

SR 354/BOONES CREEK RD CORRIDOR STUDY

City of Johnson City
Town of Jonesborough
Washington County

March 31, 2022

STUDY PURPOSE

- Study Purpose
- Study Process
- Corridor Conditions
- Vision
- Recommendations

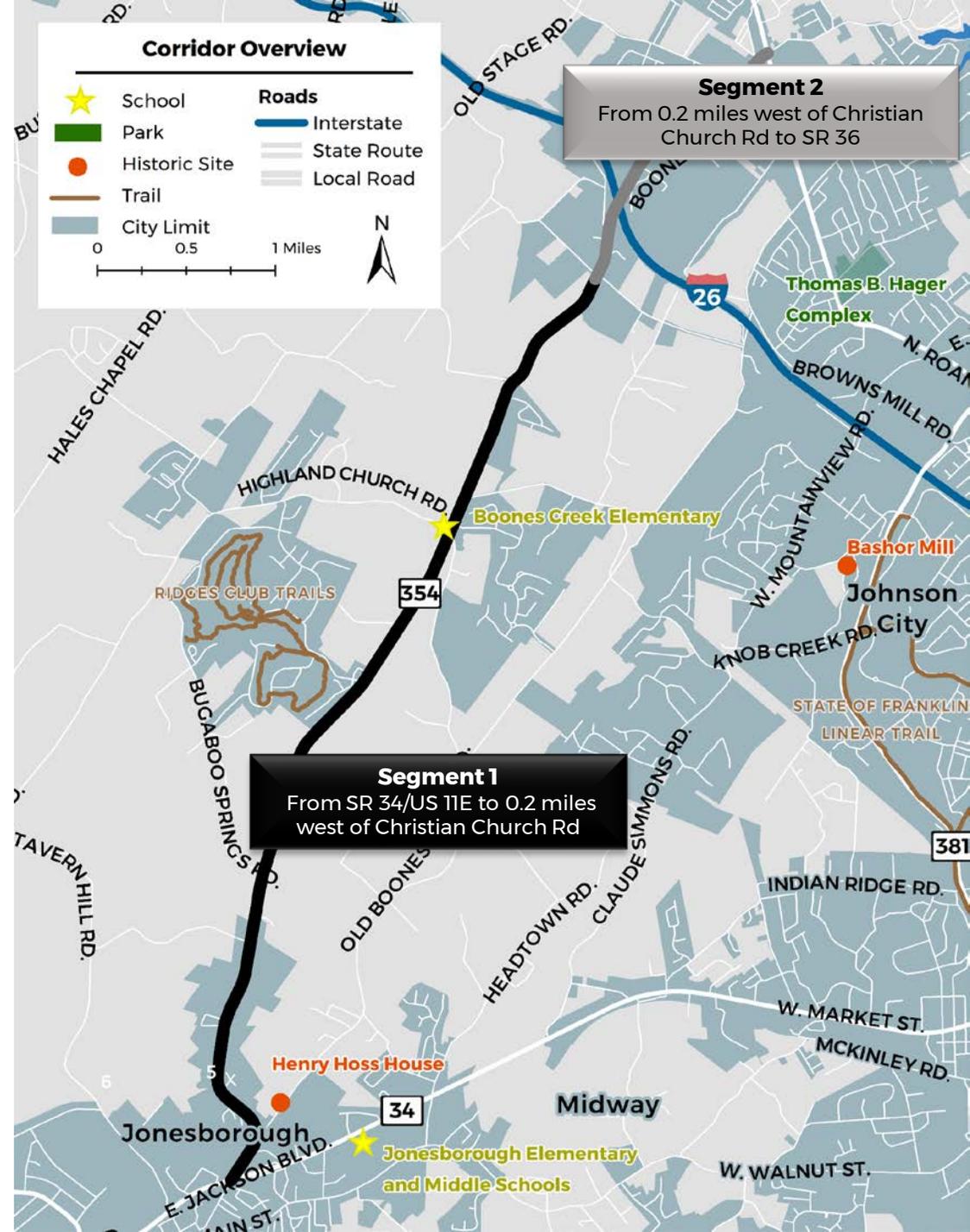


STUDY PURPOSE

Johnson City, the Town of Jonesborough, and Washington County were awarded an Urban Transportation Planning Grant (UTPG) to develop a SR 354/Boones Creek Corridor Study

The study provides guidance and recommendations related to:

- Sustainable growth strategies and policies
- Multimodal transportation enhancements
- Land use classifications
- Safety improvements



THE PROCESS

1

Analyze *Existing*
Transportation and
Land Use Conditions



2

Analyze *Future*
Transportation and
Land Use Conditions



3

Develop
Corridor
Vision



4

Develop Project
and Policy
Recommendations



5

Present
Final
Report

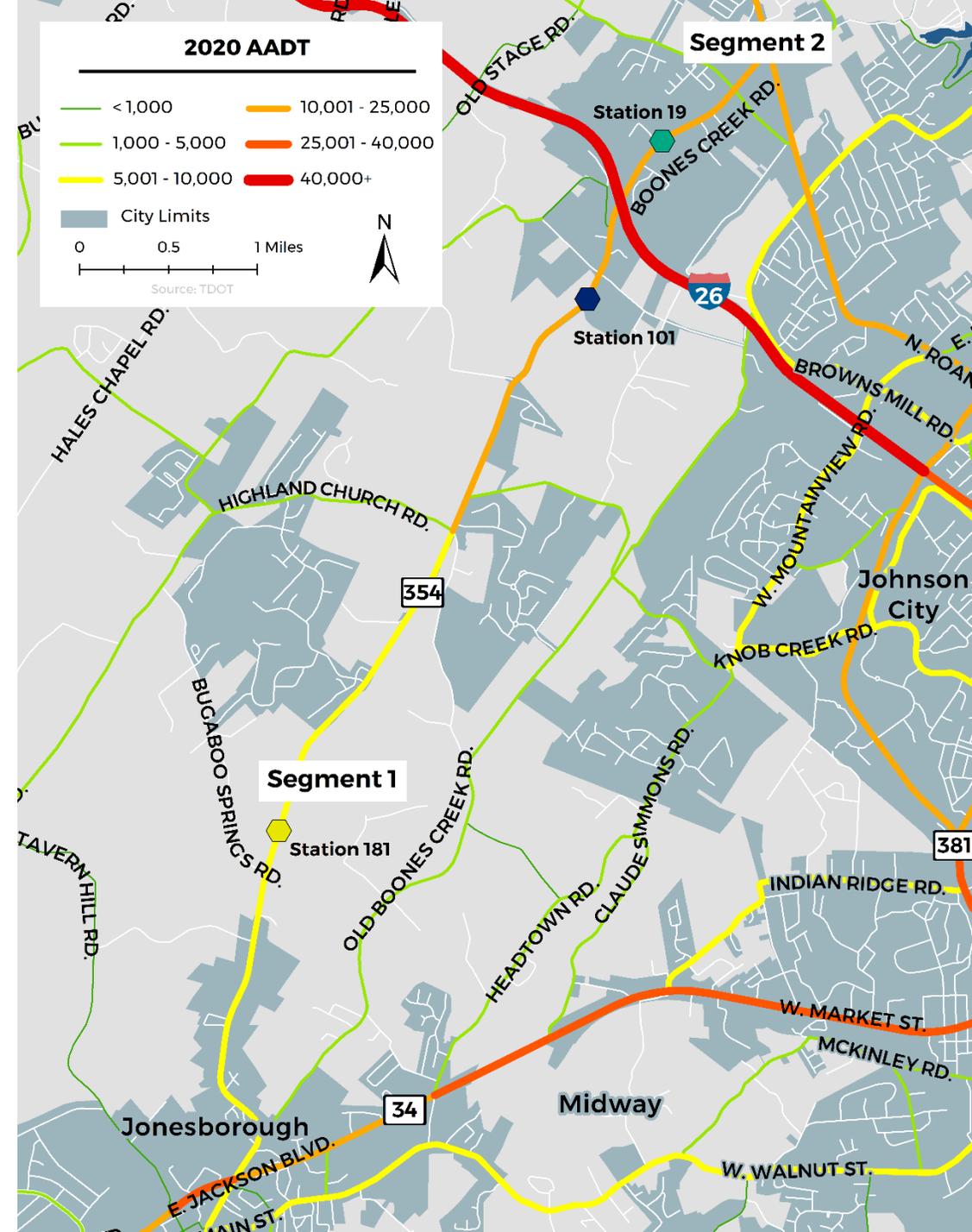


Coordination and WikiMap Engagement



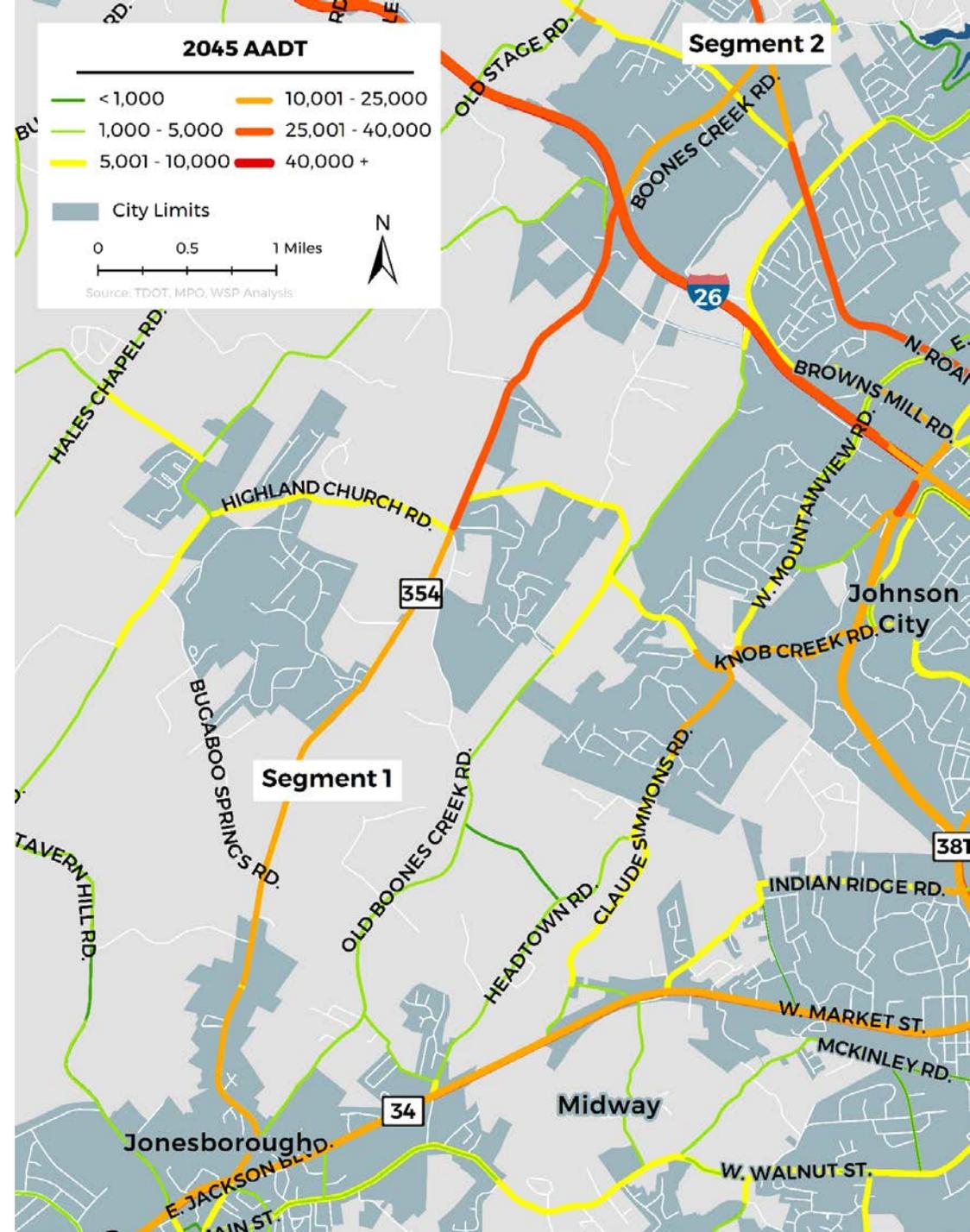
TRANSPORTATION

- Existing traffic volumes range from **8,000** in Segment 1 to over **20,000** in Segment 2
- By 2045, traffic volumes are expected to increase to approximately **15,000** in Segment 1 and over **30,000** in Segment 2
- Level of Service (LOS) at select intersections in near I-26 expected to degrade



TRANSPORTATION

- Existing traffic volumes range from **8,000** in Segment 1 to over **20,000** in Segment 2
- By 2045, traffic volumes are expected to increase to approximately **15,000** in Segment 1 and over **30,000** in Segment 2
- Level of Service (LOS) at select intersections in near I-26 expected to degrade



TRANSPORTATION

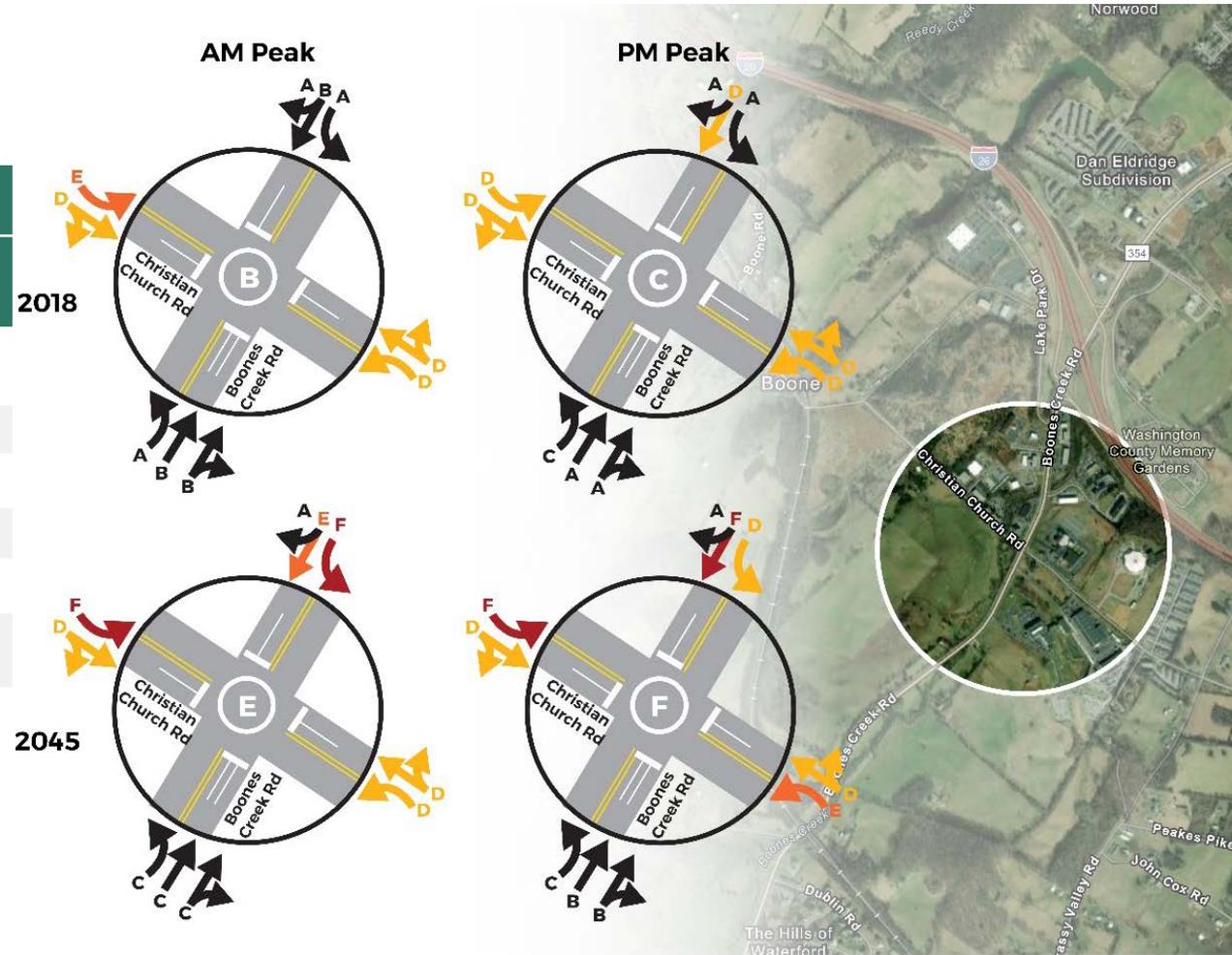
- Existing traffic volumes range from **8,000** in Segment 1 to over **20,000** in Segment 2
- By 2045, traffic volumes are expected to increase to approximately **15,000** in Segment 1 and over **30,000** in Segment 2
- Level of Service (LOS) at select intersections in near I-26 expected to degrade



TRANSPORTATION

2045 Delay and Level of Service		AM		PM	
Intersection Name	Traffic Control	Delay (s)	LOS	Delay (s)	LOS
Christian Church Rd	Signalization	59.3	E	138.8	F
Pinnacle Dr	Two-Way Stop Control	-	F	-	F
Orr Ct	Two-Way Stop Control	-	F	-	F
Lake Park Dr	Two-Way Stop Control	-	F	-	F
I-26 DDI	Signalization	97.6	F	158.9	F
Young Property Ent	Two-Way Stop Control	-	F	-	F
Boone Ridge Dr	Two-Way Stop Control	-	F	-	F

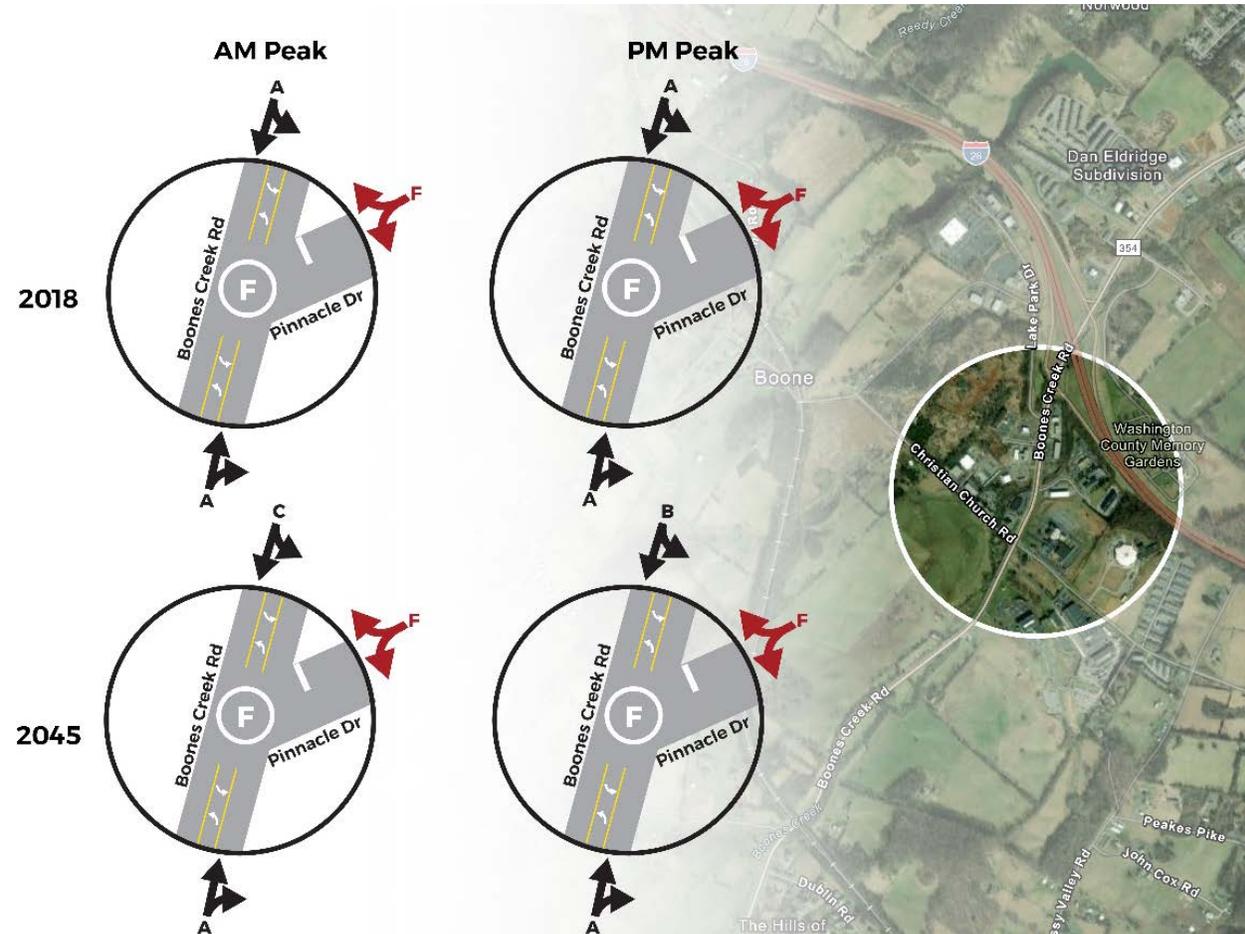
*Delays notated by a dash ("-") exceed 300 seconds; any additional delay over 300 seconds is irrelevant and indicates a need for operational changes at the intersection.



TRANSPORTATION

2045 Delay and Level of Service		AM		PM	
Intersection Name	Traffic Control	Delay (s)	LOS	Delay (s)	LOS
Christian Church Rd	Signalization	59.3	E	138.8	F
Pinnacle Dr	Two-Way Stop Control	-	F	-	F
Orr Ct	Two-Way Stop Control	-	F	-	F
Lake Park Dr	Two-Way Stop Control	-	F	-	F
I-26 DDI	Signalization	97.6	F	158.9	F
Young Property Ent	Two-Way Stop Control	-	F	-	F
Boone Ridge Dr	Two-Way Stop Control	-	F	-	F

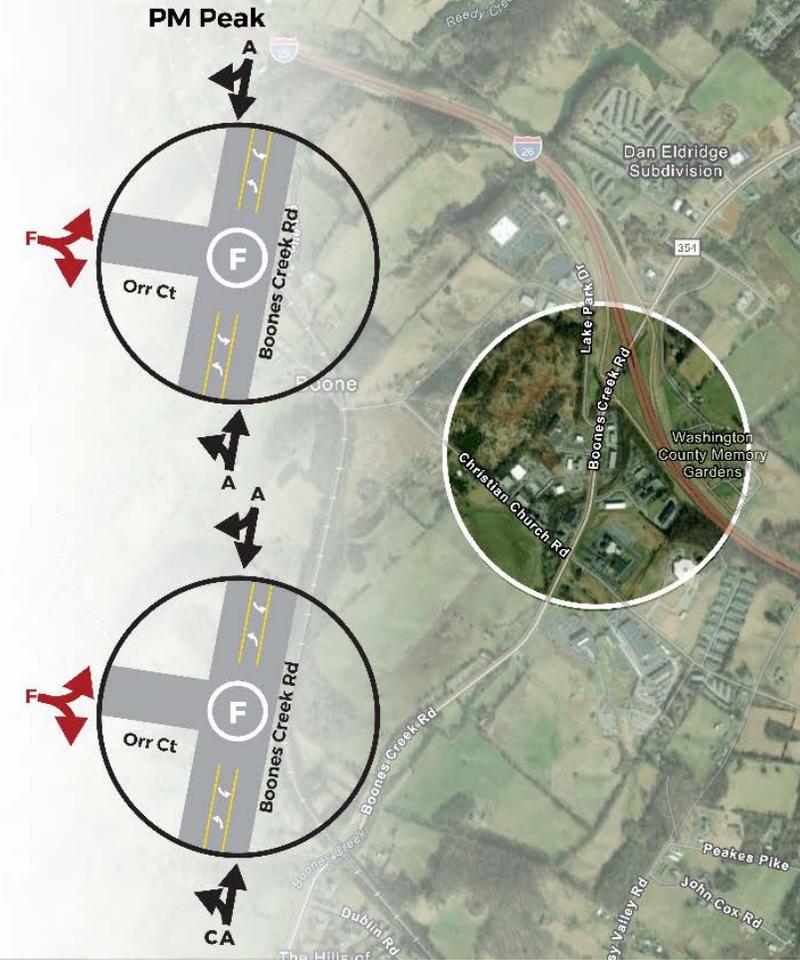
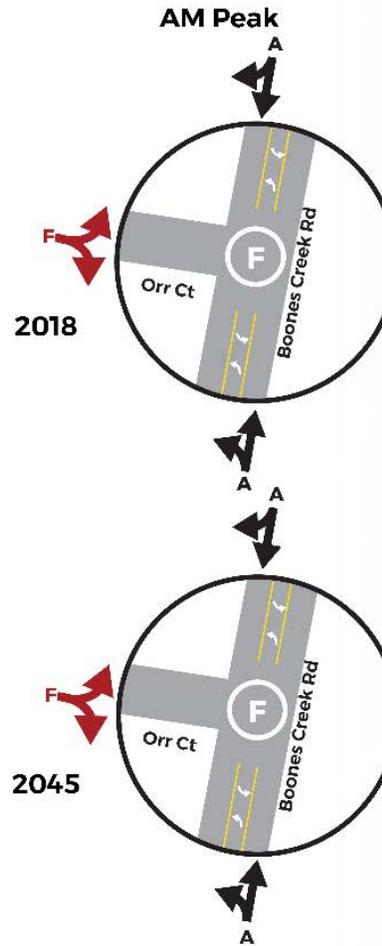
*Delays notated by a dash ("-") exceed 300 seconds; any additional delay over 300 seconds is irrelevant and indicates a need for operational changes at the intersection.



TRANSPORTATION

2045 Delay and Level of Service		AM		PM	
Intersection Name	Traffic Control	Delay (s)	LOS	Delay (s)	LOS
Christian Church Rd	Signalization	59.3	E	138.8	F
Pinnacle Dr	Two-Way Stop Control	-	F	-	F
Orr Ct	Two-Way Stop Control	-	F	-	F
Lake Park Dr	Two-Way Stop Control	-	F	-	F
I-26 DDI	Signalization	97.6	F	158.9	F
Young Property Ent	Two-Way Stop Control	-	F	-	F
Boone Ridge Dr	Two-Way Stop Control	-	F	-	F

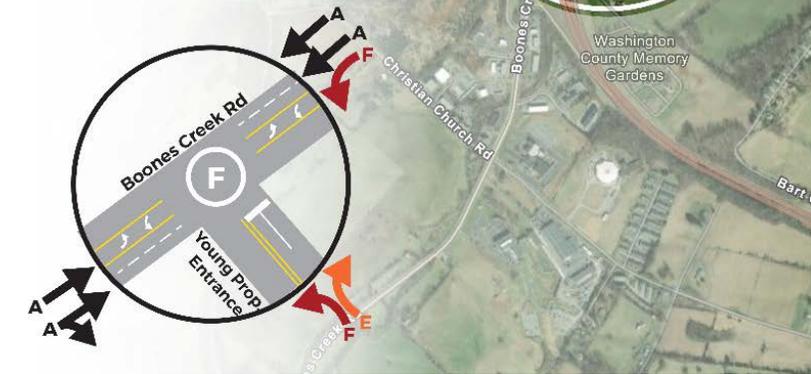
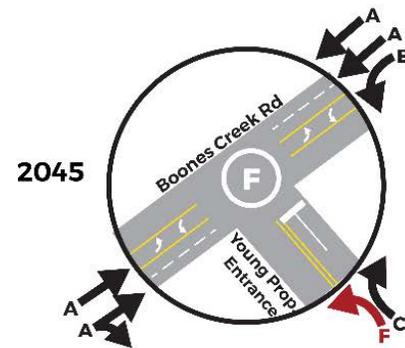
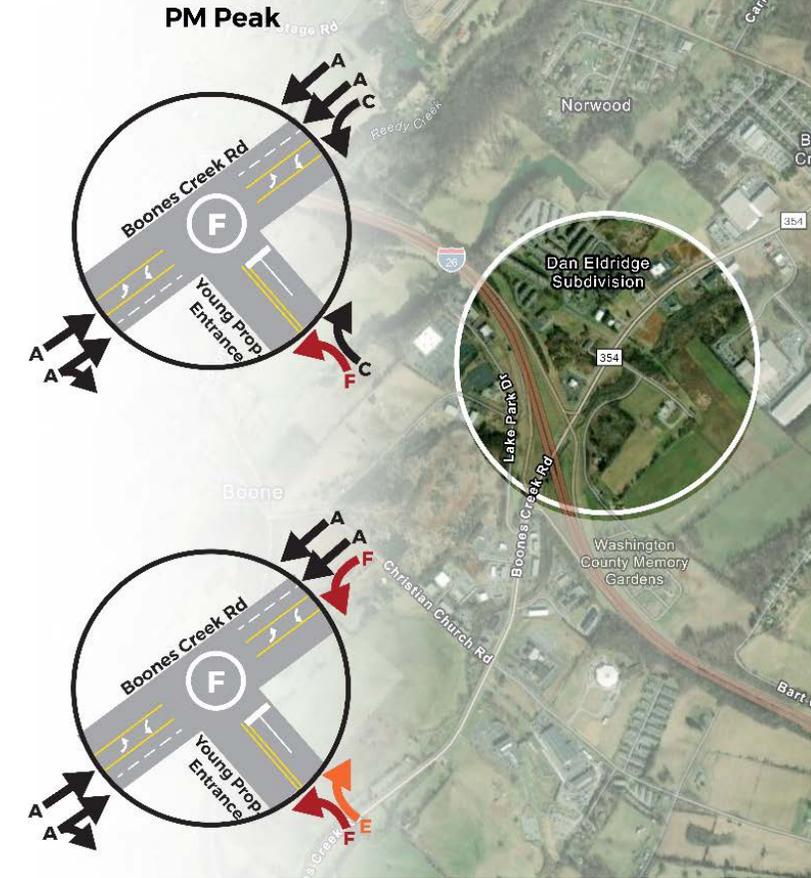
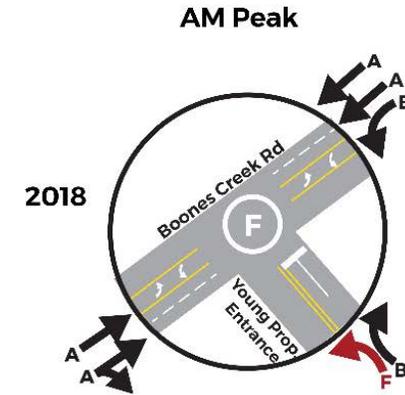
*Delays notated by a dash ("-") exceed 300 seconds; any additional delay over 300 seconds is irrelevant and indicates a need for operational changes at the intersection.



TRANSPORTATION

2045 Delay and Level of Service		AM		PM	
Intersection Name	Traffic Control	Delay (s)	LOS	Delay (s)	LOS
Christian Church Rd	Signalization	59.3	E	138.8	F
Pinnacle Dr	Two-Way Stop Control	-	F	-	F
Orr Ct	Two-Way Stop Control	-	F	-	F
Lake Park Dr	Two-Way Stop Control	-	F	-	F
I-26 DDI	Signalization	97.6	F	158.9	F
Young Property Ent	Two-Way Stop Control	-	F	-	F
Boone Ridge Dr	Two-Way Stop Control	-	F	-	F

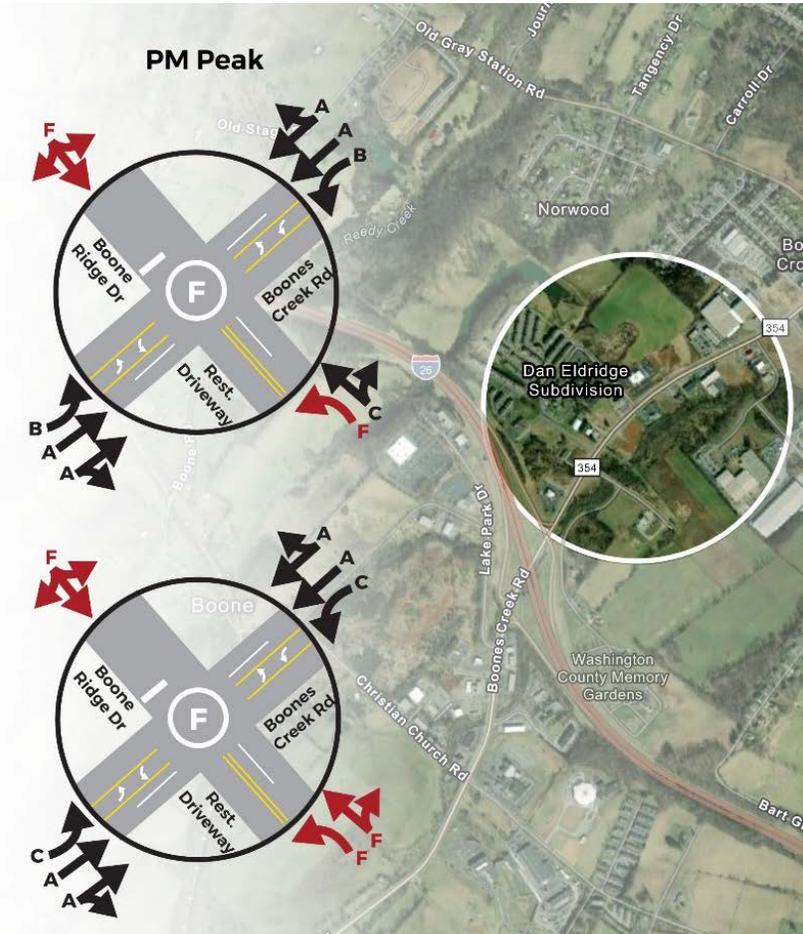
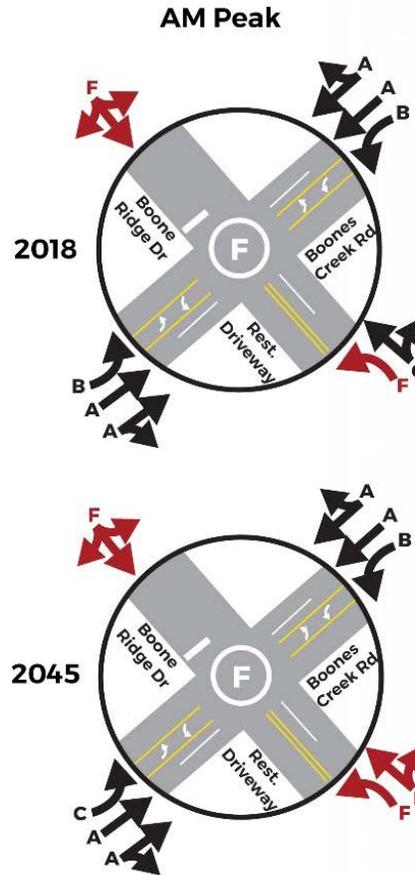
*Delays notated by a dash ("-") exceed 300 seconds; any additional delay over 300 seconds is irrelevant and indicates a need for operational changes at the intersection.



TRANSPORTATION

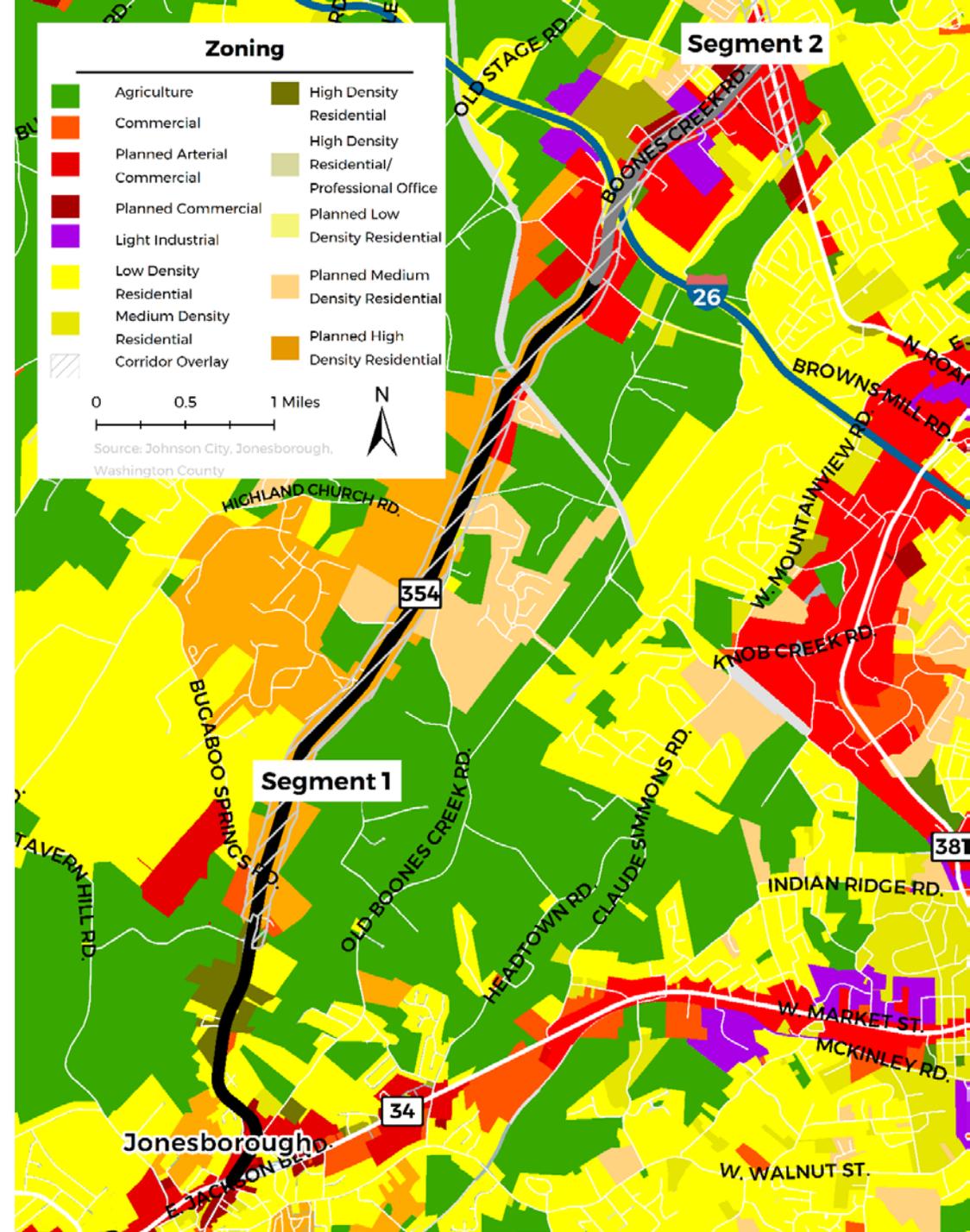
2045 Delay and Level of Service		AM		PM	
Intersection Name	Traffic Control	Delay (s)	LOS	Delay (s)	LOS
Christian Church Rd	Signalization	59.3	E	138.8	F
Pinnacle Dr	Two-Way Stop Control	-	F	-	F
Orr Ct	Two-Way Stop Control	-	F	-	F
Lake Park Dr	Two-Way Stop Control	-	F	-	F
I-26 DDI	Signalization	97.6	F	158.9	F
Young Property Ent	Two-Way Stop Control	-	F	-	F
Boone Ridge Dr	Two-Way Stop Control	-	F	-	F

*Delays notated by a dash ("-") exceed 300 seconds; any additional delay over 300 seconds is irrelevant and indicates a need for operational changes at the intersection.



LAND USE

- **Development constraints**
- **Impacts of new projects**
 - I-26 interchange
 - Knob Creek Road Reconstruction
- **Upcoming developments**
 - Planned residential developments in Jonesborough
 - Large mixed-use development near I-26
 - Mixed-use development off Christian Church Road
 - Others



VISION

VISION FOR BOONES CREEK ROAD

The Boones Creek Road corridor serves an integral transportation function throughout Washington County as a rural spoke between various destinations. The corridor shall continue to balance providing safe and reliable travel, while prioritizing the preservation of historical and natural resources, and scenic beauty of the region.

GOAL

Create safe traveling conditions for all modes of transportation

GOAL

Support reliable travel and a cohesive user experience

GOAL

Preserve environmental and aesthetic beauty while accommodating ongoing growth and development

GOAL

Focus corridor development where there is existing or planned infrastructure present (e.g., water and sewer service, etc.)

VISION

GOAL



Create safe traveling conditions for all modes of transportation.

OBJECTIVES

- Anticipate and address the need for travelers to adapt to changes in the corridor
- Decrease opportunities for conflicts between modes
- Manage vehicle speeds in areas where pedestrian activity is likely to be high

VISION

GOAL



Support reliable travel and a cohesive user experience.

OBJECTIVES

- Support multijurisdictional cooperation and the adoption of mutually supported transportation, land use, and open space standards along the corridor
- Minimize delay at key intersections

VISION

GOAL	
	Preserve environmental and aesthetic beauty while accommodating ongoing growth and development.

OBJECTIVES

- Minimize environmental impacts from development
- Preserve aesthetic and design standards along the corridor
- Leverage the area's natural beauty as development occurs

VISION

GOAL	
	Focus corridor development where there is existing or planned infrastructure present (e.g., water and sewer service, etc.).

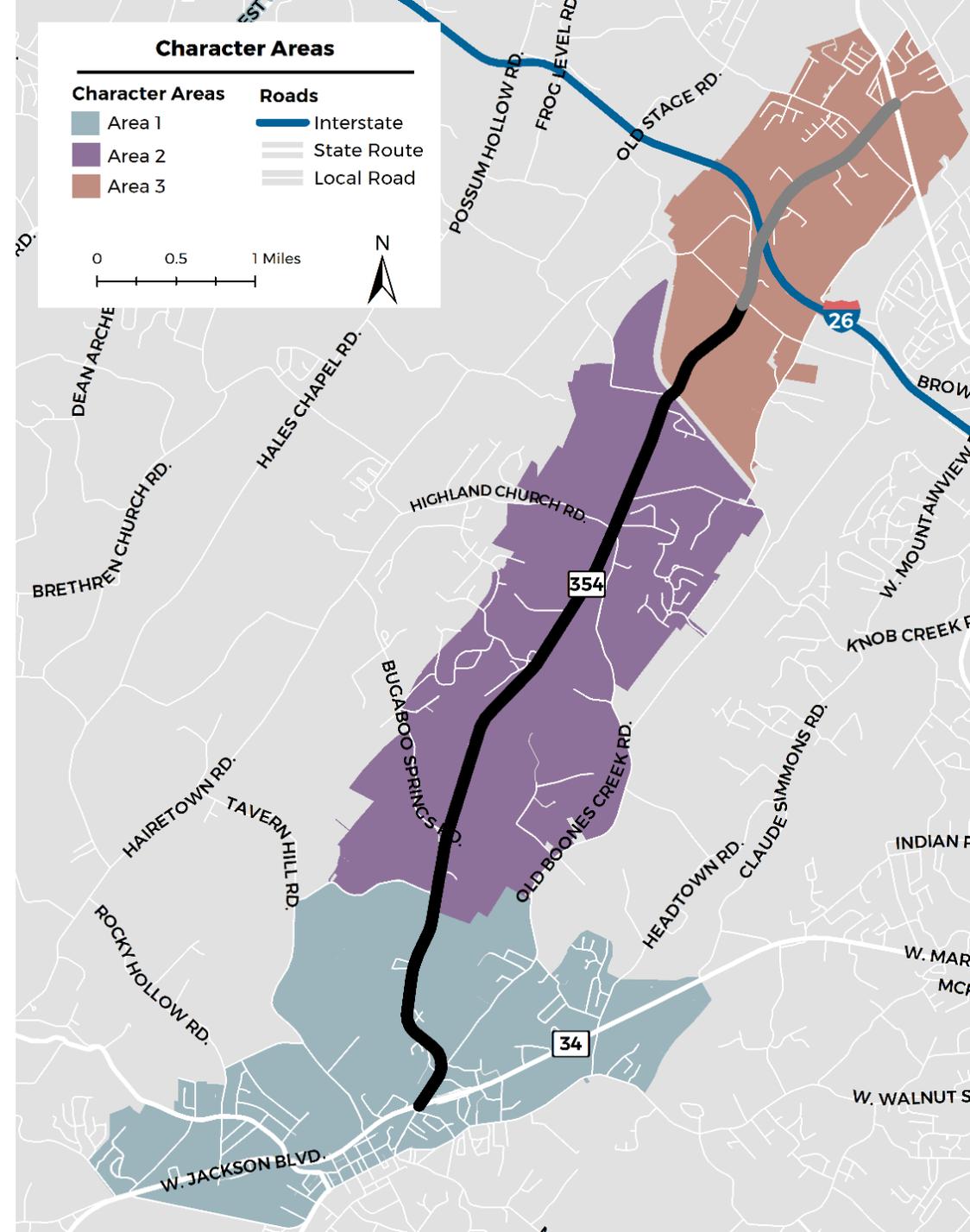
OBJECTIVES

- Focus new development in denser areas of the corridor
- Support multi-use development where drivers can access many services with one automobile trip
- Support context sensitive development

VISION

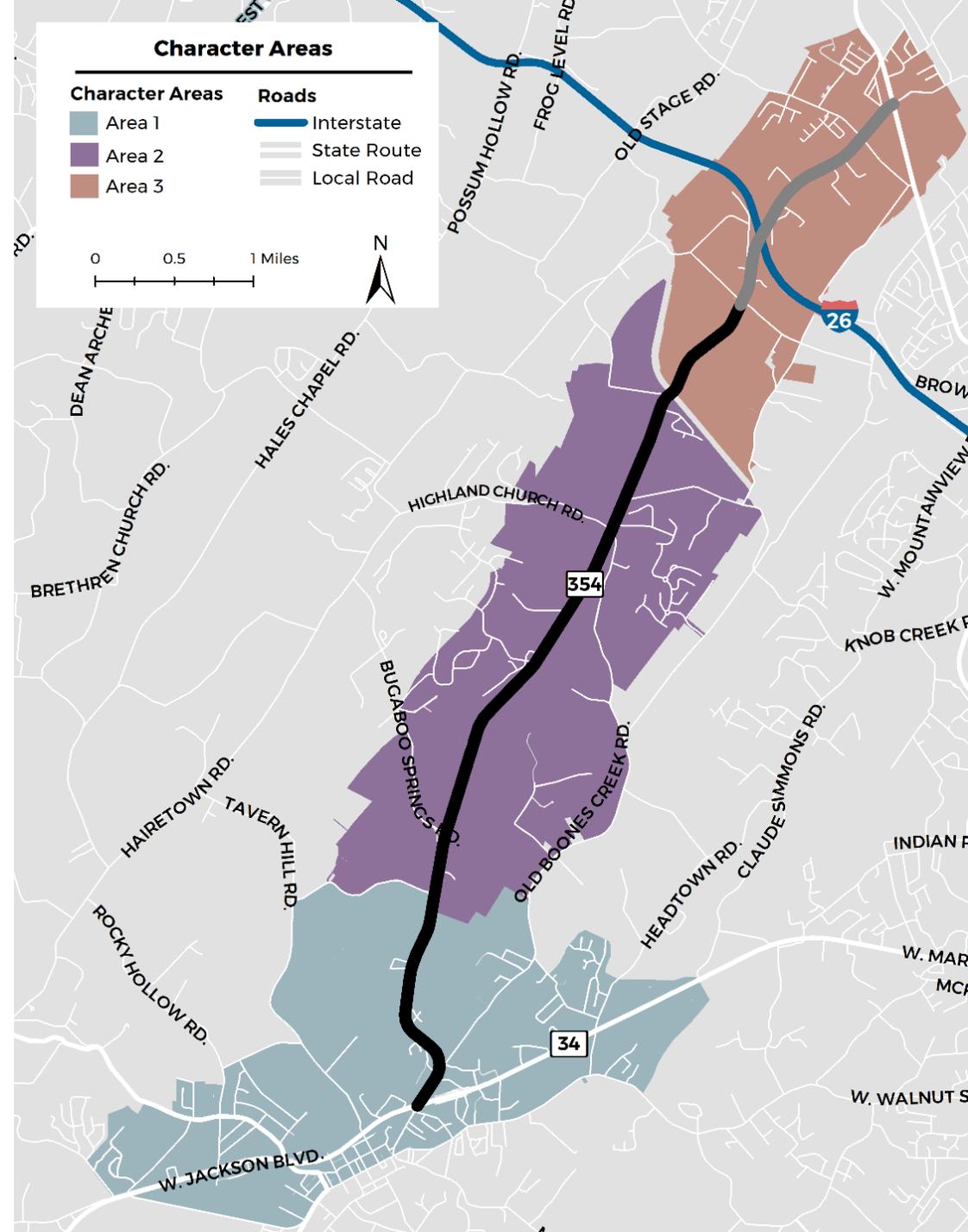
CHARACTER AREAS

- **Neighborhood Town Center (Character Area 1).** Located just north of Historic Downtown Jonesborough, Character Area 1 may accommodate concentrated neighborhood scale development, including commercial, retail, residential, and mixed-use development patterns.
- **Rural/Suburban Countryside (Character Area 2).** This area is recommended to continue to accommodate lower density residential, planned residential, and agricultural uses. Implementation of agreed upon access management standards will be important to ensuring safety and reliability throughout this portion of the corridor.
- **Regional Center (Character Area 3).** Runs from the railroad trestle to the northern terminus of the corridor at SR 36/North Roan Street and may be a target for large scale, commercial, retail, service-oriented, mixed-use, and dense residential developments.



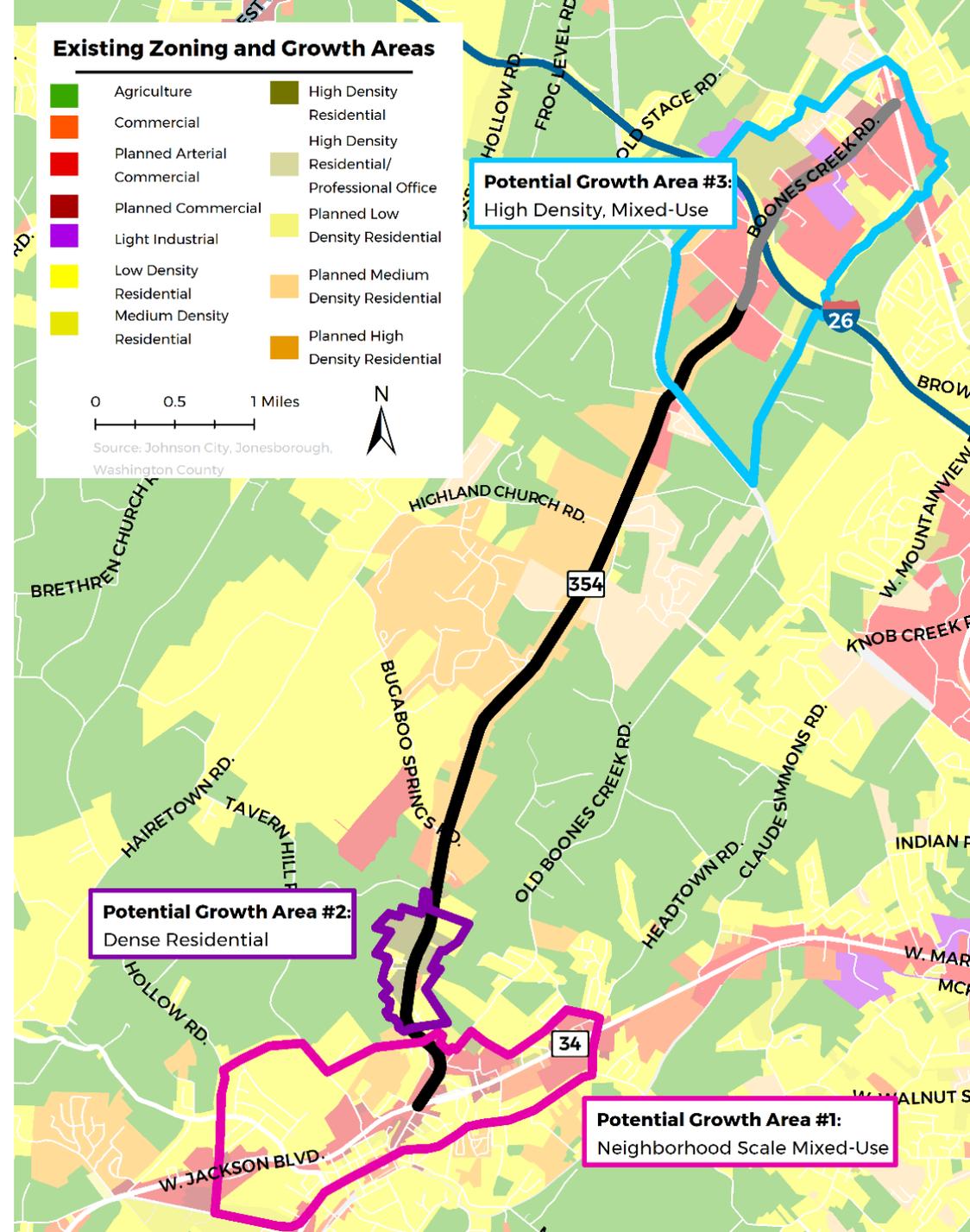
STRATEGIES & RECOMMENDATIONS

- **Fall under three categories**
 1. Character Area Development
 2. Corridor Management Approach
 3. Transportation Projects



CHARACTER AREA DEVELOPMENT

- **Concentrate Development in Identified Growth Areas**
 - Neighborhood Scale Mixed Use in Growth Area 1
 - Residential Development Concentration in Growth Area 2
 - High Density, Mixed-Use in Growth Area 3
- **Utilize Signage Standards to Preserve Corridor Beauty**
- **Enhance Landscaping to Separate Modes**



CHARACTER AREA DEVELOPMENT

- **Concentrate Development in Identified Growth Areas**
 - Neighborhood Scale Mixed Use in Growth Area 1
 - Residential Development Concentration in Growth Area 2
 - High Density, Mixed-Use in Growth Area 3
- **Utilize Signage Standards to Preserve Corridor Beauty**
- **Enhance Landscaping to Separate Modes**



CHARACTER AREA DEVELOPMENT

- **Concentrate Development in Identified Growth Areas**
 - Neighborhood Scale Mixed Use in Growth Area 1
 - Residential Development Concentration in Growth Area 2
 - High Density, Mixed-Use in Growth Area 3
- **Utilize Signage Standards to Preserve Corridor Beauty**
- **Enhance Landscaping to Separate Modes**

	SUBURBAN (CHARACTER AREAS 1 AND 3)	RURAL (CHARACTER AREA 2)
APPROACH	Ornamental or Naturalistic, Low to Moderate Maintenance	Naturalistic, Low Maintenance
GOALS	<ul style="list-style-type: none"> • Enhance appearance of growing business district • Enhance the pedestrian and motorist experience • Increase safety for users of all modes of transportation 	<ul style="list-style-type: none"> • Create a sense of arrival for motorists • Improve maintenance crew safety • Preserve visibility of signage
VEGETATION	<ul style="list-style-type: none"> • Urban tolerant plant species • Small flowering and evergreen trees for year-round interest and to create a complementary scale with street trees • Evergreen and flowering shrubs, spreading evergreen and flowering ground covers, and flowering annuals and perennials for seasonal interest and to reduce mowing 	<ul style="list-style-type: none"> • Large canopy trees • Native understory trees • Native grasses and wildflowers for seasonal interest
COMPONENTS	<ul style="list-style-type: none"> • Well-defined crosswalks and bike lanes • Preserve viewshed • Preserve open site lines at intersections • Create focal points with flowering annuals and perennials 	<ul style="list-style-type: none"> • Preserve scenic vista • Select species that will not obstruct views • Prairie grasses and wildflowers to improve aesthetics

Source: Adapted from TDOT Landscape Design Guidelines

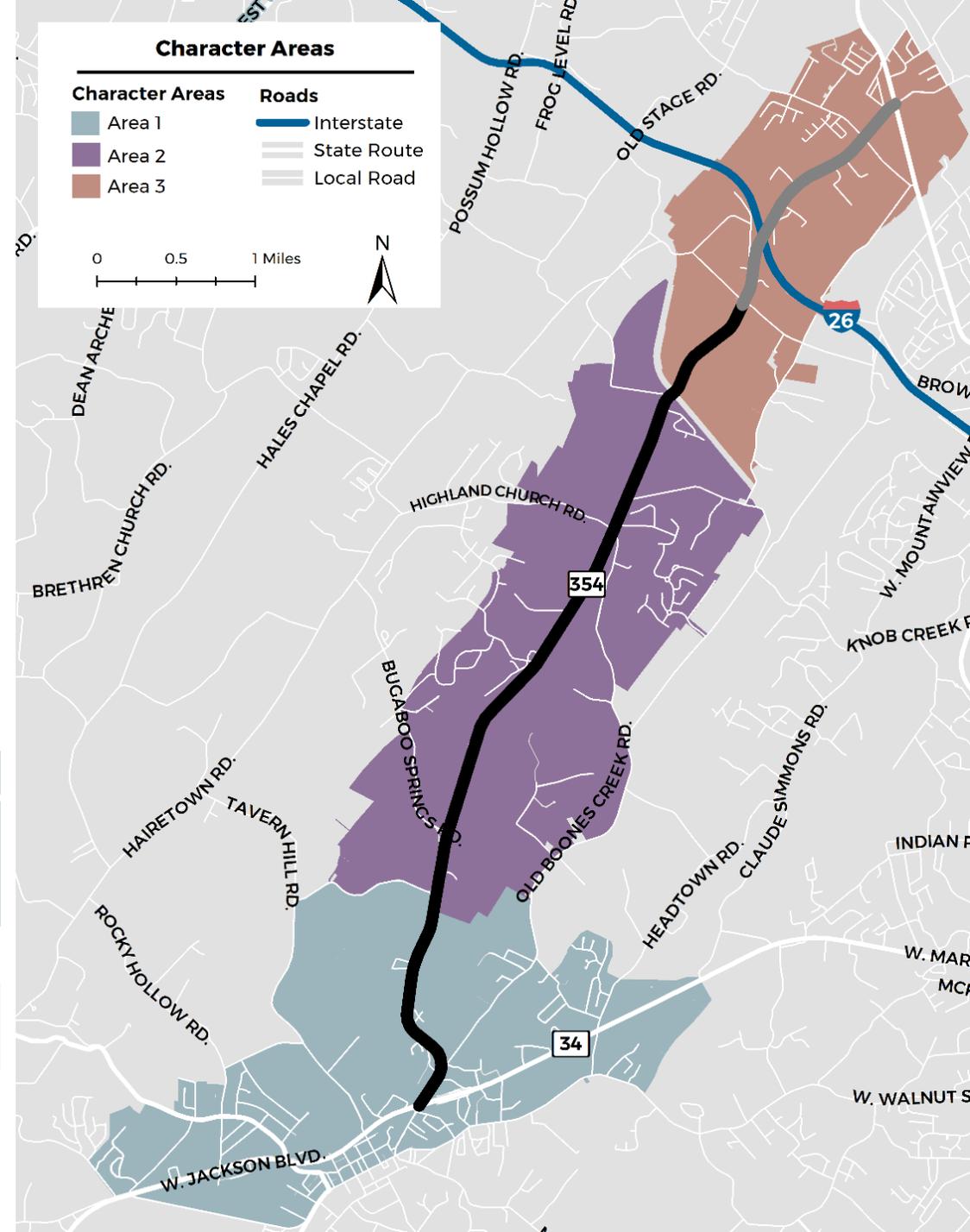
CORRIDOR MANAGEMENT APPROACH

- **Implement Access Management Strategies along Corridor**
 - Follow TDOT’s Highway System Access Manual (HSAM)
 - Manage spacing of intersection and access points
 - Limit allowable movements at driveways (such as right-in/right-out only)
 - Place entry/exit points on side roads instead of on Boones Creek Road (SR 354)

Access Density and Crashes by Character Area

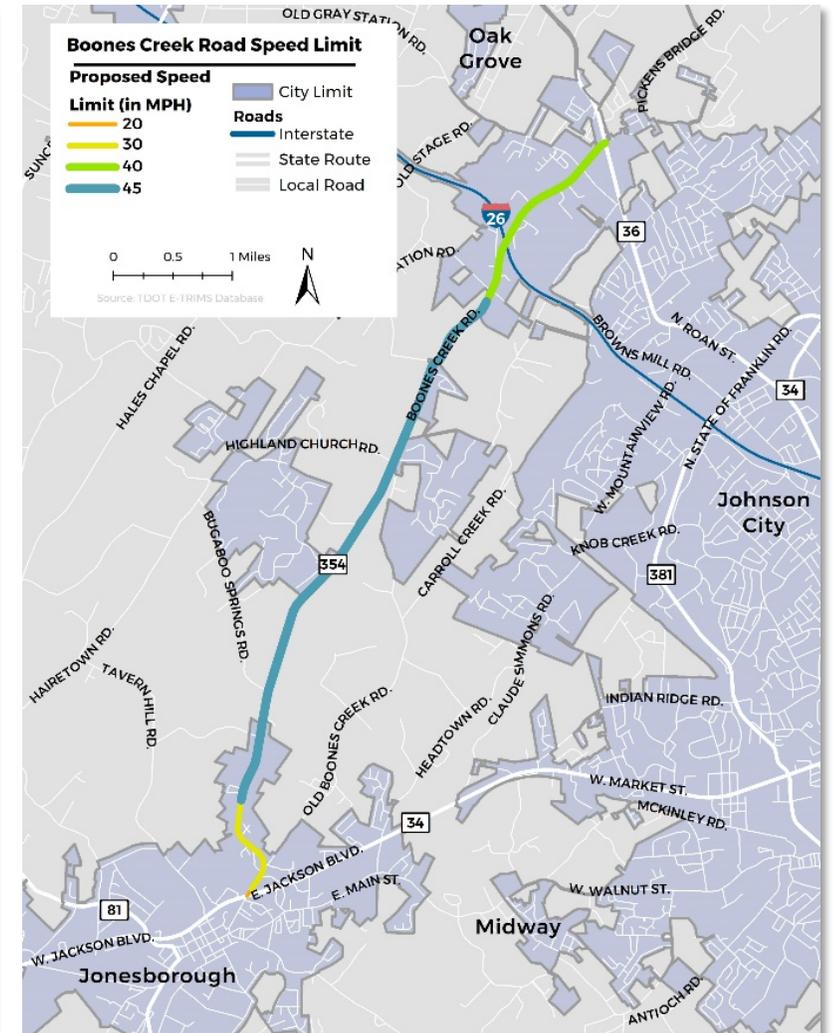
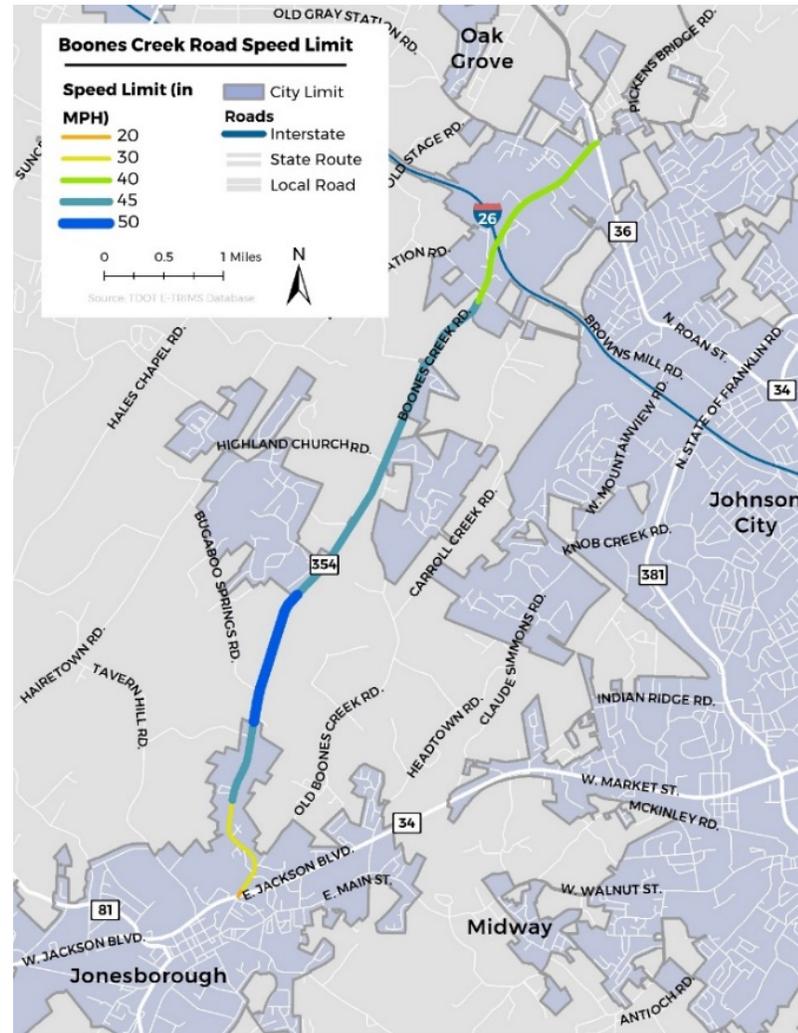
CHARACTER AREA	LENGTH	APPROXIMATE TERMINI	TOTAL ACCESS POINTS	ACCESS POINTS PER MILE	CRASHES PER MILE
1	1.5	Jackson Blvd to Hales Rd	37	24.7	11.0
2	3.6	Hales Rd to RR trestle north of Keefauver Rd	52	14.4	4.9
3	2.4	RR trestle north of Keefauver Rd to Roan St	61	25.4	12.7

Source: ETRIMS



CORRIDOR MANAGEMENT APPROACH

- Provide Consistent and Predictable Speed Limits



CORRIDOR MANAGEMENT APPROACH

- **Implement a Corridor Management Agreement (CMA) to ensure consistent goals and guidance across jurisdictions**
 - MOU is currently preferred method in Tennessee
- **Involves 4 key steps**
 1. Identify candidate corridor
 2. Define corridor vision and needs
 3. Draft an effective Corridor Management Agreement (CMA)
 4. Incentives and implementation



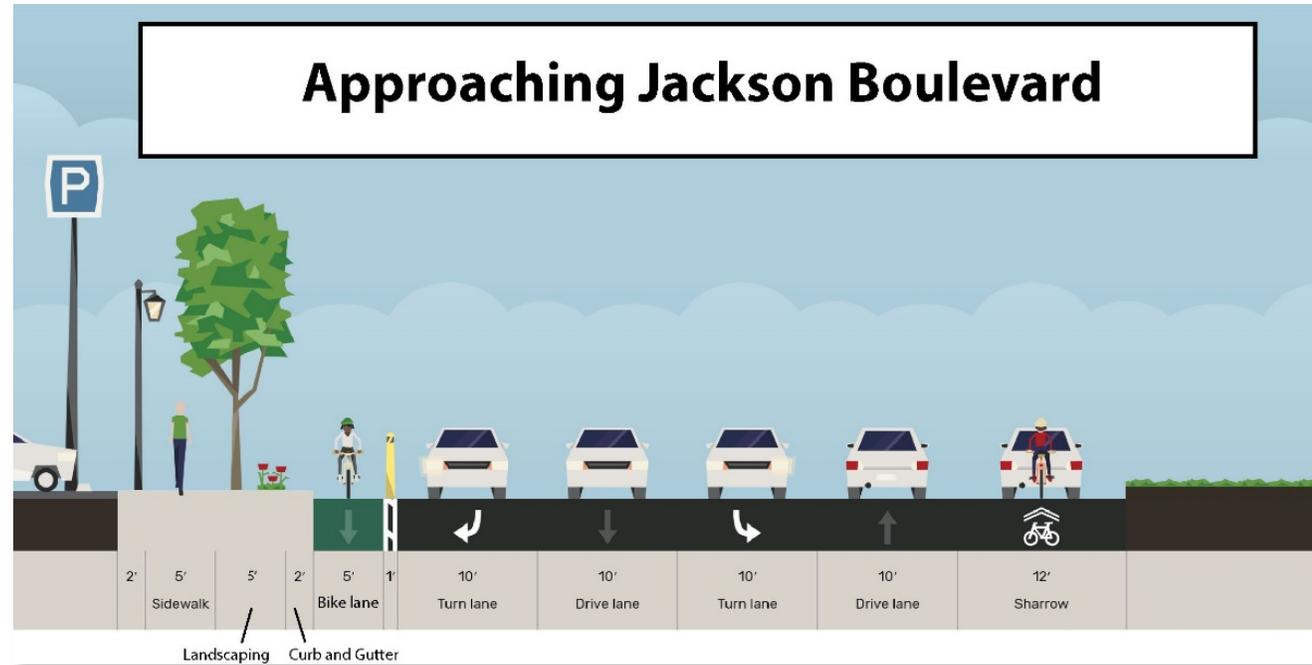
TRANSPORTATION PROJECTS

- **Improve Operations at Select Intersections**

- Boone Ridge Drive (\$194,000)
- Highland Church Road (\$480,000)

- **Multimodal amenity needs**

- Sidewalks throughout Character Area 1 (in Jonesborough) (\$3,940,000 in total)
- Crosswalks in Character Area 2 (near interstate) (\$2,540 per crossing)



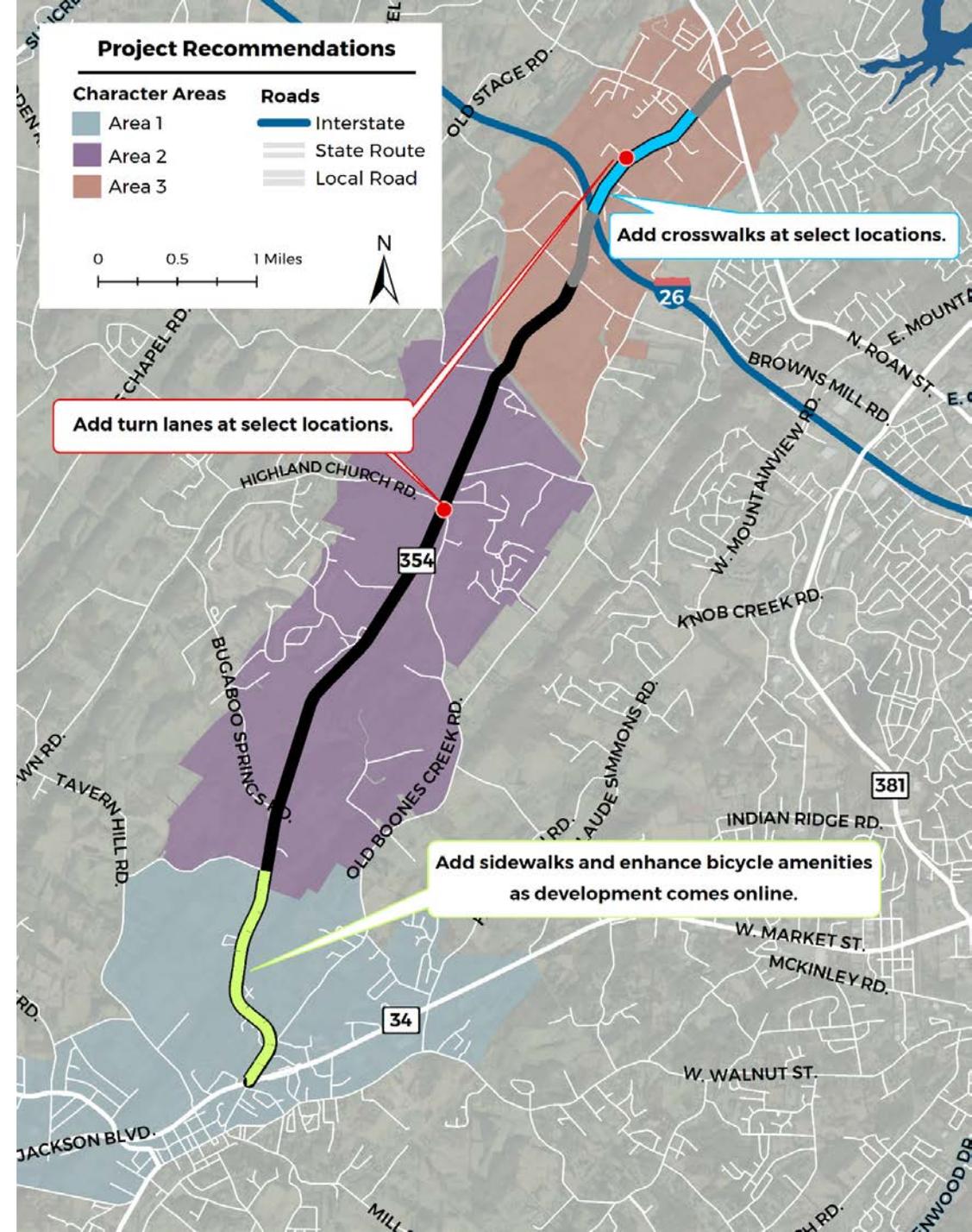
TRANSPORTATION PROJECTS

- **Improve Operations at Select Intersections**

- Boone Ridge Drive (\$194,000)
- Highland Church Road (\$480,000)

- **Multimodal amenity needs**

- Sidewalks throughout Character Area 1 (in Jonesborough) (\$3,940,000 in total)
- Crosswalks in Character Area 2 (near interstate) (\$2,540 per crossing)

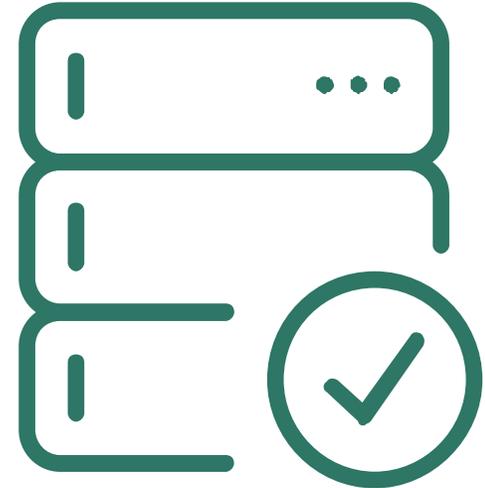


FUNDING OPPORTUNITIES

- **TDOT Multimodal Access Grant Program**
- **TDOT Transportation Alternatives Program**
- **TDOT Spot Safety Improvement Program**
- **Surface Transportation Block Program (STBG)**

NEXT STEPS

- **Step 1:** Adopt Boones Creek Road Corridor Study
- **Step 2:** Identify preferred corridor management approach and guiding document
- **Step 3:** Consider additional policy guidance (including modifications to existing overlays)



THANK YOU!

Mary Connelly, AICP
mary.connelly@wsp.com

