US 11E/SR-34/W. ANDREW JOHNSON HWY

FROM OLD ANDREW JOHNSON HIGHWAY EAST (NEAR HAMBLEN/JEFFERSON COUNTY LINE) TO WALTERS DR/W. MORRIS BLVD (IN MORRISTOWN, TN)

CORRIDOR STUDY

June 2021

LAKEWAY AREA MTPO

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INTRODUCTION

The Lakeway MTPO is the metropolitan planning organization for the region consisting of Morristown, Jefferson City, White Pine, Hamblen County, and portions of Jefferson County. The Lakeway Area Metropolitan Transportation Planning Organization (LAMTPO) has determined the need to identify short and long-term transportation improvements to US 11E/SR-34/W. Andrew Johnson Highway from Old Andrew Johnson Highway East (near the Hamblen/Jefferson County line) to Walters Dr/W. Morris Blvd (in Morristown, TN). This route serves as a major corridor in east Tennessee, extending from Knoxville to Bristol, and provides a parallel route to Interstate 81 through Hamblen County. As the City of Morristown and the Lakeway region continue to grow and attract investment, enhancing the operational efficiency of the corridor and improving the route to accommodate current and future traffic volumes is critical. The focus of this corridor study is the following:

- Multimodal safety enhancements that facilitate reliable travel for all modes throughout the corridor
- Capacity improvements to maintain and improve level of service (LOS) and accommodate increased traffic and congestion
- Ensure safe access along the corridor through access management policy and improvements.

The subject study includes an evaluation of the corridor, with an emphasis on Segment 2 – as noted below, and provides high-level recommendations (including cost estimates). The data, results, and proposed recommendations could be used by LAMTPO staff to establish potential projects for the area's long range transportation plan (LRTP).

CORRIDOR OVERVIEW

US 11E/SR 34/W. Andrew Johnson Highway is one of the main transportation routes used throughout the City of Morristown, providing a primary connection running southwest to northeast and connecting to several main routes within the Lakeway Region, including SR 160/Air Park Blvd, SR 66 (Merchants Greene Blvd), and W. Morris Blvd, and running parallel to Interstate 81 through Morristown and Hamblen County more broadly. The route was originally constructed for thru-travel but is now a less desirable route for that purpose because most of the adjoining commercial development directly accesses the highway. The LAMTPO's current long-range plan (LRTP) includes a project to evaluate the potential of combining or reducing the number of driveways on certain sections of US 11E. Although the best opportunity to make such changes is when properties redevelop, alterations to access may also be initiated when congestion and accidents become a serious problem on a particular section of roadway. The LAMTPO's current LRTP also identifies the need to make investments in corridors that serve the majority of freight and commuting movements, including US 11E, and encouraging reinvestment in existing communities to increase community revitalization and efficiency of investments.

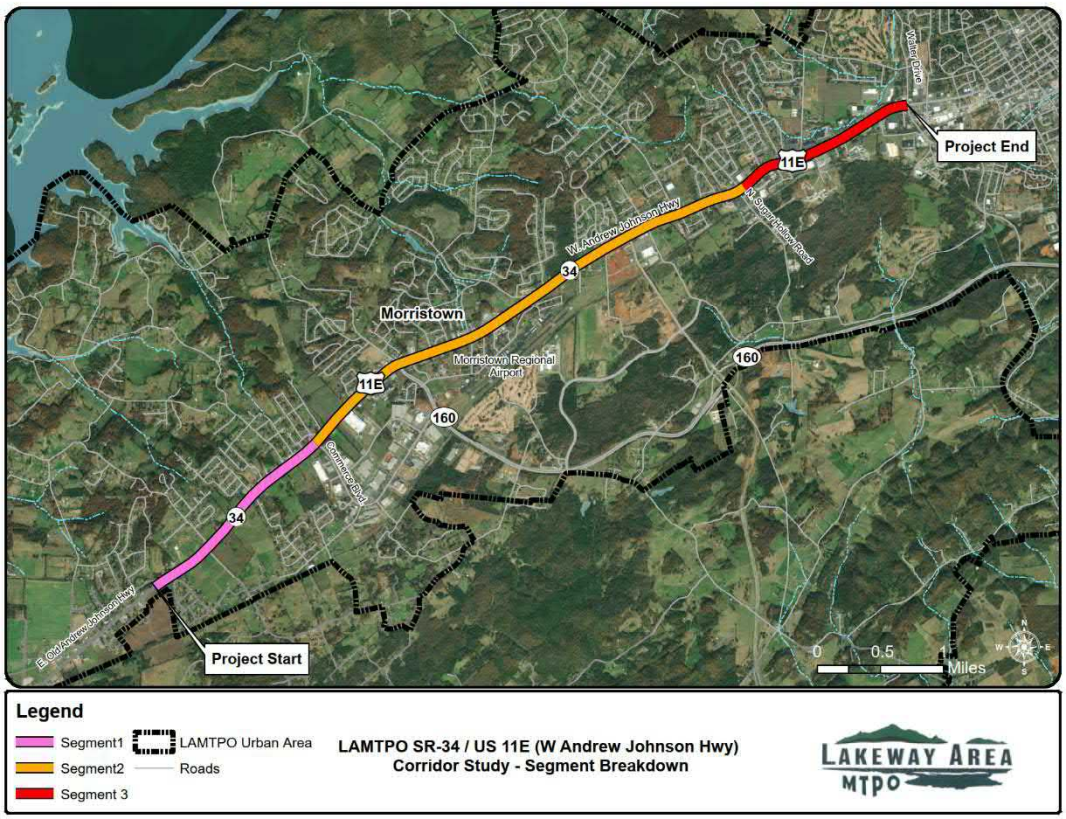
As outlined in **Figure 1**, the study area is approximately seven (7) miles long and is divided into three (3) roadway segments for purposes of analysis, based on existing land uses, development opportunities, and roadway features:

- **Segment 1** – Old Andrew Johnson Highway in Jefferson County to Commerce Blvd
- **Segment 2** – Commerce Blvd to just east of N. Sugar Hollow Rd
- **Segment 3** – East of N. Sugar Hollow Rd to Walters Dr/W. Morris Blvd

The corridor is classified as a principal arterial throughout and has two (2) typical roadway sections:

- Four-lane divided highway with depressed median from western project limits in Jefferson County to N. Sugar Hollow Rd (Segment 1 and Segment 2)
- Five-lane highway with curb and gutter from N. Sugar Hollow Rd to Walters Dr/W. Morris Blvd (Segment 3)

Figure 1. Corridor Segments



CHARACTERISTICS OF THE CORRIDOR

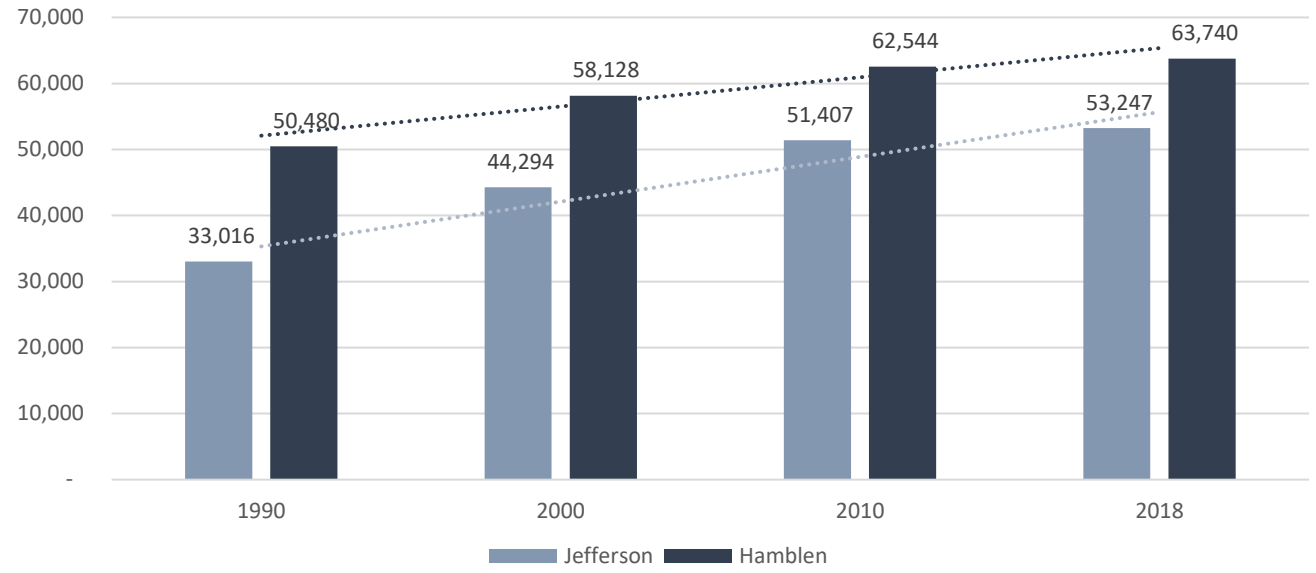
An evaluation of current corridor characteristics, including existing land use patterns in the vicinity of the corridor, development patterns, and future land use was performed in order to recommend potential transportation improvements that meet traffic demand and address operational and/or safety issues throughout the corridor. This analysis focused on Segment 2 and includes a discussion of population, employment, development trends, as well as land use patterns throughout Segment 2 of the corridor, between Commerce Blvd and East of N. Sugar Hollow Rd.

GROWTH ALONG THE CORRIDOR

Historical Growth

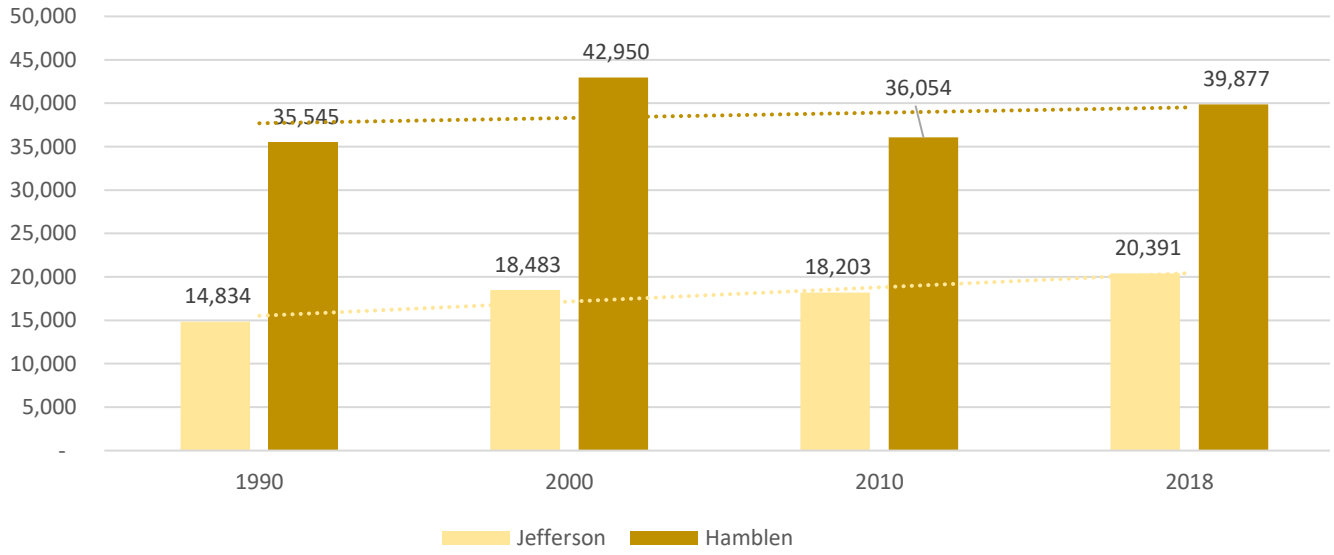
Historical growth and development trends help inform an understanding of development in the region and are critical to establishing socioeconomic projections used to forecast transportation demand and prioritize investments for the future. Since 1990, both population and employment have increased in both counties that overlap with the LAMTPO region, with Hamblen County and its incorporated areas being home to the majority of residents and jobs in the region. Historical data from the decennial Census, American Community Survey (ACS), and Bureau of Economic Analysis (BEA) show Hamblen County and its incorporated areas as the center of jobs and residents in the region. While population has grown steadily as seen in **Figure 2,** total employment declined between the 2000 and 2010 decennial Census (**Figure 3**), and has since rebounded. This is likely a result of the greater economic recession experienced nationwide in the late 2000s.

Figure 2. Population Growth (1990-2018)



Source:
2018: ACS Resource: TableID B01003, 5-year estimates
2010: Census 2010: Table P1 (SF 1a - P & H Tables [Blocks & Larger Areas])
2000: Census 2000: NP001A (SF 1a - 100% Data [Areas Larger Than Block Groups])
1990: Census 1990: Source NP1 (STF 1 - 100% Data)

Figure 3. Employment Growth (1990-2018)



Source: BEA Regional Data, CAINC30 Economic Profile - Total Employment (number of jobs)

Future Growth

Although the LAMTPO planning data does not support projections specifically for a small buffer on either side of the corridor, it is possible to estimate corridor growth from the traffic analysis zones (TAZ) used for the regional travel demand model. These projections, developed in coordination with local governments, show that population and employment growth is expected to continue within the region over the next 20 years, with growth in the corridor and Segment 2 outpacing regional growth (**Table 1**). According to the LAMTPO's current

2040 LRTP[1], the area along US 11E east of the Hamblen/Jefferson County line is anticipated to be a significant hot spot for new employment in the region, with high rates of job growth also projected for SR 66 (Merchants Greene Blvd), which opened to traffic in late 2020 and improves connectivity between Interstate 81 and the US 11E corridor through Morristown. A compilation of data from zones adjacent to US 11E Segment 2 verifies this and indicates more than 5,500 new residents and more than 5,000 new jobs in the immediate vicinity of Segment 2. With an overall length of four miles, this translates to approximately 1,380 new residents and over 1,300 new jobs per mile along this segment of the corridor (See **Figure 4** and **Figure 5**).

Table 1. Projected Population and Employment Change, 2014-2040

	Population				Employment			
	2014	2040	Growth	% Growth	2014	2040	Growth	% Growth
Segment 2	11,378	16,918	5,540	49%	9,727	14,971	5,244	54%
All Segments	17,275	26,457	9,182	53%	12,871	19,129	6,258	49%
LAMTPO Region	90,923	118,962	28,039	31%	43,551	58,772	15,221	35%

Source: LAMTPO Regional Travel Demand Model

[1] Both the 2040 and 2045 LRTP are referenced within this corridor study. LAMTPO's updated plan (i.e. 2045) was formally adopted in April 2021 which coincides with the near-term end of this study.

Figure 4. Population Growth (2014-2040)

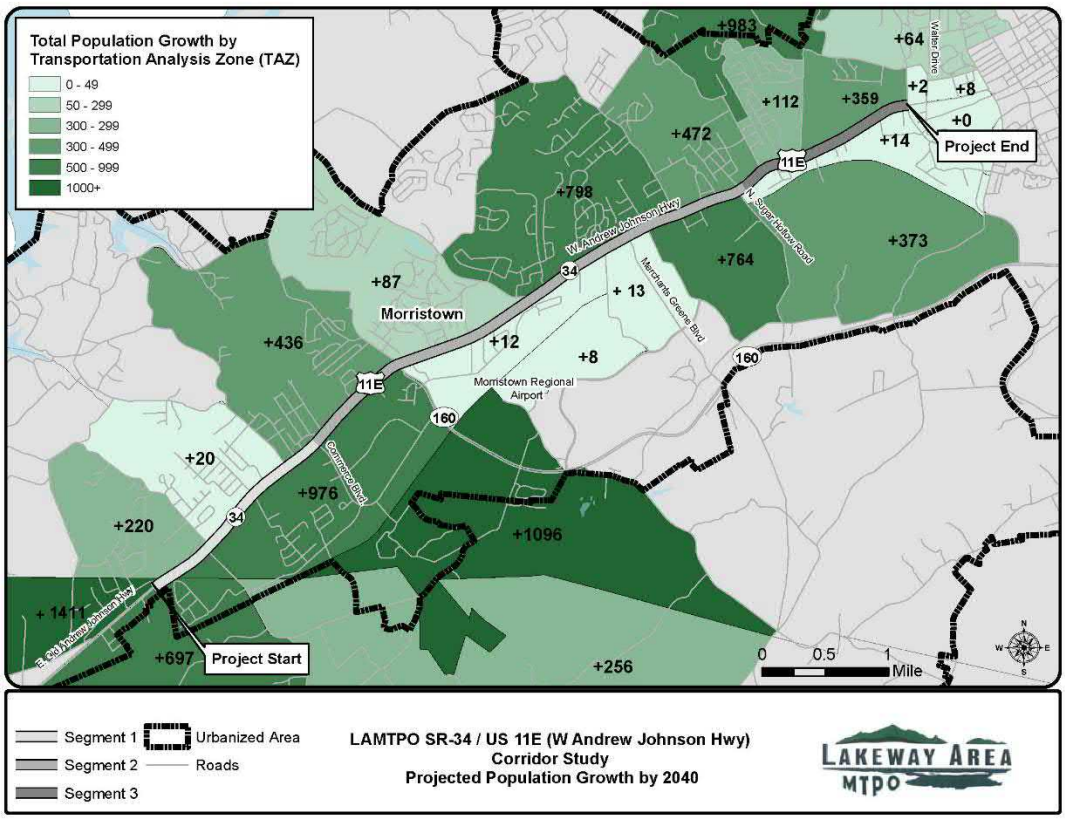
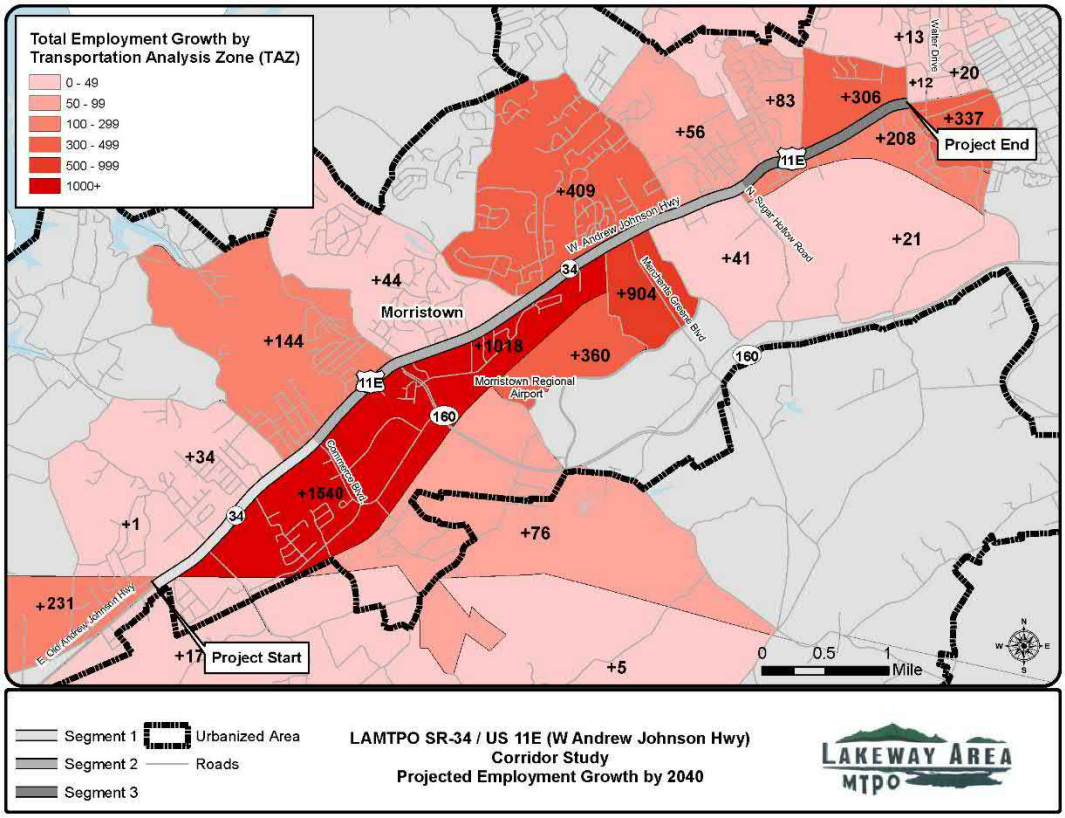


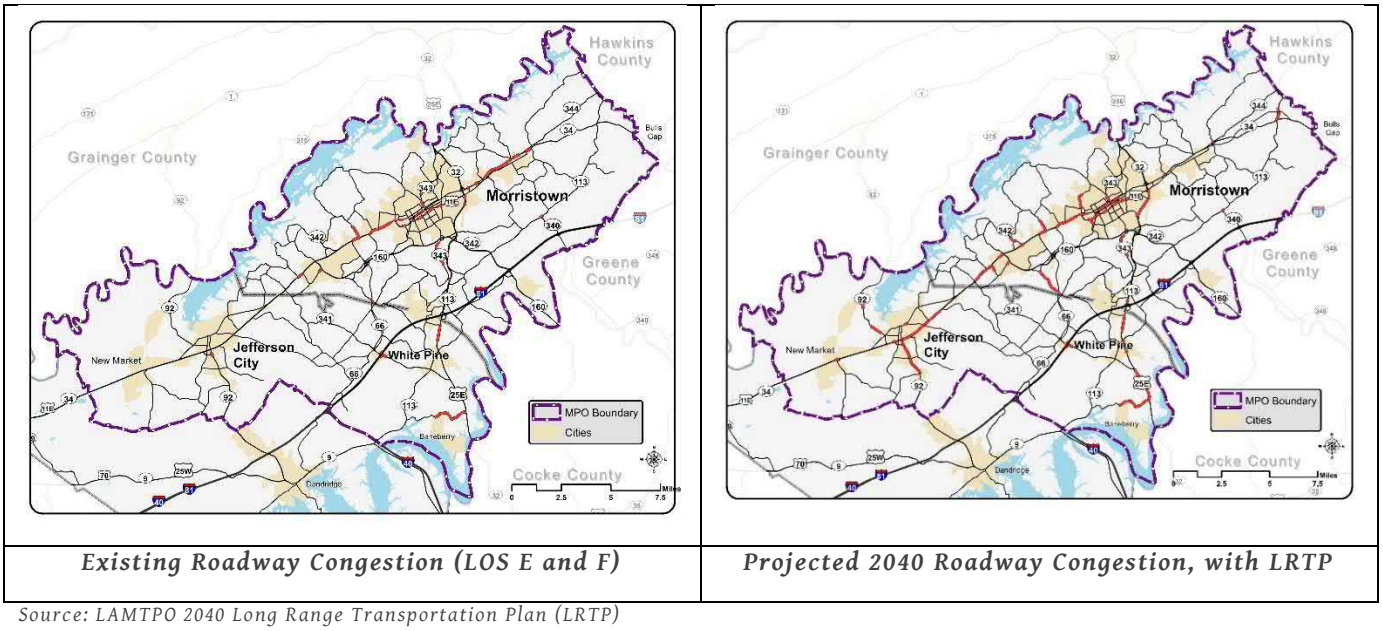
Figure 5. Employment Growth (2014-2040)



Impact of Travel Conditions

The projected growth is anticipated to have a significant impact on travel conditions in the region, and along the corridor specifically. The region's travel demand model uses the population and employment projections developed in coordination with LAMTPO member jurisdictions to predict the impact that this growth will have on traffic volumes, travel demand, and level of service on roadways. **Figure 6** shows a side by side comparison of current roadway congestion compared with congestion that is anticipated if all cost-feasible projects in the LAMTPO's current LRTP are constructed.

Figure 6. Projected Roadway Congestion (2014 vs 2040 with LRTP)



Existing Roadway Congestion (LOS E and F) | ***Projected 2040 Roadway Congestion, with LRTP***

Source: LAMTPO 2040 Long Range Transportation Plan (LRTP)

The current LRTP includes projects along all three segments of the corridor study area to help enhance the safe and reliable movement of all modes of transportation along US 11E. Segment 2 specifically includes one project for intersection improvements at US 11E and Kidwell Ridge Road. If this and other projects proposed as part of the LAMTPO's current LRTP are implemented, congestion is expected to continue along US 11E through western areas of Morristown and key intersections along Segment 2, including the intersection at Merchants Greene Blvd (SR 66). Key intersection improvements on this segment may help alleviate congestion and improve safety throughout the corridor. A more detailed analysis of transportation performance throughout the corridor, as well as proposed recommendations, are noted below in subsequent sections.

LAND USE AND ZONING CONSIDERATIONS

The US 11E corridor is home to several land use types, including residences, industrial facilities, and a variety of commercial uses. The City of Morristown and Hamblen County both have zoning regulations that specifically define and regulate what uses are allowed on specific lots and parcels. These documents regulate the location, height, bulk, number of stories and size of buildings or other structures, the percentage of lot which may be occupied or covered, the size of yards, courts and other open spaces, the density of population, use of buildings, and other considerations. Since Morristown's city limits extend throughout the US 11E corridor, its zoning and subdivision regulations apply to development of property within the corridor, as well as the industrial and airport facilities to the south. Hamblen County regulates property outside of the city limits, including residential property north of the corridor and industrial and agricultural areas south of the corridor. Hamblen County also has jurisdiction over a small stretch of the corridor in Segment 2 on the north side of 11E just east of Woods Drive.

Zoning in the area of Segment 2 is shown in **Figure 7** and described in **Table 2** below.

Table 2. Zones in Corridor

Zone	City of Morristown[2]	Hamblen County[3]	Description
Agricultural/Forestry	A1	A1	Applies to land used for agriculture, forestry, fishing, open space, etc. Low density residential uses are permitted here.
Light Industrial	L1	I1	Land for light and general manufacturing and warehousing, storage, distribution, machine shops, etc. Residential uses are typically not permitted in these areas.
Airpark Light Industrial	ALI		The Airpark Light Industrial district in the City of Morristown provides for specialized manufacturing, storage, and distribution uses near the Morristown Regional Airport which require direct access to the airport taxiway.
Heavy Industrial	H1		Land for manufacturing and other uses which may have an adverse effect on surrounding land. Examples include wrecking yards, assembly plants, gasoline or oil storage, machine shops, warehousing, and truck terminals.
Intermediate Business (Commercial)	IB		This commercial zoning designation is described in the Morristown Zoning Ordinance as more intense commercial activities like car washes, hotels, gas stations, shopping centers, parking garages, etc.
Office, Medical, Professional (Commercial)	OMP	C1	Morristown defines OMP as a transition area in which offices coexist with medium density residential. Offices and services like beauty shops, lawyers, day cares, and certain restaurant types are permitted. Hamblen County's definition of the C1 zone includes commercial activities like shopping centers, retail outlets, professional offices, etc.

[2] Zoning Ordinance, City of Morristown, Tennessee, 2020, http://cms.revize.com/revize/morristown/Dev&Planning/Zoning%20Ordinance/Zoning_Ordinance_8_18_20.pdf, accessed October 30, 2020

[3] Hamblen County Zoning Resolution, Amended 2020, https://www.hamblencountytn.gov/wp-content/uploads/delightful-downloads/2020/06/Zoning-Regs-20200526.pdf, accessed October 30, 2020

Zone	City of Morristown[2]	Hamblen County[3]	Description
Planned Commercial Development	PCD		Allowable uses in this district include appliance stores, bakeries, delis, pharmacies, grocery stores, hotel/motels, daycares, theaters, etc. Access management and limiting curb cuts is a key objective for this use to ensure better traffic flow and circulation, with objectives of promoting a more pedestrian friendly atmosphere and allowing developers more flexibility and creativity in development design.
Mobile Home Park	MHP		Land developed and located to provide safe and sanitary living conditions for mobile home occupants; and to be convenient to employment, shopping centers, schools and other community facilities.
Single Family Residential/Rural Residential	R1, RD1	R1	Residential uses with lot sizes no less than 15,000 square feet. Titled Rural Residential by Hamblen County. In Morristown, also includes small lot single family residential (RD1) with a minimum lot size of 5,500 square feet (sf).
Medium Density Residential	R2		Minimum lot size of 7,500 sf for single residence, 11,000 sf for two residences, and 14,500 for three or more. Maximum is 12 dwelling units per acre (du/acre).
High Density Residential	R3		Minimum lot size of 5,500 sf for single residence and 11,000 sf for two and three residences. Maximum is 20 du/acre.
Planned Residential Development	RP1		Residential designation that encourages more creativity in planned residential developments. All development must be approved by the Planning Commission. No minimum lot size, with a permitted density of up to 20 du/acre.

While all of the above-mentioned zones are present in the vicinity of Segment 2, the current land use pattern is predominantly commercial uses immediately adjacent to the road, large residentially zoned areas north of the corridor to Cherokee Lake, and a combination of industrial, agricultural and airport uses south of the corridor. Specifically, Segment 2 is dominated by intermediate business zoning on the corridor. This zone allows for a variety of commercial uses ranging from banks and veterinary clinics, to churches, theaters, and microbreweries (Section 14-1002).[4] There is no minimum lot size for this district. Based on current development patterns in the corridor, which include dine-in and fast food restaurants and religious organizations, Segment 2 is likely to attract primarily local trips from residents in the Morristown area. The presence of several automobile dealerships may also draw trips from outside of Morristown's city limits.

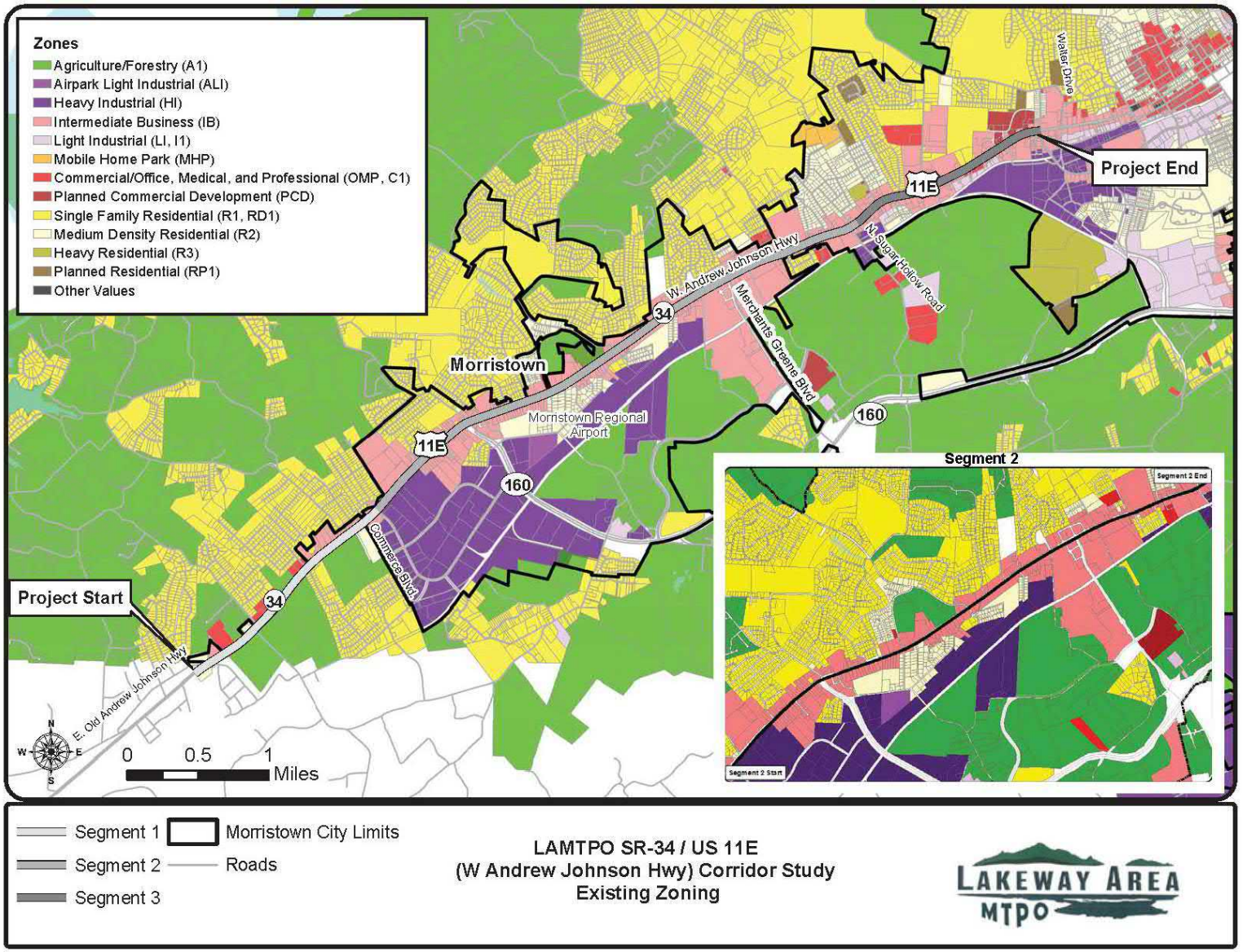
Morristown Regional Airport is also located within Segment 2, south of US 11E. Morristown Regional Airport is a general aviation facility with a 5,700-foot long runway, located adjacent to Morristown Airport Industrial District. In addition to the airport, Segment 2 is home to Alpha Elementary School near the intersection with SR

[4] Zoning Ordinance, City of Morristown, Tennessee, 2020, http://cms.revize.com/revize/morristown/Dev&Planning/Zoning%20Ordinance/Zoning_Ordinance_8_18_20.pdf, accessed October 30, 2020

160/Airpark Blvd, Wayne Hansard Park off of Airpark Blvd south of US 11E., and the West Hamblen County Fire Department at Meadowood Drive.

Several prominent employers are located on Commerce Blvd near Segment 2, including JTEKT Automotive, Alcoa Howmet Corporation, and Team Technologies, Inc. The location of these employers may lend itself to the corridor serving as a primary commuter route within the region.

Figure 7. Corridor Zoning

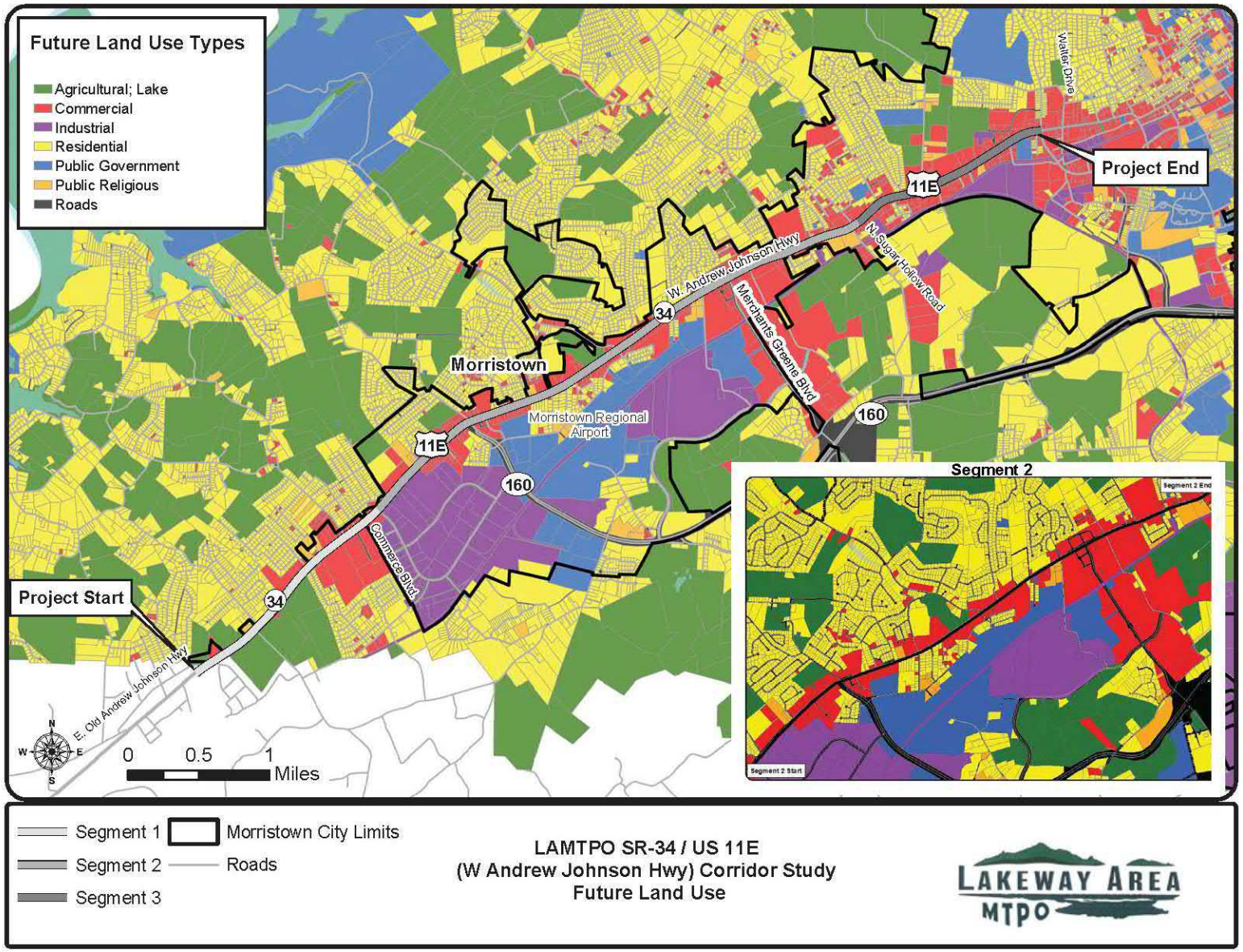


Note: Zones symbolized based on zoning classifications described in **Table 2**.

Looking into the future, US 11E is expected to continue to be a major commercial and industrial corridor in the region. The future land use designation for the corridor, shown in **Figure 8**, emphasizes a desire to develop Segment 2 in the vicinity of Merchants Greene Blvd, and largely maintain the residential character of the corridor on the north side of US 11E. As a result, it is anticipated that US 11E will continue to serve as a primary route for commuters traveling to and from downtown Morristown and to industrial and commercial employers along the corridor. Many uses currently classified as vacant or "other" are expected to develop in line with adjacent properties. For example, land surrounding the airport is planned for industrial development, and the vicinity of the US 11E/Merchants Greene Blvd intersection is planned for enhanced commercial uses.

As the area grows and economic development initiatives continue to draw residents and employers to the region, the value and efficacy of specific zoning regulations on transportation-related safety, multimodal accessibility, and transportation operations will need to be evaluated. For example, Morristown's Zoning Ordinance outlines minimum parking requirements in Section 14-216-3, "Off Street Parking Requirements," generally outlining one space per 250-300 square feet of office space and 1.25 spaces per every employee for industrial uses. It also includes a section on Access Management (Section 14-218, "Control of Access") with the objectives of promoting safe travel for drivers and pedestrians and alleviating traffic congestion. Section 14-209 addresses pedestrian movement throughout the City and requires a pedestrian walkway to connect buildings to public right-of-way. This may be a sidewalk, bright white-painted striped marking, or five-foot paved hard asphalt. Having new development comply with these requirements in a manner that encourages safe travel for motorized and non-motorized travelers, while also improving reliability and operations of the corridor, will be critical.

Figure 8. Future Land Use



DEVELOPMENT PATTERNS

The LAMTPO's 2040 LRTP includes a number of livability principles guiding growth and development throughout the region and along primary corridors that run through the region's communities, including US 11E. One of these is focused on economic competitiveness and the "reliable and timely access to employment centers, educational opportunities, services, and other basic needs by workers, as well as expanded business access to markets" and the subsequent need to invest in primary corridors to help facilitate freight and commuting movements throughout the region. This principle works in tandem with other efforts in the plan, including targeting strategic transit-oriented, mixed-use development to promote community revitalization throughout the region.

As noted in the previous section, development in Segment 2 is managed by two local governments: the City of Morristown and Hamblen County. Each entity has adopted zoning ordinances and regulations to regulate land uses and development patterns and have also adopted subdivision regulations to organize the division of land and to govern the platting and land division process. Future land use designations shown in

Figure 8 emphasize a desire to maintain the overarching character of the corridor today, outlining growth of industrial and municipal services south of the corridor adjacent to the airport, commercial development around the intersection of US 11E and Merchants Greene Blvd and to the east, and residences north of the corridor. The relocated SR 66, which opened to traffic in November 2020, will provide enhanced connectivity between Segment 2 and Interstate 81, providing a catalyst for further commercial development along Merchants Greene Blvd.

While significant development has occurred east of the study corridor in downtown Morristown and east of downtown, the west side has also seen growth over the past several years. The City of Morristown's Development Application includes several GIS databases, including information related to new development occurring within the city.[5] New development along Segment 2 includes restaurants and commercial development at the intersection of US 11E and Merchants Greene Blvd, a new community center south of the corridor on Durham Landing scheduled to open in spring 2023, industrial growth and expansions in the airport district, and the Volunteer Surgery Center at 6242 W. Andrew Johnson Hwy on the western portion of Segment 2. Beyond these developments, the Morristown Area Chamber of Commerce has identified three industrial sites and buildings for sale or lease near Segment 2.[6]

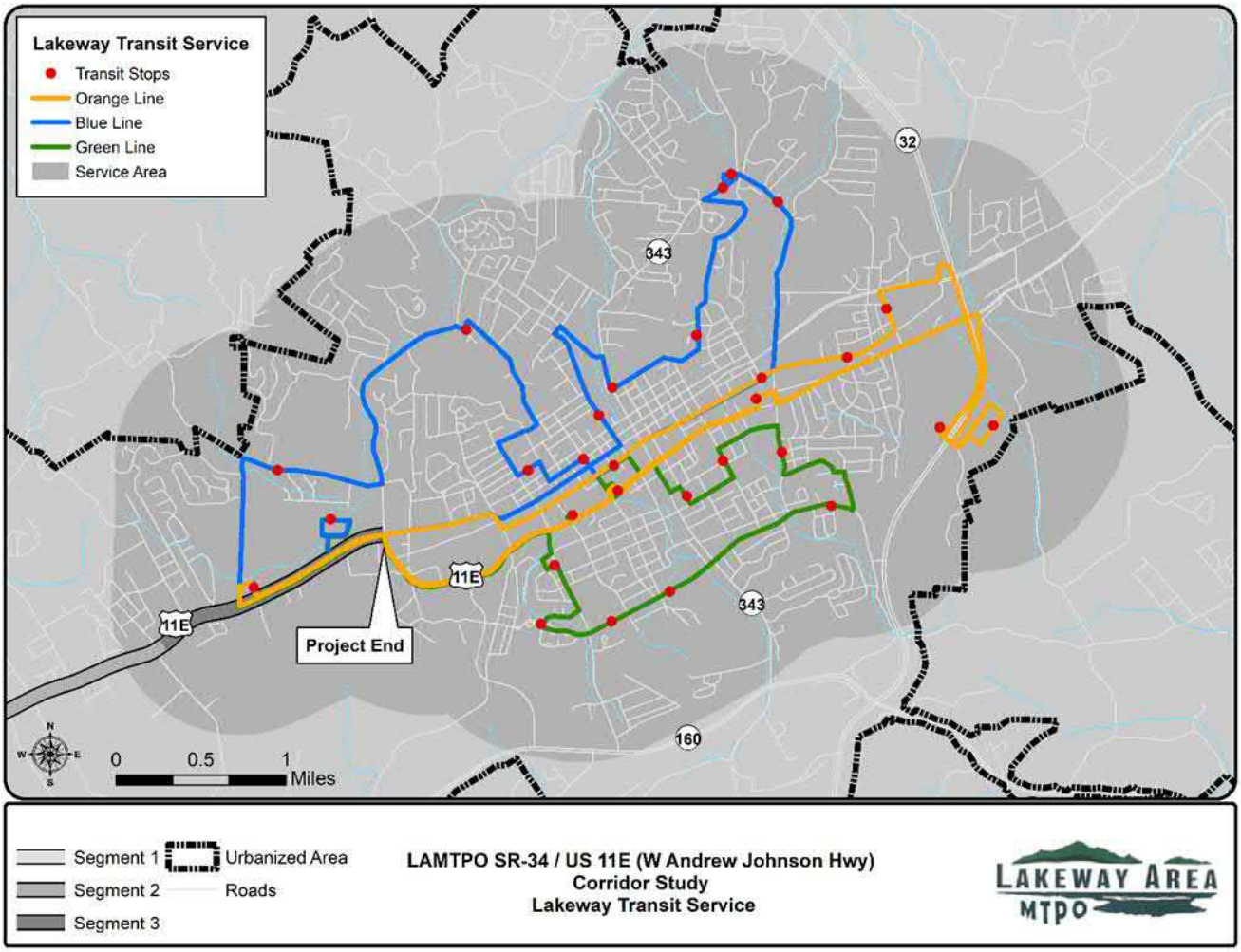
- **Retail at Cherokee Crossings (Winkler Avenue)** – 15-acre shopping development located in west Morristown across from new Walmart and Merchant's Greene development, to include Aldi grocery, Knoxville TVA Employees Credit Union, four fast casual restaurants and a newly opened Chili's Bar & Grill.
- **Retail – Merchant's Greene (Merchants Greene Blvd)** – 80-acre retail development in west Hamblen County anchored by Wal-Mart. A 25,000 sq. ft. strip center currently has vacancies. Future development will include an additional 150,000 sq. ft. of retail space and 12 outparcels on the west side of Merchants Greene Blvd.
- **Trellborg Building (Commerce Blvd)** – Industrial building consisting of over 146,000 sq. ft., on 9.4 acres located in the Morristown Airport Industrial District. It includes over 134,000 sq. ft. of industrial space, 8,000 sq. ft. of office space and 4,000 sq. ft. of shipping/receiving space.

To help accommodate growth and development in the region, LAMTPO and the East Tennessee Human Resource Agency (ETHRA) launched a fixed-route bus system that serves several main corridors throughout Morristown. This provides an alternative mode of transportation to shopping, medical, industrial, and residential areas. System hours will be Monday through Friday from 7:00 a.m. to 6:00 p.m. Three (3) routes serve the city, with the

[5] Morristown TN New Development App, https://mh-gis.maps.arcgis.com/apps/Shortlist/index.html?appid=e3fbb7c68bfd4c7493e80e2b6677611f, accessed 23 October 2020.
[6] Morristown Area Chamber of Commerce, https://selectmorristowntn.com/sites-buildings/, accessed October 21, 2020.

eastern terminus of all three being the ETHRA Transit Hub right off of US 11E near West Economy Road (Segment 3).

Figure 9. LAMTPO Transit Service



The Orange Line provides connectivity between Segment 3 and various businesses in downtown along Main Street and Morris Blvd, including the Super Wal-Mart and Walters State Community College off of US 25E east of downtown. The Blue and Green Lines both provide connectivity to destinations and development near Cold Creek Drive and Walters Drive, including Food City, businesses along Sandstone Drive, Sykes Enterprises, and several fast food restaurants.

Given the projected population and employment growth for the area, future land use plans, and projected roadway level of service and congestion identified in LAMTPO's LRTP, transit and other transportation improvements focusing on the safe and reliable movement of people and goods are needed to help facilitate improved access to employment centers and achieve community revitalization principles identified in long-range planning efforts.

TRANSPORTATION SYSTEMS AND FACILITIES

An evaluation and identification of the corridor's systems and facilities, including existing geometrics and features, traffic, safety statistics, and access type and locations, was performed in order to recommend potential transportation improvements that meet traffic demand and address operational and/or safety issues along the route. Data is presented on all three (3) segments, with additional details on Segment 2 (from Commerce Blvd to just east of N. Sugar Hollow Rd) related to ADA compliance, multimodal facilities, and ITS signal coordination.

At Talbott-Kansas Road – Looking south

PROJECTS UNDERWAY/PROGRAMMED

As noted in **Table 3,** there are several projects outlined in the LAMTPO 2045 Long Range Transportation Plan (LRTP) along or near the study corridor. These proposed projects have been incorporated into this study as proposed recommendations and further detailed in subsequent sections.

Table 3. Projects Outlined in LAMTPO 2045 LRTP

Segment	Location	Improvement	Project Type	Horizon Year	LRTP #
1	SR 341 (Talbott-Kansas Road) / Greenbriar Road	Intersection improvements at SR 341 (Talbott-Kansas Rd) and Greenbriar Rd at SR 34/US 11E - Realign intersection approaches and add turn lanes	Intersection	2026	2054
2	Kidwell Ridge Road	Intersection improvements at SR 34/US 11E and Kidwell Ridge Rd - Add turn lane on Kidwell Ridge Rd, eliminate left turn lane from W. Manley Ct Circle, add J-turn further east	Intersection	2035	2047
3	Central Church Road	Widen Central Church Road from 2 to 3 lanes (from corridor to Connie St)	Road Widening	2026	2055
3	W. Economy Road	Intersection improvements at SR 34/US 11E and W. Economy Rd – Add right turn lanes on SR 34/US 11E, reconfigure access	Intersection	2035	2048

In addition to the proposed transportation projects outlined in **Table 3,** TDOT's Interactive Tennessee Road Improvement Program (iTRIP)[7] database outlines additional projects along or near the study corridor that are underway. These are summarized in **Table 4** and included as part of the future trend scenario analysis in order to evaluate the impact they have on corridor operations.

[7] https://www.arcgis.com/apps/dashboards/e14888bce2954050a10df5e949a1bc1d

Table 4. Projects Underway

Segment	Location	Improvement	Projected Year	Project Phase	Lead Agency
2	Commerce Boulevard	Add turn lanes in EB direction on US 11E/ SR-34 (left lane to Dollar General and right lane onto Commerce Boulevard) and signalize	2020[8]	Construction	TDOT
2	SR-66 / Merchants Greene Boulevard	Add 2nd left turn lane on US 11E/ SR-34	2022 *(potential letting)*	Design	TDOT

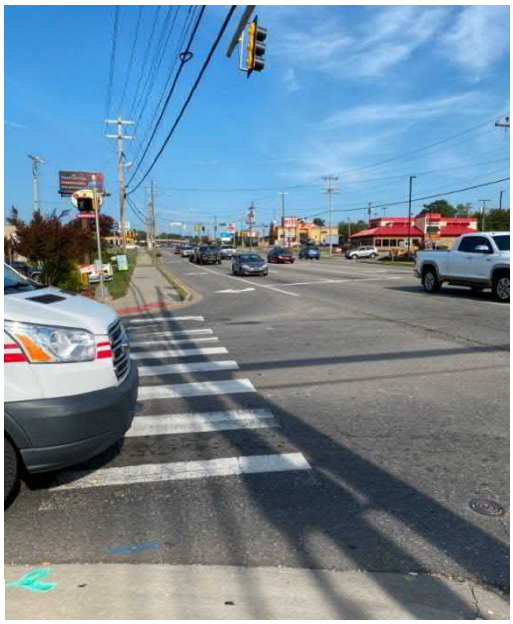
EXISTING CONDITIONS

Physical Route Description

Within the study area, US 11E/SR 34/W. Andrew Johnson Highway is classified as a principal arterial that is included in the United States Numbered Highway System. (The functional classification of connecting roadways within the study area ranges from local roads to minor arterials.)

The route is characterized by rolling terrain with a variety of horizontal and vertical curvature. Furthermore, many of the side streets and intersecting roads have both horizontal and vertical curvature features throughout the study corridor. The corridor is classified as a principal arterial and is composed of two (2) typical roadway sections, as depicted in **Figure 10**:

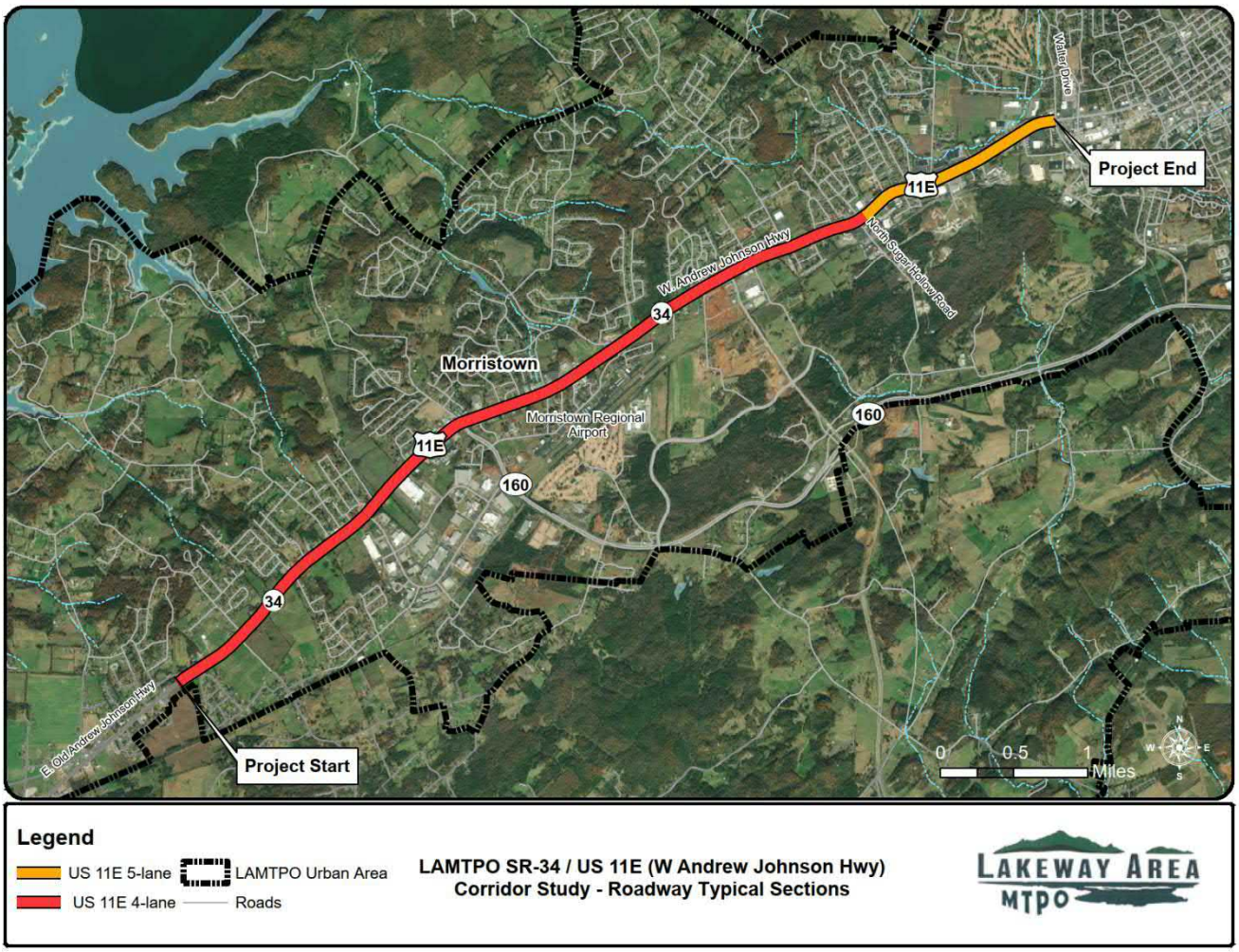
- From the western project limits in Jefferson County (approximately L.M. 16.49) to N. Sugar Hollow Road in Hamblen County (approximately L.M. 5.56), the study corridor consists of four (4) travel lanes [two (2) in each direction] with twelve (12) foot wide lanes, outside shoulders ranging from eight (8) to ten (10) feet wide, and a twenty-four (24) foot grassy depressed median. This typical section applies to both Segment 1 and 2. It should be noted that sections of Segment 2 also include sidewalk enhancements and are noted in more detailed later within this report.
- From N. Sugar Hollow Road (approximately L.M. 5.56) to the project end limits at Walters Dr/W. Morris Blvd (approximately L.M. 7.09), the study corridor consists of four (4) travel lanes [two (2) in each direction] with twelve (12) foot wide lanes, a twelve (12) foot wide two-way left-turn lane (TWLTL), outside shoulders ranging from one (1) to ten (10) feet wide, and sidewalk, curb, and gutter along both sides of the route. This typical section applies to Segment 3 only.



At Cold Creek Drive – Looking east

[8] According to TDOT E-TRIMS PPRM database, this project was let to construction on 05/15/2020 to Apac-Atlantic, Inc., with the low bid amount of $1,381,130.00.

Figure 10. Corridor Typical Sections



Corridor Features

The speed limit on SR 34 (US 11E / W Andrew Johnson Highway) is 50 miles per hour from the project start limits to just east of Kidwell Ridge Rd (L.M. 5.06), 45 miles per hour from L.M. 5.06 to N. Sugar Hollow Rd (L.M. 5.56), and 40 miles per hour from L.M. 5.56 to the project end limits at Walters Dr/W. Morris Blvd (L.M. 7.09).

The width of right-of-way (ROW) varies along the study corridor. From the project start limits to E. Sunset Hills (L.M. 5.38), the route is characterized by 140 feet of ROW then transitions to 100 feet of ROW to the end project limits.

Based on TDOT's E-TRIMS structures inventory database, there are two (2) structures along the study route, as highlighted in **Table 5,** both of which are located within Segment 2.

Table 5. Existing Structures

Feature	Structure Type Main	Structure Number
Branch	Concrete	32CULV030014
Branch	Concrete	32CULV030194

Access Points

The corridor consists of a multitude of various access points including driveways (for businesses, residences, and residential neighborhoods/communities), median openings, side streets, and intersections (unsignalized and signalized). To capture a representation of existing conditions, an inventory of access points was generated and is outlined in **Table 6.** (It should be noted that there are areas along the study route where access type and access location overlap. The data outlined in the tables below is a comprehensive summary of all access types.)

Table 6. Access Points Summary

Segment	Access Type				Total Access Points (per Segment)
	Driveway	Intersection	Median opening	Side street	
1	52	2	10	7	71
2	137	13	26	19	195
3	96	8	0	4	108

Segment 1

Segment 1 is approximately 2.4 miles long. Based on the data outlined in **Table 6,** Segment 1 averages approximately 30 access points per mile. Of the three segments, Segment 1 has the lowest number of driveways and intersections, as expected based on the roadway typical section, current development trends, and land use patterns.

Segment 2

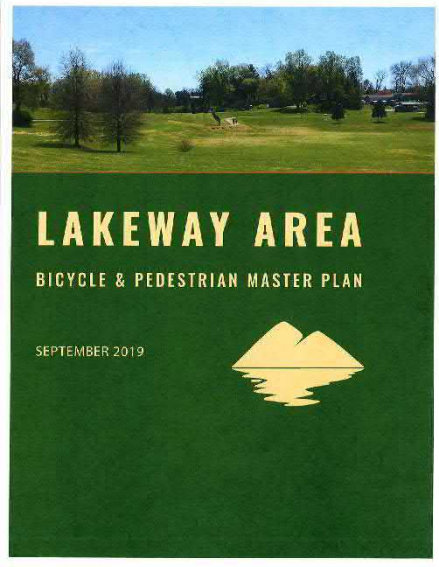
Segment 2 is approximately 4.0 miles long. Based on the data outlined in **Table 6**, Segment 2 averages approximately 49 access points per mile. Of the three segments, Segment 2 has the highest total number of access points (as projected based on the segment length) and has the highest overlap of access types at the same location.

Segment 3

Segment 3 is approximately 1.5 miles long. Based on the data outlined in **Table 6**, Segment 3 averages approximately 74 access points per mile. Of the three segments, Segment 3 has the highest average number of access points per mile, as expected based on the roadway typical section, current development trends, and land use patterns.

Multimodal Facilities

Utilizing TDOT's E-TRIMS database as well as Morristown's Americans with Disabilities Act (ADA) Transition Plan and associated geographic information system (GIS) mapping, an inventory of existing sidewalks and ramps was compiled to determine current conditions and potential means of improvement. In addition, the Lakeway Area Bicycle and Pedestrian Master Plan (2019) was reviewed and summarized in order to highlight potential pedestrian data that applies to the corridor study.



Sidewalks and Ramps

A review of Morristown's ADA Transition Plan for sidewalk and ramp obstacles resulted in the tables below. Segment 1 is not covered within the context of ADA review because there are no sidewalks nor sidewalk ramps which exist within the limits of this segment. In regard to Segment 2, sidewalk and ramp infrastructure is mainly located around the signalized intersection of SR-66/Merchants Greene Blvd. ADA data for Segment 2 is outlined in **Table 7** and **Table 8** below.

Table 7. Segment 2 Sidewalk Segments Evaluation

ObjectID	Street	Condition	Length noted in ADA Shapefile (ft)	Length noted in 2016 ADA Plan (ft)	Width (ft)	Repair Size
1018	Hatfield Dr	Excellent	11	0	4	N/A
1017	Hatfield Dr	Excellent	97	0	4	N/A
1013	Winkler Ave	Excellent	206	0	4	N/A
1012	W AJ Hwy	Excellent	94	0	4	N/A
545	W AJ Hwy	Poor	1,110	273	>5	50' Section
548	W AJ Hwy	Good	1,566	385	>5	10' Section
634	Merchants Greene Blvd	Fair	2,246	551	5	20' Section
637	Merchants Greene Blvd	Good	2,236	549	4	20' Section
1011	Walmart Private Dr	Excellent	473	0	5	N/A
546	W AJ Hwy	Good	1,08	267	>5	Whole Segment
547	W AJ Hwy	Poor	1,618	398	>5	100' Section

Table 8. Segment 2 Sidewalk Ramps Evaluation

Object ID	Street	ADA Compliant	Issue	Number of Ramps
22	W AJ Hwy	Yes	N/A	0
24	W AJ Hwy	Yes	N/A	0
43	Winkler Ave	Yes	N/A	0
44	Winkler Ave	Yes	N/A	0
137	W AJ Hwy	Yes	N/A	0
138	W AJ Hwy	Yes	N/A	0
148	W AJ Hwy	No	Mats	1
21	W AJ Hwy	No	Mats, Slope	0
23	W AJ Hwy	No	Mats, Slope	0
52	W AJ Hwy	Yes	N/A	0
139	W AJ Hwy	Yes	N/A	0
140	W AJ Hwy	Yes	N/A	0

Segment 3 is dominated with pedestrian infrastructure. Similar to the data presented for Segment 2, sidewalk and ramp infrastructure for Segment 3 is summarized in **Table 9** and **Table 10** below.

Table 9. Segment 3 Sidewalk Segments Evaluation

ObjectID	Street	Condition	Length noted in ADA Shapefile (ft)	Length noted in 2016 ADA Plan (ft)	Width (ft)	Repair Size
548	W AJ Hwy	Good	1,566	385	>5	10' Section
550	W AJ Hwy	Good	1,128	278	>5	Whole Block
235	W AJ Hwy	Good	880	217	>5	Whole Segment
234	W Economy Rd	Good	4,104	1,006	4	100' Section
238	W AJ Hwy	Good	1,701	419	>5	Whole Segment
241	W AJ Hwy	Good	2,662	655	>5	N/A
1004	Cold Creek Dr	Excellent	1,080	265	5	N/A
931	W AJ Hwy	Good	1,68	415	>5	Whole Segment
547	W AJ Hwy	Poor	1,618	398	>5	100' Section
549	W AJ Hwy	Good	721	177	>5	Whole Segment
236	W AJ Hwy	Fair	1,302	321	>5	50' Section
237	W AJ Hwy	Good	665	164	>5	Whole Segment
239	W AJ Hwy	Fair	1,014	249	>5	10' Section
240	W AJ Hwy	Good	533	131	>5	Whole Segment
242	W AJ Hwy	Fair	2,124	522	>5	20' Section
243	W AJ Hwy	Fair	1,365	336	>5	20' Section
244	W Morris Blvd	Poor	1,738	427	5	50' Section
248	W Morris Blvd	Excellent	264	65	>5	N/A

Table 10. Segment 3 Sidewalk Ramps Evaluation

Object ID	Street	ADA Compliant	Issue	Number of Ramps
147	W AJ Hwy	Yes	Mats	1
146	W AJ Hwy	Yes	N/A	0
145	W AJ Hwy	Yes	N/A	0
144	W AJ Hwy	Yes	N/A	0
143	W AJ Hwy	Yes	N/A	0
73	W AJ Hwy	Yes	N/A	0
74	W AJ Hwy	Yes	N/A	0
75	W AJ Hwy	No	Mats	1
76	W AJ Hwy	No	Mats	1
78	W AJ Hwy	Yes	N/A	0
77	W AJ Hwy	Yes	N/A	0
84	W AJ Hwy	Yes	N/A	0

Object ID	Street	ADA Compliant	Issue	Number of Ramps
81	W AJ Hwy	Yes	N/A	0
83	W AJ Hwy	Yes	N/A	0
82	W AJ Hwy	Yes	N/A	0
125	W AJ Hwy	Yes	N/A	0
124	W AJ Hwy	Yes	N/A	0
141	W AJ Hwy	No	Mats and Ramps	1
142	W AJ Hwy	No	Mats and Ramps	1
132	W AJ Hwy	Yes	N/A	0
134	W AJ Hwy	Yes	N/A	0
136	W AJ Hwy	No	Mats and Ramps	1
135	W AJ Hwy	No	Mats and Ramps	1
80	W AJ Hwy	Yes	N/A	0
79	W AJ Hwy	Yes	N/A	0
131	W AJ Hwy	No	Mats and Ramps	1
130	W AJ Hwy	No	Mats and Ramps	1
85	W AJ Hwy	No	Mats and Ramps	2
86	W AJ Hwy	No	Mats and Ramps	2
127	W AJ Hwy	Yes	N/A	0
126	W AJ Hwy	Yes	N/A	0
129	W AJ Hwy	Yes	N/A	0
128	W AJ Hwy	Yes	N/A	0

Crash History

Historical crash data for the study area was provided by LAMTPO and includes information such as location, date, time of day, severity (including the total number of involved vehicles, injuries, and fatalities), crash events, weather conditions, and lighting conditions. The safety analysis was limited to a three-year period of available data to minimize the impact of changes in traffic patterns, roadway construction, and trip origins and destinations on statistical trends in crashes in the study area. This three-year interval is referred to as the study period and for the purposes of this memo consists of the period between 2016-2019.

Crash severity measures the level of injury sustained by any person involved in each crash. TDOT records four (4) types of crash severity, as follows:

- A *fatal crash*, in which one or more persons involved in the crash suffers an injury that results in death within 30 days following the crash;
- A *suspected serious injury crash*, in which at least one (1) person involved in the crash exhibits physical evidence of a serious, non-fatal injury;
- A *suspected minor injury crash,* in which at least one (1) person involved in the crash exhibits physical evidence of or reports an injury that is neither fatal nor serious in nature; and
- A *property-damage-only (PDO) crash*, in which no person involved in the crash exhibits physical evidence of injury or reports any change in their normal functions.

Within the study period, 761 total crashes were recorded with zero (0) fatal crashes observed during the study timeline. **Table 11** displays the recorded crashes by severity, along with additional information related to crash statistics for the overall corridor.

Table 11. Corridor Crash Summary

Crash Data	Number of Crashes	Percentage of Total
Lighting Conditions		
Daylight	573	75%
Dark-Not Lighted	22	3%
Dark-Lighted	88	12%
Dusk/Dawn	14	2%
Not Indicated/Unknown	64	8%
Crash Severity		
Property Damage	659	87%
Suspected Minor Injury	89	12%
Suspected Serious Injury	13	2%
Manner of Collision		
Rear-End	363	48%
Angle	205	27%
Sideswipe (Same Direction)	61	8%
Sideswipe (Opposite Direction)	8	1%
Head On	8	1%
No Collision	32	4%
Other/Unknown/Unlisted	84	11%
Weather Conditions		
Clear	490	64.4%
Cloudy	114	15.0%
Rain	84	11.0%
Snow/Blowing Snow	7	0.9%
Fog	1	0.1%
Severe Wind	1	0.1%
Not Indicated /Unknown	64	8.4%

Segment 2

Segment 2 was evaluated at a more detailed level to review crash details between Commerce Blvd to just east of N. Sugar Hollow Rd. Within Segment 2, 319 total crashes were observed and are summarized in **Table 12.**

Table 12. Segment 2 Crash Summary

Crash Data	Number of Crashes	Percentage of Total
Lighting Conditions		
Daylight	226	71%
Dark-Not Lighted	16	5%
Dark-Lighted	51	16%
Dusk/Dawn	6	2%
Not Indicated/Unknown	20	6%
Crash Severity		
Property Damage	269	84%
Suspected Minor Injury	44	14%

Crash Data	Number of Crashes	Percentage of Total
Suspected Serious Injury	6	2%
Manner of Collision		
Rear-End	154	48%
Angle	87	27%
Sideswipe (Same Direction)	24	8%
Sideswipe (Opposite Direction)	4	1%
Head On	2	1%
No Collision	22	7%
Other/Unknown/Unlisted	26	8%
Weather Conditions		
Clear	200	62.7%
Cloudy	49	15.4%
Rain	43	13.5%
Snow/Blowing Snow	5	1.6%
Fog	1	0.3%
Severe Wind	1	0.3%
Not Indicated /Unknown	20	6.3%

Traffic

In addition to population and employment projections and zoning patterns along the corridor (as outlined in the Corridor Characteristics Technical Memorandum), information on existing traffic volumes and congestion help to communicate growth and development patterns along the corridor. Data from TDOT's E-TRIMS, corridor traffic history [as outlined in TDOT's Annual Average Daily Traffic (AADT) interactive map[9]], turning movement counts provided via 2005 US 11E Corridor Study[10] (*i.e. 2005 study*), Synchro files (provided by LAMTPO), and forecasting information from TDOT's Traffic Forecasting office were utilized in the development of traffic analysis – both for forecasting future traffic conditions and analyzing traffic operations within the study area.

TDOT collects Average Daily Traffic (ADT), which is based on a 24-hour count, via count stations located across the state. ADT numbers are then converted to AADT by applying a seasonal variation factor, which takes into account time of year and day of week and are an appropriate indicator of traffic demand. The resultant AADT values are then published by TDOT and made available to the public. Referenced from TDOT's E-TRIMS database, **Table 13** lists the TDOT count stations located along the study route, as well as which segment they fall within, and the corresponding 2019 AADT values.

Table 13. TDOT Traffic Counts Based on Segment

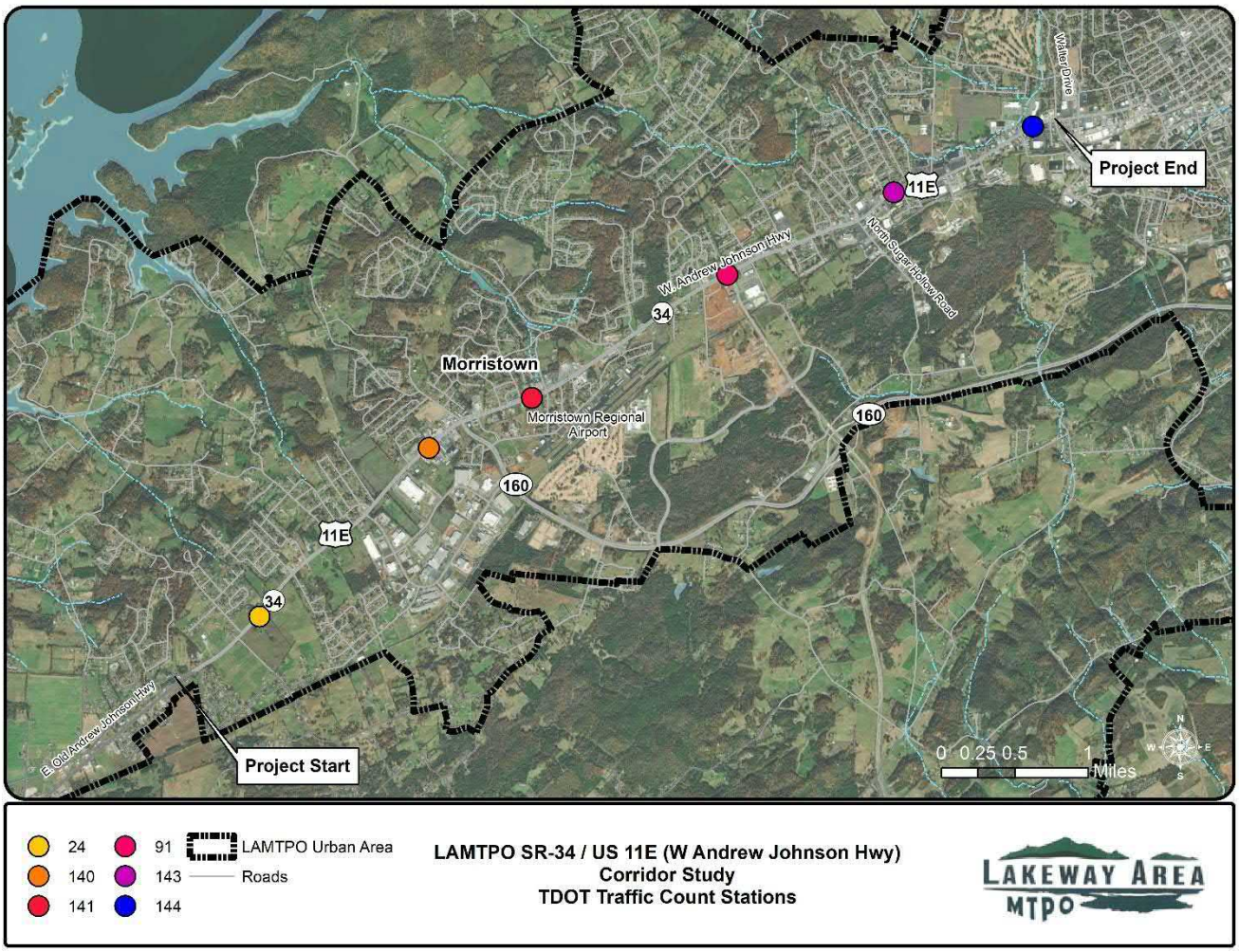
Station Number	Study Segment	General Station Location Limits	2019 AADT (Veh/Day)
32000024	1	Talbott-Kansas Rd (SR-341) to Lakeshore Dr	23,700
32000140	1 & 2	Lakeshore Dr to Airpark Blvd/SR-160	23.220
32000141	2	Airpark Blvd/SR-160 to Panther Creek Rd/ SR-342/ Old Highway 11E	22,020

[9] "TDOT Traffic History," *TDOT*, https://www.arcgis.com/apps/webappviewer/index.html?id=075987cdae37474b88fa400d65681354, Accessed 14 Dec, 2020

[10] "US 11E Corridor Study, Jefferson and Hamblen Counties, Final Report," *LAMTPO*, https://342ba995-c7e1-46d7-a1e2-84ad5d0d972c.filesusr.com/ugd/cffdbd_291f713126b44fb5b36f5492ec6e5490.pdf, Accessed 21 Aug 2020

Station Number	Study Segment	General Station Location Limits	2019 AADT (Veh/Day)
32000091	2	Panther Creek Rd/ SR-342/ Old Highway 11E to Kidwell Ridge Rd	24,660
32000143	2 & 3	Kidwell Ridge Rd to W Economy Rd	35,510
32000144	3	W Economy Rd to Walters Dr/ W Morris Blvd	45,120

Figure 11. Traffic Count Stations along the Corridor



For future corridor AADT projections, existing traffic volumes (referenced from **Table 13**) were forecasted to a prescribed future year. For the corridor study, 2025 is defined as the **future base year** and 2045 is the **future design year.** TDOT's Strategic Transportation Investments Division (STID) provided average growth rate percentages per segment, as outlined in **Table 14.**

Table 14. Average Growth Rate Per Segment Per Year

Study Segment	Average Growth Rate
1	1.90%
2	1.20%
3	1.00%

Rates from **Table 14** were then applied to current traffic volumes to determine future base and future design year AADT numbers, as reflected in **Table 15.**

Table 15. Projected Future Base Year and Future Design Year AADTs

Station Number	Study Segment	Base Year 2025 AADT (Veh/Day)	Design Year 2045 AADT (Veh/Day)
32000024	1	26,402	35,408
32000140	1 & 2	25,379	32,578
32000141	2	23,605	28,890
32000091	2	26,436	32,354
32000143	2 & 3	37,854	45,666
32000144	3	47,827	56,861

Intersection Evaluation

To determine the current conditions of the key intersections identified along the corridor, morning (AM) and evening (PM) operations were evaluated, based on provided Synchro files. Trafficware's Synchro software is a macroscopic analysis and optimization software application. Synchro supports the Highway Capacity's Manual's (HCM) 6th Edition, 2010, and 2000 for signalized intersections, unsignalized intersections, and roundabouts. Furthermore, the HCM provides operational analysis methodology and prescribes the use of levels of service (LOS) to characterize operational conditions.

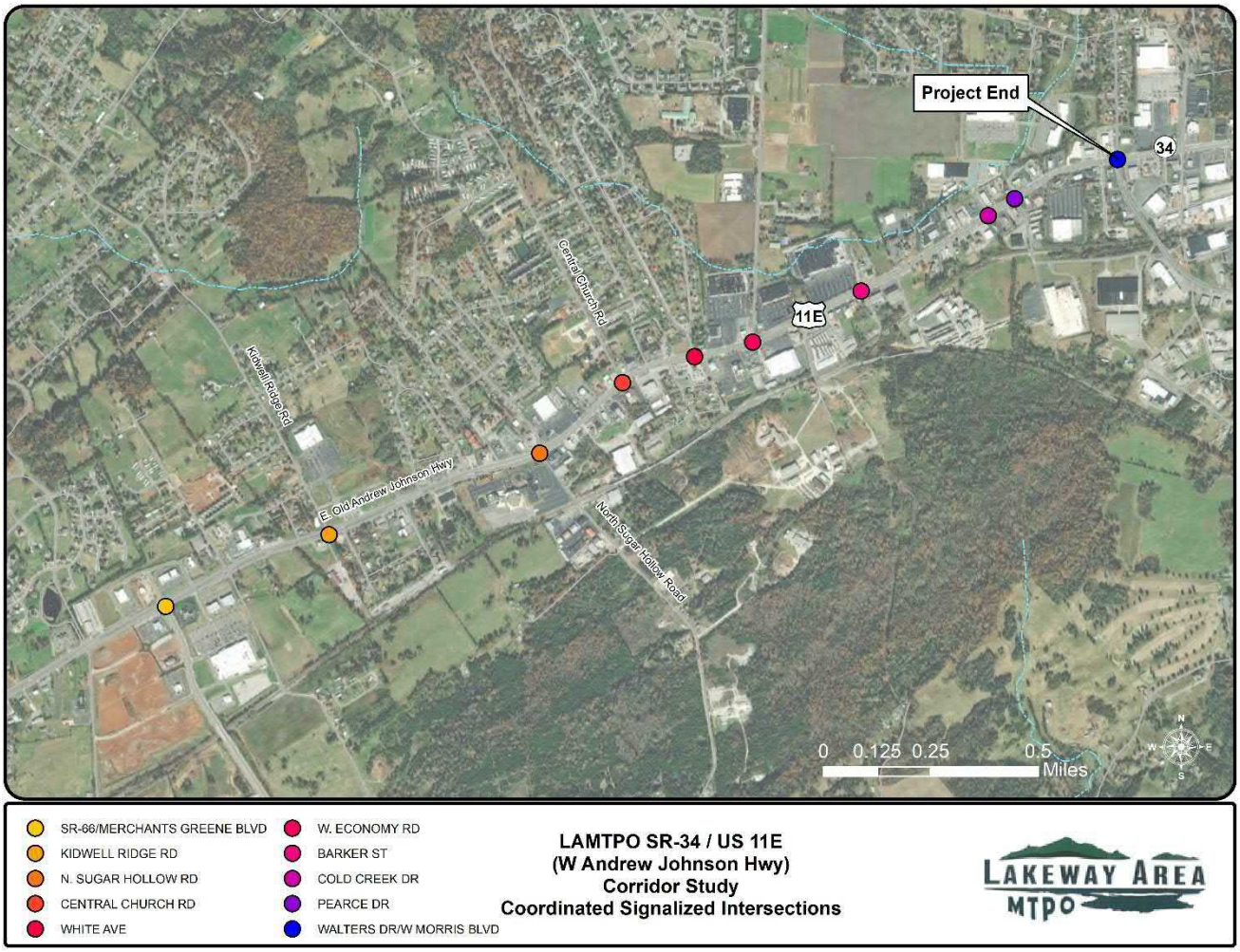
For signalized intersections, LOS is defined in terms of the average total control delay of all movements through an intersection. Control delay is a method of quantifying several intangible factors such as driver discomfort, frustration, and/or lost travel time. There are six LOS criteria to describe operations at a signalized intersection, using letters from "A" to "F", with "A" representing the best operational conditions and "F" the worst. LOS D is typically considered as the minimum acceptable LOS for an intersection within an urban area. **Table 16** below summarizes the LOS criteria for signalized intersections, as described in the HCM.

Table 16. LOS Descriptions for Signalized Intersections

LOS	Average Control Delay (seconds/vehicle)	General Description
A	≤ 10	Most vehicles arrive to the intersection during the green indication and travel through without stopping.
B	> 10 – 20	More vehicles stop than LOS A.
C	> 20 – 35	Number of vehicles stopping is significant, although many still pass through the intersection without stopping.
D	> 35 – 55	Many vehicles stop and individual cycle failures are noticeable.
E	> 55 – 80	Progression is unfavorable and the cycle length is long. Individual cycle failures are frequent.
F	> 80	Progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

The provided Synchro file(s) include traffic data and operations related to the existing coordinated signal system along the route. For purposes of the subject corridor study, the following sections detail operations for 10 (ten) signaled intersections total – located along Segments 2 and 3 as shown in **Figure 12.**

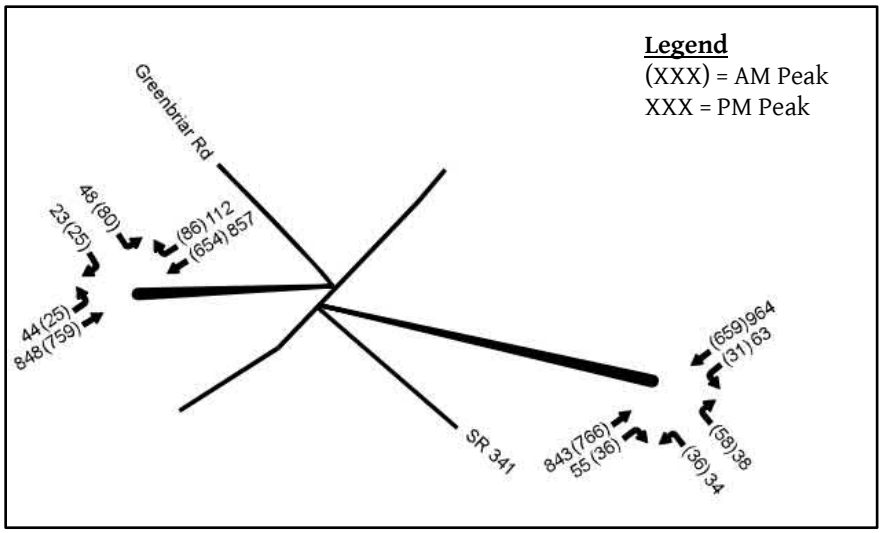
Figure 12. Coordination Signalized Intersections along Study Route



Segment 1

The side streets of SR 341/ Talbott Kansas Road & Greenbriar Road are currently offset side streets. As outlined in **Table 3,** prior studies noted a recommendation to implement intersection improvements at this location in order to realign the intersection approaches and add turn lanes. It should be noted that turning movement counts were not performed due to the temporary change in traffic patterns because of the current pandemic. However, the 2005 corridor study provides 2004 turning movement counts, as outlined in **Figure 13.**

Figure 13. 2004 Turning Movement Counts for SR 341/Talbott Kansas Road and Greenbriar Road



Source: January 2005 US 11E Corridor Study

Segment 2

LAMTPO provided the 2015 AM and PM baseline Synchro files for the coordinated signalized intersections along the route. Signal system coordination begin at SR-66/Merchants Greene Blvd and extends east to the end project limits (and beyond). After reviewing the model for lane geometry and configurations, hourly volumes were forecasted to future base year and future design year, based on values outlined in **Table 14.** Projected values were then input into their respected AM and PM models to perform intersection analysis of three (3) of the existing signalized intersections along Segment 2. The results for 2015 (existing baseline), 2025 (future base year), and 2045 (future design year), are noted in **Table 17, Table 18,** and **Table 19** below for both AM and PM. Additionally, traffic volume diagrams (for both base and future years) are located in Appendix A. 2025 Traffic Volume Diagrams and Appendix B. 2045 Traffic Volume Diagrams.

*Table 17. Segment 2- **2015** AM and PM Intersection Capacity Summary*

	AM			
Intersection Name	**Average Intersection Delay (s)**	**Maximum v/c Ratio**	**Intersection Capacity Utilization (%)**	**LOS**
SR-66/Merchants Greene Blvd	35.5	0.97	75.5	D
Kidwell Ridge Rd	27.5	0.91	65.4	C
N. Sugar Hollow Rd	24.4	0.89	67.9	C
	PM			
SR-66/Merchants Greene Blvd	35.7	1.22	72.5	D
Kidwell Ridge Rd	25.0	0.84	72.7	C
N. Sugar Hollow Rd	15.8	0.65	68.1	B

*Table 18. Segment 2- **2025** AM and PM Intersection Capacity Summary*

	AM			
Intersection Name	**Average Intersection Delay (s)**	**Maximum v/c Ratio**	**Intersection Capacity Utilization (%)**	**LOS**
SR-66/Merchants Greene Blvd	45.7	1.03	80.4	D

Kidwell Ridge Rd	24.7	0.94	72.9	C
N. Sugar Hollow Rd	16.5	1.16	85.7	B
	PM			
SR-66/Merchants Greene Blvd	36.7	0.84	77.9	D
Kidwell Ridge Rd	24.5	0.95	82.4	C
N. Sugar Hollow Rd	12.6	0.71	80.2	B

*Table 19. Segment 2- **2045** AM and PM Intersection Capacity Summary*

	AM			
Intersection Name	**Average Intersection Delay (s)**	**Maximum v/c Ratio**	**Intersection Capacity Utilization (%)**	**LOS**
SR-66/Merchants Greene Blvd	71.8	1.25	95.4	E
Kidwell Ridge Rd	60.7	1.13	87.1	E
N. Sugar Hollow Rd	28.2	1.20	97.8	C
	PM			
SR-66/Merchants Greene Blvd	58.1	1.12	92.0	E
Kidwell Ridge Rd	40.7	1.12	98.6	D
N. Sugar Hollow Rd	27.5	1.09	91.8	C

Segment 3

Similar to the methodology laid out for Segment 2, lane geometry and configurations were reviewed for the 2015 AM and PM Synchro files. Next, hourly volumes were forecasted to future base year and future design year, based on values outlined in **Table 14.** Projected values were then input into their respected AM and PM models to perform intersection analysis of seven (7) of the existing signalized intersections along Segment 3. The results for 2015 (existing baseline), 2025 (future base year), and 2045 (future design year), are noted in **Table 20, Table 21,** and **Table 22** below for both AM and PM. As mentioned above, traffic volume diagrams (for both base and future years) are located in Appendix A. 2025 Traffic Volume Diagrams and Appendix B. 2045 Traffic Volume Diagrams.

*Table 20. Segment 3- **2015** AM and PM Intersection Capacity Summary*

	AM			
Intersection Name	**Average Intersection Delay (s)**	**Maximum v/c Ratio**	**Intersection Capacity Utilization (%)**	**LOS**
Central Church Rd	17.5	0.90	59.6	B
White Ave/Lee Dr	14.6	0.89	61.0	B
W. Economy Rd	16.5	0.84	70.1	B
Barker St	17.8	0.76	54.2	B
Cold Creek Rd	6.5	0.71	63.1	A
Pearce Dr	22.0	0.94	57.6	C
Walters Dr/W. Morris Blvd	48.5	1.04	79.6	D
	PM			
Central Church Rd	13.4	0.71	68.6	B
White Ave/Lee Dr	8.0	0.61	57.2	A
W. Economy Rd	28.1	1.10	82.3	C
Barker St	18.5	0.59	64.2	B

Cold Creek Rd	12.5	0.69	67.4	B
Pearce Dr	8.9	0.72	56.5	A
Walters Dr/W. Morris Blvd	64.0	1.03	84.4	E

*Table 21. Segment 3- **2025** AM and PM Intersection Capacity Summary*

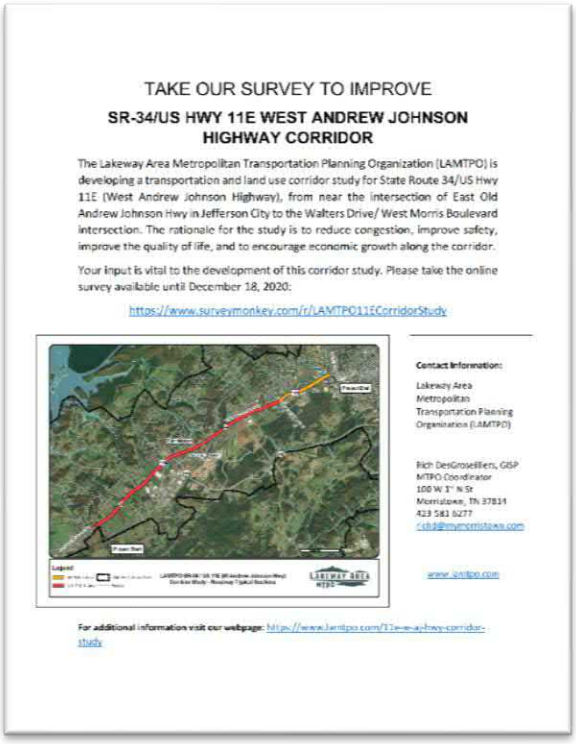
	AM			
Intersection Name	**Average Intersection Delay (s)**	**Maximum v/c Ratio**	**Intersection Capacity Utilization (%)**	**LOS**
Central Church Rd	8.2	0.84	64.8	A
White Ave/Lee Dr	6.3	0.78	65.5	A
W. Economy Rd	17.4	1.19	72.7	B
Barker St	4.8	0.62	58.4	A
Cold Creek Rd	6.6	0.66	67.2	A
Pearce Dr	9.0	0.77	61.9	A
Walters Dr/W. Morris Blvd	35.2	0.91	75.2	D
	PM			
Central Church Rd	14.9	0.78	74.8	B
White Ave/Lee Dr	7.4	0.61	63.7	A
W. Economy Rd	46.5	1.10	91.2	D
Barker St	5.6	0.65	67.9	A
Cold Creek Rd	5.5	0.62	66.9	A
Pearce Dr	6.1	0.69	60.8	A
Walters Dr/W. Morris Blvd	34.5	0.91	77.3	C

*Table 22. Segment 3- **2045** AM and PM Intersection Capacity Summary*

	AM			
Intersection Name	**Average Intersection Delay (s)**	**Maximum v/c Ratio**	**Intersection Capacity Utilization (%)**	**LOS**
Central Church Rd	13.5	1.01	77.0	B
White Ave/Lee Dr	20.7	0.95	76.7	C
W. Economy Rd	35.6	1.57	85.4	D
Barker St	3.9	0.75	68.0	A
Cold Creek Rd	8.2	0.73	77.2	A
Pearce Dr	16.8	0.94	71.3	B
Walters Dr/W. Morris Blvd	48.0	1.09	87.8	D
	PM			
Central Church Rd	20.1	0.89	87.1	C
White Ave/Lee Dr	4.0	0.75	74.1	A
W. Economy Rd	67.3	1.25	107.1	E
Barker St	9.4	0.75	77.3	A
Cold Creek Rd	11.6	0.79	77.9	B
Pearce Dr	8.9	0.79	71.0	A
Walters Dr/W. Morris Blvd	50.0	0.98	88.7	D

ONLINE SURVEY

LAMTPO received more than 150 responses to a survey (via SurveyMonkey) which asked citizens to describe their experience and solicit feedback about the corridor. The online survey was conducted in parallel with the first public workshop and was publicized through local governments' websites, Twitter, and Facebook accounts. A detailed summary of survey questions and responses is provided in Appendix D. Public Survey and Results.


TAKE OUR SURVEY TO IMPROVE

SR-34/US HWY 11E WEST ANDREW JOHNSON HIGHWAY CORRIDOR

The Lakeway Area Metropolitan Transportation Planning Organization (LAMTPO) is developing a transportation and land use corridor study for State Route 34/US Hwy 11E (West Andrew Johnson Highway), from near the intersection of East Old Andrew Johnson Hwy in Jefferson City to the Walters Drive/ West Morris Boulevard intersection. The rationale for the study is to reduce congestion, improve safety, improve the quality of life, and to encourage economic growth along the corridor.

Your input is vital to the development of this corridor study. Please take the online survey available until December 18, 2020:

https://www.surveymonkey.com/r/LAMTPO11ECorridorStudy

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To summarize, respondents indicated that entertainment was the central purpose of traveling along the corridor. Additionally, respondents most reported traveling the route in the afternoon (from 3:00 – 7:00 pm) on weekdays and mid-day (from 10:00 am – 3:00 pm) on weekends. When asked to prioritize improvement strategies along the corridor, safety and traffic congestion ranked highest. Of the three segments, Segment 3 was noted as the most travelled.

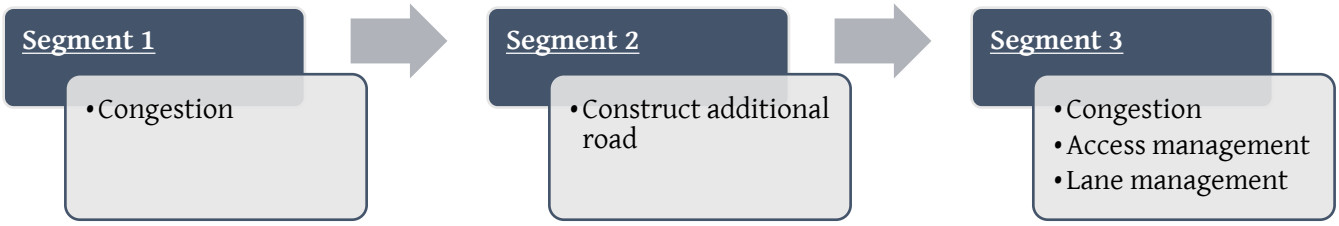
Table 23 below summarizes the responses to survey question #8: "*Are there intersections (signaled or un-signaled) along the study corridor that may have opportunities for improvement or enhancement?*" SR-66/Merchants Greene Blvd, N Bellwood Rd / S Bellwood Rd, and Kidwell Ridge Rd were most frequently noted.

Table 23. Survey Question #8 Summary

Segment	Intersection Name	Number of References
2	Commerce Blvd	5
2	Air Park Blvd	2
2	Panther Creek Rd	2
2	Howell Rd	2
2	SR-66/Merchants Greene Blvd	8
2	N Bellwood Rd / S Bellwood Rd	6
2	Kidwell Ridge Rd	9
2	N Sugar Hollow Rd	1
3	Cold Creek Drive	1
3	Pearce Dr	1

Respondents indicated that issues with operations, capacity, access management, and safety were present within each of the three segments. Issues that were mentioned across the entirety of the corridor include lighting, speed, traffic signals, and congestion. Separately, topics that were specific to individual segments are included in **Figure 14**.

Figure 14. Main Concerns - Per Segment



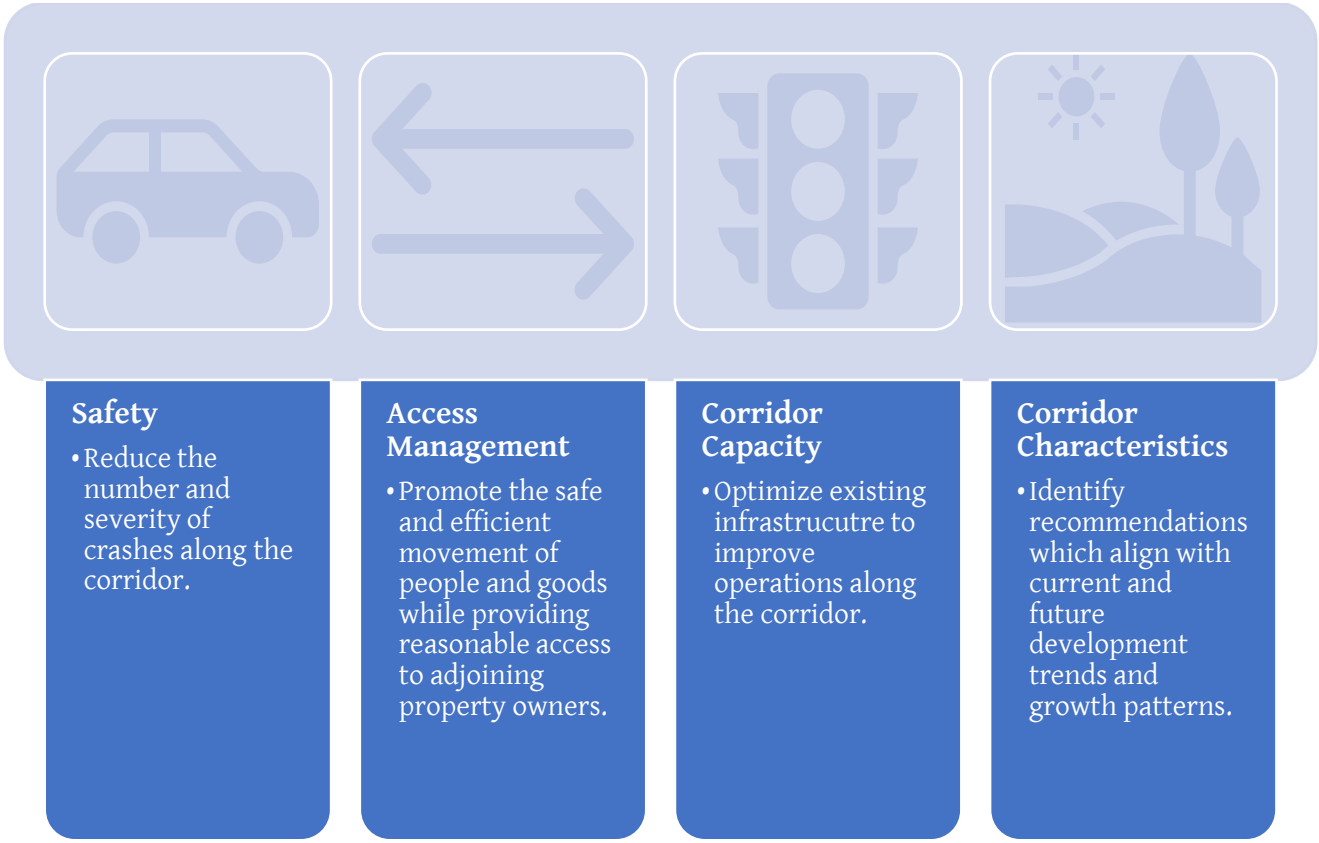
PUBLIC WORKSHOPS

LAMTPO hosted two (2) public workshops which took place virtually on December 3, 2020, and April 14, 2021, in order to raise awareness of the corridor study and gain feedback from interested individuals/parties. Appendix C. Public Workshop #1 Presentation and Appendix E. Public Workshop #2 Presentation contain the PowerPoint presentations that were used to facilitates the meetings.

PROPOSED RECOMMENDATIONS

Based on findings noted in previous sections – including public engagement and participation, proposed alternatives were developed at the conceptual planning level and evaluated for their ability to meet and/or satisfy criteria noted in **Figure 15.**

Figure 15. Corridor Goals and Objectives



Furthermore, these recommendations have been broken down into "early-action" solutions that can be implemented quickly (within the next 5 years), are lower in cost, have minimum right-of-way requirements, and address the most pressing operational and safety issues identified in earlier tasks. In addition to early-action improvements, long-term (25 years out) improvements have also been identified.

TRANSPORTATION-RELATED RECOMMENDATIONS

Transportation-related recommendations are outlined in the following figures below, broken down by segment.

Figure 16. Segment 1 Recommendations

#1 and #1 short-term recommendations go hand-in-hand, based on their functionality together and should be implemented (if applicable) as one (1) project.

At Lakeshore Road – Looking southeast

Figure 17. Segment 2 Recommendations

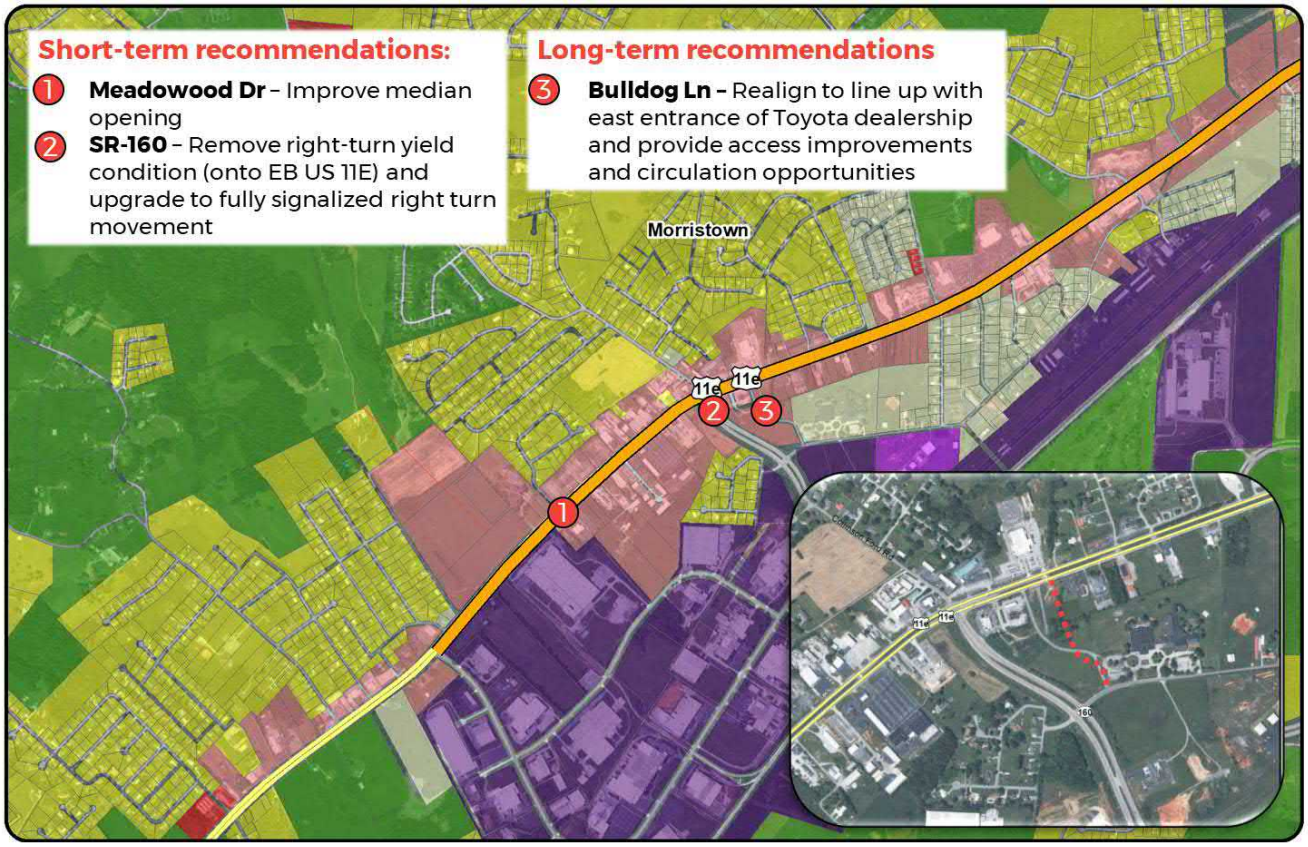


Figure 18. Segment 2 Recommendations (continued)

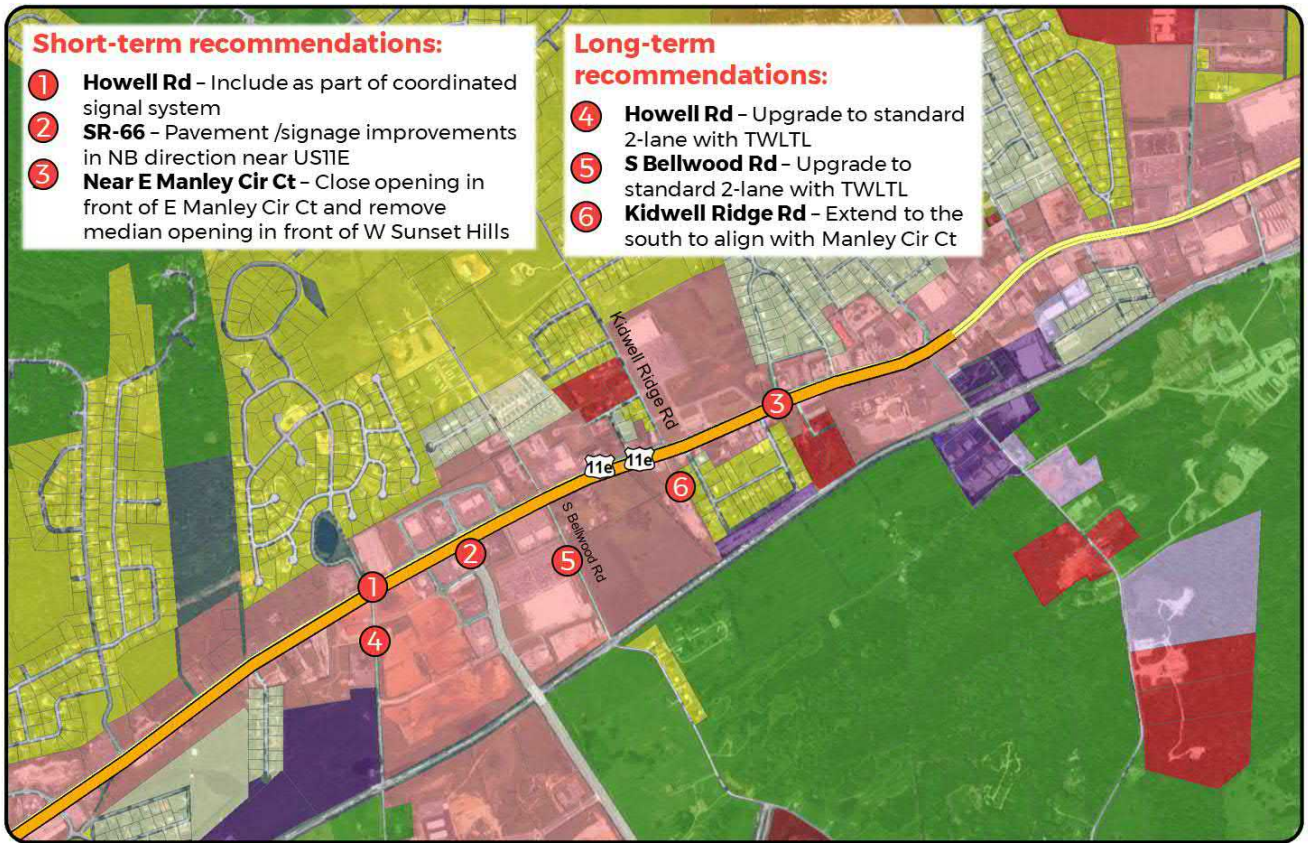
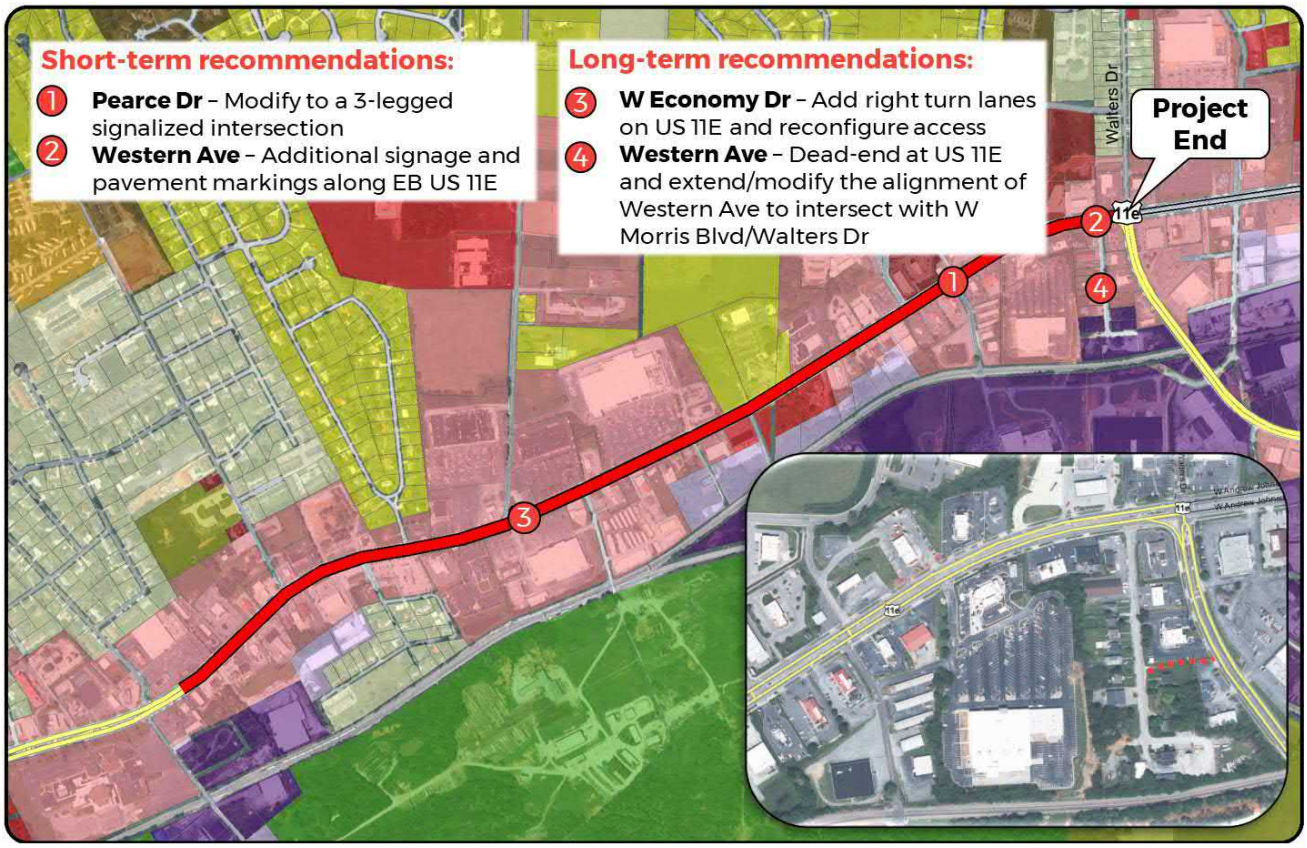


Figure 19. Segment 3 Recommendations



ADDITIONAL CORRIDOR RECOMMENDATIONS

A more detailed analysis was performed along Segment 2. The following sections highlight additional corridor recommendations.

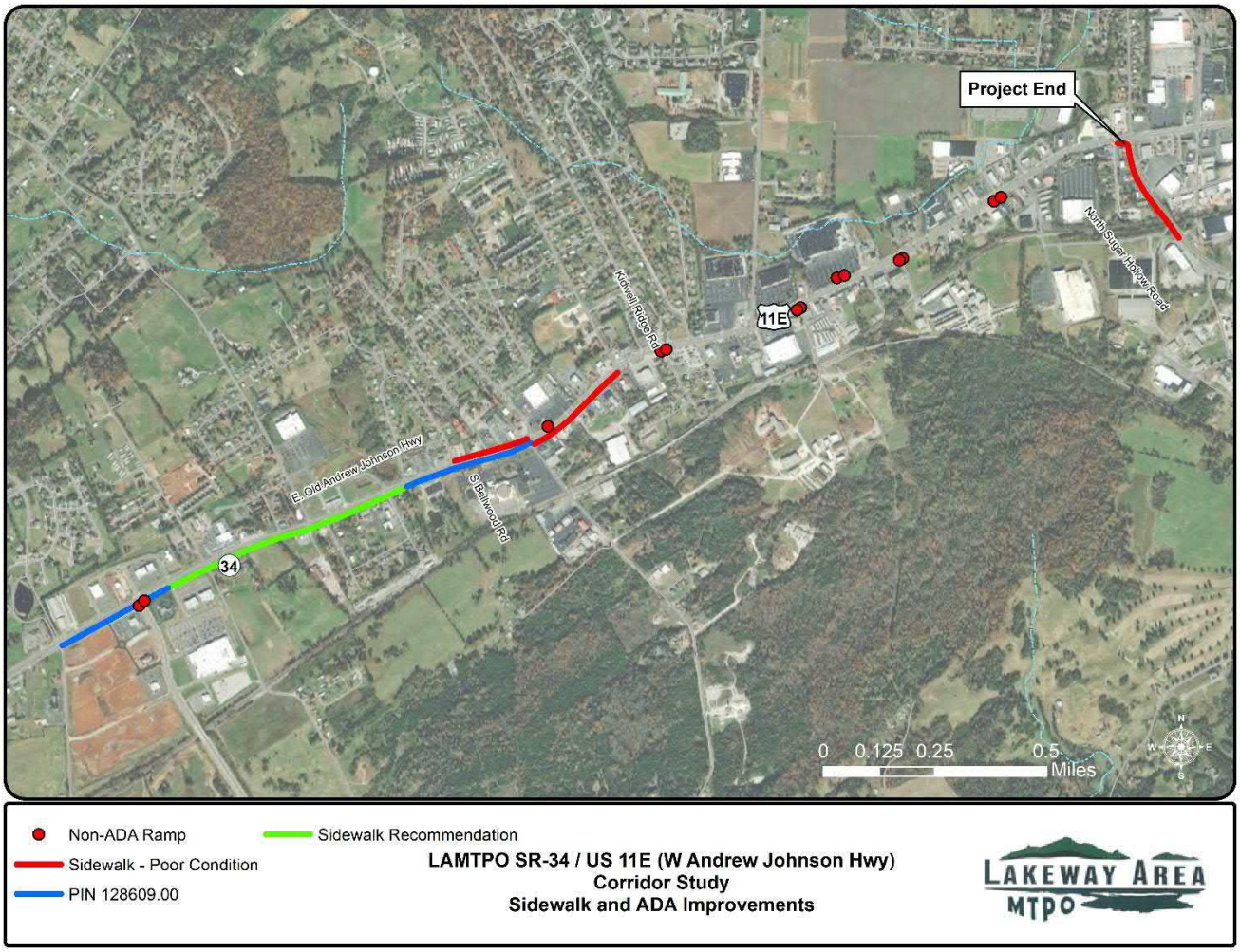
Sidewalks and curb Ramps

Similar to other transportation modes, providing additional and/or improving sidewalk amenities along the corridor will increase walking and link residents and visitors to their destination in a safe and efficient way. Referenced from TDOT iTRIP platform, a Local Programs project currently exists (PIN 128609.00), which includes various sidewalk improvements along the corridor from Hampton West Boulevard to Terrace Lane in Morristown. These improvements include new construction and rehabilitation of sidewalks, ADA upgrades, drainage improvements, pedestrian signals, and crosswalk striping. Building upon this project, it is recommended to provide sidewalk improvements from just east of SR-66/Merchants Greene Blvd to just west of W Sunset Hills (approximately 3,000 feet) in order to provide pedestrian connectivity along the route.

In addition, it is recommended to upgrade existing pedestrian infrastructure along Segments 2 and 3 including improving sections of sidewalk near S. Sugar Hollow Rd that are considered in poor condition and various curb ramp improvements along Segment 2 and 3 to ensure all facilities are ADA compliant.

At Howell Road intersection – Looking east

Figure 20. Corridor Sidewalks and Ramps Improvements



Transit

As noted in the Morristown Deviated Fixed-Route Study, there are two (2) bus stop locations which fall within the study area. Transit Hub and Food City stop, both of which are located along or near Segment 3. The existing amenities of these stops are outlined in the following tables.

Table 24. Transit Hub Amenities

Street Parking	No
Street MPH	N/A
Intersection Signal	Yes
Activity Generator	Transit Station
Stop Type	Bus Pull Out
Stop Lighting	Yes
Stop Shade	Yes
Pedestrian Sidewalk	No
Pedestrian Crosswalk	No
ADA ROW	No
ADA Pad	Yes
ADA Ramp	No
ADA Terrain	Level
ADA Other	No

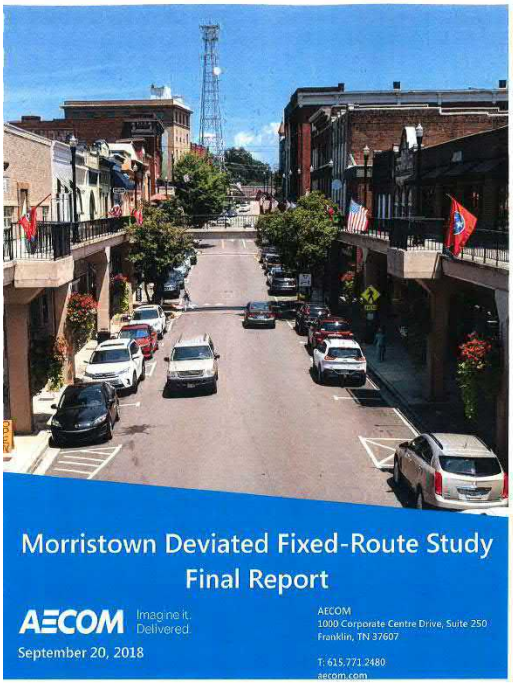


Table 25. Food City Amenities

Street Parking	No
Street MPH	N/A
Intersection Signal	No
Activity Generator	Food City, Shops
Stop Placement	Midblock
Stop Type	Curb
Stop Lighting	Yes
Stop Shade	Yes
Pedestrian Sidewalk	Yes
Pedestrian Crosswalk	No
ADA ROW	No
ADA Pad	Yes
ADA Ramp	Yes
ADA Terrain	Level
ADA Utilities Obstacles	No
ADA Other	No

Recommended bus stop amenities at these two (2) locations includes the following:

- Benches and shelters – if applicable, which are warranted by the following:
  - Number of transfers at a stop
  - Right-of-way to construct shelters, waiting areas, or benches
  - Number of elderly or individuals with physical disabilities in the area
  - Proximity to major activity centers
  - Frequency of service
  - Adjacent land use compatibility
  - Harsh environmental conditions in the area that would necessitate a shelter
- Route information including a route schedule and map, enclosed in plastic schedule holder
- Trash or recycling receptacles
- Transit bus stop signs

Access Management

Access management is the proactive management of vehicular access points along adjacent parcels of the roadway network. Good access management promotes safe and efficient use of the transportation system by minimizing the number of vehicular conflict points that exist along a corridor and providing thoughtful consistent ingress / egress to side streets, businesses and residential areas. Access management should address the following topics:

- Roadway classification by function or type of facility (i.e. local street, minor collector etc.)
- Intersection spacing
- Driveway spacing
- Median treatments / openings
- Turning lanes & auxiliary lanes
- Side street connections
- Interconnection of side streets though the use of frontage roads to access development

In areas of expected future or current growth, it is important to develop access standards that accomplish a balance between property access and the safe and efficient functionality of the corridor. Implementing access management can provide three major benefits:

- Increased roadway capacity
- Reduced crashes
- Shorter travel times for motorists[11]

A comprehensive access management policy is multifactored and effects various departments within a local organization. **Table 26** outlines various examples of effective access management tools and strategies.

Table 26 Local Access Management Tools and Strategies[12]

Access Management Ordinances	Zoning	Subdivision Regulations	Develop Review
Classify roadways by function and level of access control.	Apply corridor overlay zoning to implement corridor and interchange access management plans.	Manage land division activity on arterial frontage; restrict flag lots and commercial or residential strips.	Require permits and establish access review criteria for subdivision and site plan reviews.
Adopt access location, spacing, and design standards for each roadway class and intersection functional areas.	Increase minimum lot frontage requirements on arterial roadways where the network is not internalized.	Require continuation and connectivity of subdivision roads; regulate street spacing; implement service roads on major corridors.	Require traffic impact studies to identify needed improvements to site access and circulation.
Establish provisions for improving access during redevelopment.	Enact form-based codes to implement block and street patterns, restrict curb cuts on street	Provide for shared (joint) access and interparcel cross access under certain conditions.	Establish criteria for administering exemptions from standards.

[11] 21st Century Operations using 21st Century Technologies https://ops.fhwa.dot.gov/access_mgmt/what_is_accsmgmt.htm accessed May 2021.
[12] TDOT Highway System Access Manual, Volume 1: Planning Land Development Regulations

Access Management Ordinances	Zoning	Subdivision Regulations	Develop Review
	frontage, and require alley access.		
Require auxiliary lanes and access design elements, such as minimum driveway throat lengths.	Establish land use activity centers and transit- oriented development districts versus strips for improved multimodal access and circulation.	Require unified access and circulation and manage outparcel access.	Provide for coordinated permitting with state DOT on state highways.

It is recommended that a comprehensive access management policy be formulated based on the characteristics of each segment of this study in context with the tools and strategies as outlined in **Table 26**. The Tennessee Department of Transportation Highway System Access Manual (HSAM) Volumes 1 and 2 provide up to date guidance when developing such policies and strategies.

Overall policy objectives should be universal but due to the different characteristic of each segment, targeted strategies may need to be implemented to meet long term goals.

- **Segment 1**
  - Due to this section being less developed with fewer access points, access management policy should focus on this opportunity to holistically develop access best management practices.
- **Segment 2**
  - Existing Redevelopment: Reduce / combine access points, require frontage roads / rear side streets as parcels redevelop. Frontage road implementation may be incremental in nature due to timing of redevelopment.
  - New development: In undeveloped areas implement full best management practices.
- **Segment 3**
  - Existing Redevelopment: Reduce / combine access points, require frontage roads / rear side streets as parcels redevelop. Frontage road implementation may be incremental in nature due to timing of redevelopment.

ESTIMATED COSTS

Planning-level costs were developed for the transportation-related recommendations. These values were calculated in 2020 dollars (per most current TDOT STID cost estimate tool) and should be updated (if necessary) if LAMTPO chooses to incorporate these projects into its Long Range Transportation Plan, Transportation Improvement Plan, or similar documents[13]. **Table 27** provides estimated costs for both short and long-solutions and also highlights the applicable solution criteria for each, in alignment with the corridor goals and objectives as shown in **Figure 15.**

At S Bellwood Road – Looking south

[13] For estimating future project costs, a compounded inflation rate of 5% per year should be applied from the year of this base estimate (i.e. 2020).

Table 27. Estimated Recommendations Costs

Segment	Location	Recommendation Description	Timeframe	Solution Criteria	Planning Level Cost Estimate
1	Talbott-Kansas (SR-341)/Greenbriar Rd	Provide deceleration lane in WB direction at median opening	Short	Safety	$360,000
1	Talbott-Kansas (SR-341)/Greenbriar Rd	Close median opening in front of Talbott-Kansas Rd (SR-341)	Short	Access Management	$200,000
1	Lakeshore Dr	Ingress/egress enhancements to businesses at existing signalized intersection	Short	Access Management	$350,000
1	Talbott-Kansas (SR-341)/Greenbriar Rd	Reconfigure intersection approaches and add turn lanes	Long	Safety	$1,330,000
1	Lakeshore Dr	Extend road to the south and connect to Superior Ct/Dr	Long	Characteristics	$2,380,000
2	Meadowood Dr	Improve median opening	Short	Access Management	$150,000
2	SR-160	Remove right-turn yield condition (onto EB US 11E) and upgrade to fully signalized right turn movement	Short	Safety	$225,000
2	Bulldog Ln	Realign to line up with east entrance of Toyota dealership and provide access/circulation improvements to SE quadrant of signalized intersection	Long	Safety	$1,200,000
2	Howell Rd	Include as part of coordinated signal system	Short	Capacity	$10,000
2	SR-66/Merchants Greene Blvd	Pavement/signage improvements in NB direction near US 11E	Short	Safety	$20,000
2	Near E Manley Cir Ct	Close opening in front of E Manley Cir Ct and remove median opening in front of W Sunset Hills	Short	Access Management	$250,000
2	Howell Rd	Upgrade to a standard 2-lane with center two-way left turn lane (TWLTL)	Long	Characteristics	$6,940,000
2	S Bellwood Rd	Upgrade to a standard 2-lane with center two-way left turn lane (TWLTL)	Long	Characteristics	$5,450,000
2	Kidwell Ridge Rd	Extend to the south to align with Manley Cir/Ct	Long	Characteristics	$1,380,000
3	W Economy Rd	Add right turn lanes on US 11E and reconfigure access	Long	Capacity	$340,000

Segment	Location	Recommendation Description	Timeframe	Solution Criteria	Planning Level Cost Estimate
3	Pearce Dr	Modify to a 3-legged signalized intersection	Short	Capacity	$175,000
3	Western Ave	Provide additional signage and pavement markings along EB US 11E	Short	Safety	$25,000
3	Western Ave	Dead-end at US 11E and extend/modify the alignment of Western Ave to intersect with W Morris Blvd/Walters Dr	Long	Safety	$1,190,000

PRIORITY MATRIX

In order to assist LAMPTO staff in prioritizing the recommendations noted within the subject study, a priority matrix was developed to categorize and rank "early-action" solutions that can be implemented quickly (within the next 5 years) and long-term (25 years out) improvements that address future needs and trends. **Table 28** outlines prioritization data for short-term proposed projects, which were guided by the goals and objectives outlined in **Figure 15** and favors safety-oriented projects first. Similarly, **Table 29** summaries prioritization information for long-term proposed projects.

Table 28. Short-Term Prioritization

Segment	Location	Recommendation Description	Priority Ranking
1	Talbott-Kansas (SR-341)/Greenbriar Rd	Provide deceleration lane in WB direction at median opening	**4**
1	Talbott-Kansas (SR-341)/Greenbriar Rd	Close median opening in front of Talbott-Kansas Rd (SR-341)	**5**
1	Lakeshore Dr	Ingress/egress enhancements to businesses at existing signalized intersection	**6**
2	Meadowood Dr	Improve median opening	**7**
2	SR-160	Remove right-turn yield condition (onto EB US 11E) and upgrade to fully signalized right turn movement	**2**
2	Howell Rd	Include as part of coordinated signal system	**8**
2	SR-66/Merchants Greene Blvd	Pavement/signage improvements in NB direction near US 11E	**3**
2	Near E Manley Cir Ct	Close opening in front of E Manley Cir Ct and remove median opening in front of W Sunset Hills	**9**
3	Pearce Dr	Modify to a 3-legged signalized intersection	**10**
3	Western Ave	Provide additional signage and pavement markings along EB US 11E	**1**

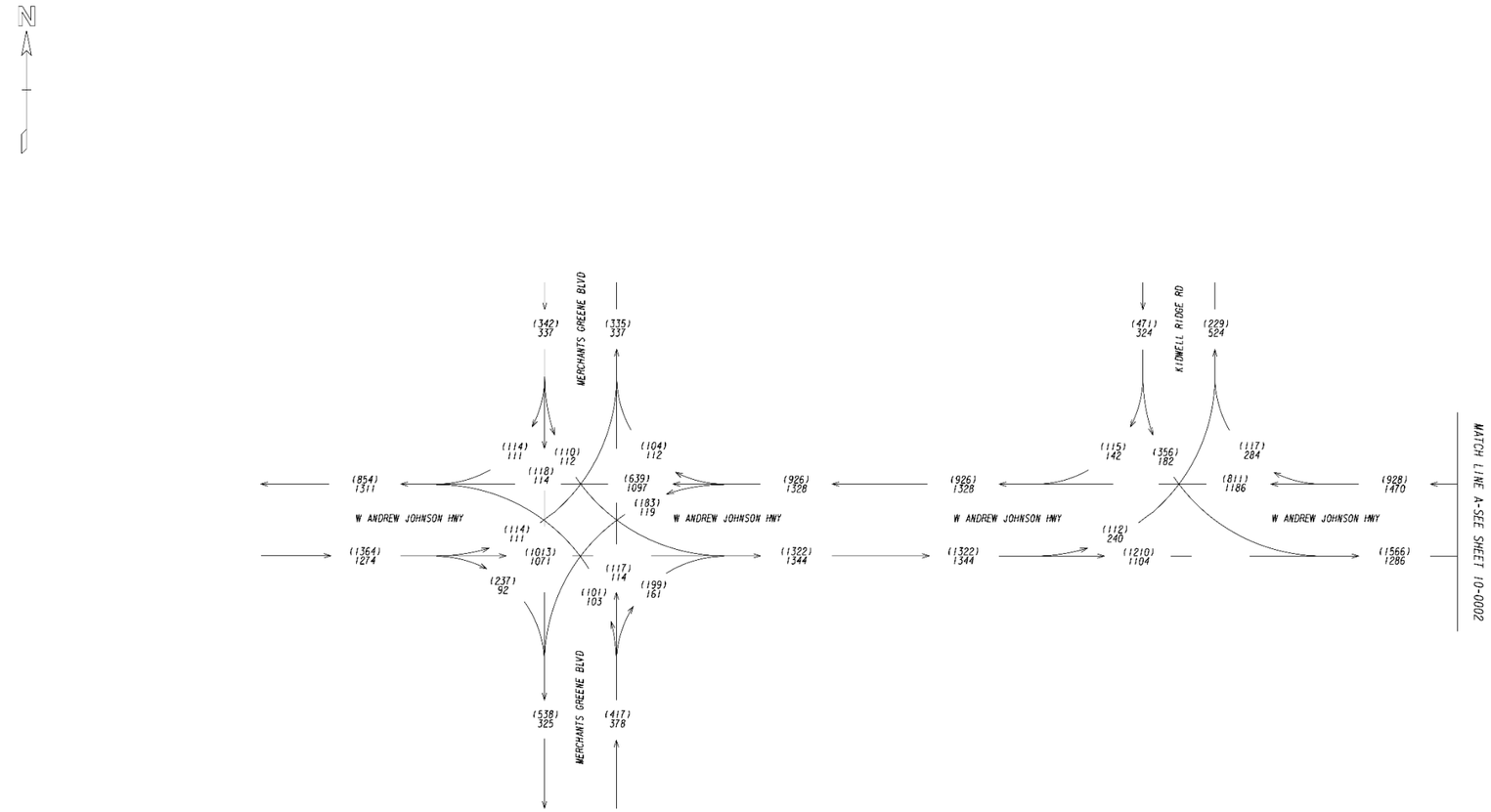
Table 29. Long-Term Prioritization

Segment	Location	Recommendation Description	Priority Ranking
1	Talbott-Kansas (SR-341)/Greenbriar Rd	Reconfigure intersection approaches and add turn lanes	**1**

Segment	Location	Recommendation Description	Priority Ranking
1	Lakeshore Dr	Extend road to the south and connect to Superior Ct/Dr	**7**
2	Bulldog Ln	Realign to line up with east entrance of Toyota dealership and provide access/circulation improvements to SE quadrant of signalized intersection	**3**
2	Howell Rd	Upgrade to a standard 2-lane with center two-way left turn lane (TWLTL)	**5**
2	S Bellwood Rd	Upgrade to a standard 2-lane with center two-way left turn lane (TWLTL)	**6**
2	Kidwell Ridge Rd	Extend to the south to align with Manley Cir/Ct	**8**
3	W Economy Rd	Add right turn lanes on US 11E and reconfigure access	**4**
3	Western Ave	Dead-end at US 11E and extend/modify the alignment of Western Ave to intersect with W Morris Blvd/Walters Dr	**2**

APPENDIX A. 2025 TRAFFIC VOLUME DIAGRAMS

P.I. No.



WEST ANDREW JOHNSON HIGHWAY / SR 34 @ MERCHANTS GREENE BOULEVARD AND @ KIDWELL RIDGE ROAD	2025 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES

TRAFFIC DIAGRAM
LAMPTO US 11E / SR 34 /
WEST ANDREW JOHNSON HIGHWAY
CORRIDOR STUDY

DRAWN BY: DATE:
CHECKED BY: DATE:
CORRECTED: DATE:
VERIFIED: DATE:

DRAWING NO.
10-0006

7/30/2015 CPLK

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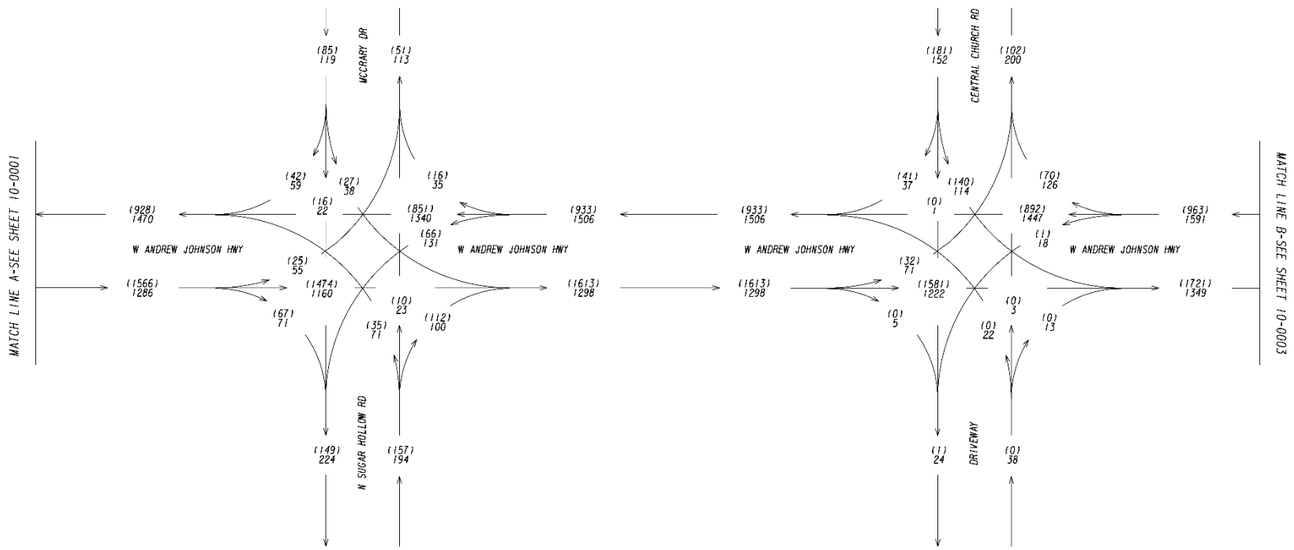

WEST ANDREW JOHNSON HIGHWAY / SR 34 @ MCCRARY DRIVE / NORTH SUGAR HOLLOW ROAD AND @ CENTRAL CHURCH ROAD	2025 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES	**TRAFFIC DIAGRAM** LAMPTO US 11E / SR 34 / WEST ANDREW JOHNSON HIGHWAY CORRIDOR STUDY DRAWING NO.: 10-0007

7/31/2015 CPLN

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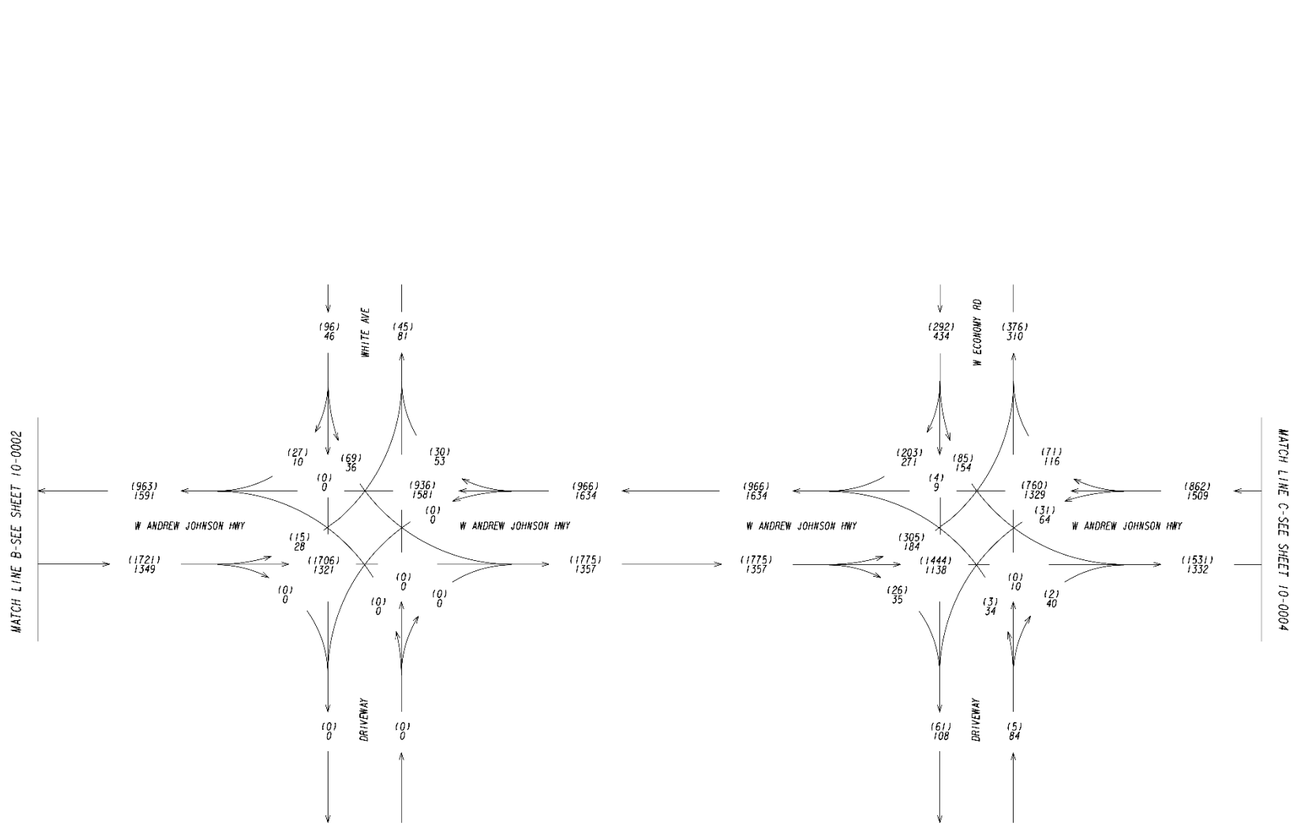

WEST ANDREW JOHNSON HIGHWAY / SR 34
@ WHITE AVENUE
AND
@ WEST ECONOMY ROAD

2025 VOLUMES
(XXX) - AM PEAK
XXX - PM PEAK

NTS

REVISION DATES

TRAFFIC DIAGRAM
LAMPTO US 11E / SR 34 /
WEST ANDREW JOHNSON HIGHWAY
CORRIDOR STUDY

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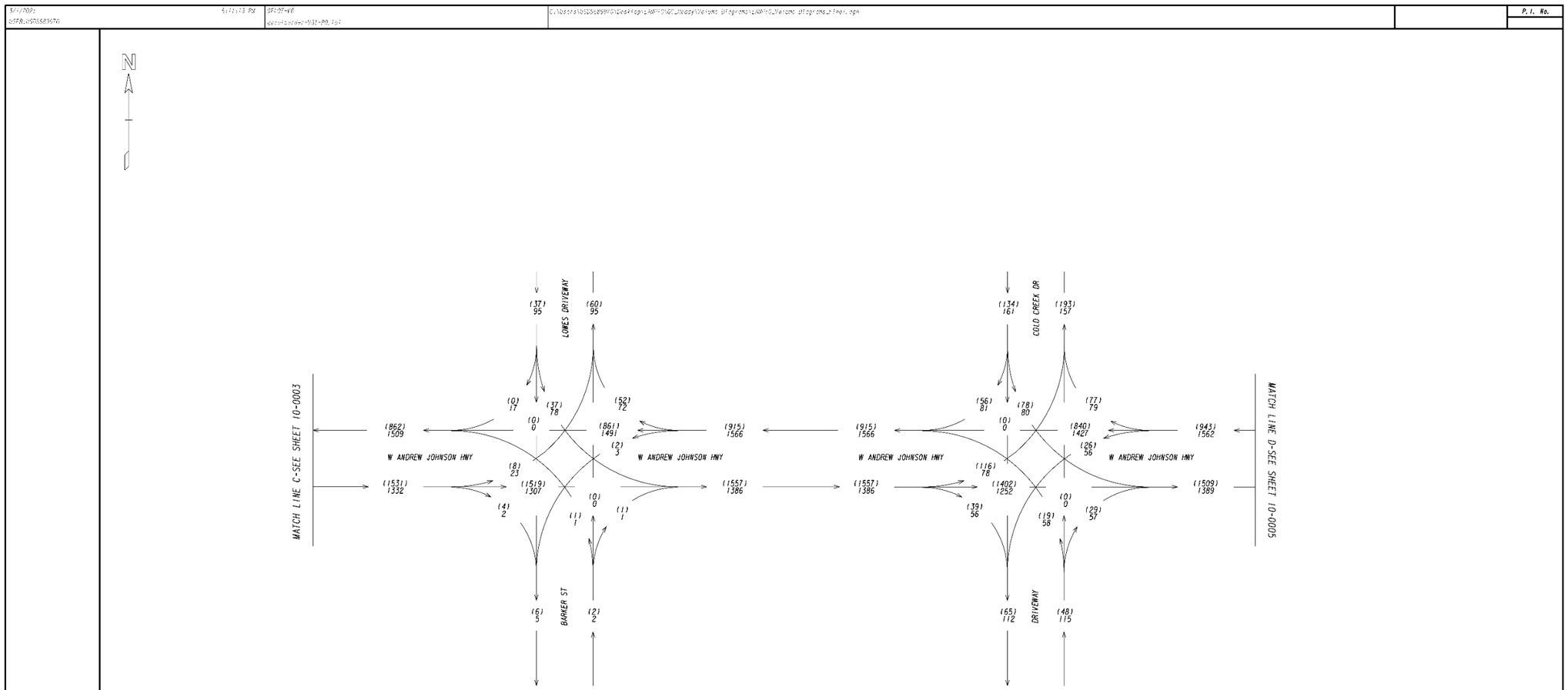

WEST ANDREW JOHNSON HIGHWAY / SR 34 @ BARKER STREET AND @ COLD CREEK DRIVE	2025 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES	**TRAFFIC DIAGRAM** LAMPTO US 11E / SR 34 / WEST ANDREW JOHNSON HIGHWAY CORRIDOR STUDY DRAWING NO.: 10-0009

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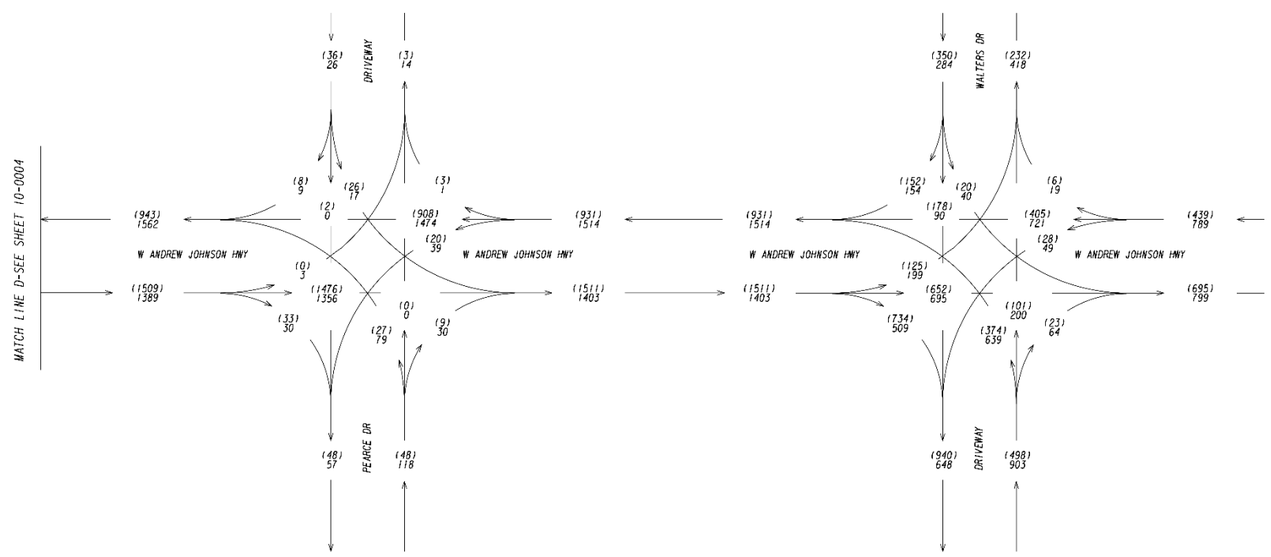
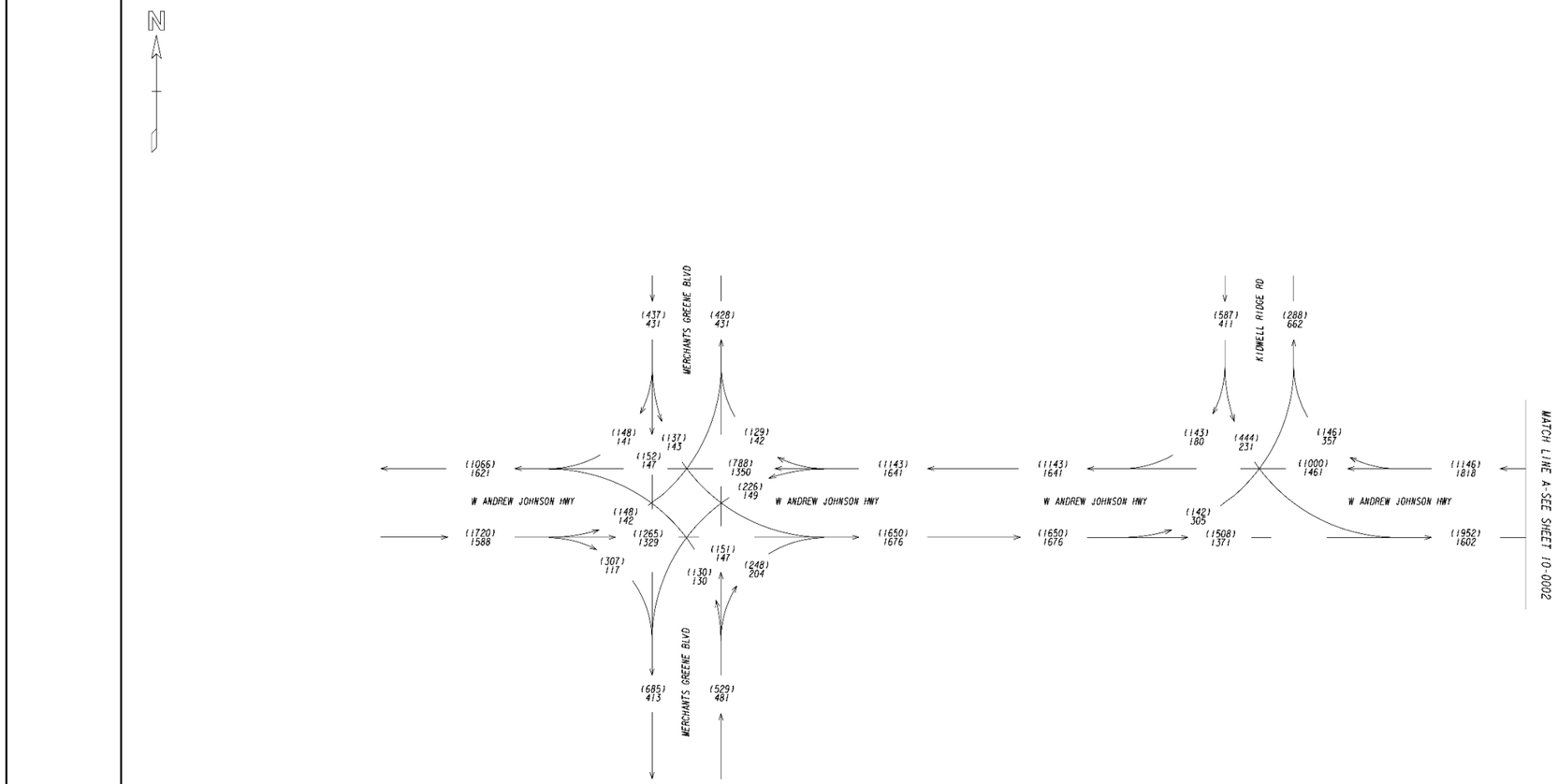


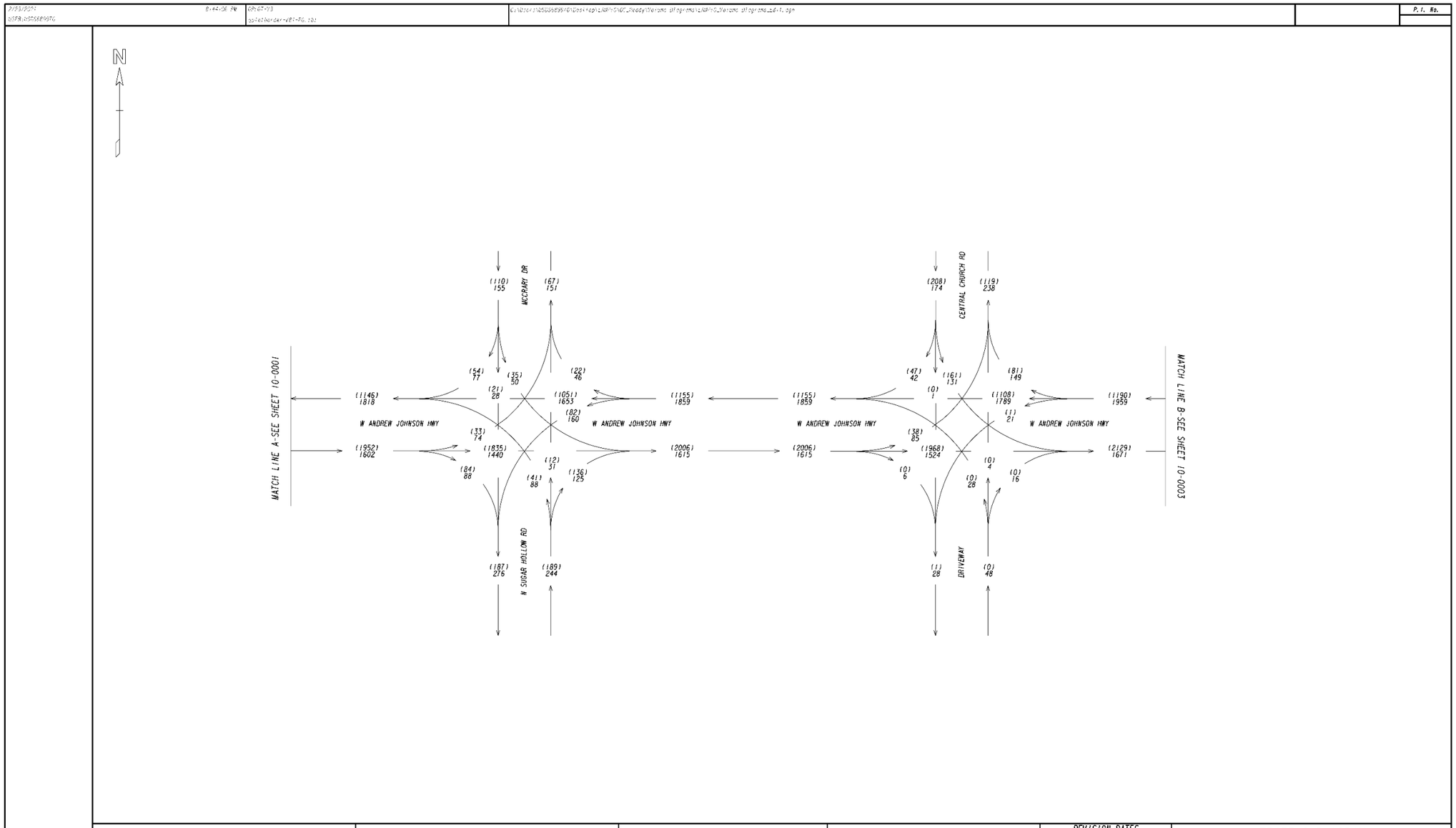
WEST ANDREW JOHNSON HIGHWAY / SR 34 @ PEARCE DRIVE AND @ WALTERS DRIVE	2025 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES	**TRAFFIC DIAGRAM** LAMPTO US 11E / SR 34 / WEST ANDREW JOHNSON HIGHWAY CORRIDOR STUDY DRAWING NO. 10-0010

7/31/2015 CPLN

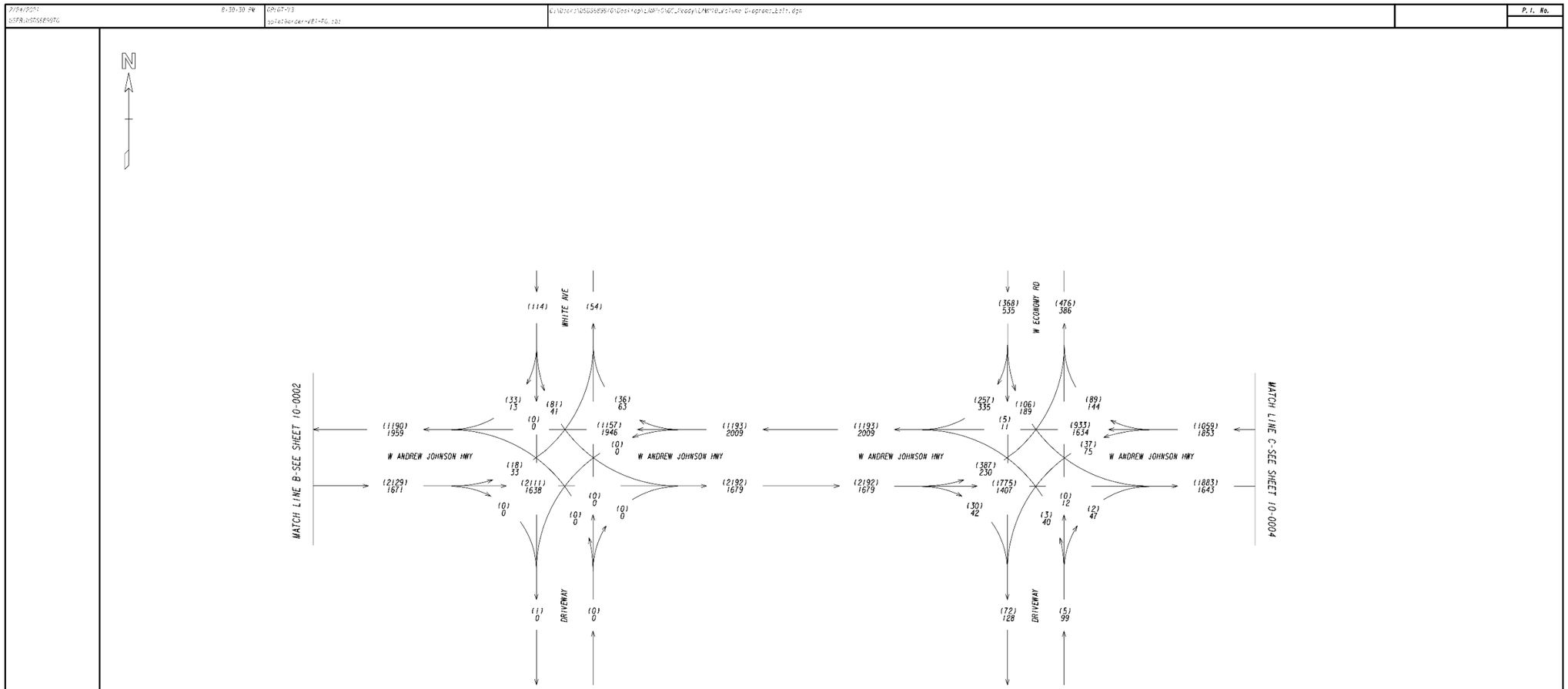
APPENDIX B. 2045 TRAFFIC VOLUME DIAGRAMS



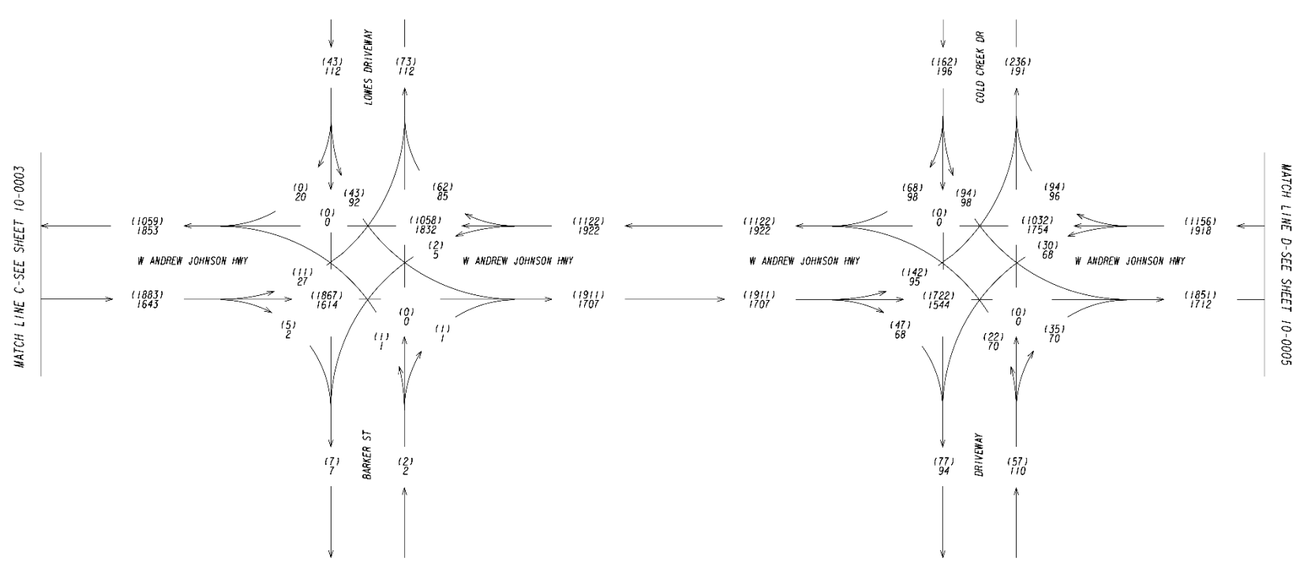
WEST ANDREW JOHNSON HIGHWAY / SR 34 @ MERCHANTS GREENE BOULEVARD AND @ KIDWELL RIDGE ROAD	2045 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES	**TRAFFIC DIAGRAM** LAMPTO US 11E / SR 34 / WEST ANDREW JOHNSON HIGHWAY CORRIDOR STUDY DRAWING NO. 10-0011



WEST ANDREW JOHNSON HIGHWAY / SR 34 @ MCCRARY DRIVE / NORTH SUGAR HOLLOW ROAD AND @ CENTRAL CHURCH ROAD	2045 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES	**TRAFFIC DIAGRAM** LAMPTO US 11E / SR 34 / WEST ANDREW JOHNSON HIGHWAY CORRIDOR STUDY DRAWING NO.: 10-0012



WEST ANDREW JOHNSON HIGHWAY / SR 34 @ WHITE AVENUE AND @ WEST ECONOMY ROAD	2045 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES	**TRAFFIC DIAGRAM** LAMPTO US 11E / SR 34 / WEST ANDREW JOHNSON HIGHWAY CORRIDOR STUDY DRAWING NO.: 10-0013



WEST ANDREW JOHNSON HIGHWAY / SR 34 @ BARKER STREET AND @ COLD CREEK DRIVE	2045 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES	**TRAFFIC DIAGRAM** LAMPTO US 11E / SR 34 / WEST ANDREW JOHNSON HIGHWAY CORRIDOR STUDY DRAWING NO.: 10-0014

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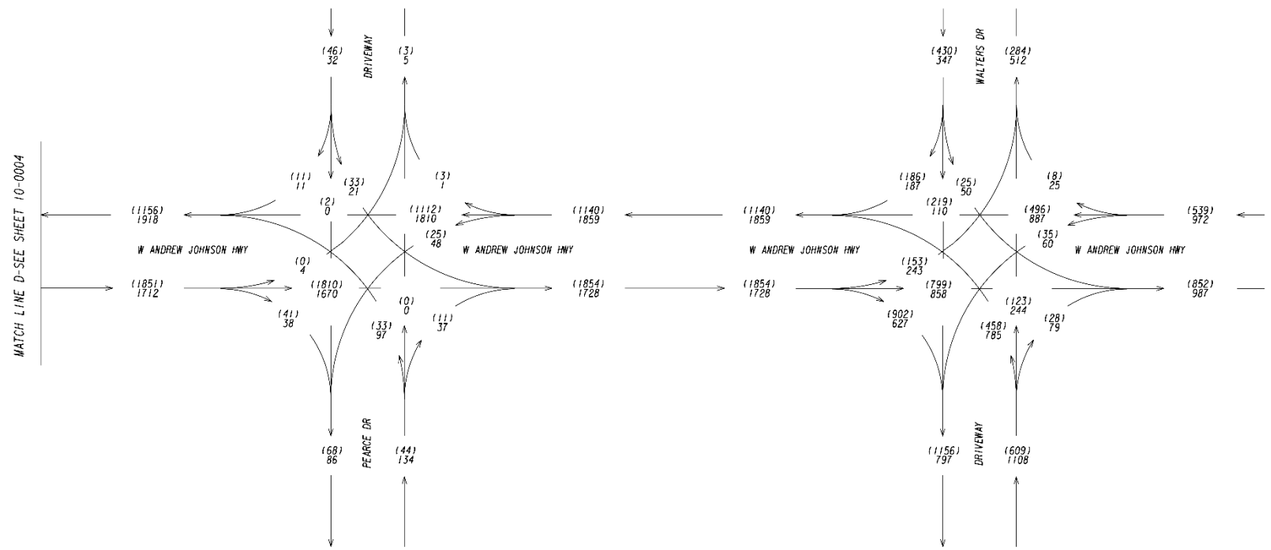


WEST ANDREW JOHNSON HIGHWAY / SR 34 @ PEARCE DRIVE AND @ WALTERS DRIVE	2045 VOLUMES (XXX) - AM PEAK XXX - PM PEAK	wsp	NTS	REVISION DATES	**TRAFFIC DIAGRAM** LAMPTO US 11E / SR 34 / WEST ANDREW JOHNSON HIGHWAY CORRIDOR STUDY DRAWING NO. 10-0015

APPENDIX C. PUBLIC WORKSHOP #1 PRESENTATION

US HWY 11E/ SR 34/ W ANDREW JOHNSON HWY CORRIDOR STUDY

Public Meeting

December 3, 2020

Agenda

- Purpose of the Corridor Study
- Study Timeline
- Elements of the Corridor Study
- Corridor Description
- Corridor Issues & Opportunities
- Online Survey Results (to date)
- Additional Public Involvement Opportunities
- Discussion: Questions / Answer

Purpose of the Corridor Study

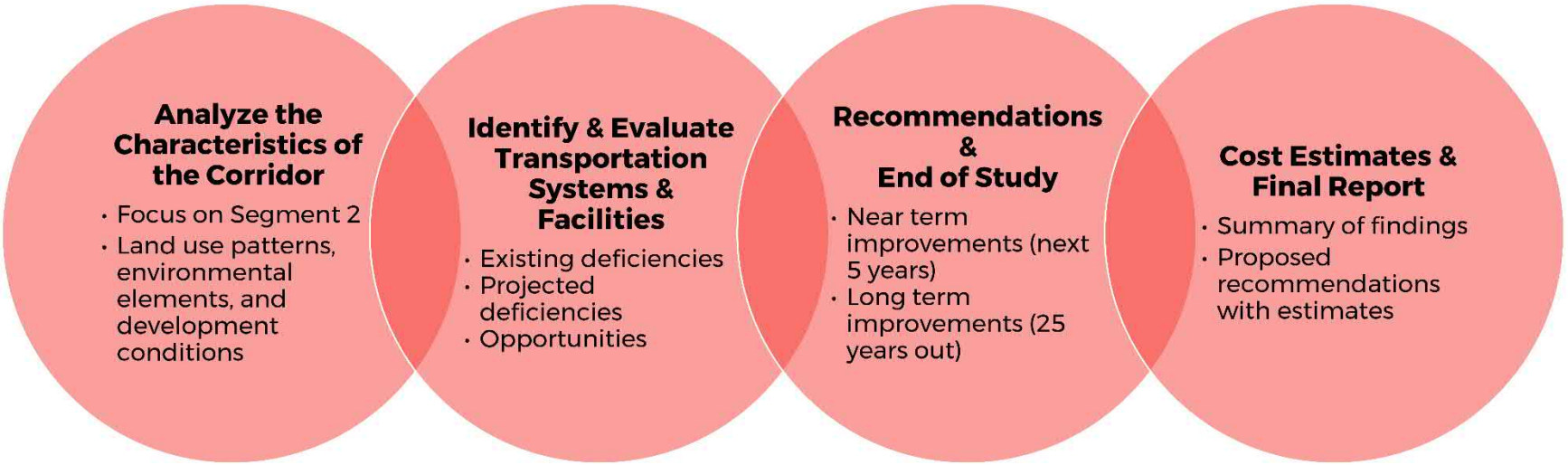
- **The Corridor Study:**
  - *Review and analysis of US Hwy 11E/ SR 34/ W Andrew Johnson Highway from **Old AJ Hwy E to Walters Drive/W Morris Blvd**, which will result in recommended transportation improvements to the route*

- **Purpose:**
  - *Identify sustainable **short and long-term** operational and geometric transportation enhancements that will improve the lifecycle of the route*
  - *Guidance for decision-makers regarding future projects*

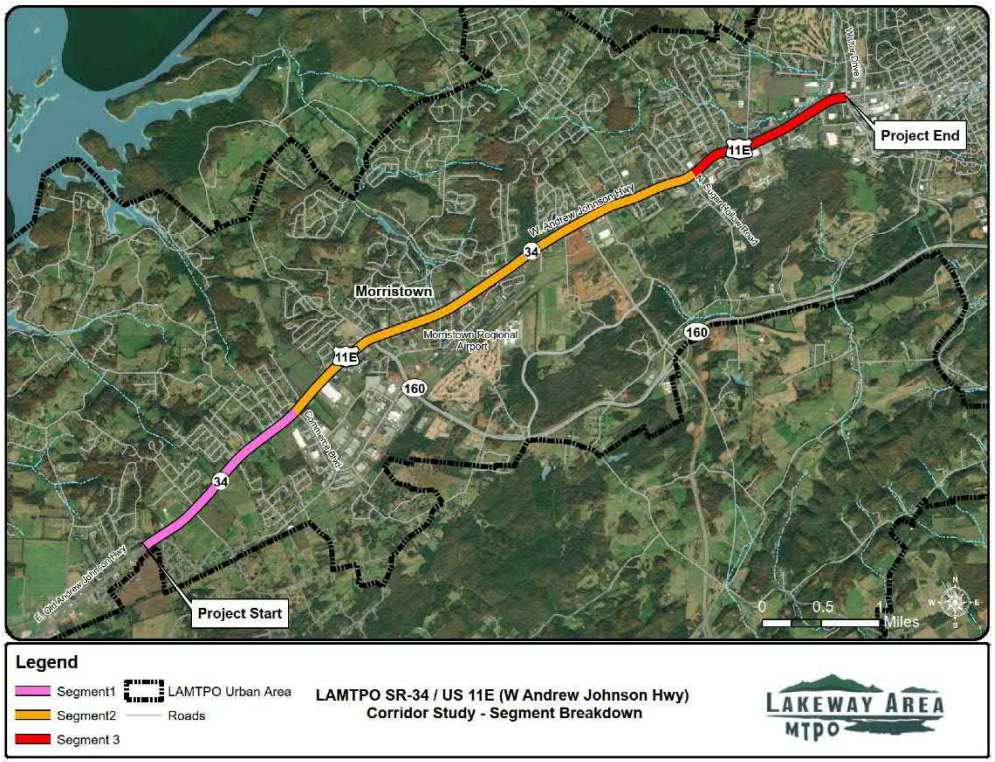
Study Timeline

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Public Participation											
Online Survey											
Public Workshop #1											
Public Workshop #2											
Analyze the Characteristics of the Study Corridor											
Identify & Evaluate Transportation Systems and Facilities											
Recommendations/Implementation/End of Study											
Cost Estimates/Final Report											

Major Study Elements

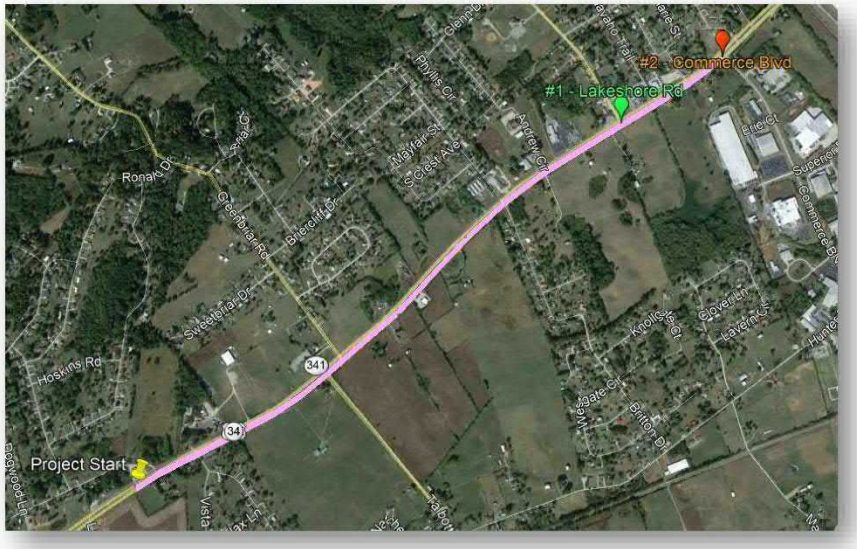


Corridor Study Area

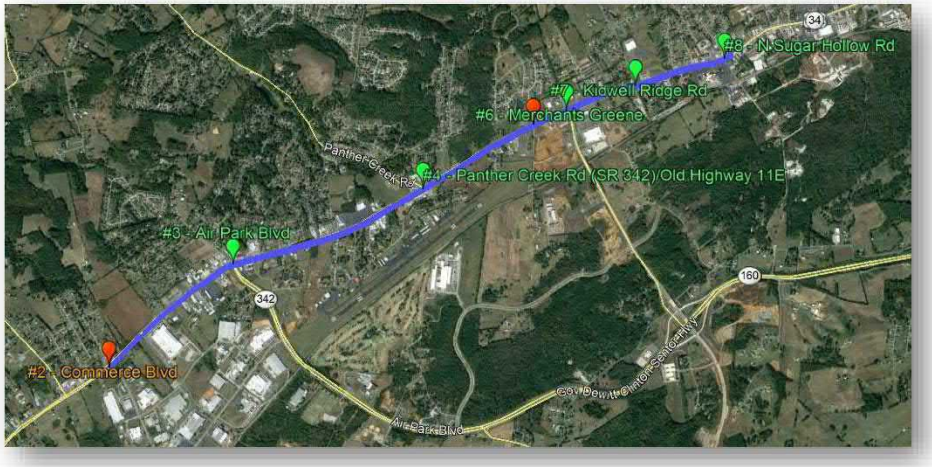


Segment 1 – Old AJ Hwy E to Commerce Blvd

- ≈ 1.7 miles
- 4-lane divided highway with grassy median
- Agricultural, commercial, and single-family residential land patterns
- 1 existing signalized intersection at Lakeshore Dr
- 50 mph posted speed limit



Segment 2 – Commerce Blvd to East of N. Sugar Hollow Rd



- ≈ 4 miles
- 4-lane divided highway with grassy median
- Intermediate business land patterns
- 5 existing signalized intersections plus 2 new proposed signalized intersections
- 45 & 50 mph posted speed limits

Segment 2 – Corridor Characteristics

Future Growth

- Significant hot spot for new employment in the region
- High rates of job growth projected for SR 66 (Merchants Greene Blvd)

Land Use & Zoning

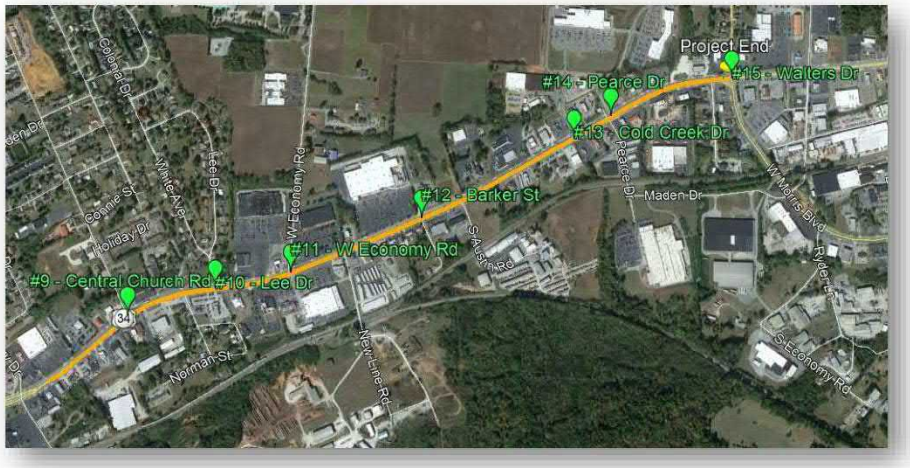
- Commercial uses immediately adjacent to segment
- Large residentially zoned areas north of the corridor (to Cherokee Lake)
- Industrial, agricultural, and airport uses south of the corridor

Development Patterns

- Primarily local trips from residents in the Morristown area
- Relocated SR 66 will provide enhanced connectivity
- New potential developments include: restaurants, commercial businesses, community center, industrial sites, and medical facility

Segment 3 - N. Sugar Hollow Rd to Walters Dr / W. Morris Blvd

- ≈ 1.5 miles
- 5-lane curb and gutter highway with sidewalks
- Dominated by commercial land uses
- 7 existing signalized intersections
- 40 mph posted speed limit

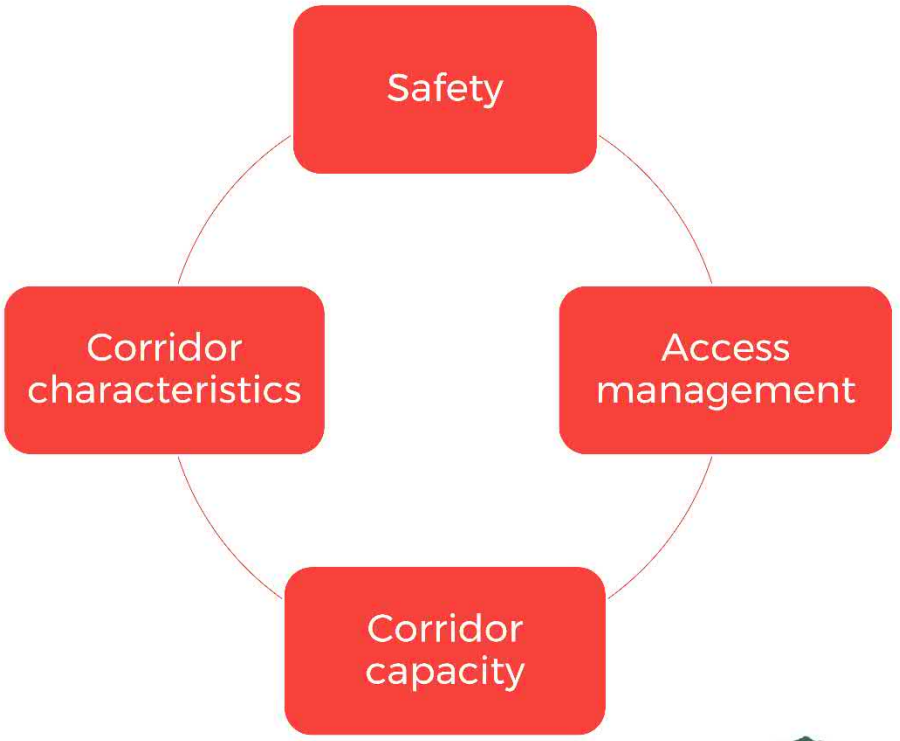


Corridor Issues & Opportunities

— **Congestion**

— **Traffic accidents**

— **Current and future developments**



Online Survey Results *(to date)*

- **160 Survey Responses**
- **Main use for corridor**
  - Entertainment and Retail
- **Peak Travel Times**
  - Afternoon and Mid-day
- **Corridor Priorities**
  - Traffic Congestion and Safety
- **Improvements**
  - Sync Signals
  - Turning Lanes
  - Access Management
  - Pedestrian Crossing
  - Striping
  - Intersection Realignment

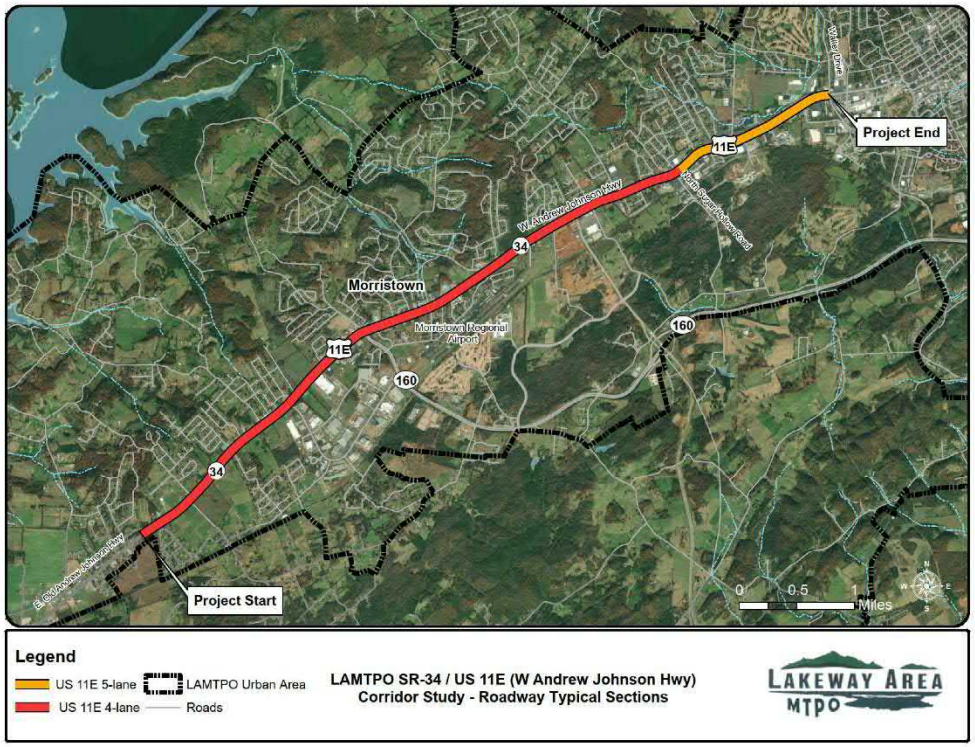
Noted Intersection Improvements

- Kidwell Ridge Rd
- Merchants Green Blvd
- Bellwood Rd
- Hampton West/Howell Rd
- Commerce Blvd

Additional Public Involvement Opportunities

- **Public Workshops**
  - *#1*
    - Collect input on needs and potential solutions
  - *#2*
    - Share draft corridor study for comments
- **Online Survey**
  - *https://www.surveymonkey.com/r/LAMTPO11ECorridorStudy*
  - *Closes on **Friday, 12/18/2020***
- **Visit the Website**
  - *https://www.lamtpo.com/11e-w-aj-hwy-corridor-study*

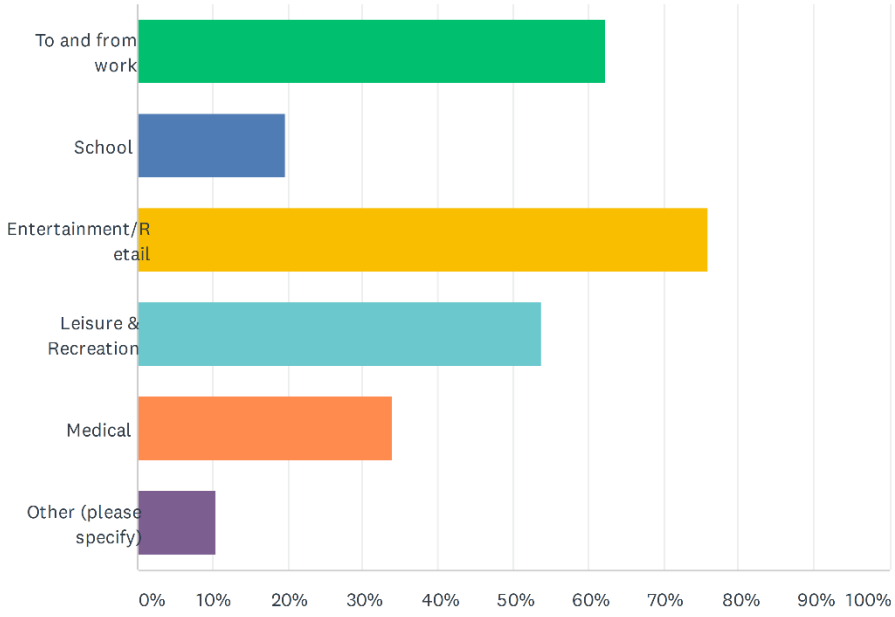
Discussion, Questions, Comments



APPENDIX D. PUBLIC SURVEY AND RESULTS

Q1 What is your main purpose of traveling SR 34 / US Hwy 11E (W Andrew Johnson Hwy)? (Select all that Apply)

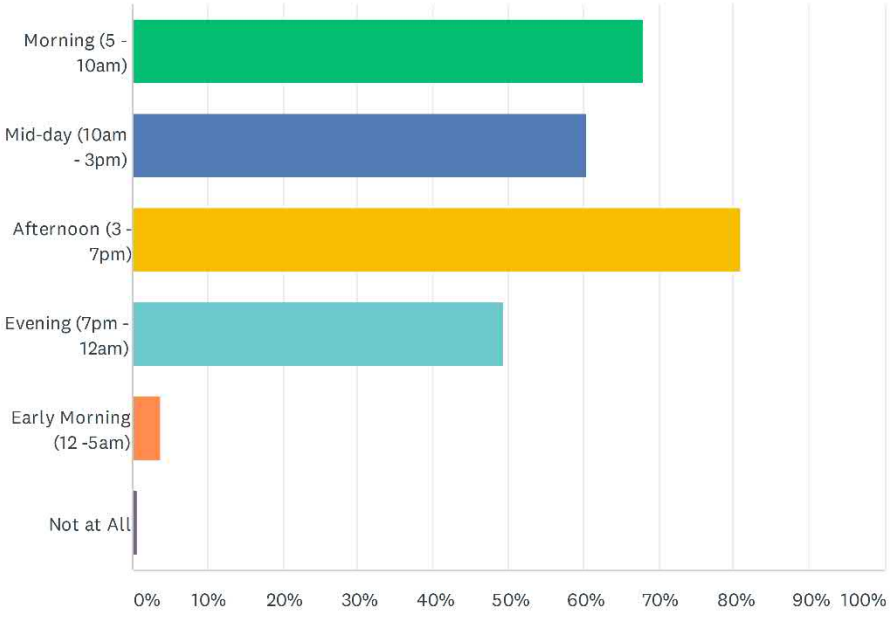
Answered: 162 Skipped: 3



ANSWER CHOICES	RESPONSES	
To and from work	62.35%	101
School	19.75%	32
Entertainment/Retail	75.93%	123
Leisure & Recreation	53.70%	87
Medical	33.95%	55
Other (please specify)	10.49%	17
Total Respondents: 162		

Q2 What times of day during weekdays do you travel along the corridor? (Select all that Apply)

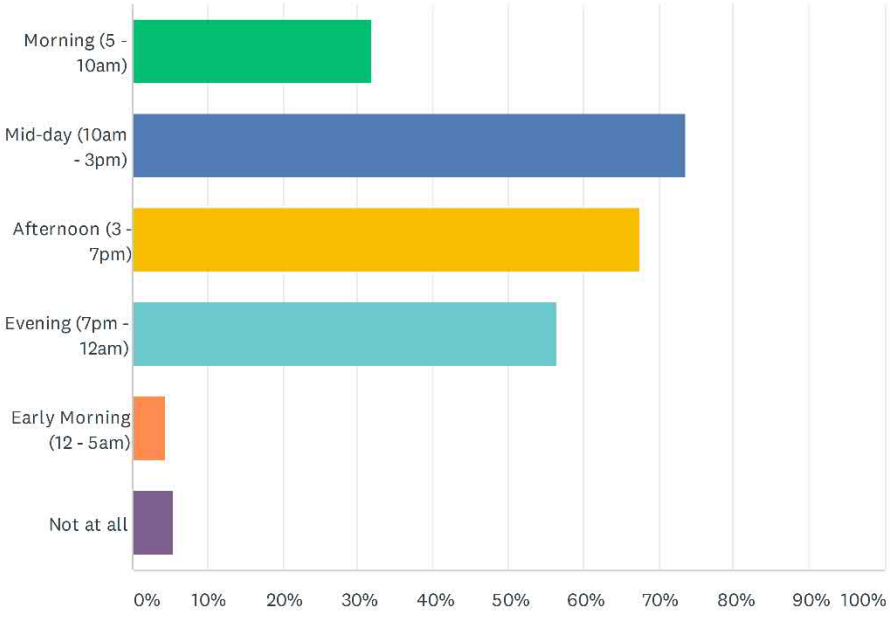
Answered: 162 Skipped: 3



ANSWER CHOICES	RESPONSES	
Morning (5 - 10am)	67.90%	110
Mid-day (10am - 3pm)	60.49%	98
Afternoon (3 - 7pm)	80.86%	131
Evening (7pm - 12am)	49.38%	80
Early Morning (12 -5am)	3.70%	6
Not at All	0.62%	1
Total Respondents: 162		

Q3 What times of day during the weekend do you travel the corridor? (Select all that Apply)

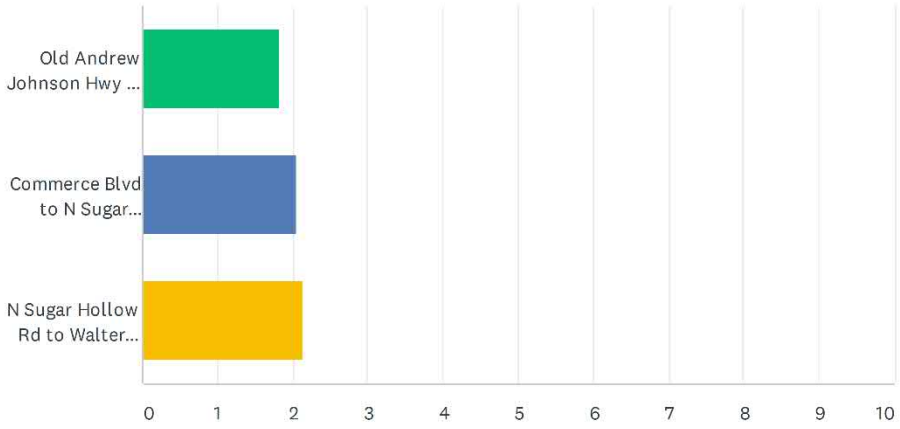
Answered: 163 Skipped: 2



ANSWER CHOICES	RESPONSES	
Morning (5 - 10am)	31.90%	52
Mid-day (10am - 3pm)	73.62%	120
Afternoon (3 - 7pm)	67.48%	110
Evening (7pm - 12am)	56.44%	92
Early Morning (12 - 5am)	4.29%	7
Not at all	5.52%	9
Total Respondents: 163		

Q4 The study will analyze the corridor based on 3 different segments. Of the 3 segments listed below, rank them in order of how often you utilize them. (1 being most often and 3 being least often)

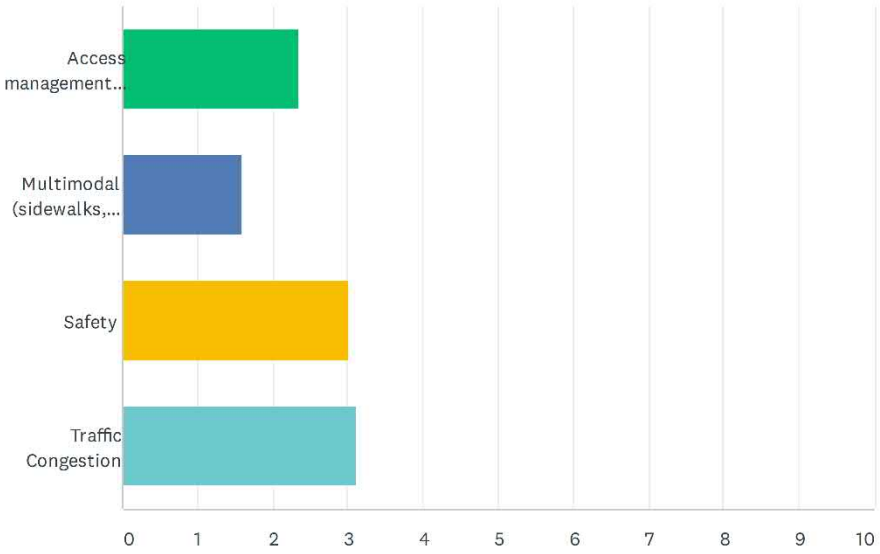
Answered: 161 Skipped: 4



	1	2	3	TOTAL	SCORE
Old Andrew Johnson Hwy E to Commerce Blvd	33.12% 51	16.88% 26	50.00% 77	154	1.83
Commerce Blvd to N Sugar Hollow Rd	24.20% 38	56.05% 88	19.75% 31	157	2.04
N Sugar Hollow Rd to Walter Dr / W Morris Blvd	43.40% 69	27.04% 43	29.56% 47	159	2.14

Q5 Rank each of the following categories from low priority to high priority as they pertain to areas of improvement to SR 34/ US Hwy 11E (W Andrew Johnson Hwy) from Old Andrew Johnson Hwy E to Commerce Blvd. (1 being highest priority and 4 being lowest priority)

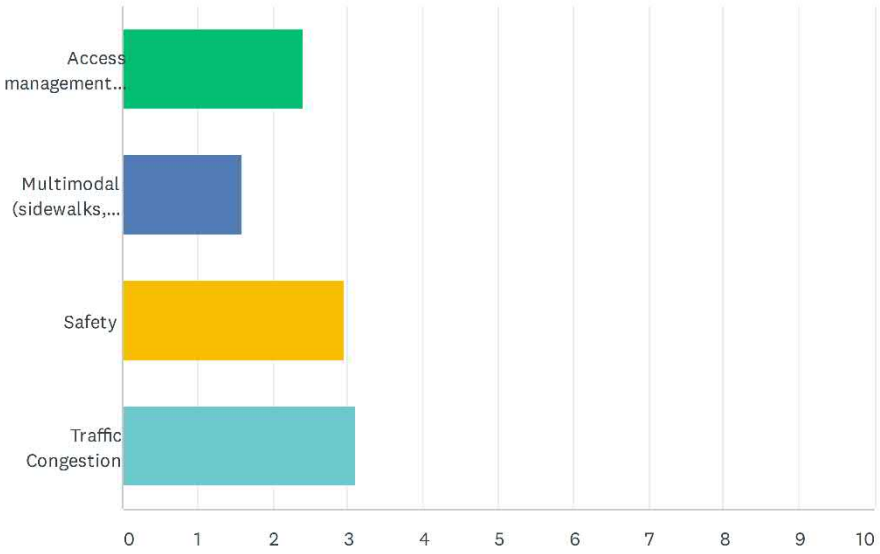
Answered: 164 Skipped: 1



	1	2	3	4	TOTAL	SCORE
Access management (median opening, driveways, sides roads)	14.10% 22	25.00% 39	42.31% 66	18.59% 29	156	2.35
Multimodal (sidewalks, greenways, bike lanes)	7.50% 12	8.13% 13	20.63% 33	63.75% 102	160	1.59
Safety	33.97% 53	39.74% 62	20.51% 32	5.77% 9	156	3.02
Traffic Congestion	46.91% 76	27.16% 44	16.67% 27	9.26% 15	162	3.12

Q6 Rank each of the following categories from low priority to high priority as they pertain to the areas of improvement to SR 34 / US Hwy 11E (W Andrew Johnson Hwy) from Commerce Blvd to N Sugar Hollow Rd. (1 being highest priority and 4 being lowest priority)

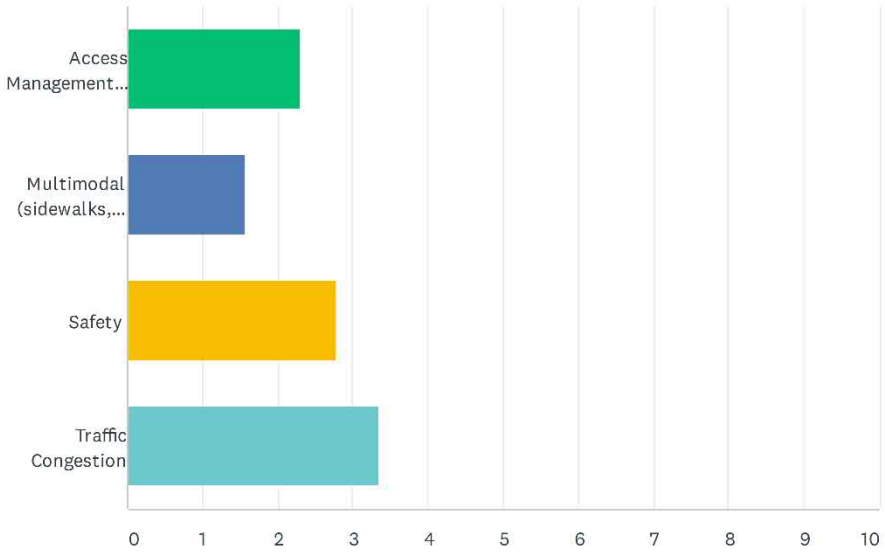
Answered: 163 Skipped: 2



	1	2	3	4	TOTAL	SCORE
Access management (median opening, driveways, side roads)	16.46% 26	22.15% 35	46.84% 74	14.56% 23	158	2.41
Multimodal (sidewalks, greenways, bike lanes)	8.18% 13	9.43% 15	14.47% 23	67.92% 108	159	1.58
Safety	35.00% 56	32.50% 52	23.75% 38	8.75% 14	160	2.94
Traffic Congestion	40.99% 66	36.02% 58	14.29% 23	8.70% 14	161	3.09

Q7 Rank each of the following categories from low priority to high priority as they pertain to the areas of improvement to SR 34 / US Hwy 11E (W Andrew Johnson Hwy) from N Sugar Hollow Rd to Walters Dr / W Morris Blvd. (1 being highest priority and 4 being lowest priority)

Answered: 162 Skipped: 3



	1	2	3	4	TOTAL	SCORE
Access Management (median opening, driveways, side roads)	14.10% 22	21.79% 34	45.51% 71	18.59% 29	156	2.31
Multimodal (sidewalks, greenways, bike lanes)	6.88% 11	6.88% 11	21.25% 34	65.00% 104	160	1.56
Safety	24.38% 39	40.63% 65	23.75% 38	11.25% 18	160	2.78
Traffic Congestion	55.06% 87	30.38% 48	9.49% 15	5.06% 8	158	3.35

Q8 Are there intersections (signaled or un-signaled) along the study corridor that may have opportunities for improvement or enhancement? If so, please explain the location, current situation, and potential solution.

Answered: 101 Skipped: 64

Q9 Any other comments or suggestions for the corridor?

Answered: 69 Skipped: 96

Q10 What is your ZIP/Postal Code?

Answered: 156 Skipped: 9

Q11 Please provide us with your basic information (Optional)

Answered: 95 Skipped: 70

ANSWER CHOICES	RESPONSES	
Name	91.58%	87
Company	0.00%	0
Address	0.00%	0
Address 2	0.00%	0
City/Town	98.95%	94
State/Province	0.00%	0
ZIP/Postal Code (required)	0.00%	0
Country	0.00%	0
Email Address	86.32%	82
Phone Number	0.00%	0

APPENDIX E. PUBLIC WORKSHOP #2 PRESENTATION

US HWY 11E/ SR 34/ W ANDREW JOHNSON HWY CORRIDOR STUDY

Public Meeting (#2)

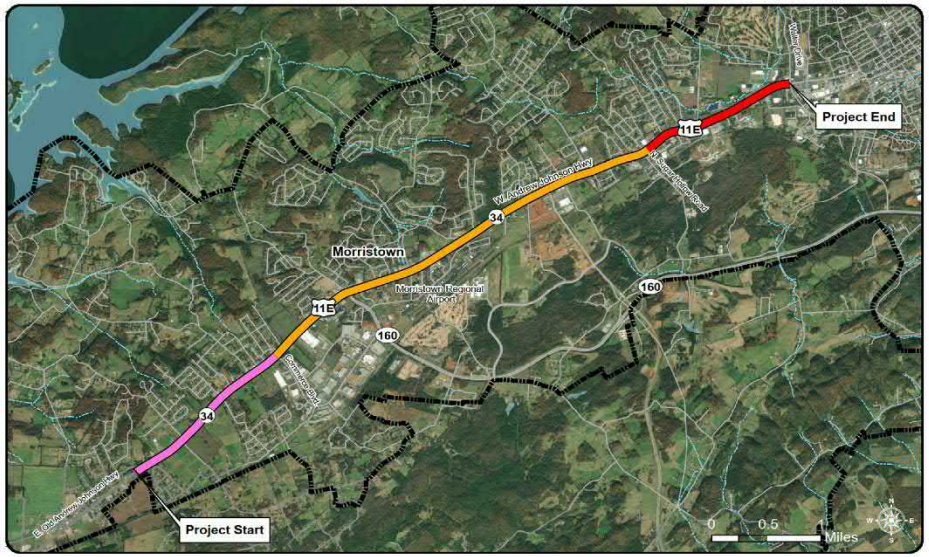
April 14, 2021

Richard DesGroseilliers *(LAMTPO)*
Andrew Sonner, PE *(WSP)*
Paige Harris, PE *(WSP)*

Agenda

- Purpose of the Corridor Study
- Study Steps
- Existing Conditions
- Recommendations Criteria
- Preliminary Recommendations
- Timeline & Next Steps
- Discussion, Questions, & Comments

Purpose of the Corridor Study



Purpose:

- Identify sustainable **short and long-term** transportation enhancements that will improve the lifecycle of the route
- Guidance for decision-makers regarding future projects

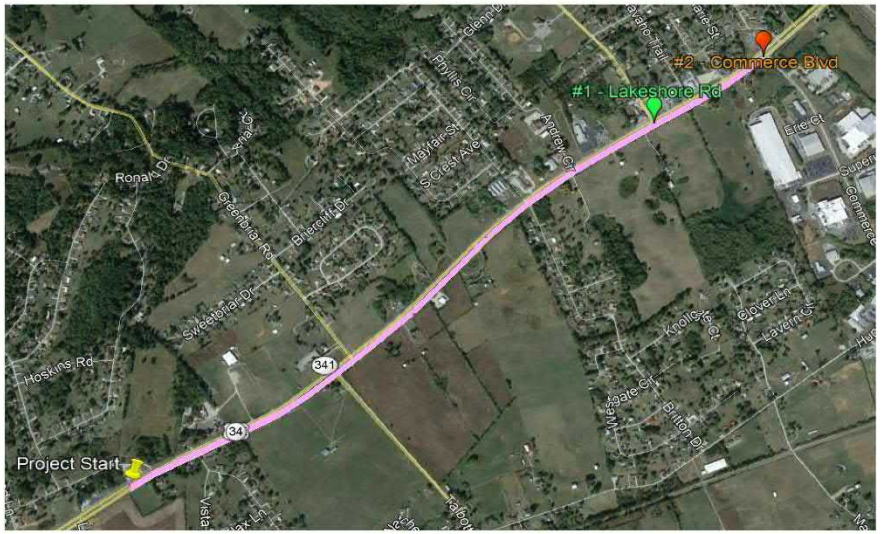
Study Steps

Public Participation	• 2 workshops (12/3/20 & 4/14/21) • Online survey
Analyze the Characteristics of the Corridor	• Focus on Segment 2 • Land use patterns, environmental elements, and development conditions
Identify & Evaluate Transportation Systems & Facilities	• Existing deficiencies • Projected deficiencies • Opportunities
Recommendations & End of Study	• Near term improvements (next 5 years) • Long term improvements (25 years out)
Cost Estimates & Final Report	• Summary of findings • Proposed recommendations with estimates

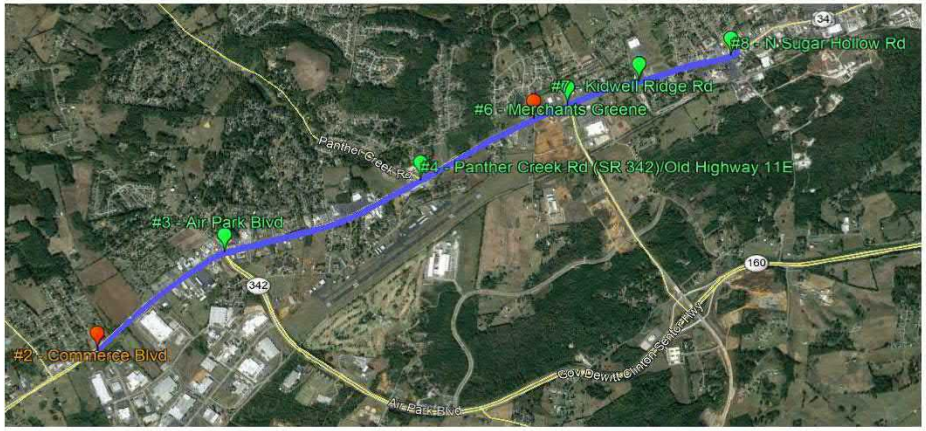
Existing Conditions

Segment 1 – Old AJ Hwy E to Commerce Blvd

- ≈ 1.7 miles
- 4-lane divided highway with grassy median
- 50 mph posted speed limit
- 1 existing signalized intersection at Lakeshore Dr



Segment 2 – Commerce Blvd to East of N. Sugar Hollow Rd

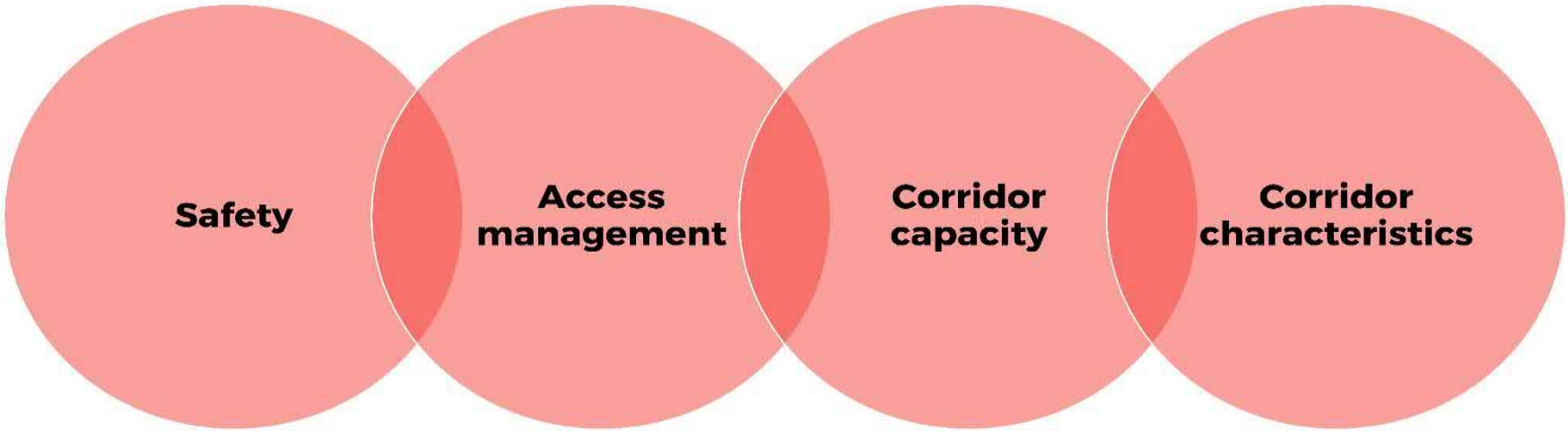


- ≈ 4 miles
- 4-lane divided highway with grassy median
- 45 & 50 mph posted speed limits
- 5 existing signalized intersections plus 2 new underway/under construction

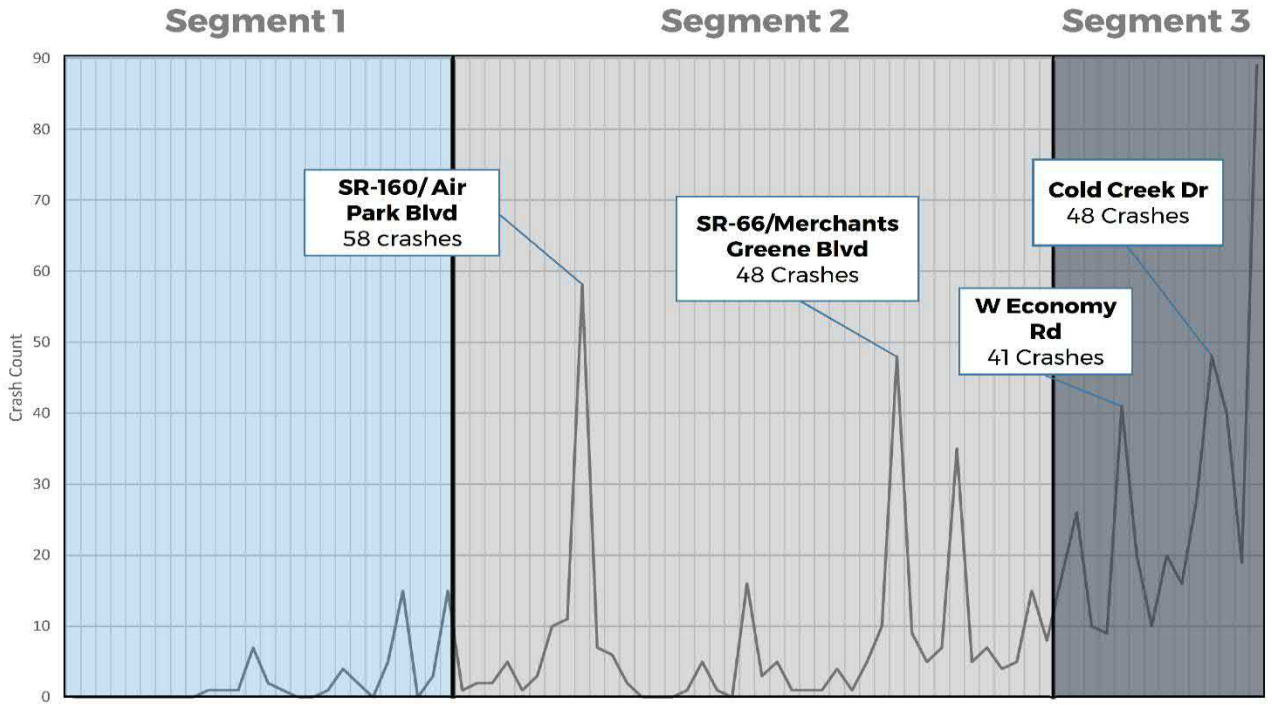
Segment 3 - N. Sugar Hollow Rd to Walters Dr / W. Morris Blvd

- ≈ 1.5 miles
- 5-lane curb and gutter highway with sidewalks
- 40 mph posted speed limit
- 7 existing signalized intersections

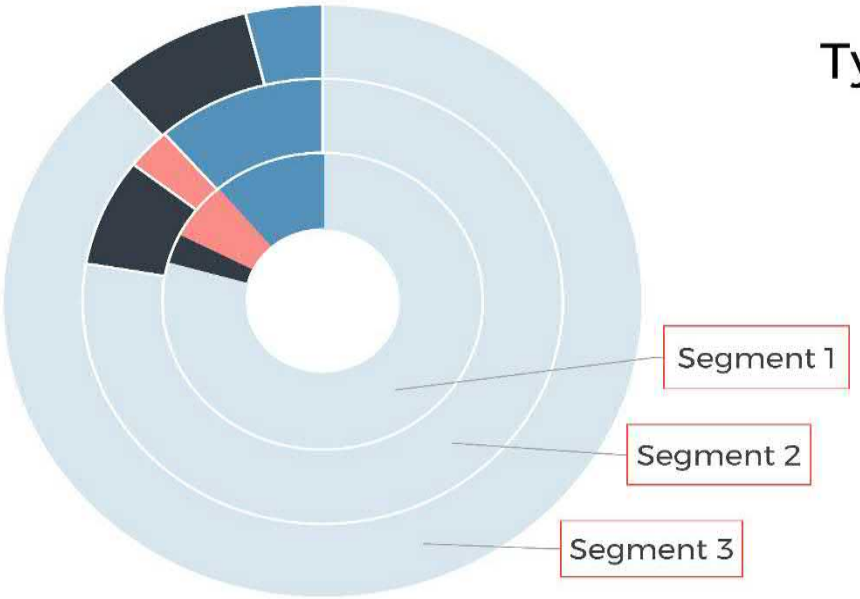
Recommendations Criteria



Safety


Segment 1
Segment 2
Segment 3
Crash Count
90
80
70
60
50
40
30
20
10
0
SR-160/ Air Park Blvd
58 crashes
SR-66/Merchants Greene Blvd
48 Crashes
W Economy Rd
41 Crashes
Cold Creek Dr
48 Crashes

Access Management

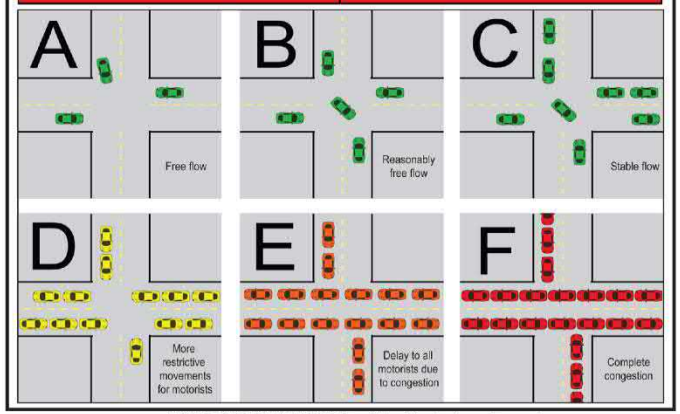


Types of Access Points:

- Driveway (business, residence, etc.)
- Intersection (signalized or unsignalized)
- Median opening
- Side street

Capacity

Level of Service (Signalized Intersections)	Average Vehicle Delay at Intersection (seconds)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80



MD103/MD104/MD108 Corridor Study (arcgis.com)

Level of Service (LOS)

— *Qualitative measure of traffic delay or congestion*

Intersection Name	LOS	
	AM	PM
Merchants Greene Blvd	D	D
Kidwell Ridge Rd	C	C
N Sugar Hollow Rd	C	B
Central Church Rd	B	B
White Ave	B	A
W Economy Rd	B	C
Barker St	B	B
Cold Creek Rd	A	B
Pearce Dr	C	A
Walters Dr	D	E

Corridor Characteristics (Segment 2)

Future Growth

- Hot spot for new employment in the region
- High rates of job growth projected for SR 66 (Merchants Greene Blvd)

Land Use & Zoning

- Commercial uses adjacent to segment
- Large residentially zoned areas north of the corridor
- Industrial, agricultural, and airport uses south of the corridor

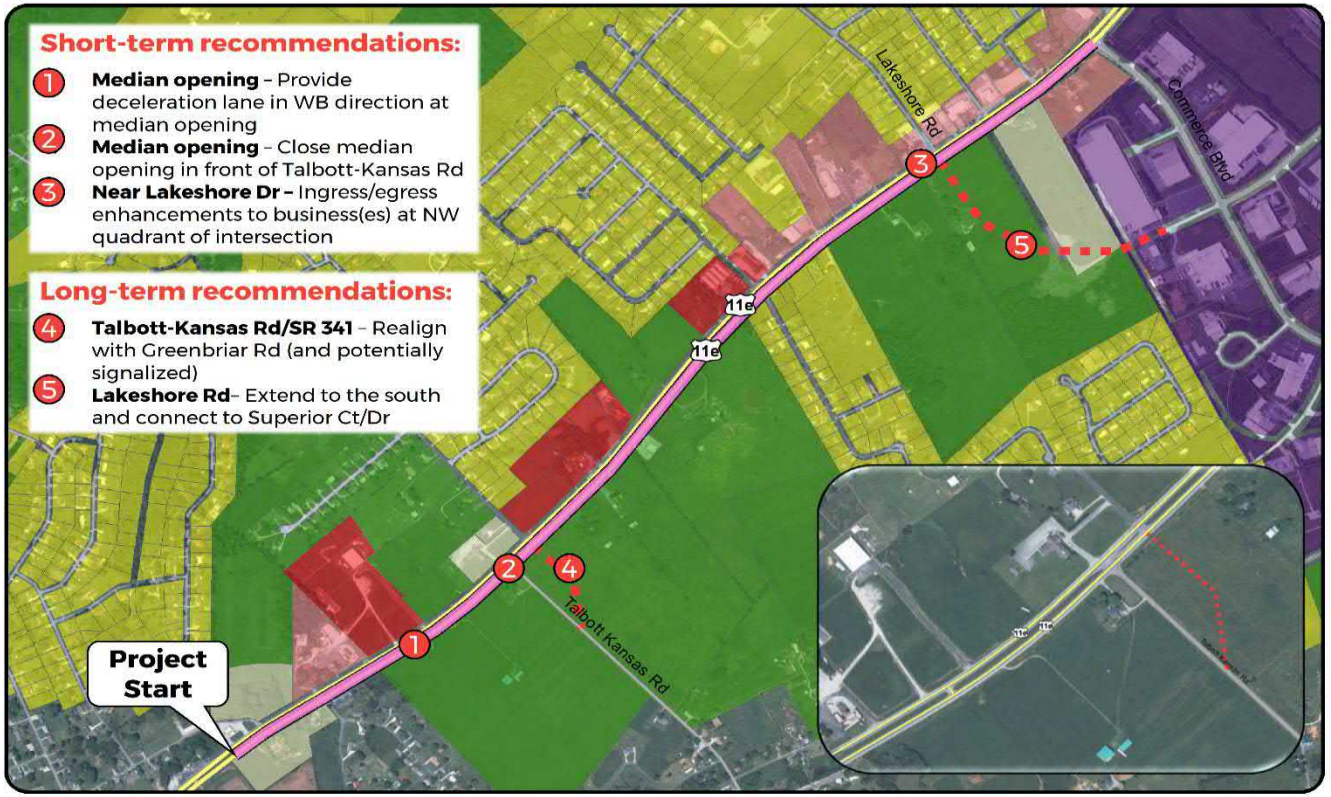
Development Patterns

- Primarily local trips from residents in the Morristown area
- Relocated SR 66 will provide enhanced connectivity
- New potential developments include: restaurants, commercial businesses, community center, industrial sites, and medical facility

Preliminary Recommendations

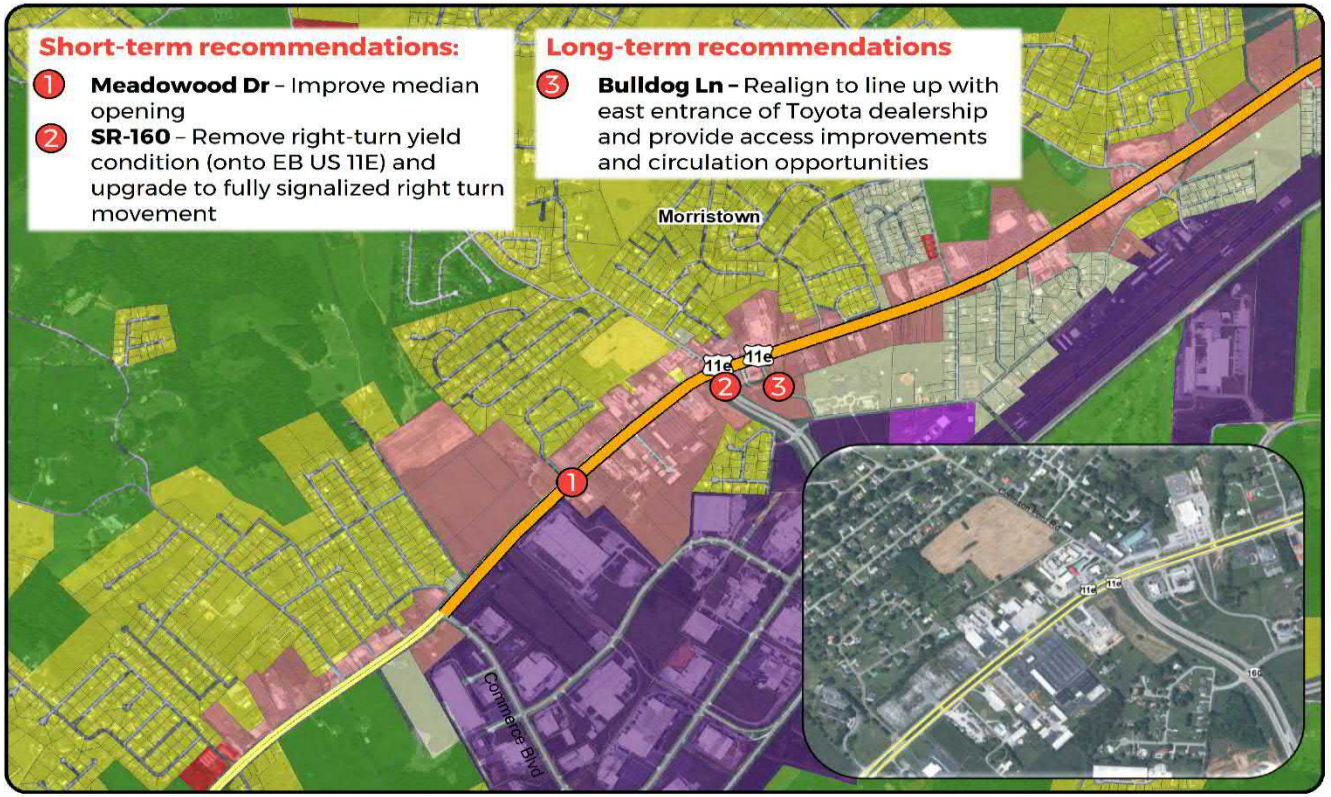
Segment 1

Limits:
Near the intersection of Old AJ Hwy E (Jefferson County) to Commerce Blvd



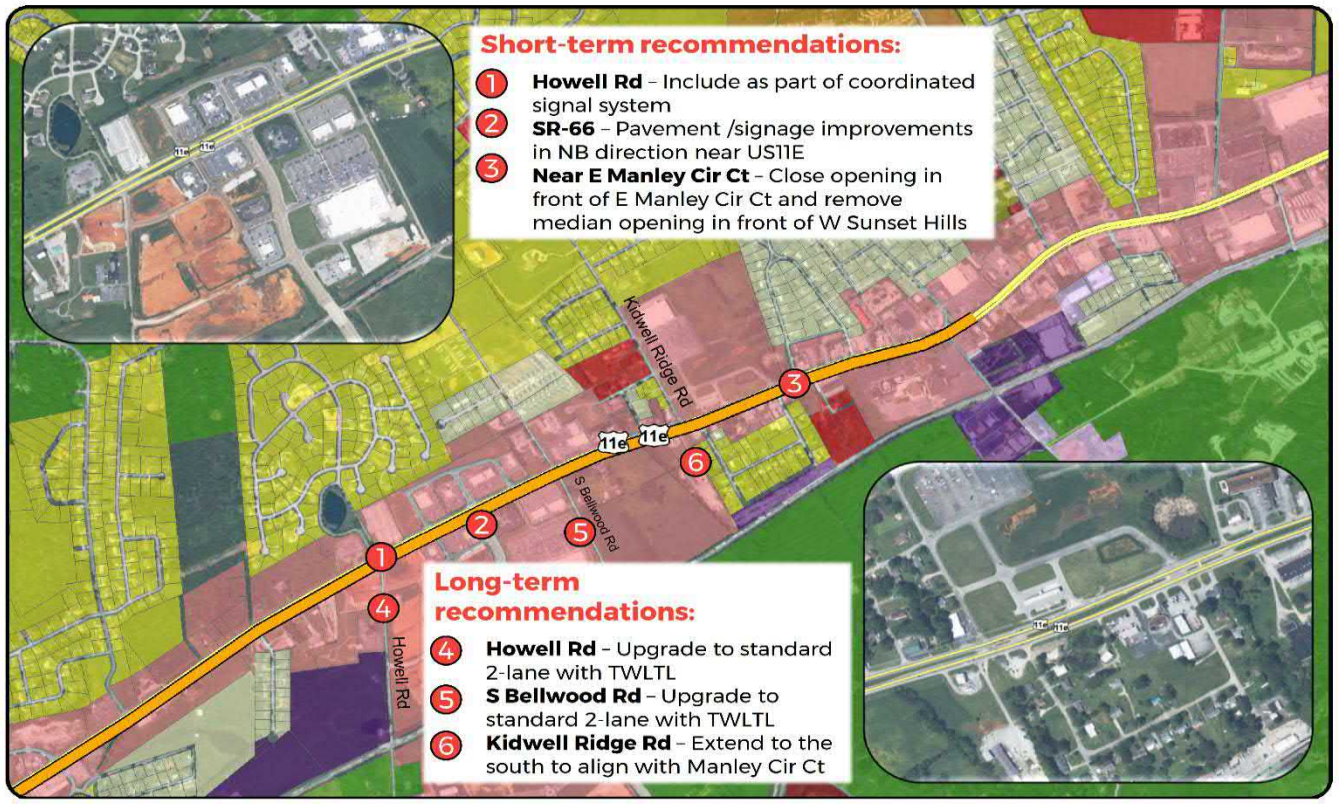
Segment 2

Limits:
Commerce Blvd to East of N. Sugar Hollow Rd



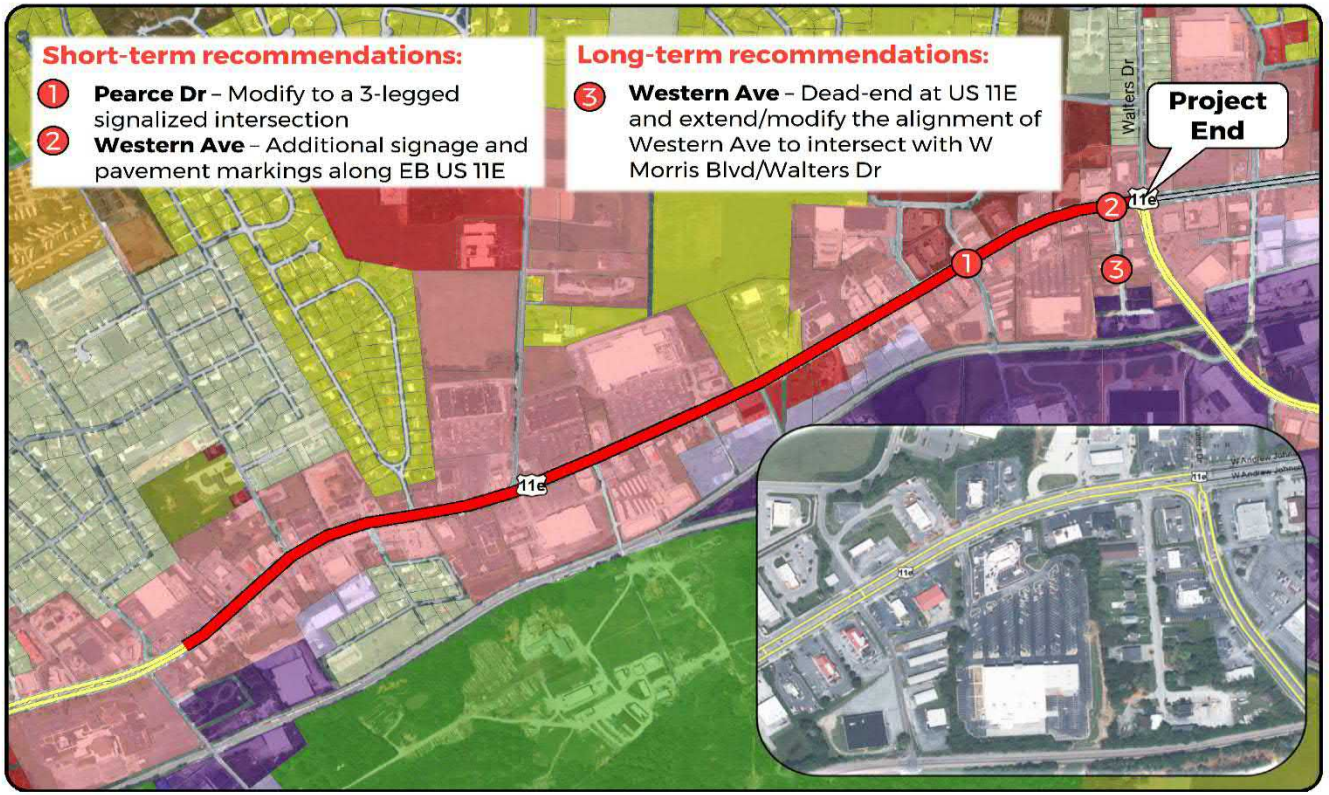
Segment 2 *(cont)*

Limits:
Commerce Blvd to East of N. Sugar Hollow Rd



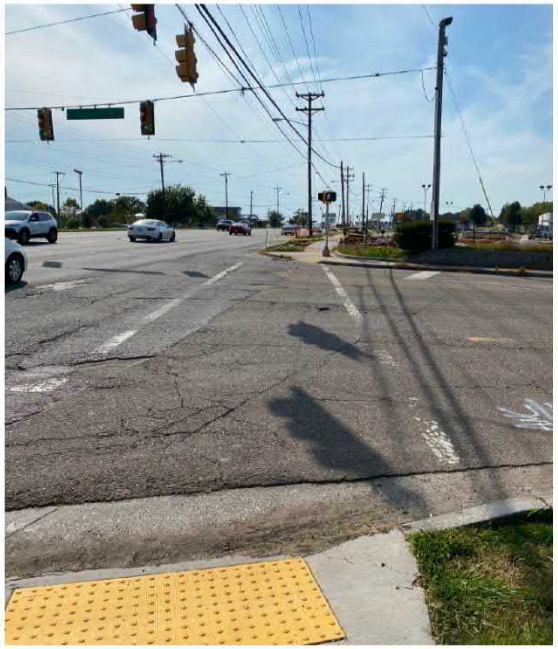
Segment 3

Limits:
East of N. Sugar Hollow Rd to Walters Dr / W. Morris Blvd



Multimodal System Enhancements

- **Sidewalk** addition between SR-66 (Merchants Greene Blvd) & near S. Sugar Hollow Rd (along Segment 2)
- Improvements to **existing sidewalks and ramps** along Segments 2 and 3 to meet current standards
- Transit **bus stop amenities** located along/near the route: Transit Hub & Food City



Timeline & Next Steps

Task #		Q3 20		Q4 20			Q1 21			Q2 21		
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	**Public Participation**											
1.1	Kickoff Meeting with Stakeholders											
1.2	Public Workshop #1											
1.3	Online Survey											
1.4	Working Meeting with LAMTPO Staff											
1.5	TAC Meeting #1 – Present Findings											
1.6	Public Workshop #2											
1.7	Executive Board Presentation of Final Report											
2	**Analyze the Characteristics of the Study Corridor**											
3	**Identify & Evaluate Transportation Systems and Facilities**											
4	**Recommendations/Implementation/End of Study**											
5	**Cost Estimates/Final Report**											

Discussion, Questions, Comments