Lowest Risk
- 
- 
- Highest Risk

Factors included in the bicyclist safety risk analysis:

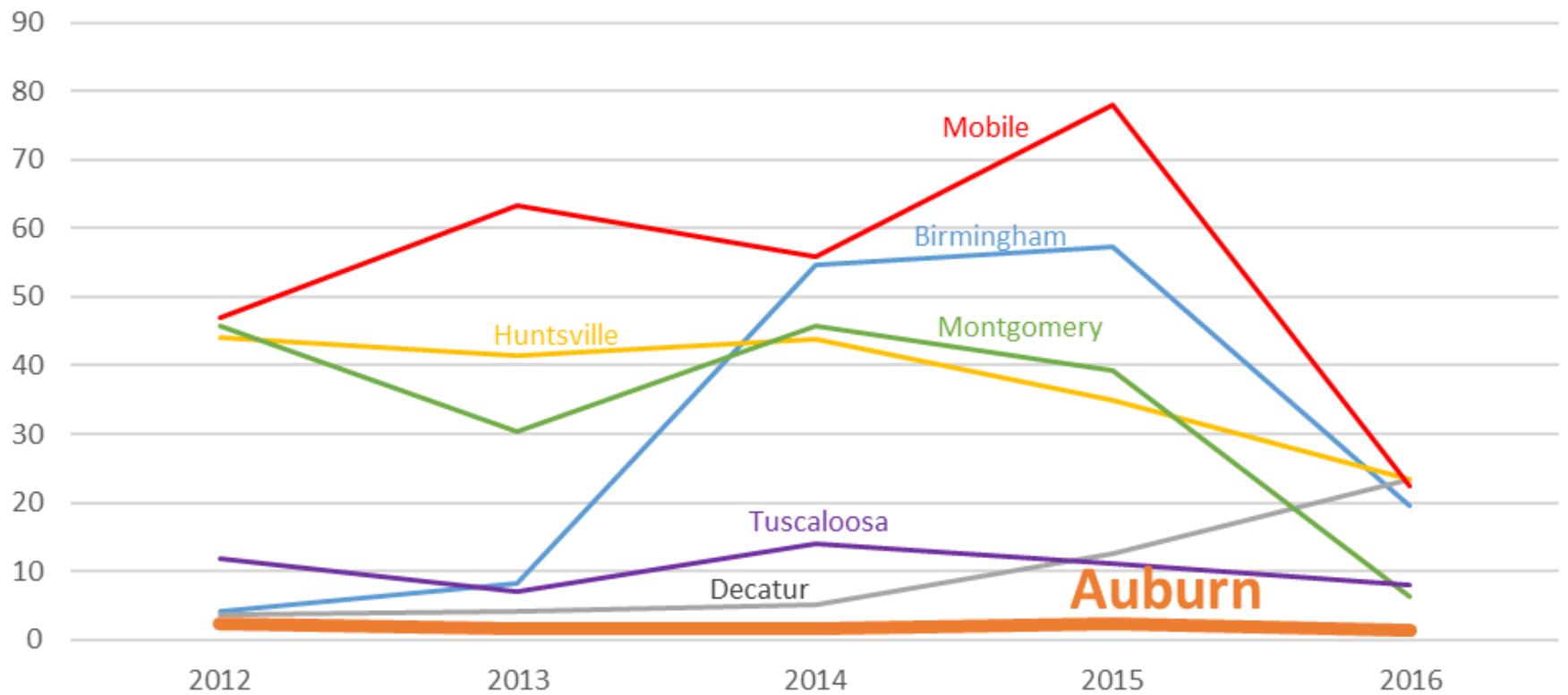
- Number of Vehicle Lanes
- Posted Speed
- Average Daily Traffic
- Presence of Bikeway



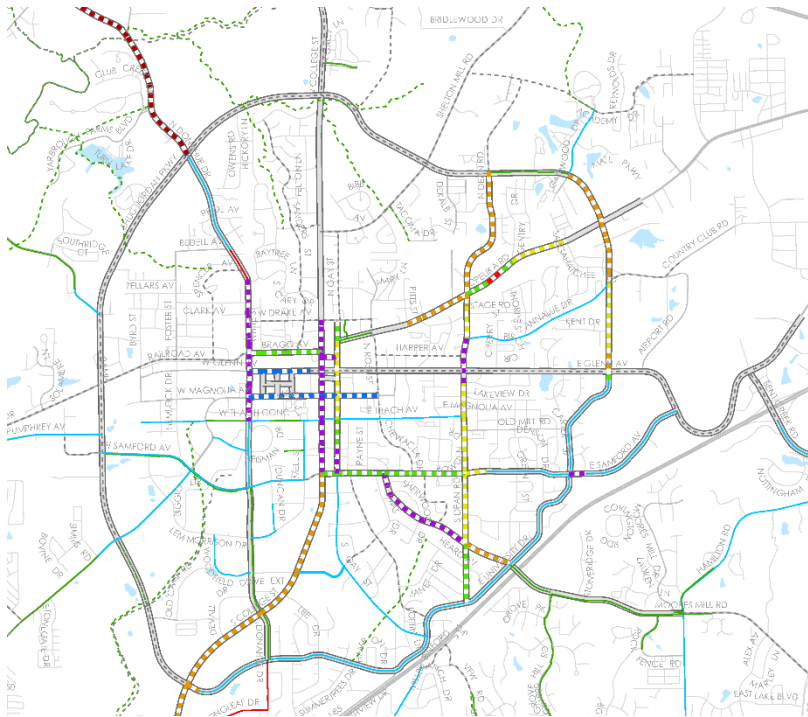
Crash Rate: Crashes Involving Bicyclists/Bicycling Commute Mode Share for Select Alabama Cities, 2012-2016



Crash Rate: Crashes Involving Pedestrians/Walking Commute Mode Share for Select Alabama Cities, 2012-2016



# Implementation Strategies



## Implementation Strategy

- Install Shared Lane Markings
- Install Shared Lane Markings + Traffic Calming
- Reduce Widths of Existing Lanes
- Reconfigure Roadway
- Construct 10-12' Multi-Use Path(s)
- Expand Roadway
- Expand Roadway + Install 10-12' Multi-Use Path

## Existing Bikeways

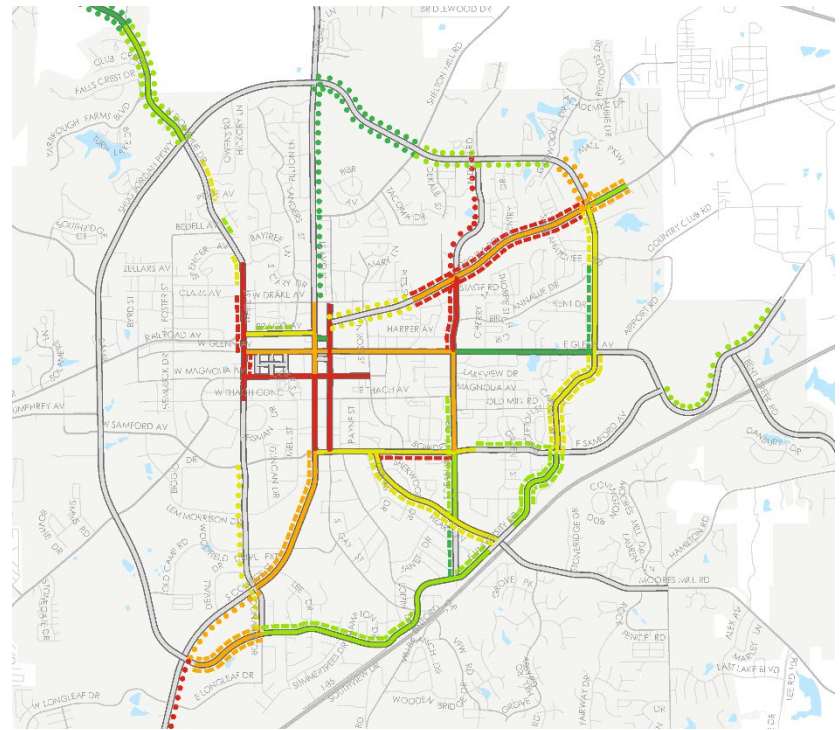
- Bike Lane
- Shared Lane Markings
- Multi-Use Path

## 2017 Traffic Study Corridor

- Bikeway or Multi-Use Path Proposed in Auburn Bike Plan (1998)
- Greenway Proposed in Greenspace and Greenway Master Plan (2011)



# Project Prioritization



## Project Priority Scores

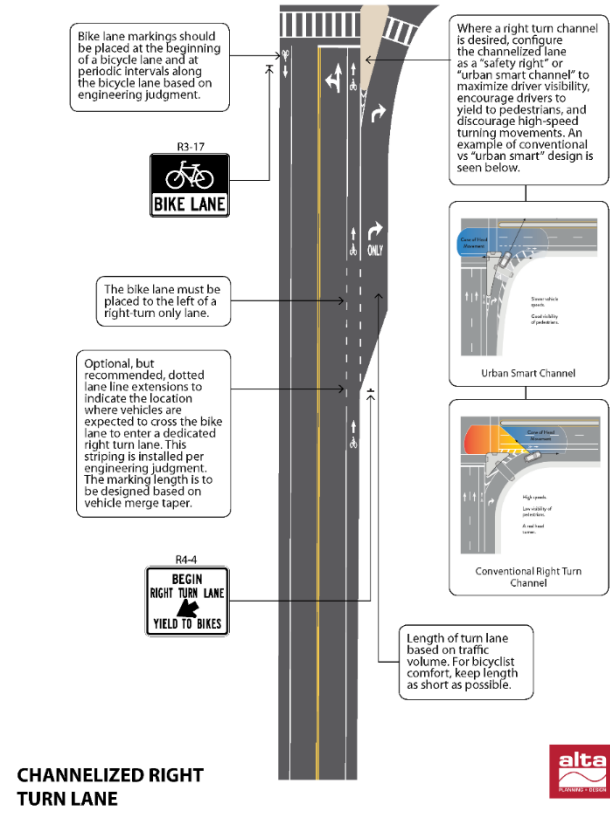
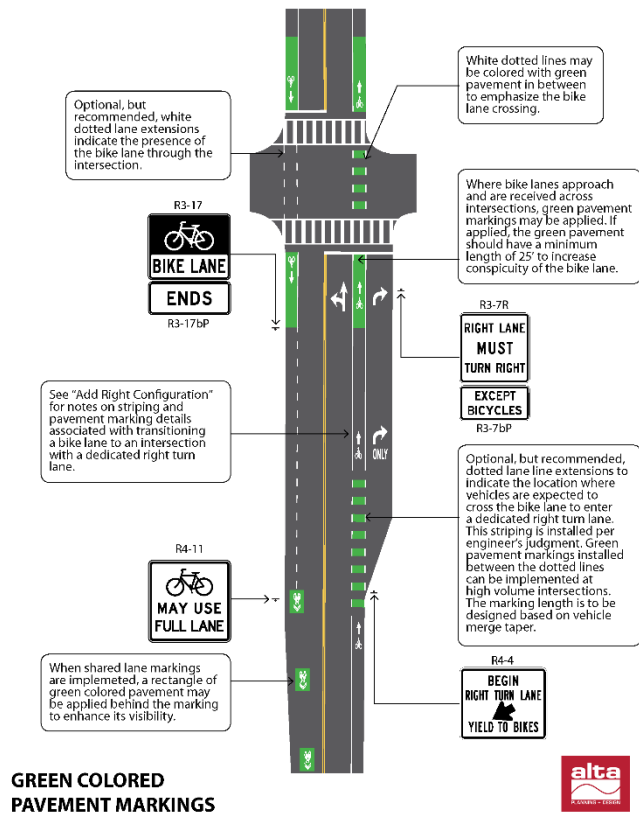
- |                          |                                |                          |
|--------------------------|--------------------------------|--------------------------|
| <b>Sidewalk Projects</b> | <b>Multi-Use Path Projects</b> | <b>On-Street Bikeway</b> |
| ■ Lowest                 | ●●●●● Lowest                   | ■ Lowest                 |
| ■ Low                    | ●●●● Low                       | ■ Low                    |
| ■ Moderate               | ●●● Moderate                   | ■ Moderate               |
| ■ High                   | ●● High                        | ■ High                   |
| ■ Highest                | ● Highest                      | ■ Highest                |

## 2017 Traffic Study Corridor

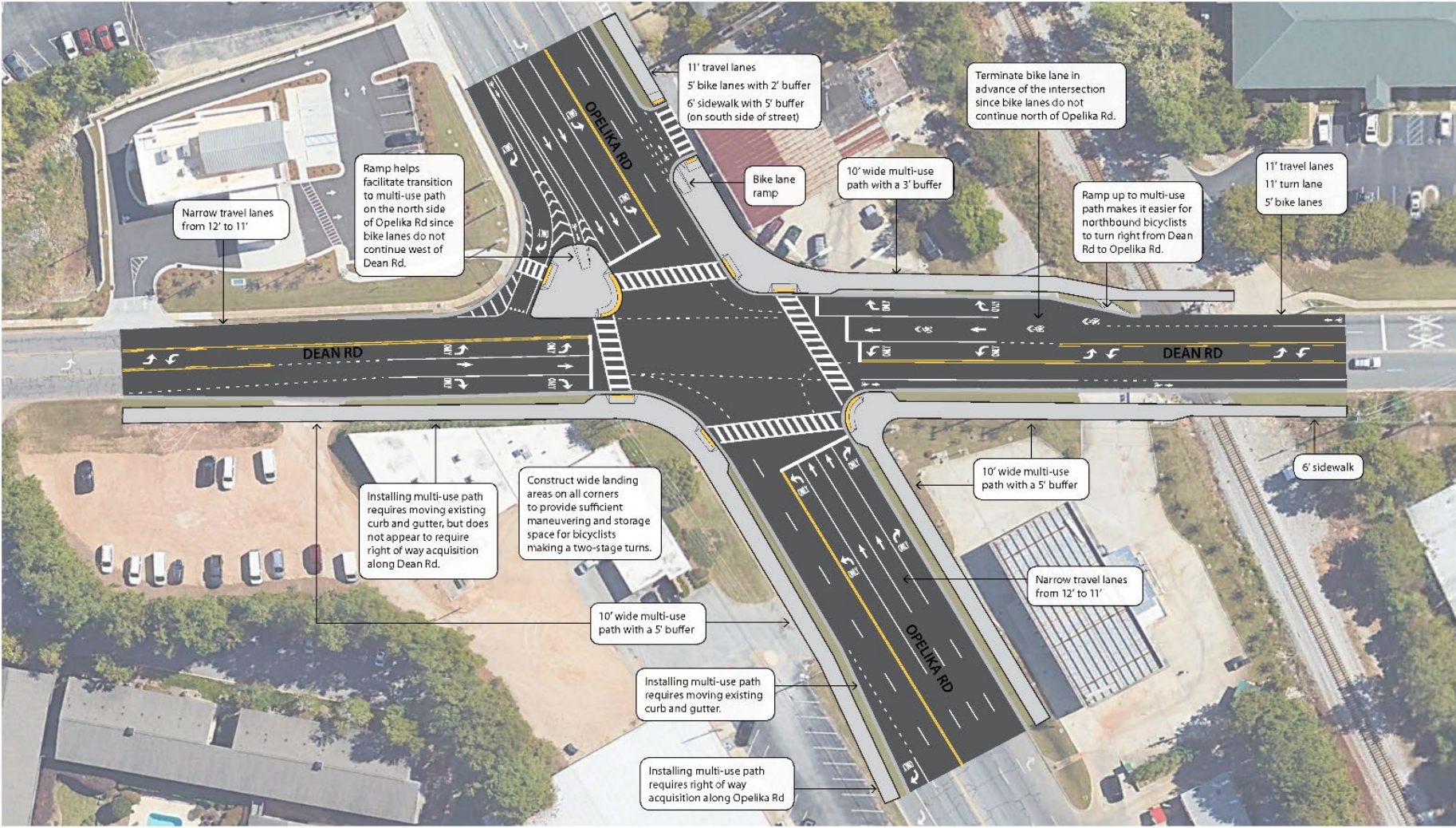
- Existing Facilities
- Sidewalk
- Multi-Use Path
- Shared Lane Marking
- Bike Lane



# Design Guidance



# Design Concept for Dean Rd and Opelika Rd



# Proposed Signal Systems



- ▶ College Street/Samford Avenue
- ▶ Gay Street
- ▶ Opelika Road
- ▶ Dean Road
- ▶ Bent Creek Road
- ▶ Moores Mill Road
- ▶ Donahue Drive
- ▶ East University Drive





# Traffic Signal Systems

- ▶ College Street
  - ▶ I-85 to Roosevelt Drive/Miller Avenue
    - ▶ 9 signals
- ▶ Gay Street
  - ▶ Opelika Road to Thach Avenue
    - ▶ 5 signals
- ▶ Donahue Drive
  - ▶ MLK Drive/Bragg Ave to Magnolia Avenue
    - ▶ 3 signals
- ▶ Dean Road
  - ▶ Opelika Road to Moores Mill Road
    - ▶ 6 signals

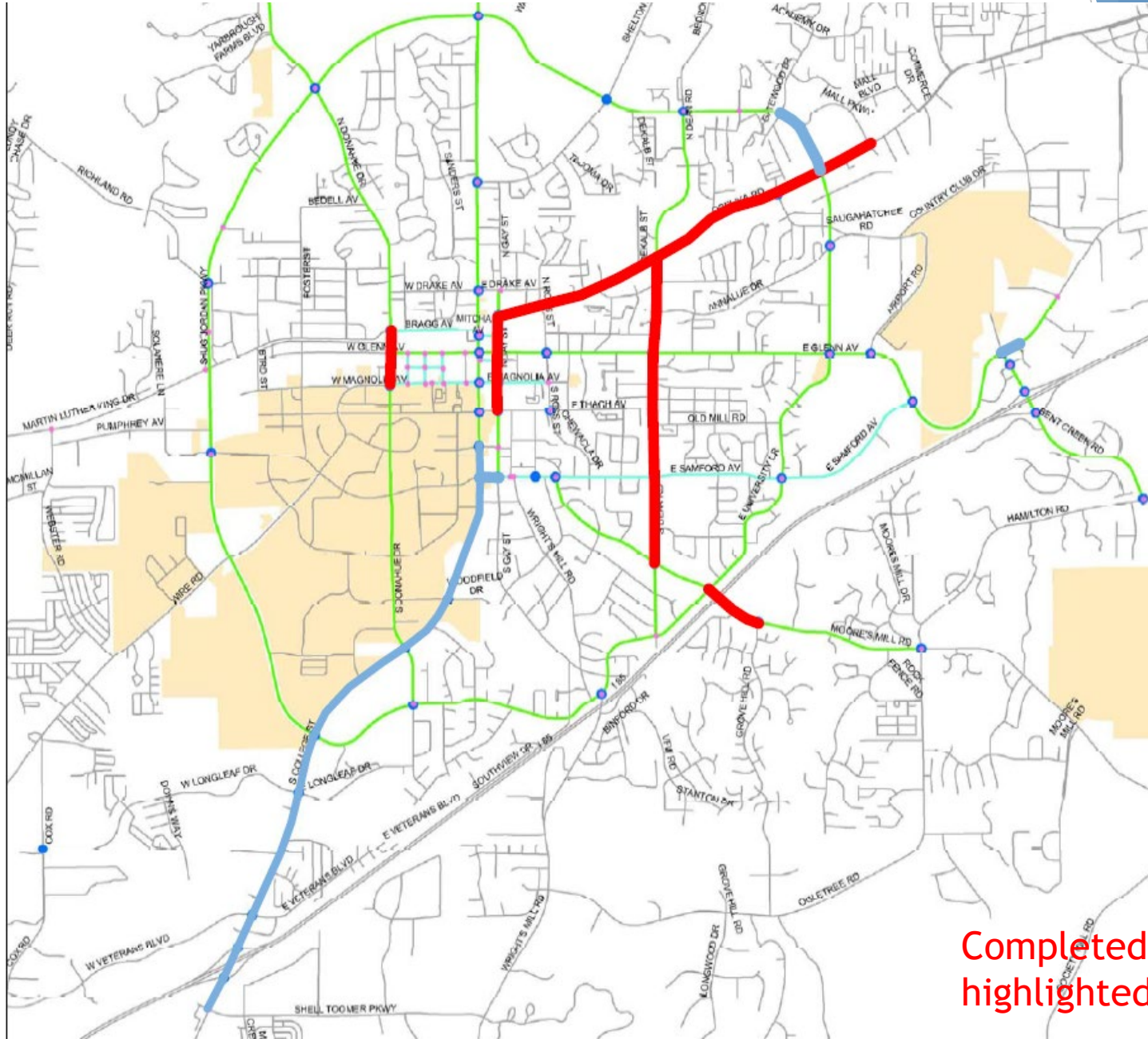
# Traffic Signal Systems

- ▶ Moores Mill Road
  - ▶ East University Drive to Grove Hill Road
    - ▶ 2 signals
- ▶ Opelika Road
  - ▶ Gay Street to Mall Parkway
    - ▶ 7 signals
- ▶ East University Drive
  - ▶ Gatewood Drive to Opelika Road
    - ▶ 4 signals
- ▶ Glenn Avenue
  - ▶ Bent Creek Road to Auburn Exchange
    - ▶ 2 signals

# Traffic Signal Systems

- ▶ Samford Avenue
  - ▶ College Street to Gay Street
    - ▶ 2 signals
  
- ▶ 36 total signals to be coordinated

# Completed Signal Systems



Completed signal systems highlighted in red.

# Signal System Improvements Example Results

## ▶ Dean Road

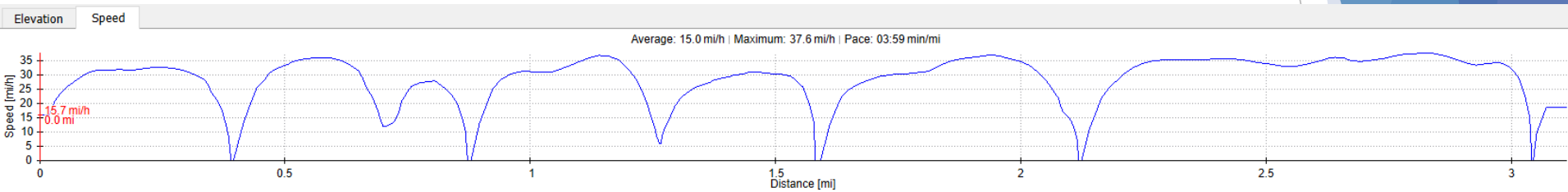
- ▶ From East University Drive (north) to East University Drive (south)
- ▶ Length 3.1 miles

Average Speed				
	Northbound		Southbound	
	Before	After	Before	After
AM	15.0 mph	22.5 mph	16.8 mph	22.1 mph
Midday	17.2 mph	27.9 mph	19.9 mph	24.7 mph
PM	18.2 mph	19.3 mph	14.3 mph	21.3 mph

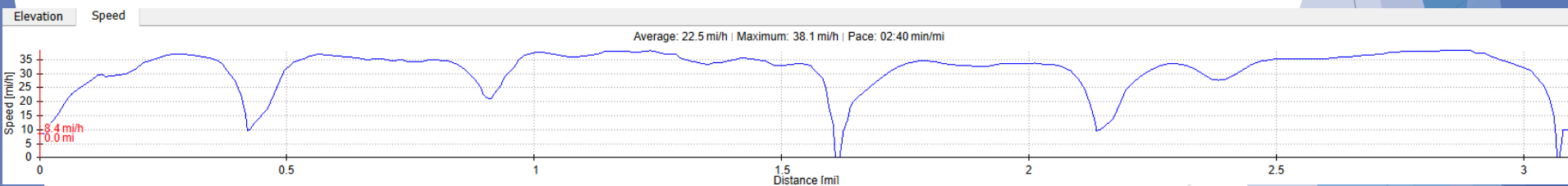
# Travel Speed Comparison

## Dean Road - AM - Northbound

BEFORE - 15.0 MPH



AFTER - 22.5 MPH

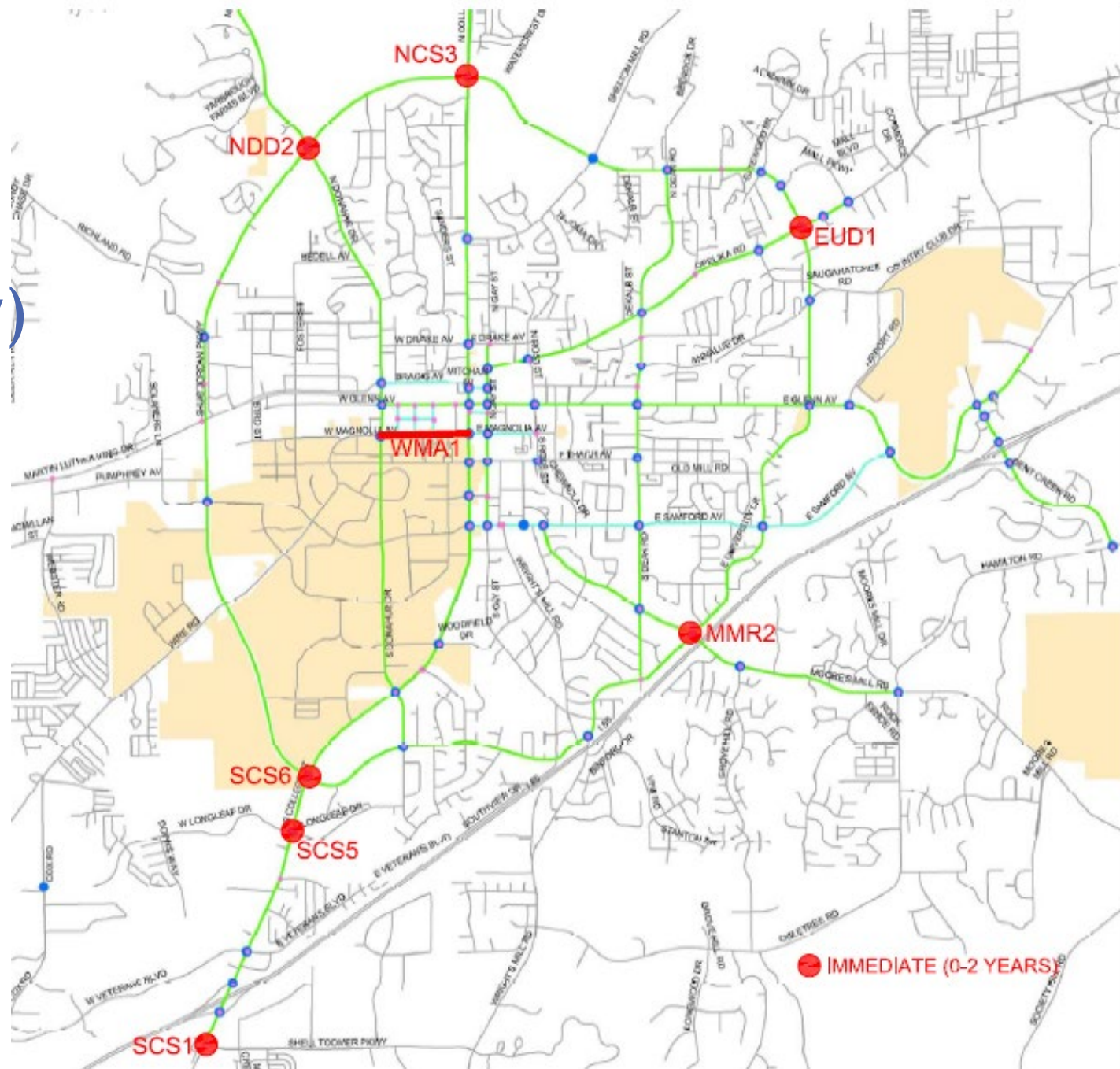


# Recommended Improvements

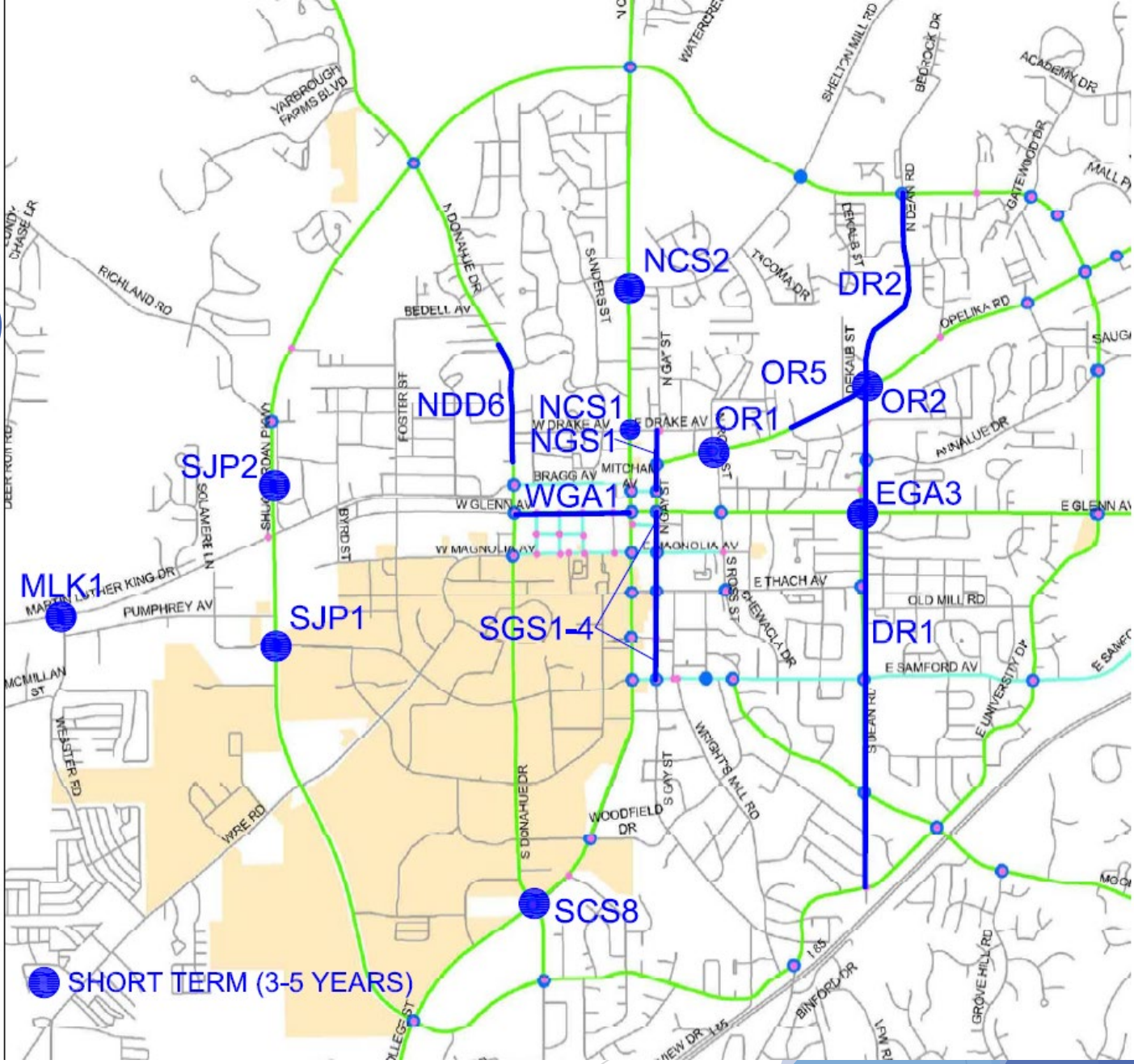
- ▶ 65 recommended improvement projects
  - ▶ 8 Immediate Projects (0-2 years)
  - ▶ 20 Short-Term Projects (3-5 years)
  - ▶ 16 Mid-Term Projects (6-8 years)
  - ▶ 21 Long Term Projects (9+ years)
- ▶ Note: assignment of projects to priority levels is preliminary subject to further review by City of Auburn



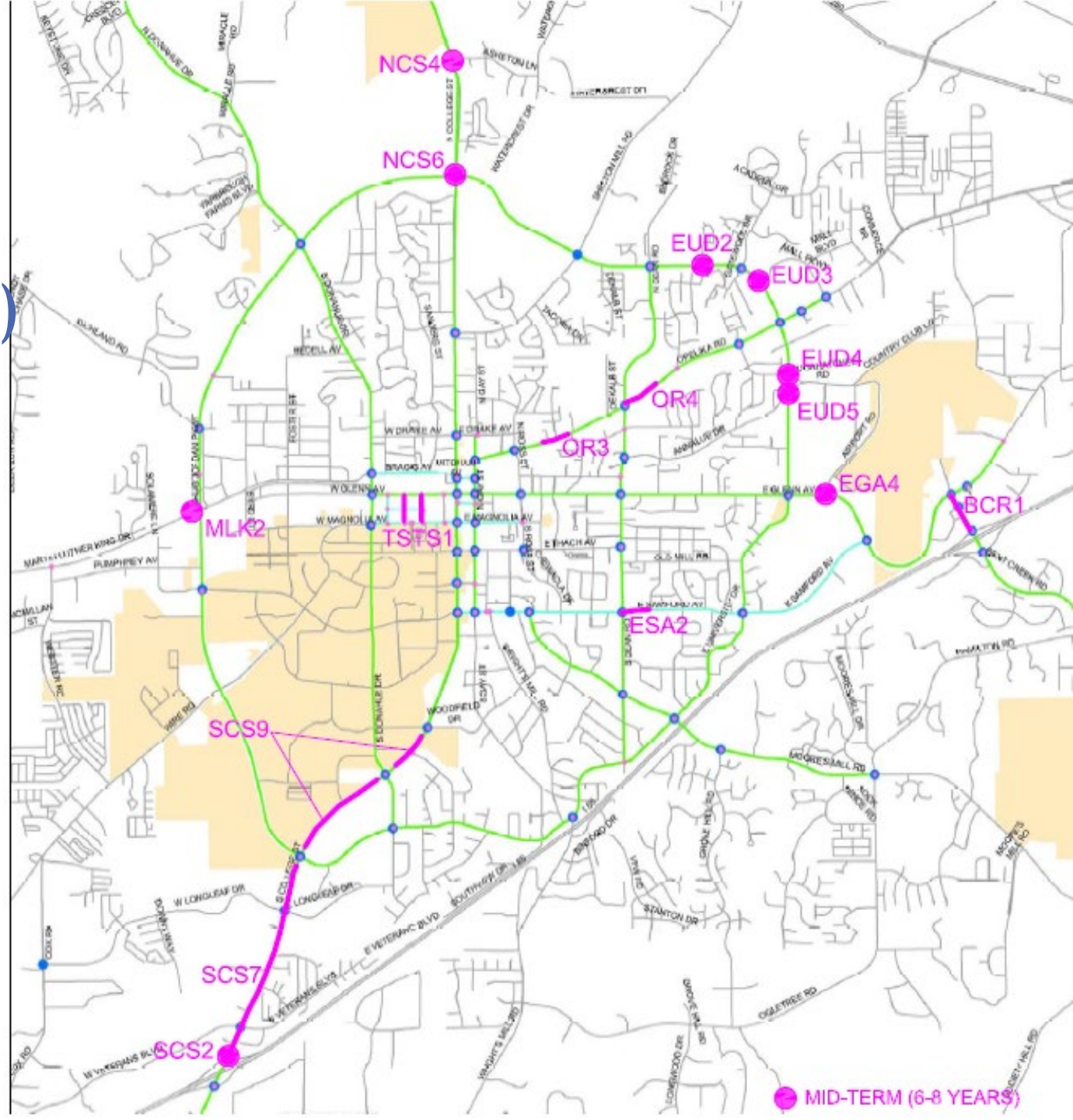
# Immediate 0-2 Years (Preliminary)



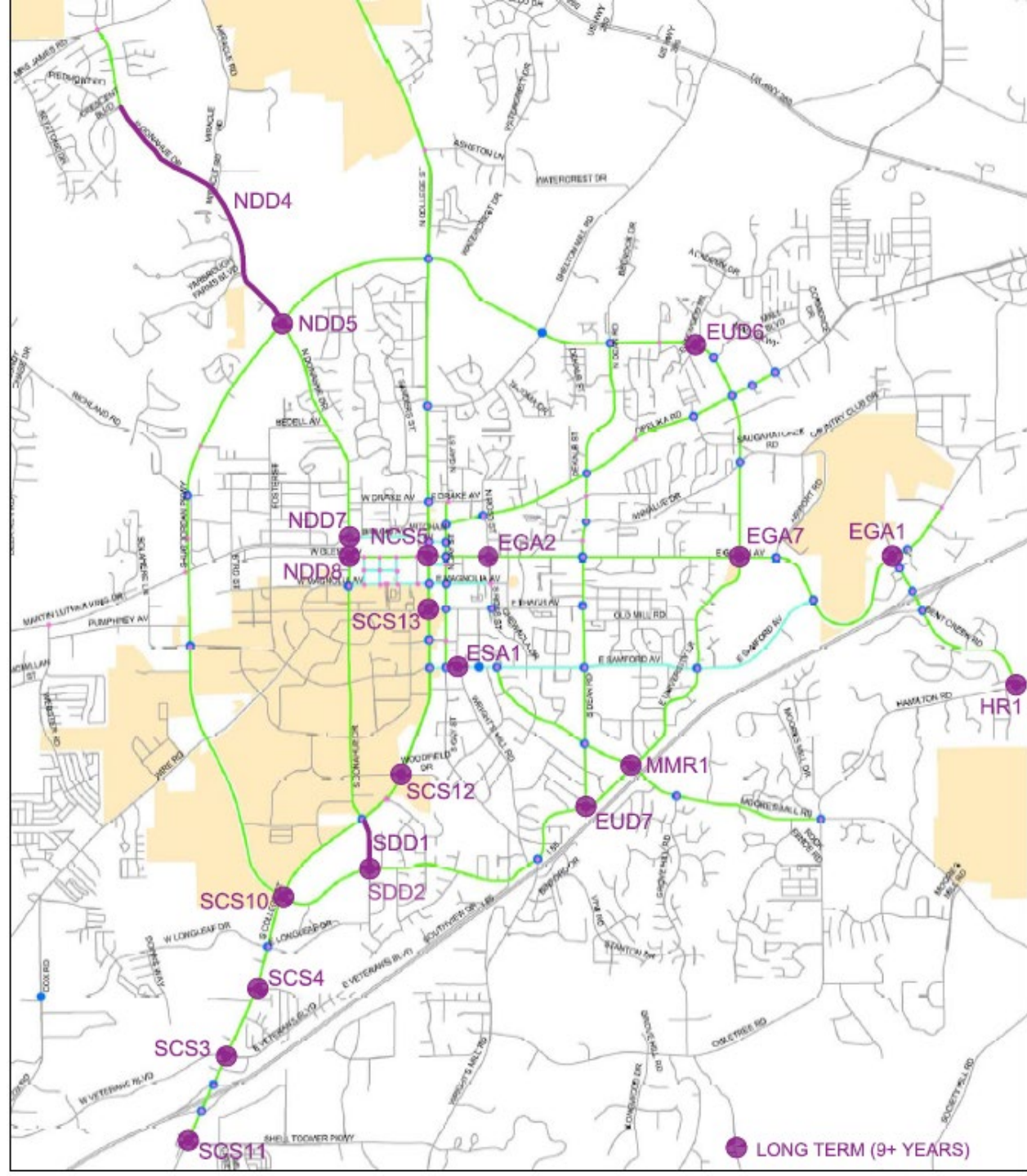
# Short Term 3-5 Years (Preliminary)



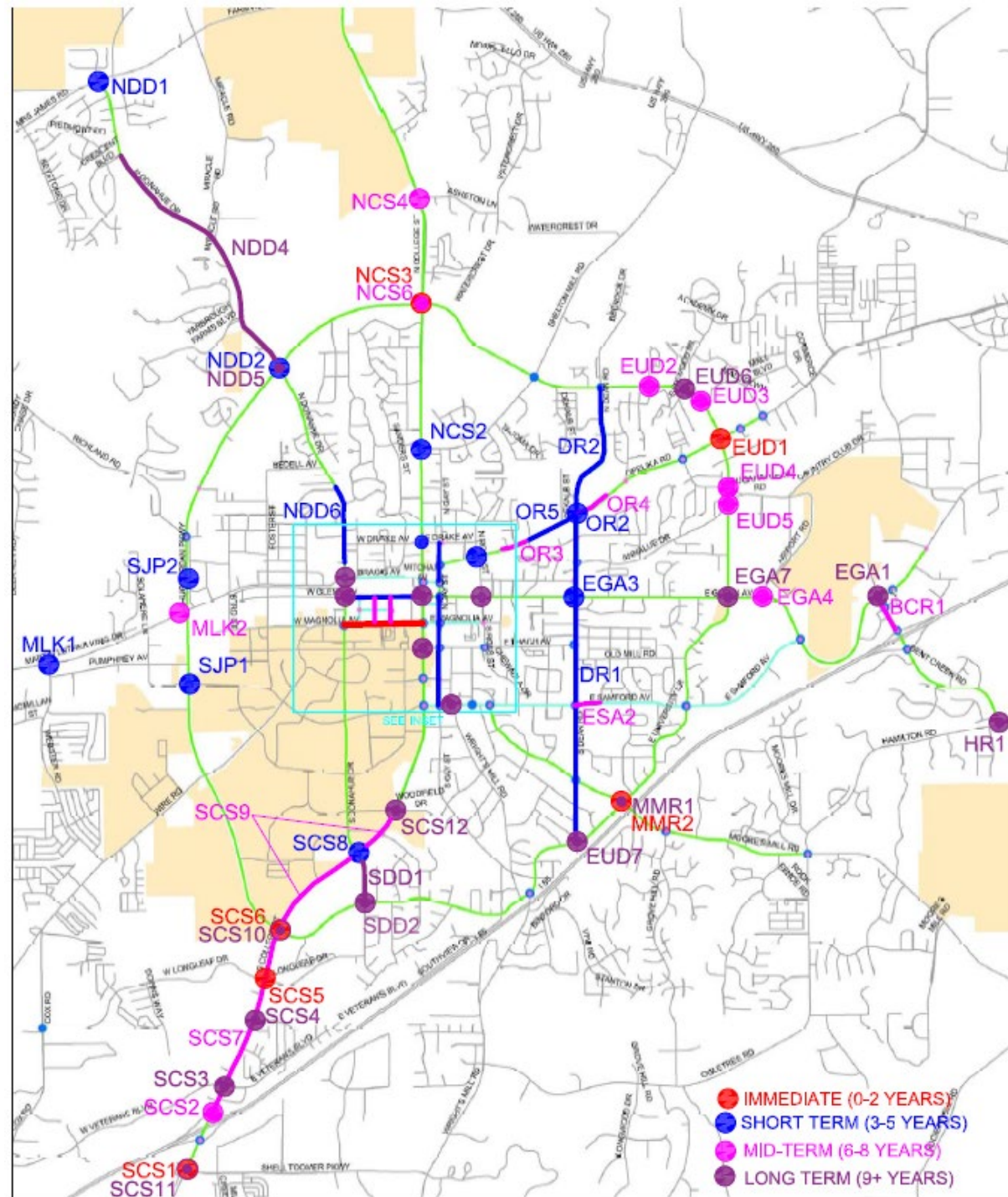
# Mid-Term 6-8 Years (Preliminary)



# Long Term 9+ Years (Preliminary)



# Complete Plan



# Cost Estimates

- ▶ Immediate Projects - \$620,000
- ▶ Short Term Projects - \$4.6 million
- ▶ Mid-Term Projects - \$3.4 million
- ▶ Long Term Projects - \$17.2 million

Total of all Projects - \$25.8 million