



BROWNSVILLE

Corridor Study



AUGUST 2019

FINAL REPORT

ACKNOWLEDGEMENTS

Thank you to the people who participated in the development of this plan through comment forms, public outreach events, and meetings. This time spent planning for the City of Brownsville's future is appreciated and will positively impact the community for years to come.

CITY OF BROWNSVILLE, TENNESSEE

Honorable William Rawls, Jr., Mayor
Mr. Leon King, Vice Mayor
Mr. Tom Averyheart, Alderman
Ms. Carolyn Flagg, Alderwoman
Mr. John Simmons, Alderman

SOUTHWEST TENNESSEE DEVELOPMENT DISTRICT

Shelton Merrell, RPO Coordinator

KIMLEY - HORN

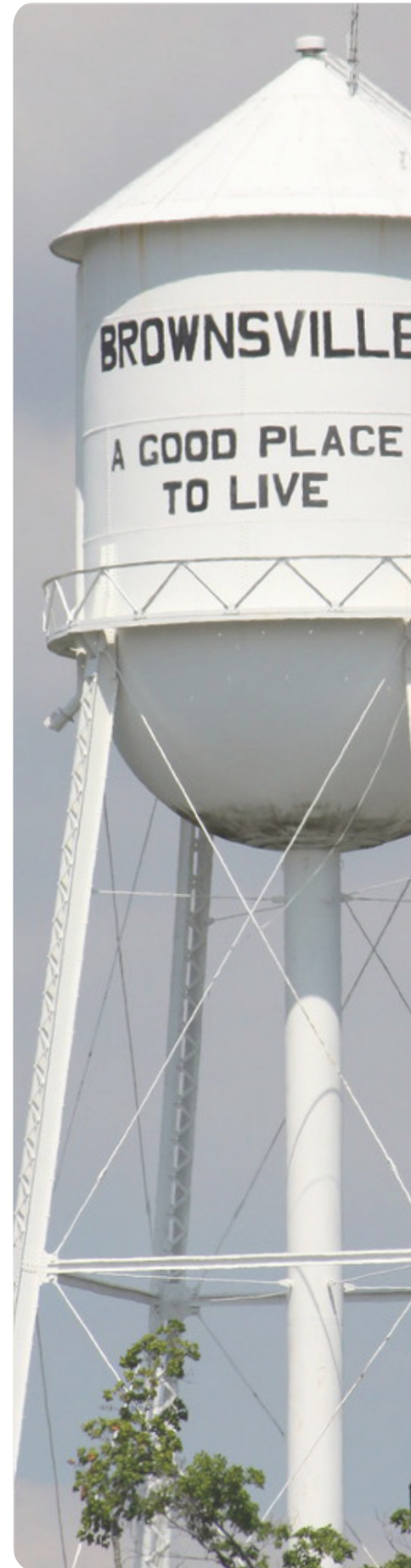
Dusty Mays, PE
Kenneth Monroe, PE
Michael Shelton, PLA, AICP, ASLA
Cameron Cooper, AICP

TENNESSEE DEPARTMENT OF TRANSPORTATION

Jennifer Marshall
Antoine Hawkins

TABLE OF CONTENTS

Chapter 1: Introduction	5
Background	
Plan Funding	
Project Process	
Chapter 2: Existing Conditions	11
Corridor Study Area	
Existing Zoning	
Existing Land Use	
Existing Infrastructure	
Chapter 3: Traffic Analysis	27
Existing Conditions	
Future Conditions	
Transportation Safety	
Bicycle and Pedestrian Circulation	
Chapter 4: Access Management	35
Introduction	
Tool Box	
Project-Specific Strategies	
Chapter 5: Proposed Improvements	41
Connectivity	
Transportation Alternatives	
Chapter 6: Implementation	57
Planning Recommendations	
Implementation Priorities	
Funding Recommendations	





BROWNSVILLE
flower shop

ST. JOHNS CHURCH

WE DISCOVER WHAT WE CAN DO
TO SERVE OUR COMMUNITY

M & M Design

The background of the slide is a photograph of a street scene. On the left, there is a brick building with a decorative window. In the foreground, there is a market stall with a blue canopy and several people sitting at tables. The sky is blue with some clouds. A large dark blue circle is overlaid on the top half of the image, and a white horizontal bar is overlaid on the middle. The bottom right corner has a dark blue vertical bar and a teal curved shape at the bottom.

CHAPTER 1: Introduction

Background
Plan Funding
Project Process

CONTEXT

Background:

Located in the heart of West Tennessee along Interstate 40, this rural municipality of just over 10,000 has a rich cultural heritage, a proud educational system and an enthusiastic outlook for the future that positions the city to be a leader in the region for years to come.

At the time of this study, Brownsville had been recently named a national Main Street Community—one of just 28 in the state of Tennessee—and awarded two new National Historic Districts.

Thanks to the industrial development of the state supported Memphis Regional Megasite, the unique ecology of the federally supported Hatchie National Wildlife Refuge, and the high quality of life supported by its citizens, Brownsville is proud to say that it truly is ‘A Good Place to Live.’

Historical Significance:

- Brownsville has been a significant place in West Tennessee history since it was first founded by General Jacob Jennings Brown in 1812. Home to three National Historic Districts and four locations on the National Register of Historic Places, much of the town’s nineteenth century architecture remains.
- Home to the Tina Turner Museum at Flagg Grove School, the West TN Delta Heritage Center chronicles the extraordinary impact of Brownsville on American Music.
- From blues legends like Sleepy John Estes to songwriters like Alex Harvey, rockers like Fuel and Tina Turner herself, the Delta Heritage Center is a can’t-miss destination for music buffs traveling through Tennessee.
- Brownsville’s Dunbar-Carver Museum, located at 709 East Jefferson Street, chronicles the rich African American heritage of the city. The Dunbar-Carver Museum is the centerpiece of the city’s proposed Jefferson Street Historic District.

- The Dunbar-Carver Museum tells the story of African American life in Haywood County TN through portrayal of events associated with the one hundred plus year existence of the Dunbar-Haywood County Training-Carver High School in Brownsville.
- Billy Tripp’s Mindfield is a legendary piece of Americana located in the heart of downtown Brownsville. The Mindfield is Tripp’s legacy. Since 1989, he has single handedly hammered, welded and hoisted the living artwork together in honor of his late parents. The Mindfield is awe inspiring to some, puzzling to others and is sure to leave an impression on anyone traveling down Brownsville’s West Main Street.

** Information gathered from brownsvilletn.gov/visitors*

Transportation Plan:

Brownsville, Tennessee is excited for the opportunity to study the city’s transportation network to discover how to become a better place to live, work, and visit for all. The city intends to take the necessary steps to create a plan that reflects the unique assets of Brownsville and to work with various regional partners to improve upon the transportation conditions within the city.

Brownsville is already a great place to live. The city is surrounded by and full of a unique cultural heritage that blends the laid-back, down home style of the South with a musical heritage that packs a punch far greater than the size



PLAN FUNDING

of the city. The addition of infrastructure and pedestrian improvements to ensure safety for both visitors and residents is a great opportunity for the city.

Funding Sources:

It is critical to establish a timeline to secure necessary funding to finance Brownsville's transportation plan. There are many sources of funding through state and federal programs. It can be a long process to obtain these financial resources, and an appropriate amount of time must be taken into consideration when planning for future improvements. Once funding has been obtained, time is limited in using the funds to establish construction plans and produce built results, thus the importance of this document to outline proposed improvements ready to be designed once funding is allocated. Successful community improvements begin with a well thought out schedule, while taking funding resources into consideration.

Community Transportation Planning Grant (CTPG):

The Brownsville Corridor Study was selected as a recipient of TDOT's CTPG funding. The Office of Community Transportation (OCT) coordinates the state's transportation planning efforts to provide technical guidance for local jurisdictions, increasing the level of collaboration between TDOT and municipalities across the state. OCT gives TDOT a thorough understanding of local communities and the various transportation planning documents and policies in place. The office is comprised of two sections, Community Planning and Regional Planning. The OCT's mission is to coordinate the state's transportation planning, local land use decisions, and community visions to guide the development of a safe and efficient statewide transportation system. This report was funded by Brownsville's CTPG grant. As a part of the agreement to receive funding through the grant, the City of Brownsville will need to adopt a resolution; allowing the city to begin implementing recommendations from this plan.

COMMUNITY TRANSPORTATION PLANNING GRANT

GRANT OBJECTIVES

1. Develop transportation and land use plans containing deliverables that can be used as guiding tools for future transportation projects.
2. Develop real-world transportation and land use solutions that are cost effective and feasible.
3. Improve safety through planning documents.
4. Create policies and procedures that link all transportation modes and provide alternative mobility options.
5. Utilize Context Sensitive Design and Solutions (CSD/CSS) that preserve and enhance community, resources.

Plan Development:

The planning process began on January 29, 2019 with a project kick-off meeting with City of Brownsville staff. Two public meetings were held on April 9th and June 20th. Meetings included discussions and activities that generated and evaluated planning concepts and strategies. While the project team coordinated and received feedback, the team also obtained opinions from community members and took their thoughts and ideas into consideration. Outreach and project input occurred throughout the planning process (see diagram to the right).

Engagement Process:

Special consideration was given to reaching a broad cross-section of the community with the intent to accomplish several objectives:

- Offering decision and/or influence opportunities for citizens
- Using the engagement process to raise awareness of the project and of planning in general

PROJECT INITIATION

1

- Client Project Kickoff Meeting
- Communicate Workplan

VISIONING

2

- Community Input Events

PLAN & REPORT DEVELOPMENT

3

- Second public meeting showcasing final design scenario selection
- Final report development and adoption of plan

PROJECT IMPLEMENTATION

4

- Funding Acquisition
- Construction of recommendations

What is a Corridor Study:

A Corridor Study is the first step in planning for the future of a transportation facility by defining the corridor's needs to create the best solution in moving people and goods safely and efficiently.

Corridor studies are an effective tool for determining existing conditions, developing a favored future plan, and offering short-term and long-term solutions for transitioning corridors as they change. A well-executed transportation study will promote a safe, thriving environment that can ultimately lead to a growing community and flourishing economy.

Why conduct a Corridor Study:

Corridor studies are an effective tool to promote community improvements. Specific benefits may include:

- Aid in the maximization of existing infrastructure
- Improve safety conditions
- Development of coordinated land uses
- Promote access or mobility improvements
- Improve air quality through congestion reduction
- Resolution of major planning issues prior to the beginning of project construction

How are Corridor Studies used:

Corridor Studies serve many purposes in helping community members and visitors circulate through a city. Benefits may include:

- Define acceptable levels of access and mobility
- Aid in determining appropriate land uses
- Assist in consolidating and controlling access points
- Guidance for interim projects to ensure the progression towards long-range objectives
- Promote redevelopment of an under-performing corridor
- Support partnerships between diverse organizations and agencies

LEADERSHIP COMMITMENT

Community leaders must demonstrate a clear commitment to support the transportation study.

VISIONING & CONSENSUS

Establishing a shared vision and consensus allows the community to set project goals and objectives. Understanding needs and developing support from the community is vital to start the planning, design and implementation processes.

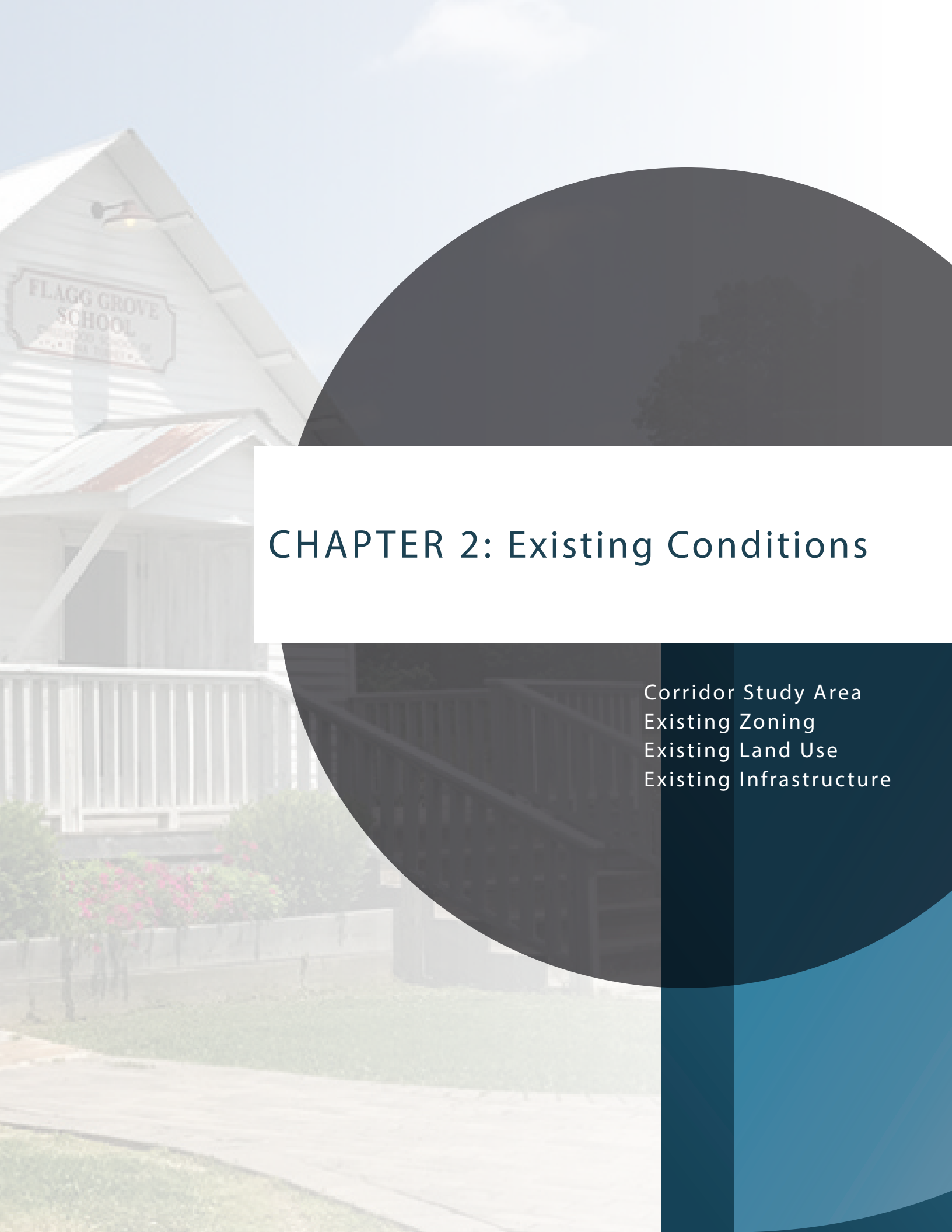
PLANNING & DESIGN

Communities should leverage local resources and knowledge to assist in guiding project activities to best meet the needs of their community. Tailoring best practices to meet local conditions and desires will assist in developing an implementable, successful planning study.

PLAN & REPORT DEVELOPMENT

Communities should seek funding from diverse sources to implement their transportation studies. Communities should also consider partnering with private industry as well as seeking funding from other state and federal sources.





CHAPTER 2: Existing Conditions

Corridor Study Area
Existing Zoning
Existing Land Use
Existing Infrastructure

STUDY AREA

This document will provide a planning level analysis of the study area as defined by the following corridors and adjacent properties:

Anderson Avenue:

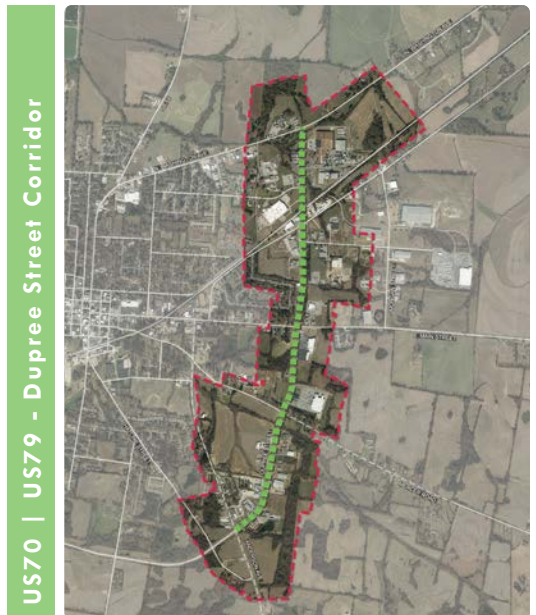
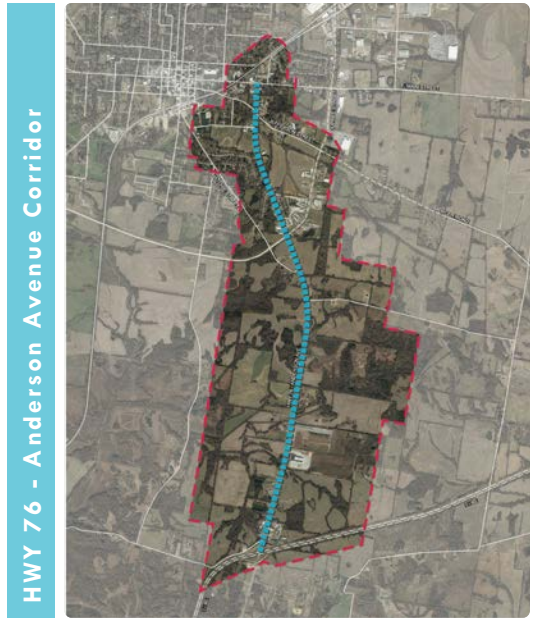
- This corridor is defined as beginning at the City of Brownsville City Limits at Interstate I-40 and heading north approximately 4 miles to its terminus at the intersection of Anderson Avenue and Main Street.

Dupree Street:

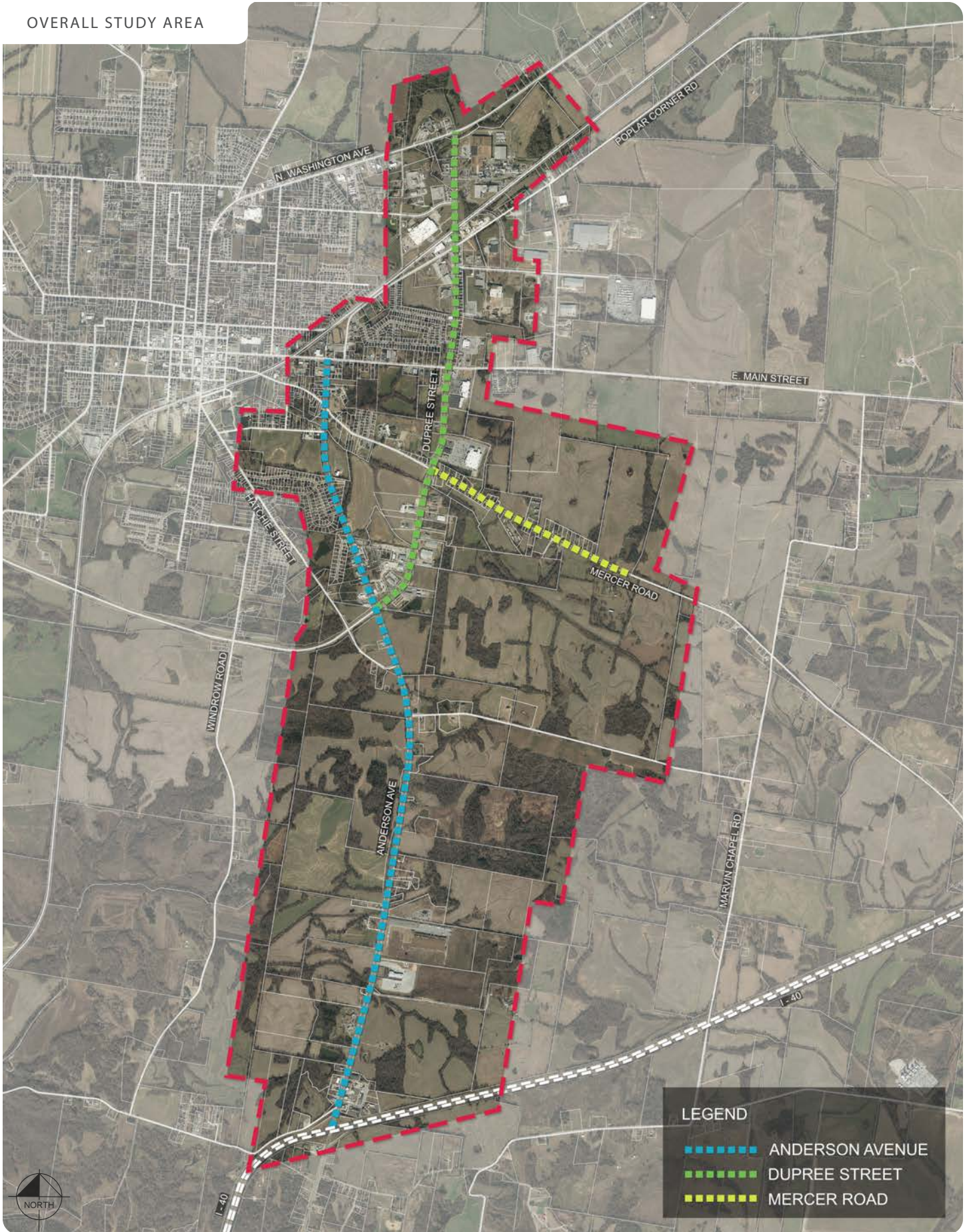
- This corridor is defined as beginning at the intersection of Anderson Avenue and Dupree Street and continuing approximately 2.5 miles to its northern terminus at the intersection of Dupree Street and North Washington Avenue

Mercer Road:

- This corridor is defined as beginning at the intersection of Dupree Street and Mercer Road and heading approximately 4,000 feet east to the Brownsville City Limits.



OVERALL STUDY AREA

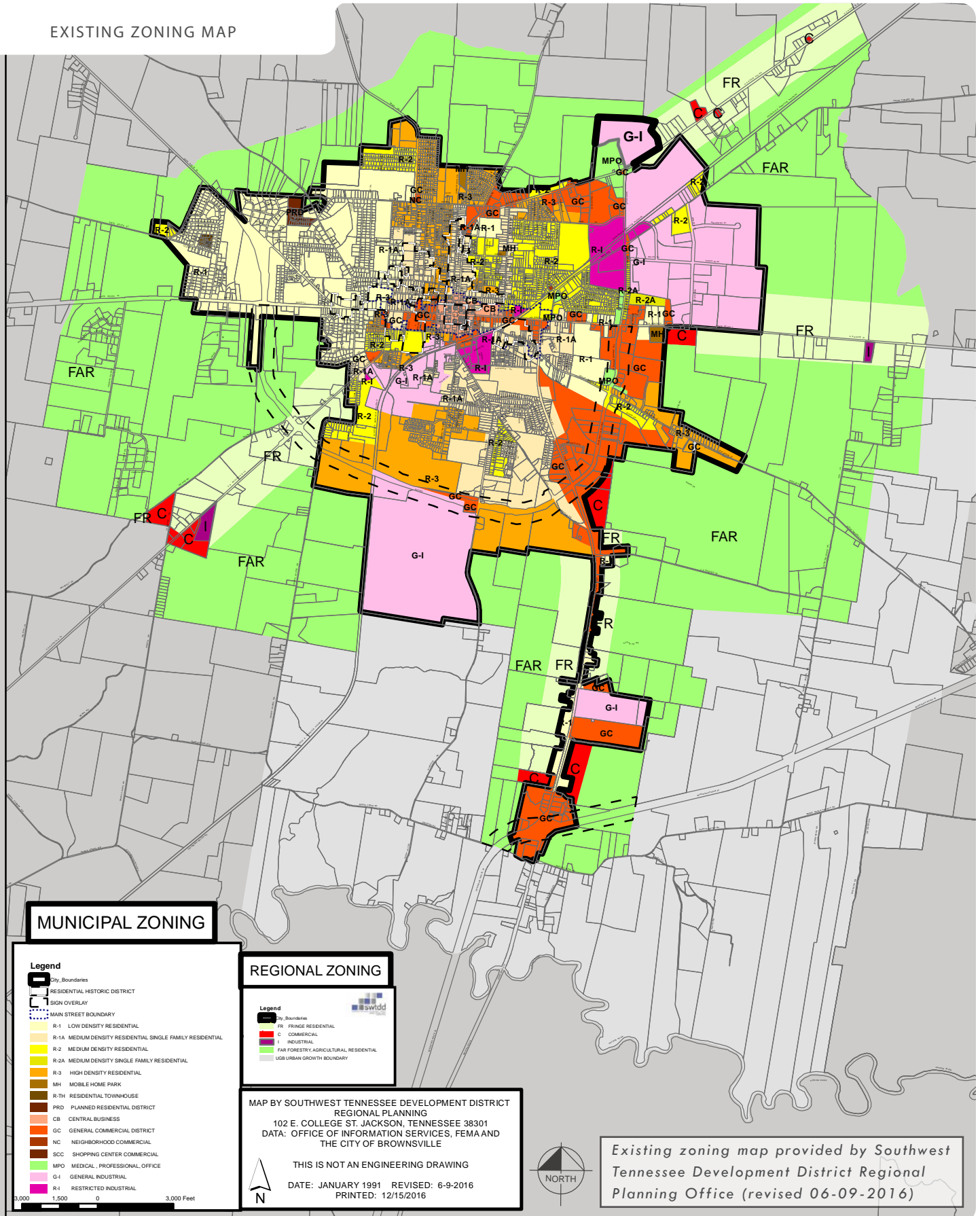


LEGEND

- ANDERSON AVENUE
- DUPREE STREET
- MERCER ROAD

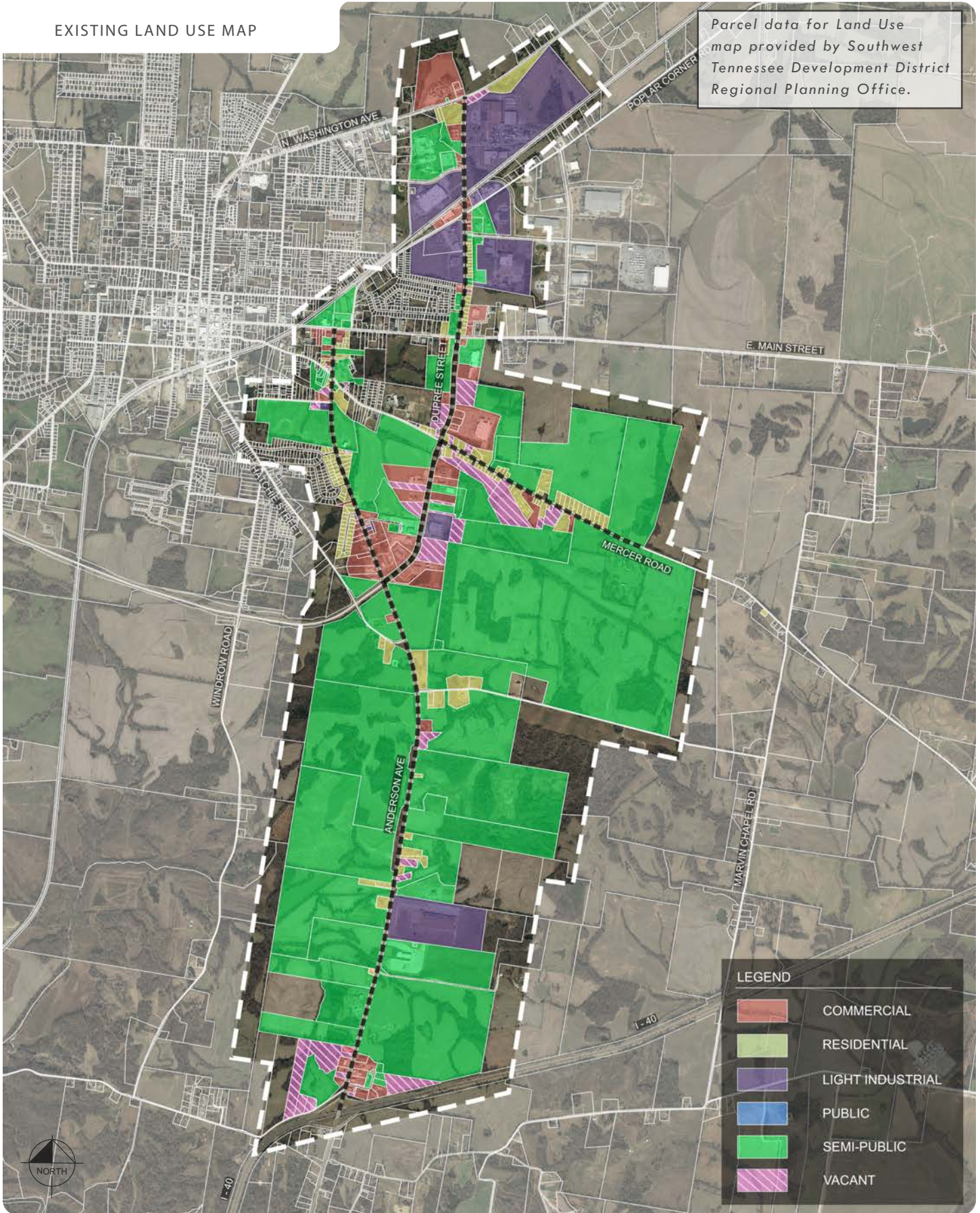
ZONING

EXISTING ZONING MAP



LAND USE

EXISTING LAND USE MAP

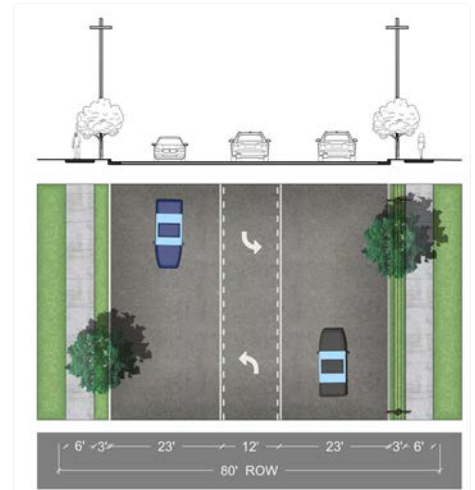


HWY 76 - ANDERSON AVENUE CORRIDOR

From Main Street to Jefferson Street

The intersection of Main Street and Anderson Avenue marks the northern most point of the Anderson Corridor study area.

- 3-Lane Minor Arterial
- Speed Limit – 30 mph
- Lane width varies between 12' and 20'+
- Curb and gutter with sidewalks
- Green strips with occasional street plantings
- Scattered street trees in poor condition
- Lack of striping in areas

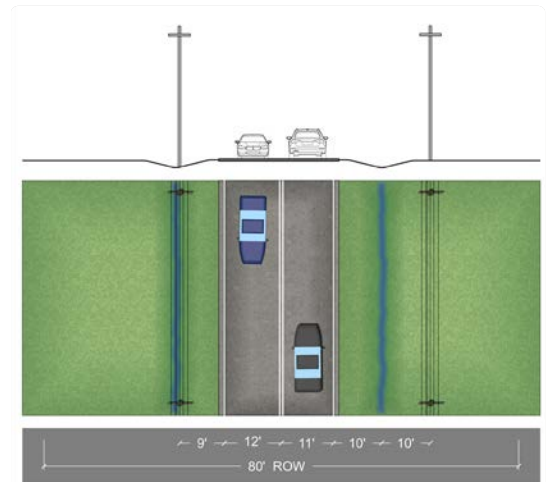


Viewing South on Anderson Avenue toward East Jefferson Street

From Jefferson Street to Dupree Street

The Anderson corridor between Jefferson Street and Dupree Street consists of two lanes with open shoulders. This is the narrowest section of the Anderson corridor.

- 2-Lane Minor Arterial
- Speed Limit – 45 mph
- Lane width varies between 11' and 12'
- Curb and gutter with sidewalks
- Roadway striping unclear in some areas



Viewing South on Anderson Avenue toward Dupree Street

A @ Main Street



B @ E. Jefferson Street



C @ Dupree Street



D @ Interstate 40



KEY INTERSECTIONS - ANDERSON AVENUE STUDY AREA

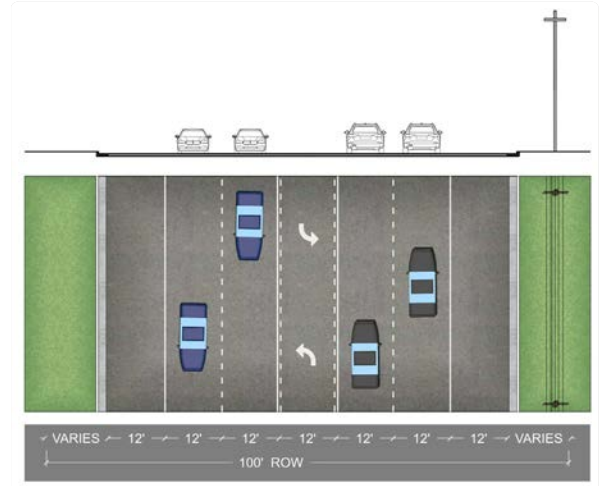


HWY 76 - ANDERSON AVENUE CORRIDOR

From Dupree Street to Interstate 40

The Anderson corridor between Dupree Street and Interstate 40 consists of five lanes with large shoulders. This is the widest section of the Anderson corridor.

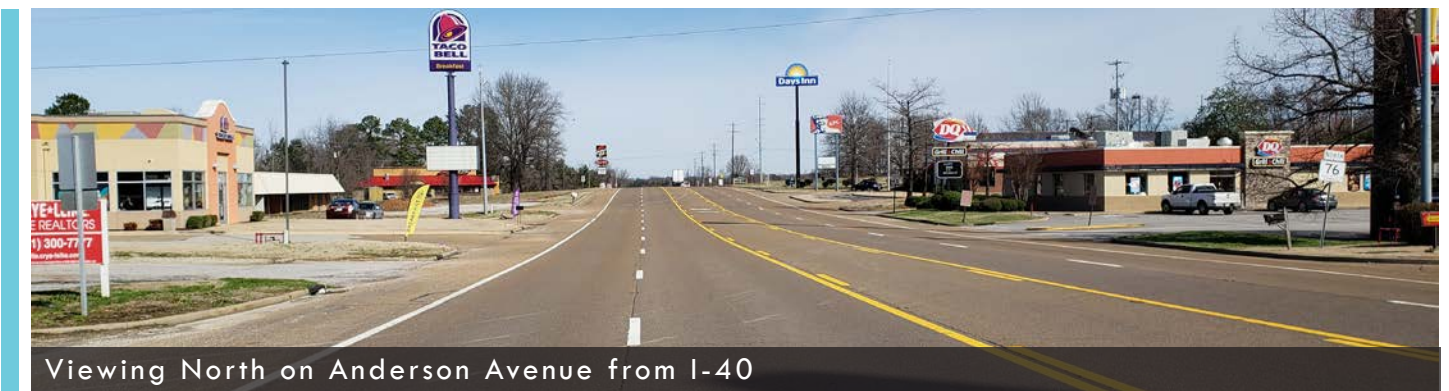
- 5-Lane Principal Arterial on the National Highway System (NHS)
- Speed Limit – 45 mph
- Lane width is 12'
- 12' shoulder with curb and gutter
- No sidewalks



Viewing South on Anderson Avenue toward I-40

Anderson at Interstate 40

The Anderson corridor at Interstate 40 is unique in the fact that this portion of the corridor runs through an assortment of commercial and industrial land uses. As this area of the corridor developed, a surplus amount of access points were created on Anderson Avenue which raises concerns of access management.



Viewing North on Anderson Avenue from I-40

A @ Main Street



B @ E. Jefferson Street



C @ Dupree Street



D @ Interstate 40



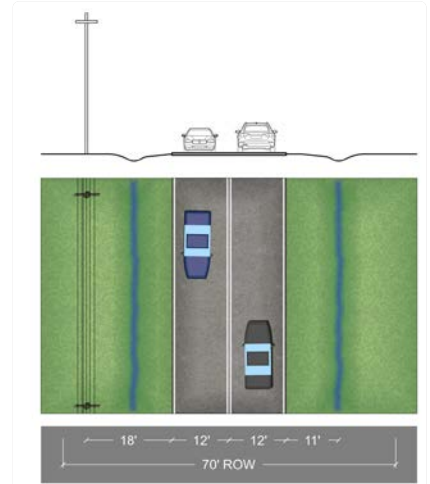
KEY INTERSECTIONS - ANDERSON AVENUE STUDY AREA



From Washington Avenue to East Main Street

The Dupree corridor transitions from a 3-lane section with a turn lane to a narrow 2-lane section as you travel south toward the intersection of Dupree Street and E. Main Street.

- 2-Lane/3-lane Principal Arterial on the National Highway System (NHS)
- Speed Limit ranges from 40 - 45 mph
- Lane width varies between 11' and 12'
- Open shoulder cross section
- No sidewalks

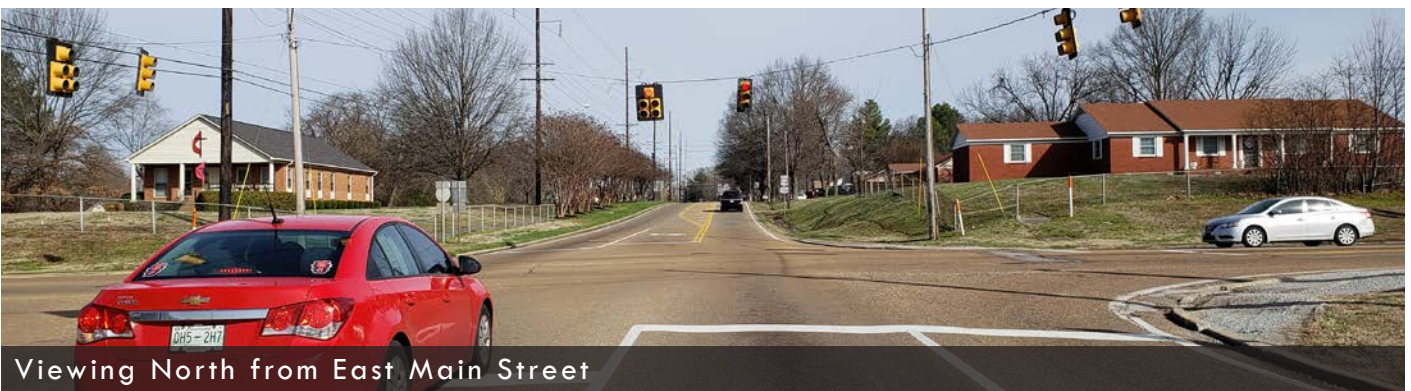
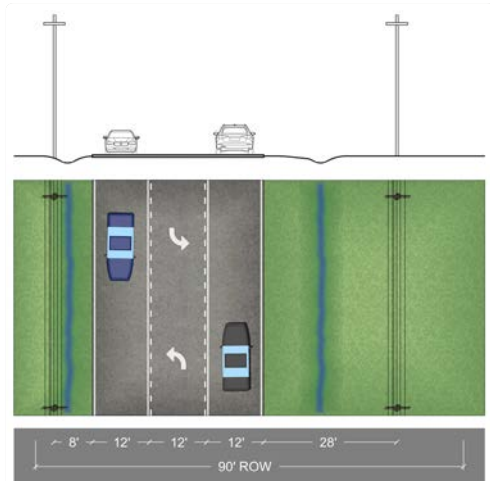


Viewing South from Washington Avenue

From East Main Street to Mercer Road

This section of the Dupree Corridor consists mainly of a 3-lane section with a turn lane servicing adjacent commercial land uses.

- 3-lane Principal Arterial on the National Highway System (NHS)
- Speed Limit ranges from 40 - 45 mph
- Lane width varies between 11' and 12'
- Open shoulder cross section – 12' shoulder
- No sidewalks



Viewing North from East Main Street

A @ N. Washington Avenue



B @ E. Main Street



C @ Mercer Road



D @ Anderson Avenue



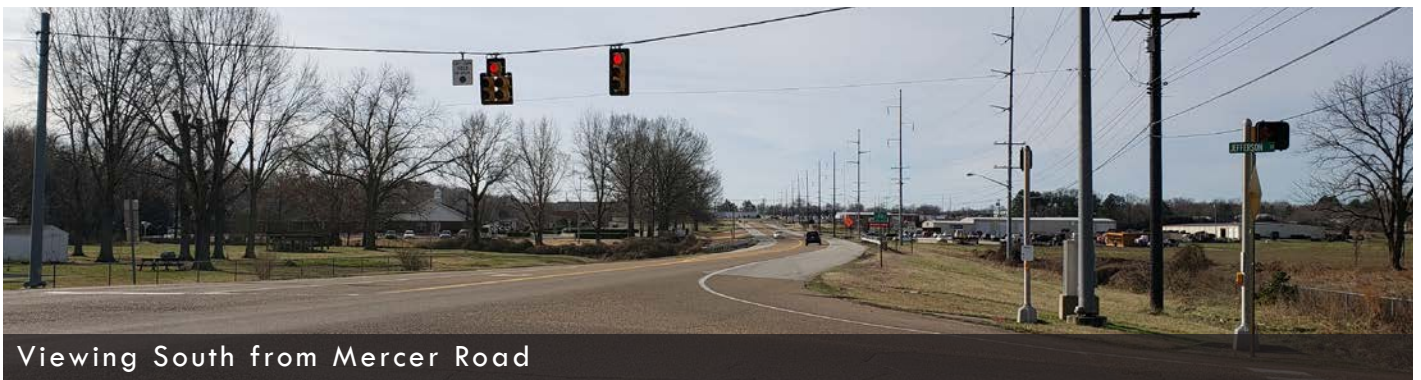
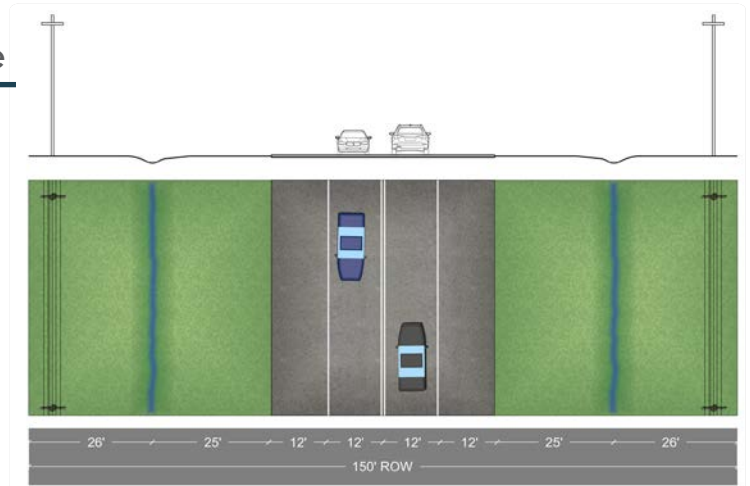
KEY INTERSECTIONS - DUPREE STREET STUDY AREA



From Mercer Road to Anderson Avenue

This 2-lane section of Dupree Street has large 12' shoulders and serves several adjacent, commercial land uses.

- 2-lane Principal Arterial on the National Highway System (NHS)
- Speed Limit – 55 mph
- Lane width is 12'
- Open shoulder cross section – 12' shoulder
- No sidewalks



A @ N. Washington Avenue



B @ E. Main Street



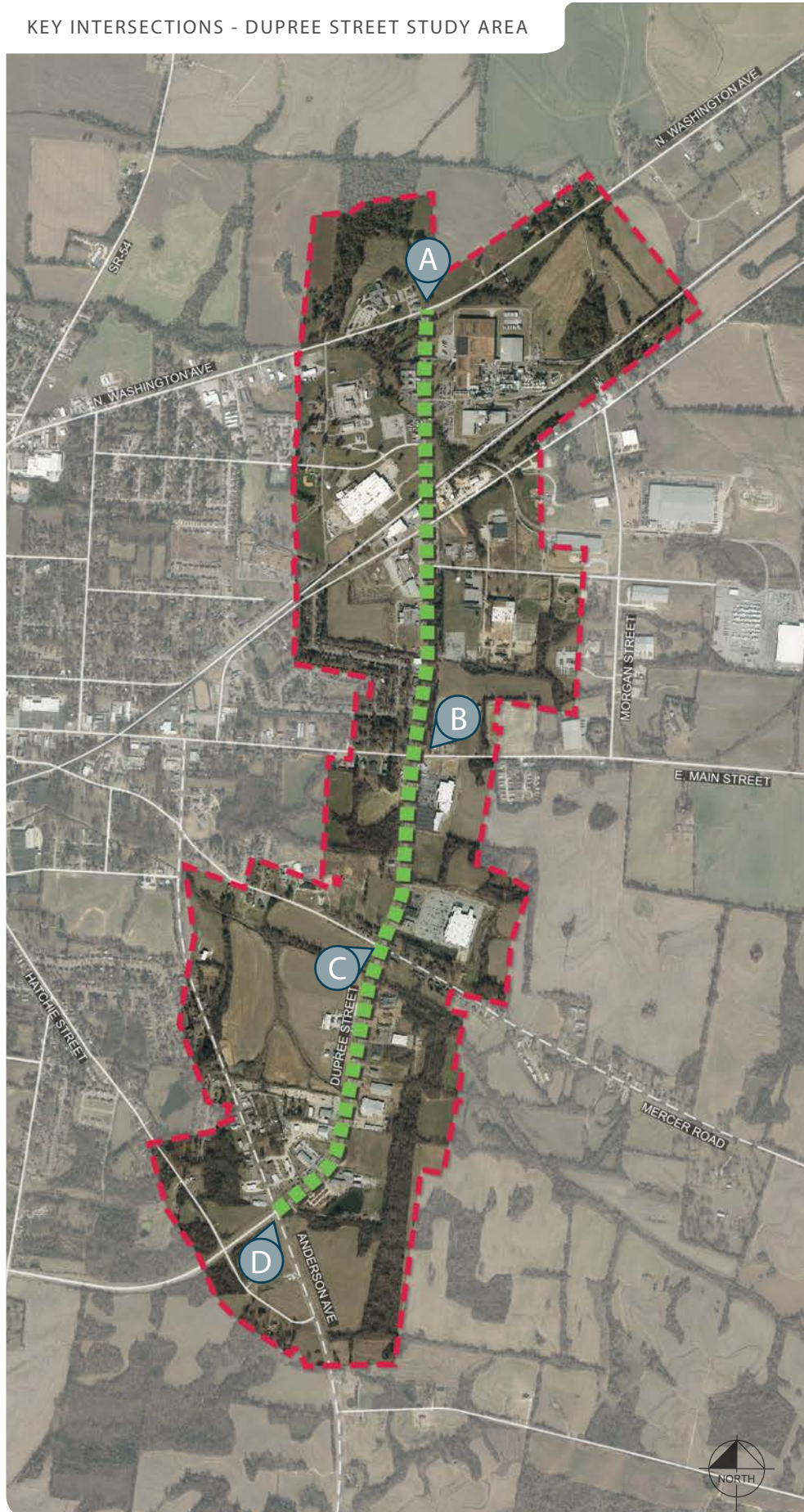
C @ Mercer Road



D @ Anderson Avenue



KEY INTERSECTIONS - DUPREE STREET STUDY AREA

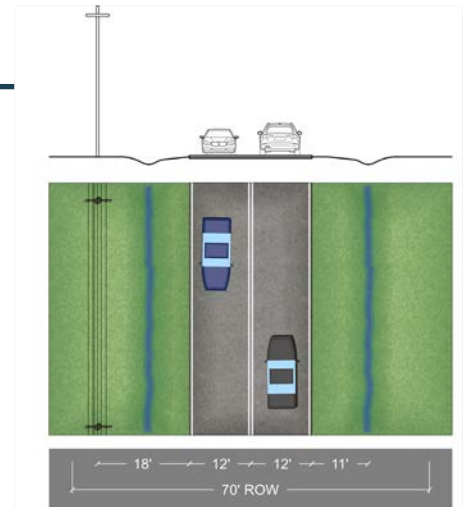


HWY 19 - MERCER ROAD CORRIDOR

From Dupree Street to Brownsville City Limits

This narrow, 2-lane section of Mercer Road is consistent throughout the corridor with varying amounts of space between the edge of the road section and the extents of the right-of-way.

- 2-lane Minor Arterial
- Speed Limit – 35 mph
- Lane width varies between 10' and 11'
- Open shoulder cross section
- No sidewalks



Viewing West towards Dupree Street



Viewing East from Dupree Street

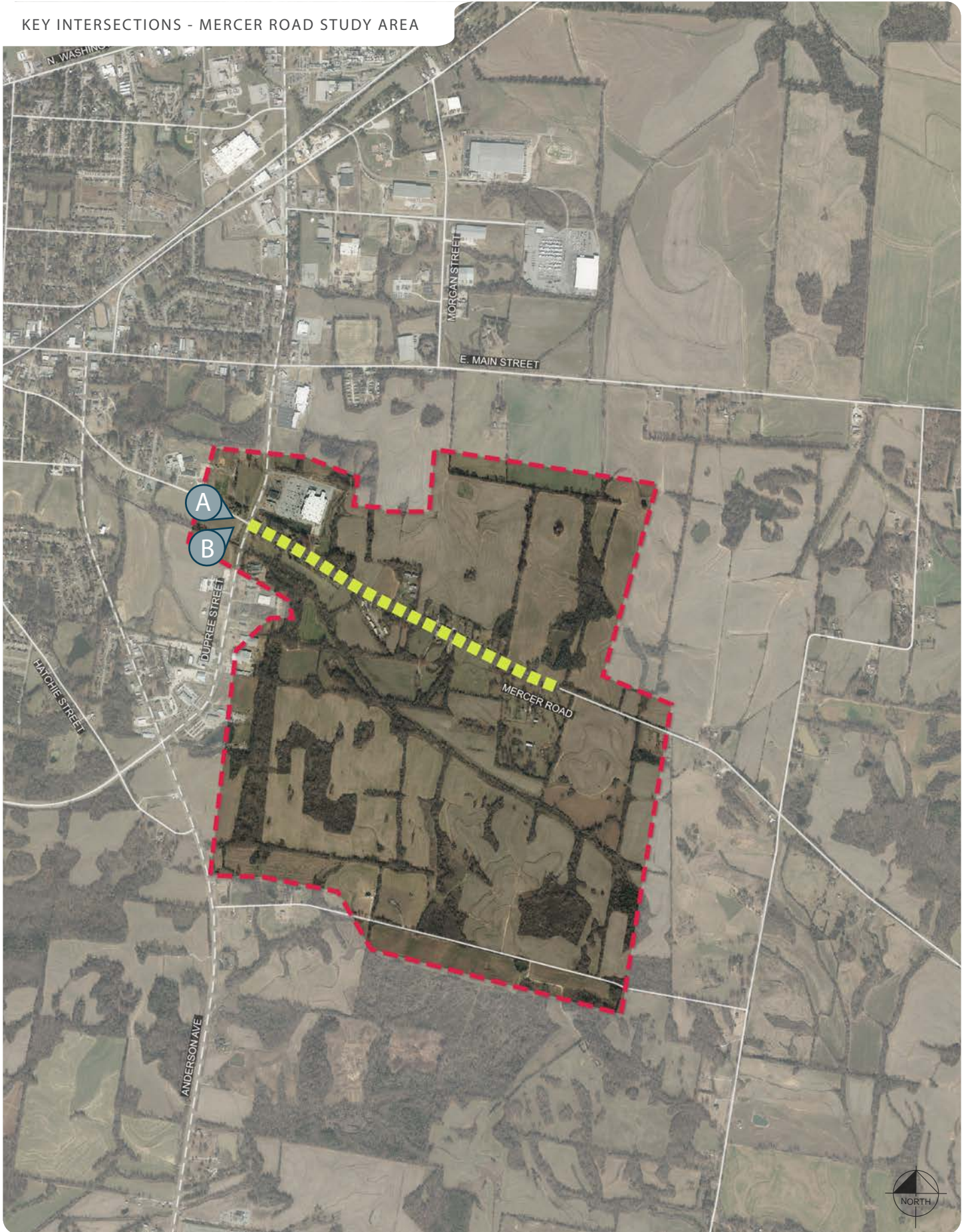


A



B

KEY INTERSECTIONS - MERCER ROAD STUDY AREA





CHAPTER 3: Traffic Analysis

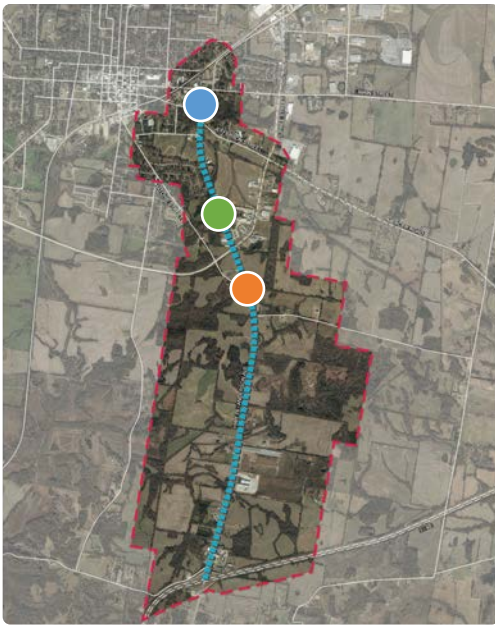
Existing Conditions
Future Conditions
Transportation Safety
Bicycle and Pedestrian

EXISTING CONDITIONS - AVERAGE ANNUAL DAILY TRAFFIC

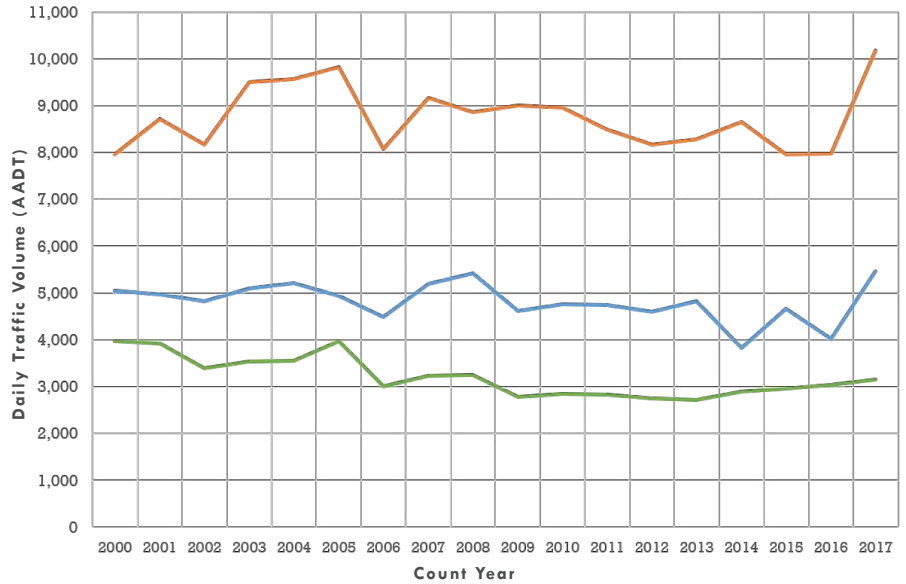
Historic traffic counts along the corridor were collected from TDOT. The counts were average annual daily traffic (AADT) counts which represent the number of trips that use a roadway on an average day. The counts collected for this study were from 2000 to 2017.

Anderson Avenue Corridor

The historic AADT counts along Anderson Avenue show that traffic volumes are much greater on Anderson Avenue from I-40 to Dupree Street than on Anderson Avenue north of Dupree Street. Volumes range from 8,000 to 10,000 vehicles per day south of Dupree Street. The volumes range from 2,500 to 5,500 vehicles per day north of Dupree Street. In aggregate, the counts show a slight increase in traffic over the 17 years reported.



Traffic Count History

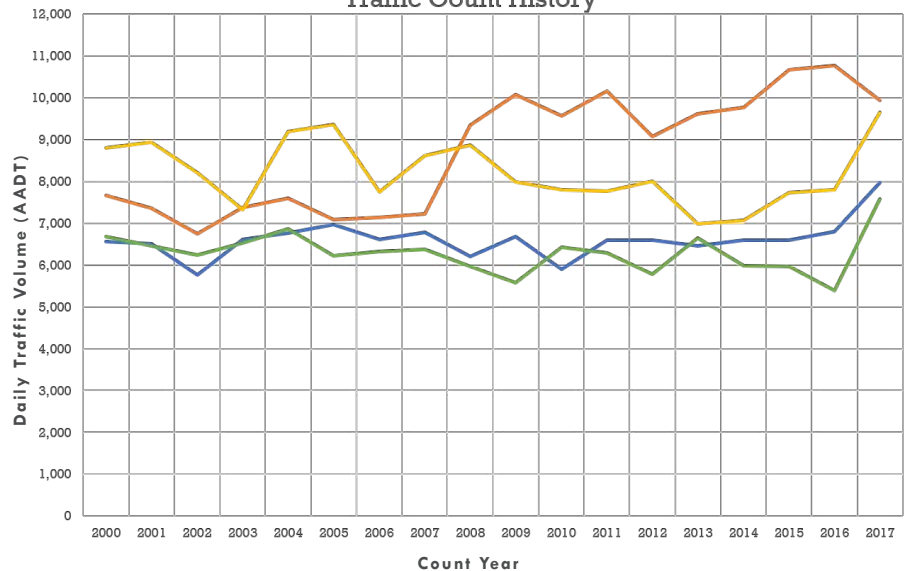


Dupree Street Corridor

The historic AADT counts along Dupree Street show heavier volumes along Dupree Street around Main Street with lower volumes near the intersections with Anderson Avenue and Washington Avenue. Recent volumes along Dupree Street range from 5,500 to 10,500 vehicles per day. The aggregate trend of the AADT volumes for the 17-year period show an increase in traffic along Dupree Street.



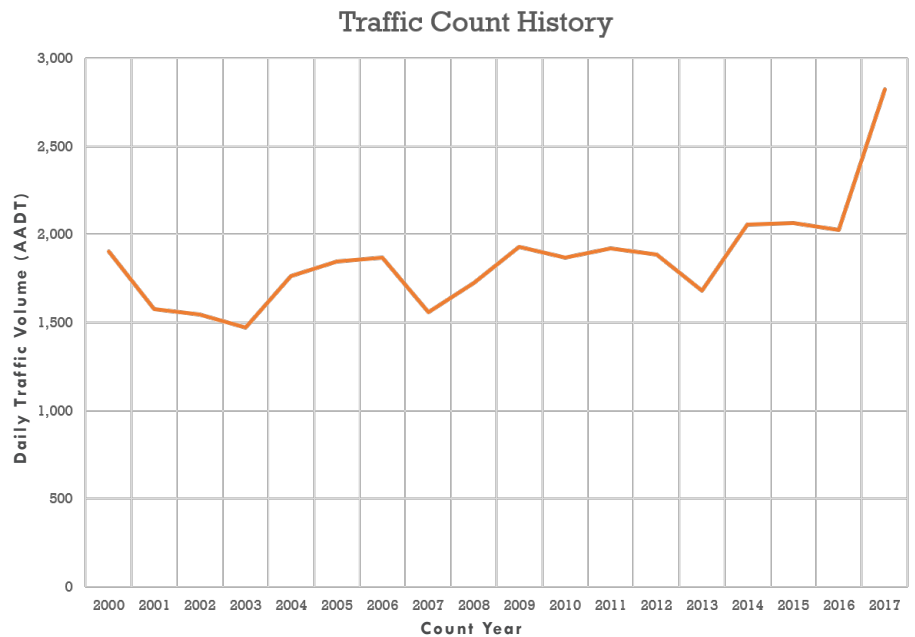
Traffic Count History



EXISTING CONDITIONS - AVERAGE ANNUAL DAILY TRAFFIC

Dupree Street Corridor

The historic AADT count station on Mercer Road shows an increase in traffic over the 17-year period. Recent traffic volumes on Mercer Road in the study area ranged from 2,000 to 2,800 vehicles per day.



Existing Capacity Analysis

Turning movement counts are counts that are taken at an intersection to count how many cars are passing through an intersection on a 15-minute interval basis. These counts can be used to determine how well the intersection is operating during peak periods of traffic. For this study, turning movement counts were collected by TDOT at four intersections in January 2019.

- Washington Avenue at Dupree Street
- Main Street at Dupree Street
- Jefferson Street at Dupree Street
- Anderson Avenue at Dupree Street

These counts were used to perform a capacity analysis for the morning and evening peak hours of traffic. Intersection capacity is measured by assigning the overall delay at an intersection a Level of Service (LOS). The LOS is a rating, A through F, with A being the best and F being the worst. LOS of A through C are considered acceptable. LOS D is considered at capacity and LOS E and F are failing and need mitigation to function properly.

All of the intersections counted along Dupree Street currently operate at LOS C or better. There appear to be no capacity issues along the study corridor.

FUTURE CONDITIONS

The historic AADT data was used to project the growth expected in future years along the corridor. This future analysis was used to determine if any improvements need to be made to the corridor in order to accommodate future growth in the Brownsville area. The future year used for this study is 2040. Based on the rate at which the corridor grew from 2000 to 2017, the traffic is expected to grow 0.03% every year to the future year of 2040. The current year 2019 volumes and the expected year 2040 future volumes are shown in Figure 3.1. All the roadways along the corridor have the capacity to accommodate this projected growth.

This same methodology for estimating future AADT growth was used at the intersections where turning movement counts were conducted along Dupree Street. These counts were grown by 0.03% per year to the study horizon year of 2040. Then, the future year estimates were used for another capacity analysis. The capacity analysis shows that the intersections will continue to operate at LOS C or better in the horizon year. Therefore, no recommendations are made for these intersections to accommodate future capacity.

Figure 3.1 - AADT PROJECTIONS



TRANSPORTATION SAFETY

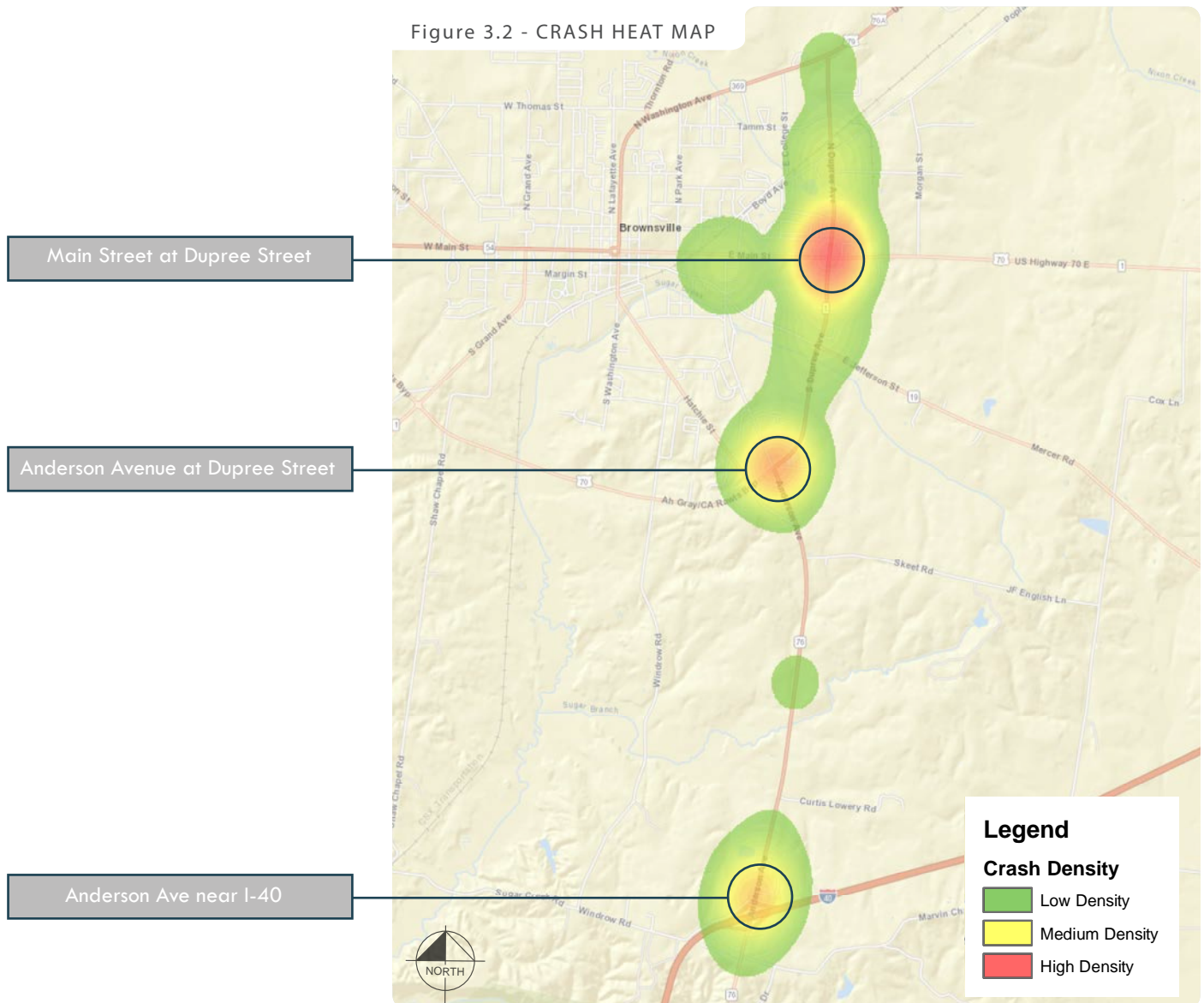
Crash data was obtained from TDOT through the Enhanced Tennessee Roadway Information Management System (ETRIMS) for the previous three years (2016-2018). A total of 160 crashes were reported during this time period along the study corridor. The crash data was summarized by crash type, time of day, contributing causes of the crash, and roadway conditions.

Of the 160 crashes along the study corridor, 127 were crashes that resulted in property damage only. This means that vehicles and road features were damaged, but no motorists, pedestrians, or bicyclist were injured. Thirty-two (32) of the remaining crashes resulted in motorist injuries: 26 crashes with minor injuries and 6 crashes with serious injuries. There was one fatal crash in the study area along Mercer Rd. It was an angle collision that occurred as a motorist exited a private driveway onto Mercer Road. There are no reported crashes involving pedestrians or bicyclists.

Figure 3.2 is a heat map that shows the density of crashes along the corridor. The figure identifies three main areas with a high density of crashes, meaning a high occurrence of crashes. The three areas are detailed below:

- Main St at Dupree St - Crashes in this area primarily occur at the intersection or along the southbound approach to the intersection. Intersection crashes were angle crashes of vehicles traveling opposing directions.
- Anderson Ave at Dupree St - Crashes in this area are primarily at the intersection as angle crashes of vehicles traveling opposing directions.
- Anderson Ave approaching I-40 – Crashes in this area are primarily related to the many driveways along Anderson as it approaches the I-40 interchange.

Figure 3.2 - CRASH HEAT MAP



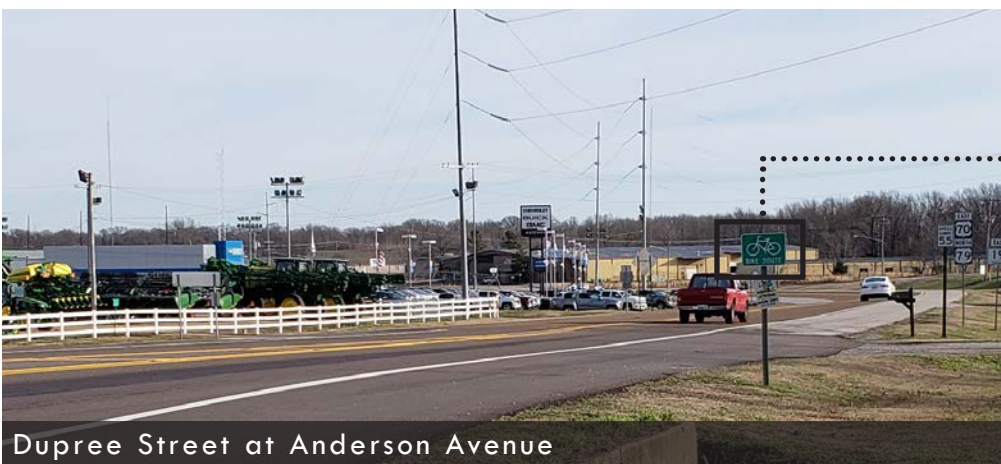
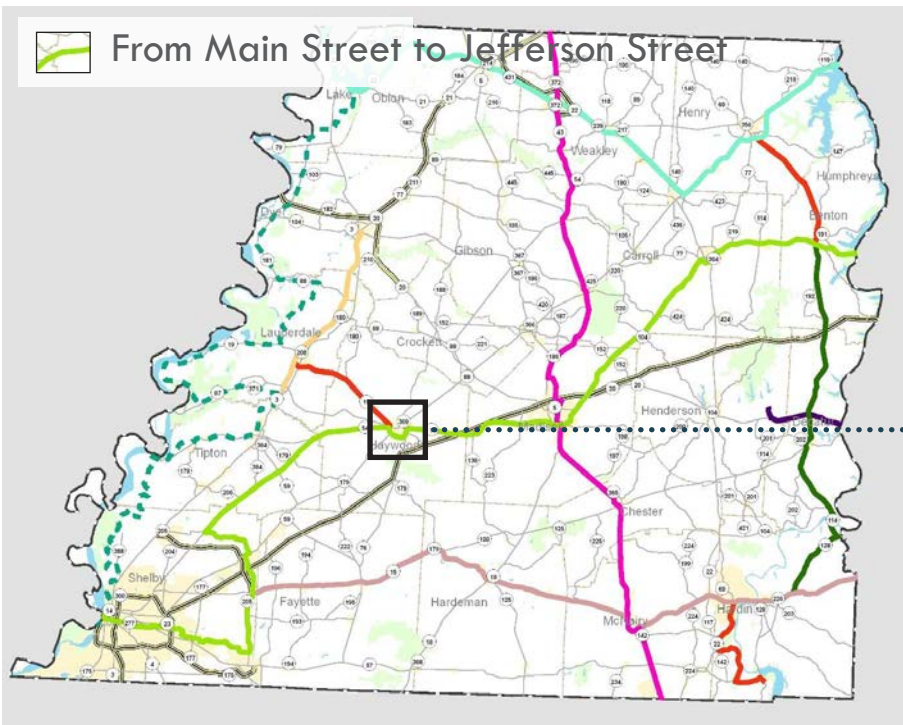
BICYCLE AND PEDESTRIAN CIRCULATION

From Main Street to Jefferson Street

A section of the proposed state bicycle route from Memphis to Nashville runs through the study area as part of Dupree Street from Anderson Avenue to East Main Street. There is signage indicating that the roadway is part of a state bicycle route but no physical infrastructure or striping to delineate bicycle specific or shared travel lanes.

Planning Recommendations:

1. Conduct a Trails and Greenway Study to identify origins, destinations, and potential connections to the state bicycle route.
2. A proposed greenway along the west side of Dupree Street offers separated bicycle and pedestrian circulation



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HCS



CHAPTER 4: Access Management

Introduction
Toolbox
Project-Specific Strategies

As Brownsville's corridors attract development in the future, protecting the capacity and safety of these corridors is essential for the efficiency of the transportation system and potential economic growth. Access management balances the needs of motorists, pedestrians, and bicyclists using a roadway with the needs of adjacent property owners who depend upon access to the roadway. In the current environment, where funds are limited for transportation projects, access management is not just good policy but crucial to the health of the entire transportation network and the commercial corridor.

The Federal Highway Administration (FHWA) defines access management as "the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed." According to the Access Management Manual published by the Transportation Research Board, access management results from a cooperative effort between state and local agencies and private land owners to systematically control the "location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway." Access management requires cooperation between government agencies and private land owners.

The Tennessee Department of Transportation (TDOT) does not currently have a comprehensive access management guide. The TDOT Manual for Constructing Driveway Entrances on State Highways (2015) provides some access management strategies. Brownsville should continue to consider these strategies with implementation of the TDOT guide.

Poor access management directly affects the livability and economic vitality of commercial corridors, ultimately discouraging potential customers from entering the area. A corridor with poor access management lengthens commute times, lowers fuel efficiency, and increases vehicle emissions. Signs of a corridor with poor access management include:

- Increased crashes between motorists, pedestrians, and cyclists
- Worsening efficiency of the roadway
- Congestion outpacing growth in traffic
- Spillover cut-through traffic on adjacent residential streets
- Limited sustainability of commercial development

BENEFITS OF CORRIDOR ACCESS MANAGEMENT

MOTORISTS	<ul style="list-style-type: none"> • Fewer delays and reduced travel times • Safer traveling conditions
BICYCLISTS	<ul style="list-style-type: none"> • Safer traveling conditions • More predictable motorist movements • More options in a connected street network
PEDESTRIANS	<ul style="list-style-type: none"> • Median refuges and fewer access points increasing overall safety • More pleasant walking environment
GOVERNMENT AGENCIES	<ul style="list-style-type: none"> • Lower costs to achieve transportation goals and objectives • Protection of long-term investment in transportation infrastructure
COMMUNITIES	<ul style="list-style-type: none"> • More attractive, efficient roadways without the need for constant road widening

Without access management, the function and character of major roadway corridors can deteriorate rapidly and adjacent properties can suffer from declining property values and high turnover. Proper access management has wide-ranging benefits to a variety of users.

PLANNING TOOLBOX

Access management includes a variety of tools to improve corridor operation and should never be considered a one-size fits all solution. In fact, a successful strategy on one section of a corridor can prove ineffective further down the same road. The chosen strategies also must be coordinated with other transportation initiatives to ensure access management does not hinder the intended outcome of those programs.

The toolbox that follows provides a general overview of various strategies available to alleviate congestion. The toolbox offers local engineering and planning officials' strategies as well as an overview of their application and use. The list presented here is not comprehensive but rather represents strategies spanning a broad spectrum of time and monetary commitments. A chosen access management program should support the efficient and safe use of the corridor for all transportation modes. Regular evaluation must be a part of the program. The toolbox includes a variety of strategies organized into four categories:



On-site traffic circulation:

The total number of vehicle conflicts can be reduced by promoting on-site traffic circulation and shared-use driveways during development application review. Such improvements should be a key consideration during the approval of redeveloped sites along corridors identified for access management programs.

Examples include: number of driveways, driveway placement/relocation, cross access between sites

Median Treatments:

Segments of a corridor with sufficient cross access, backdoor access, and on-site circulation may be candidates for median treatments. A median-divided roadway improves traffic flow, reduces congestion, and increases traffic safety. While medians restrict some left-turn movements, access to businesses is enhanced and traffic delays are reduced. Landscaping and gateway features incorporated into median treatments improve the aesthetics of the corridor, in turn encouraging investment in the area.

Examples include: non-traversable median, directional crossover, left-turn lanes, offset left turn lanes

Intersection and Minor Street Treatments:

The operation of intersections can be improved by reducing driver confusion, establishing proper curb radii, and ensuring adequate laneage of minor street approaches.

Examples include: "skip marks", intersection and driveway curb radii, minor street approach improvements

PROJECT SPECIFIC STRATEGIES

Access Management Scenario: Anderson Avenue at Interstate 40

Access Management improvements at Anderson Avenue and I-40, along with other areas along the study corridors, should be in line with the following list of enhancements:

- Consolidate curb cuts where feasible
- Use rear access for circulation where feasible
- Locate parking in the rear of buildings
- Clearly denote points of ingress and egress

Planning Recommendation: Conduct planning analysis to produce additional development standards for new development occurring along the corridors in this study area regulating how and where access management is addressed.



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CHAPTER 5: Proposed Improvements

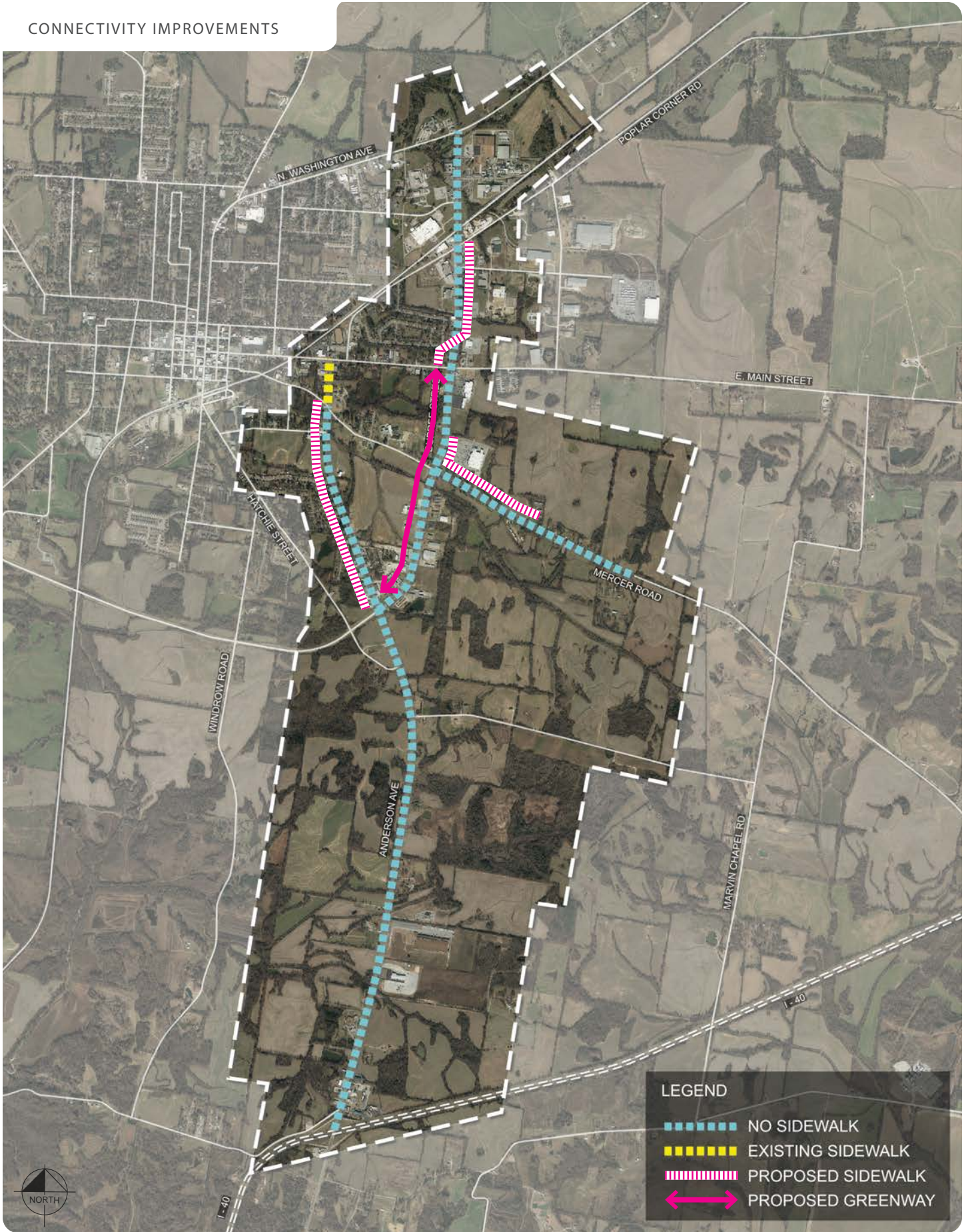
Connectivity
Transportation Alternatives

Existing connectivity for bicycle and pedestrian movement within the study area is limited. Within the study area sidewalks exist on Anderson Avenue between East Jefferson Street and East Main Street. In order to increase multimodal connectivity within Brownsville the following opportunities have been identified within the study area:

- **Proposed Greenway**
 - Dupree Street is currently designated as a state bike route, but no infrastructure is in place to create an attractive and safe environment for bicycle and pedestrian travel. A proposed greenway offers separated and safe travel along Dupree within the right-of-way from Anderson Avenue north to East Main Street providing access to residential and commercial properties along that corridor, including the existing Walmart at Mercer Road.
- **Proposed Sidewalks**
 - The lack of existing sidewalks within the study area discourages alternative modes of transportation and creates a dangerous environment for pedestrians and cyclists. Proposed sidewalks linking residential properties to goods and services would serve to elevate the quality of life of many residents in Brownsville.

The connectivity improvements identified in this planning document should create a framework to build upon as Brownsville continues to grow. Linking origins to destinations will be an important part of what makes a successful and usable alternative transportation network.

CONNECTIVITY IMPROVEMENTS

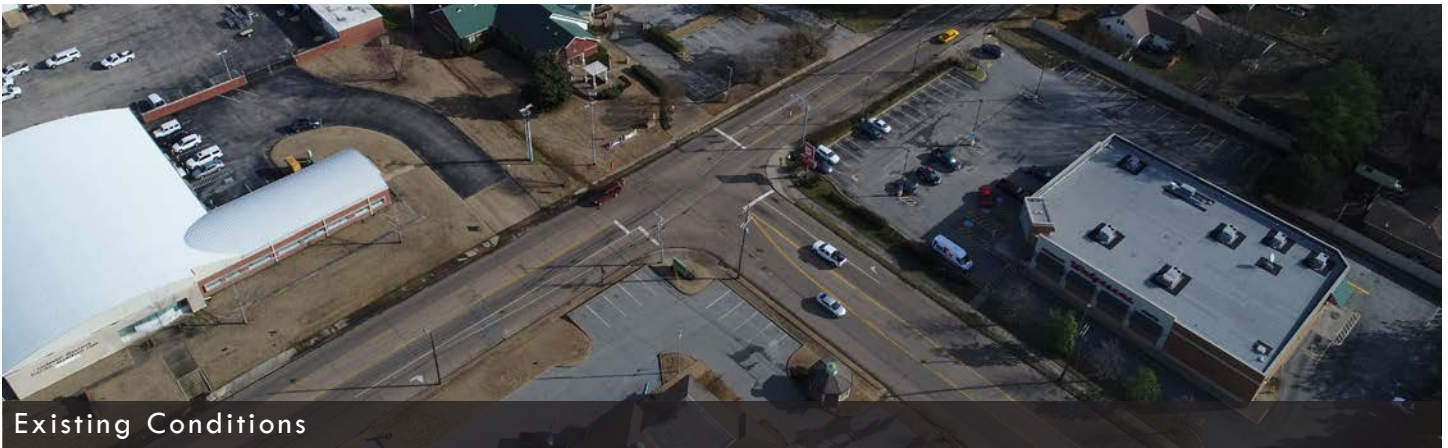


Key Intersection A: Anderson Avenue at E. Main Street

The design intervention at the intersection of Anderson and Main Street focuses on addressing the existing lack of pedestrian infrastructure to create a safer environment for alternative modes of transportation. The wide, existing roadway section offers an opportunity to introduce optional bicycle lanes, median separation, and narrower more defined lanes to control traffic speeds and further define and separate areas designated for cars and pedestrian.

The proposed improvements could include the following elements/recommendations:

- Updated vehicular and pedestrian traffic signals (push buttons, mast arms, crosswalks, stop bar relocations, etc.)
- ADA curb cuts at all pedestrian crossing areas.
- Possible median and left turn lane protection.
- Landscape and beautification improvements where not in conflict with existing overhead electric lines and miscellaneous utilities.
- Planning Recommendation: conduct bike/pedestrian study to determine a plan for potential bicycle routes connecting destinations throughout Brownsville.



Existing Conditions

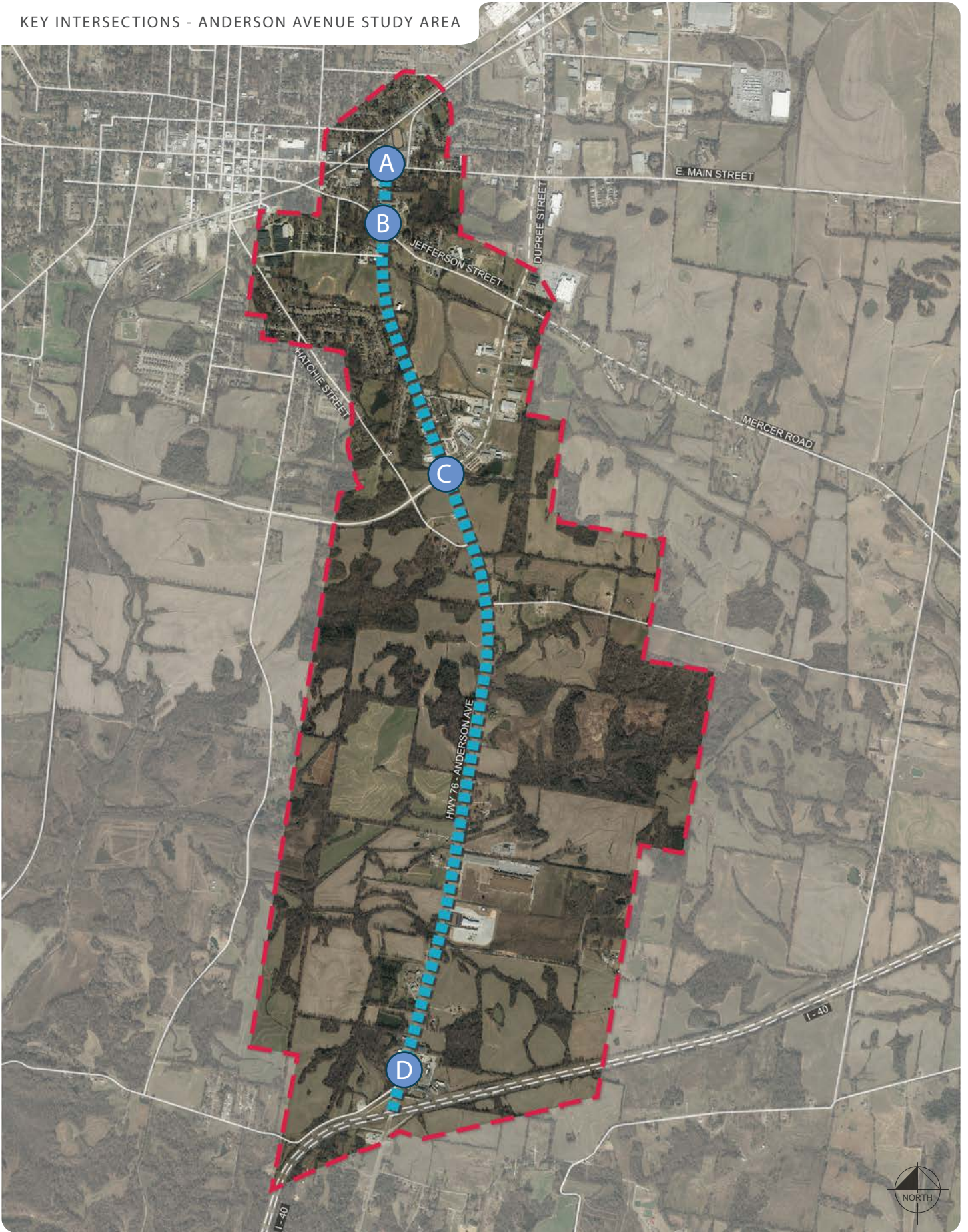


Existing Intersection



Proposed Improvements

KEY INTERSECTIONS - ANDERSON AVENUE STUDY AREA



Key Intersection B: Anderson Avenue at E. Jefferson Street

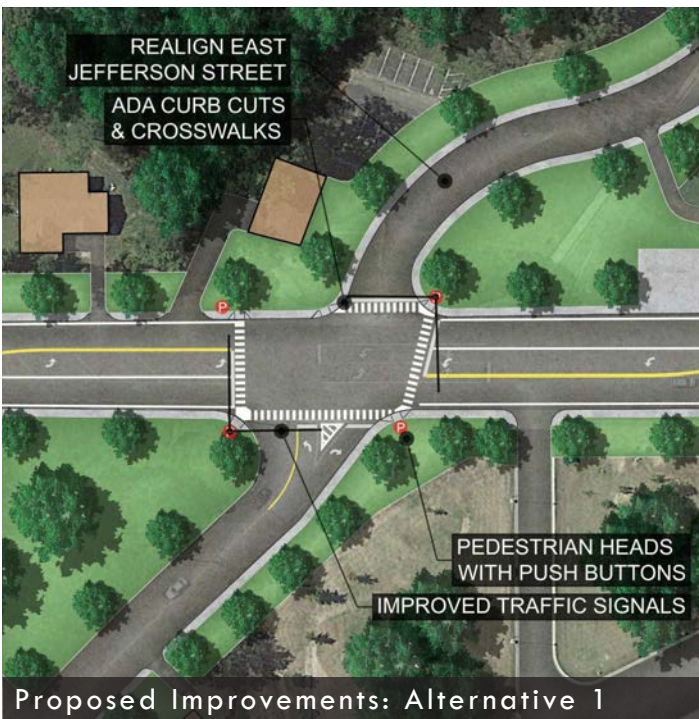
East Jefferson street jogs over 150' when it crosses Anderson Avenue creating a confusing and potentially dangerous environment for motorist and pedestrians travelling the corridor. As a possible solution to this existing condition we are proposing two alternative concepts to realign the two roads. Alternative 1 proposes a traditional all-way stop. Alternative 2 proposes a traffic circle to increase the flow of traffic and create opportunity for a landmark feature. Each of the proposed improvements would involve possible right-of-way acquisition and upgrading the pedestrian components of the streetscape to be ADA compliant.

The proposed improvements could include the following elements/recommendations for each alternative:

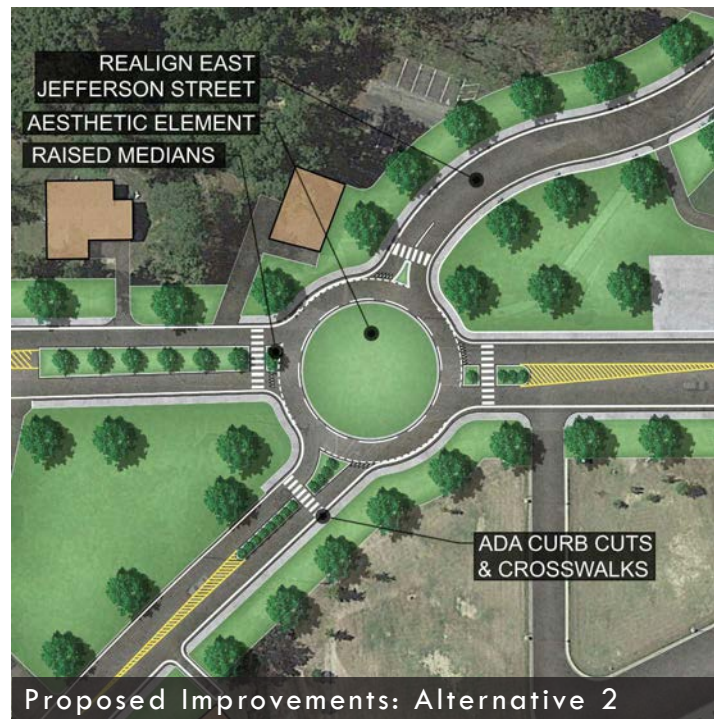
- Updated vehicular and pedestrian traffic elements (pedestrian crosswalks, stop bar relocations, signage, etc.)
- ADA compliant sidewalks and curb cuts at all pedestrian crossings.
- Right-of way acquisition and road realignment through Brownsville Farmer's Market and park area.



Existing Conditions

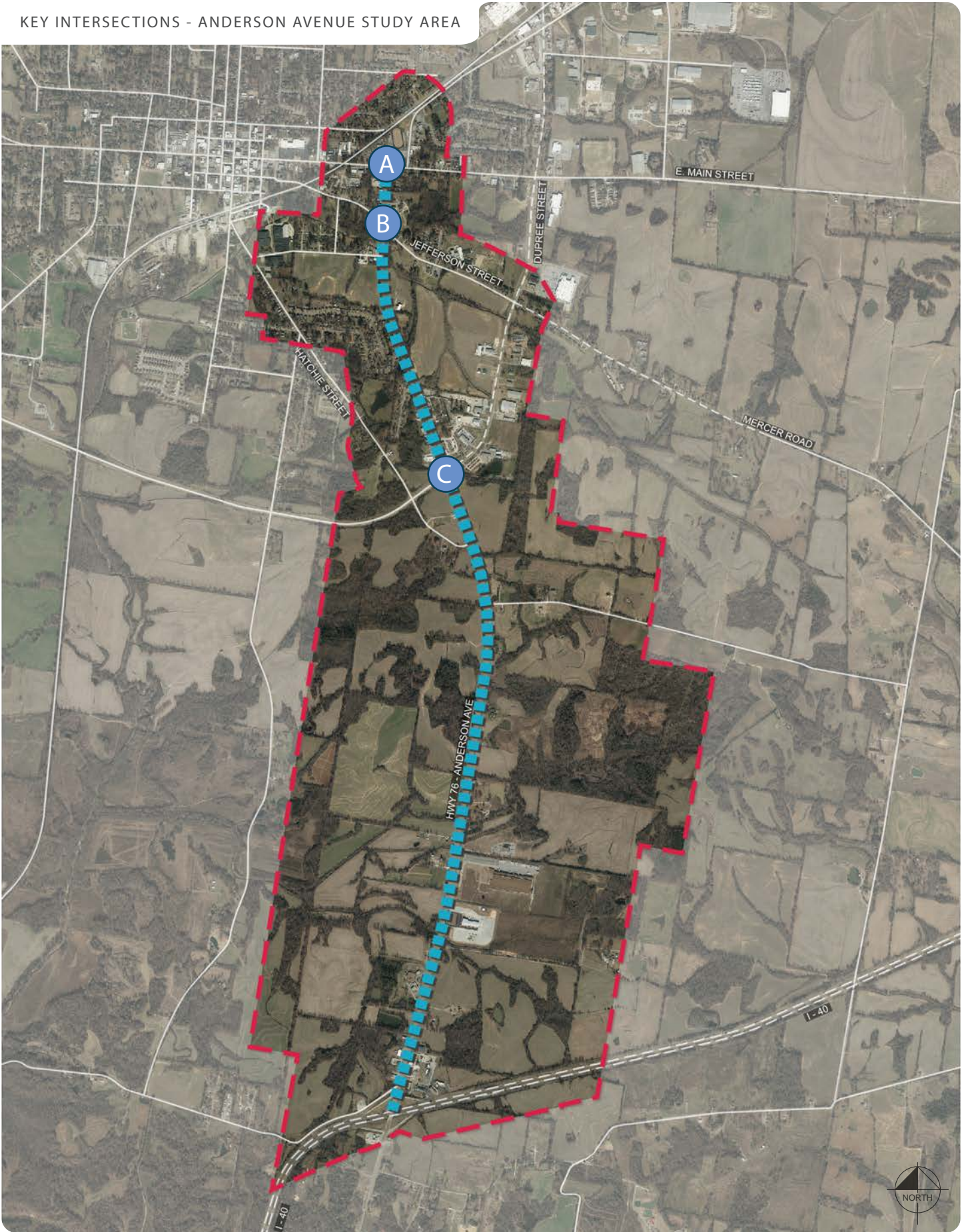


Proposed Improvements: Alternative 1



Proposed Improvements: Alternative 2

KEY INTERSECTIONS - ANDERSON AVENUE STUDY AREA

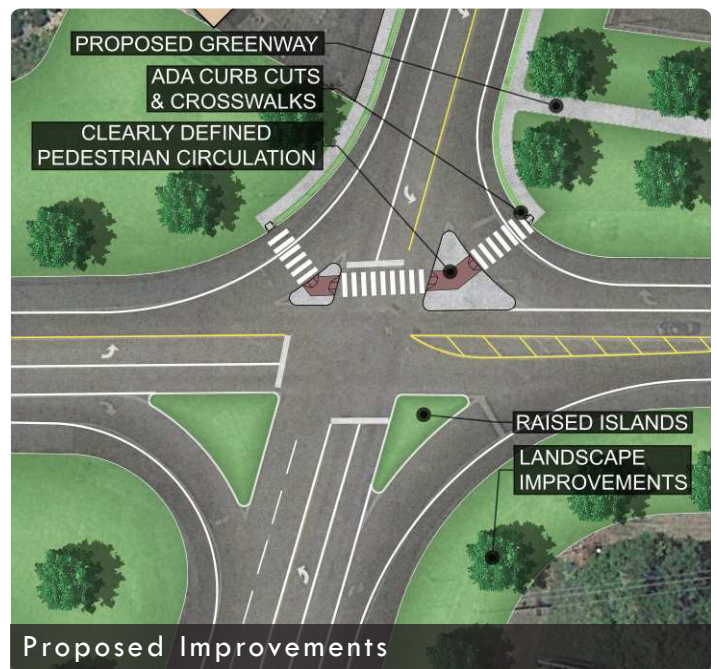
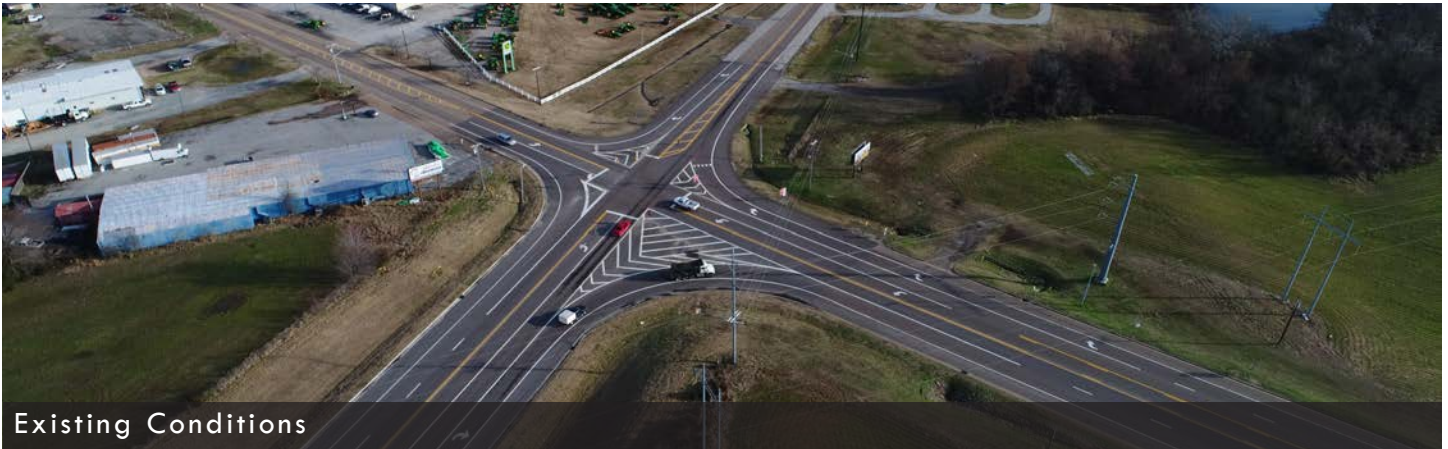


Key Intersection C: Anderson Avenue at Dupree Street

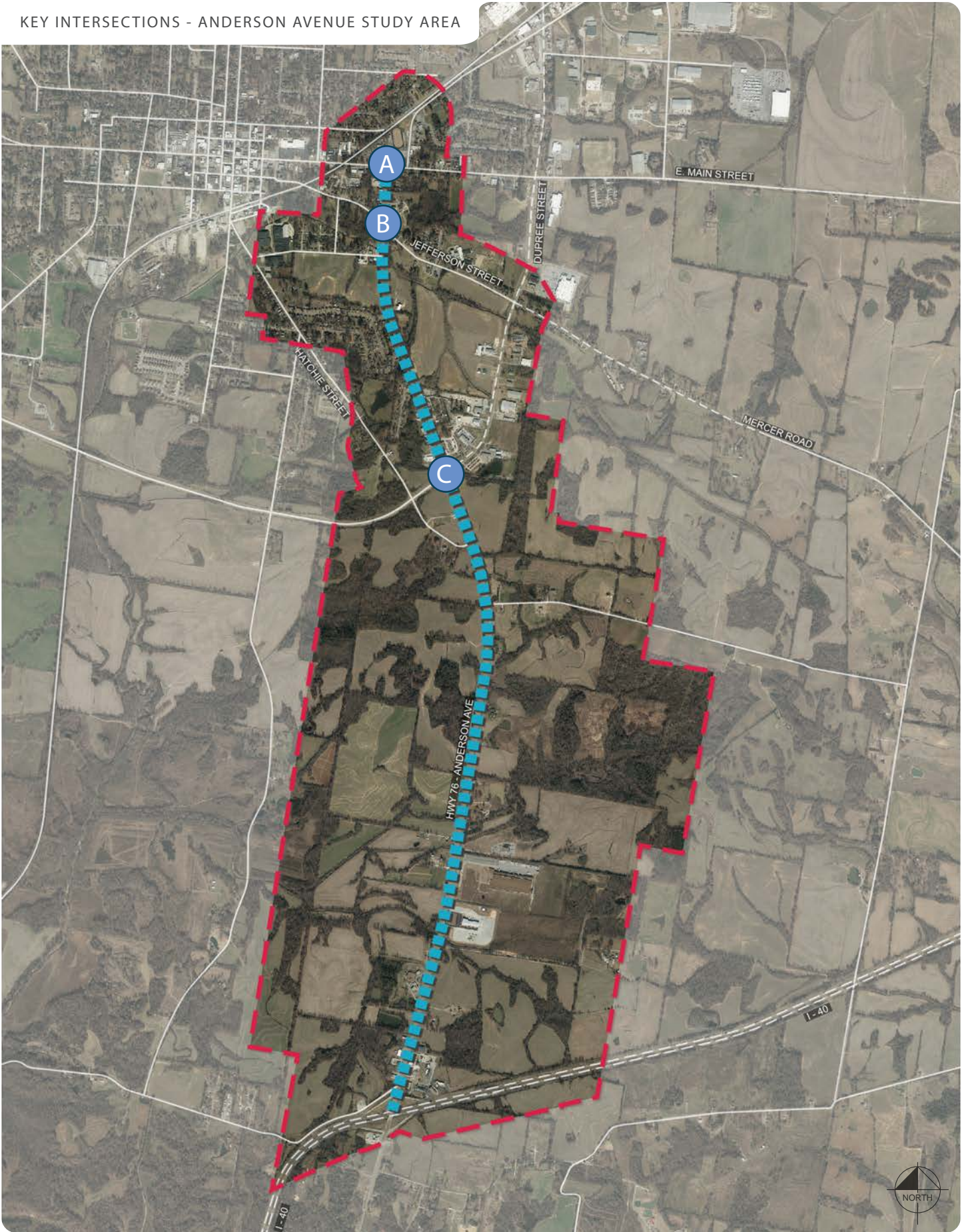
The intersection of Anderson Avenue and Dupree Street mark the distinct change in roadway section from a 5-lane principal arterial (south to I-40) to a two lane section that continues north to East Jefferson Street serving various smaller commercial and residential uses. This intersection is considered the gateway into Brownsville. Our proposed improvement involves raising some of the existing striped areas to more clearly define and enclose the vehicular travel lanes. Pedestrian circulation is shown on the north side of the intersection tying into a proposed 10' wide greenway trail that follows Dupree to north to East Main Street.

The proposed improvements could include the following elements/recommendations:

- Updated vehicular and pedestrian traffic elements (pedestrian crosswalks, stop bar relocations, signage, etc.)
- ADA compliant sidewalks and curb cuts at all pedestrian crossings.
- Raised curb and sodded landscape in existing striped areas.
- Street trees in available right-of-way where feasible.
- Planning Recommendation: trails/greenways study to determine feasibility and network of possible greenways throughout Brownsville.



KEY INTERSECTIONS - ANDERSON AVENUE STUDY AREA



Key Intersection D: Dupree Street at Washington Avenue

Existing site conditions indicate that the turning movement from the east bound lane of Washington Avenue south onto Dupree Street is insufficient for larger trucks using this route to get to nearby industrial land uses. This inefficiency has led to degradation of the existing shoulder. The proposed improvements at this intersection aim to create a wider turning radius for trucks to effectively turn onto Dupree Street. This alternative may require some right-of-way acquisition from the property directly southwest of the intersection.

The proposed improvements could include the following elements/recommendations:

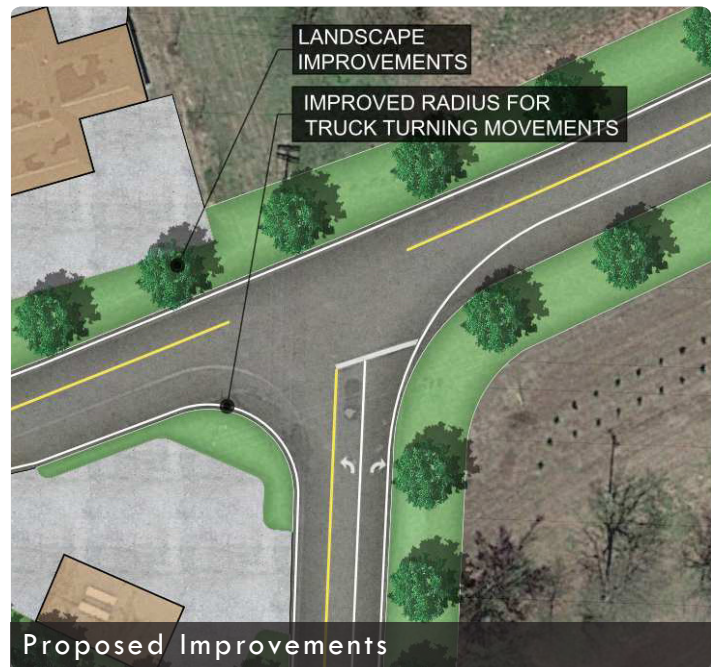
- Widened turning radius onto Dupree Street from east bound Washington Avenue.
- Entry and wayfinding signage.
- Landscape and beautification improvements where not in conflict with existing overhead electric lines and miscellaneous utilities.



Existing Conditions



Existing Intersection



Proposed Improvements

KEY INTERSECTIONS - DUPREE STREET STUDY AREA

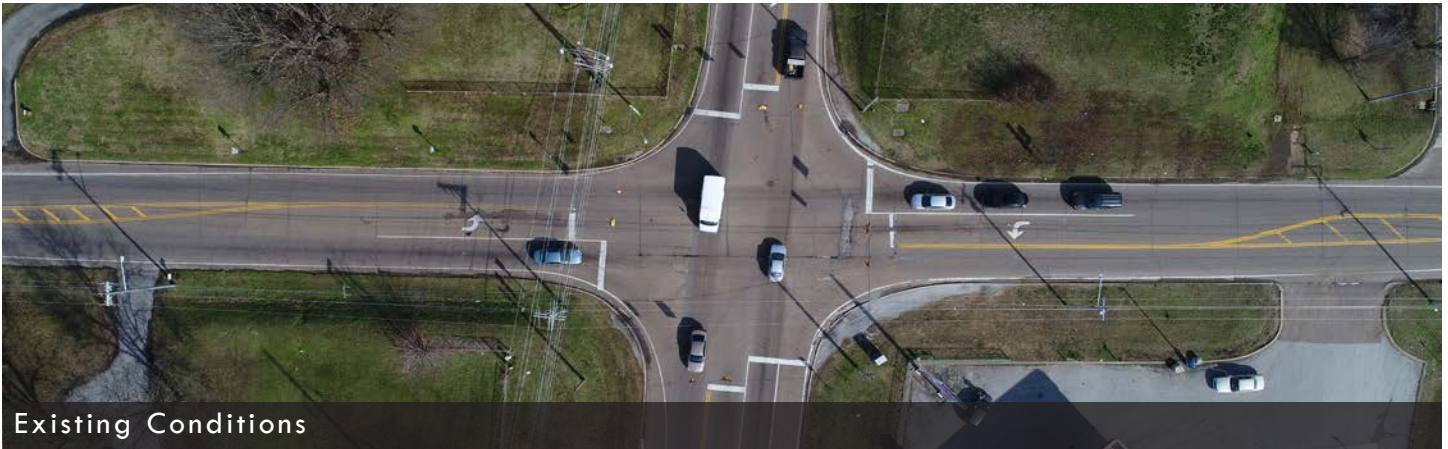


Key Intersection E: Dupree Street at E. Main Street

Design improvements at Dupree and E. Main Street will focus on introducing ADA compliant pedestrian circulation and addressing existing damage caused by truck turning movements. The curb and landscape area have been worn away from trucks turning East onto Main Street. The damage caused by these turning movements is justification for wider, more appropriate turning radii on the east side of the intersection. A proposed greenway will transition into a typical sidewalk after crossing Main Street. Pedestrian and traffic signal enhancements will be needed at this intersection.

The proposed improvements could include the following elements/recommendations:

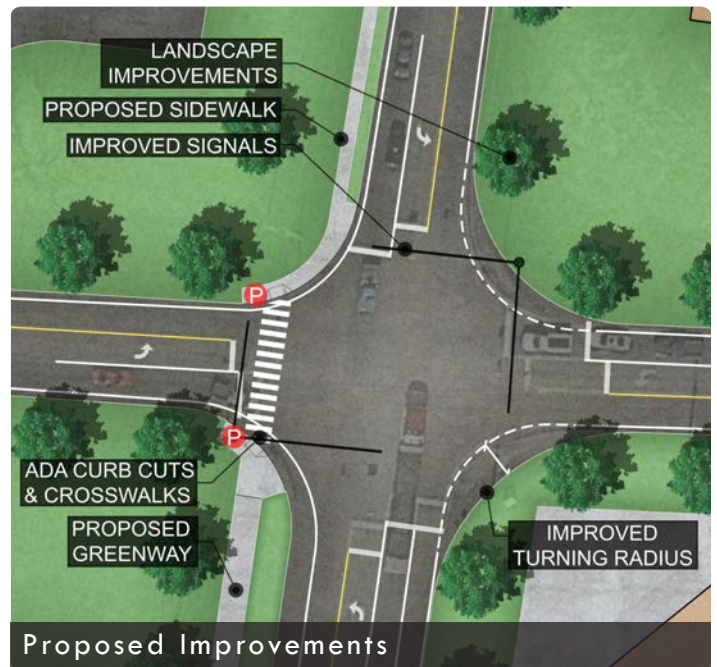
- Updated vehicular and pedestrian traffic signals (push buttons, mast arms, crosswalks, stop bar relocations, etc.)
- ADA curb cuts at all pedestrian crossing areas.
- Wider turning radii on the east side of the intersection to accommodate truck turning movements.
- Landscape and beautification improvements where not in conflict with existing overhead electric lines and miscellaneous utilities.
- Continue sidewalk to provide pedestrian access north of Main Street along Dupree Street. Final location of the sidewalk may need to be changed from one side of the street to the other upon more detailed analysis of existing conditions and right-of-way along the corridor.



Existing Conditions



Existing Intersection



Proposed Improvements

KEY INTERSECTIONS - DUPREE STREET STUDY AREA

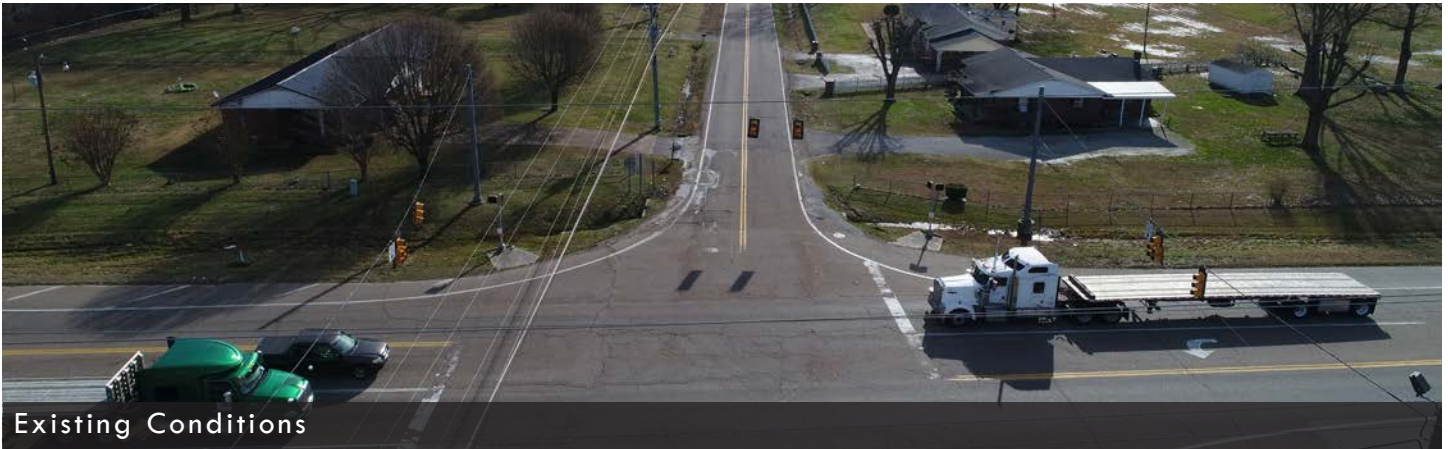


Key Intersection F: Mercer Road at Dupree Street

Improvements at the intersection of Mercer Road and Dupree are pedestrian and connectivity focused. Traffic and pedestrian signal enhancements are proposed to provide safe and ADA compliant circulation along two sides of the intersection with the goal of connecting residents to the nearby school, proposed greenway, and grocery store. Proposed streetscape enhancements along Mercer include a raised sidewalk separated from the street by a green strip, curb, and gutter. The final roadside design along Mercer Road may vary based on available funding, right-of-way acquisition, and drainage impacts along the corridor.

The proposed improvements could include the following elements/recommendations:

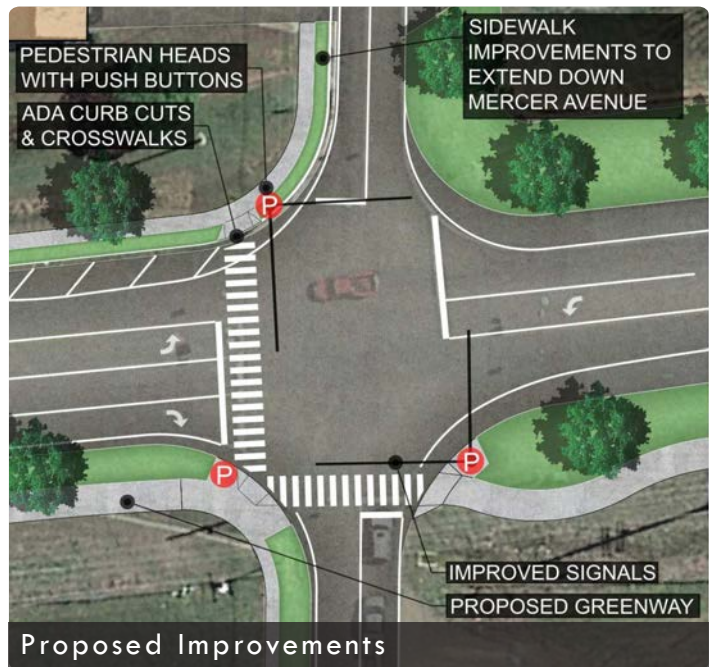
- Updated vehicular and pedestrian traffic signals (push buttons, mast arms, crosswalks, stop bar relocations, etc.)
- ADA curb cuts at all pedestrian crossing areas.
- Proposed greenway crossing on the west side of Dupree Street.
- Right-of-way acquisition may be needed in some areas to construct the proposed sidewalk improvements along the north side of Mercer Road. Improvements can be phased as funding allows.
- Planning Recommendation: as properties along the Mercer Road corridor develop, new property owners should be required to dedicate the needed right-of-way to allow space for the proposed improvements.



Existing Conditions

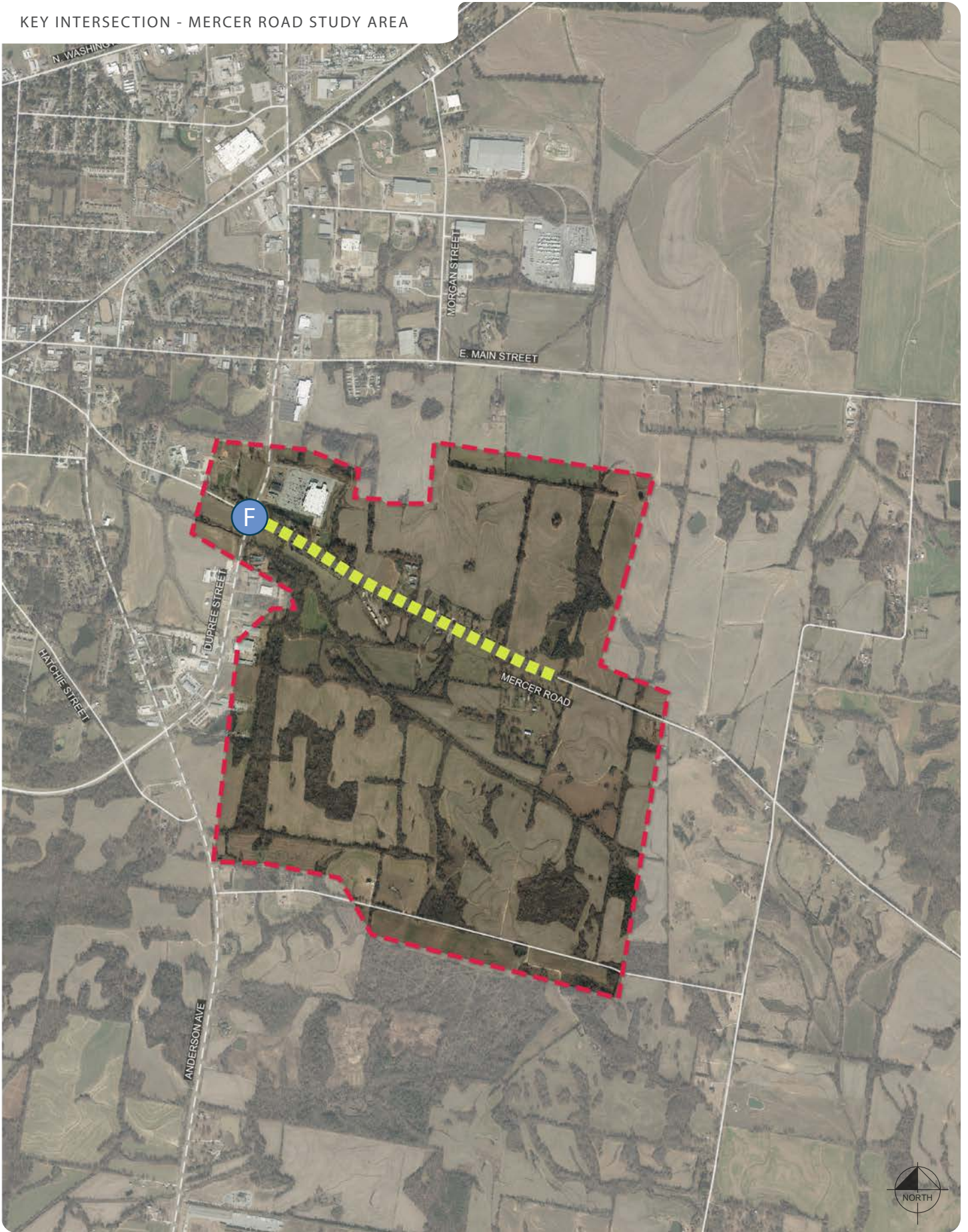


Existing Intersection



Proposed Improvements

KEY INTERSECTION - MERCER ROAD STUDY AREA







CHAPTER 6: Implementation

Planning Recommendations
Implementation Priorities
Funding Recommendations

PLANNING RECOMENDATIONS

The Brownsville Corridor Study provides recommendations that were developed from input and feedback from the local community. These recommendations should be undertaken in the short term to make the vision of this corridor become a reality. Improvements are phased to allow capital investment to be spread out and by doing so, will take several years to construct.

The community must be proactive in this endeavor and have the full support of its local leaders, other public agencies, developers, local business owners, property owners and residents. Brownsville should be the leader in promoting cooperation and collaboration with these partners to help implement these recommendations.

This section includes a list of potential funding sources for Brownsville to consider pursuing for implementing these recommendations. They are organized by funding category, which include an emphasis on:

- Transportation and Infrastructure
- Parks, Trails, and Open Space

It should be noted that while these funding sources provide options, it is not an all-encompassing list. As grant programs change and other funding sources become available the City should consider exploring those and applying for funds if they fit the scope of the recommended projects.

IMPLEMENTATION PRIORITIES

The following implementation estimates represent a planning level cost analysis of each key intersection within the study area. The existing state of the intersection and all improvements are outlined in Chapter 5 of this document, Proposed Improvements. Planning level construction budgets do not include costs for design or construction administration.

A

\$375K - \$475K
Anderson Avenue at E. Main St.

\$250K - \$300K Construction
\$125K - \$175K Traffic Signals

B

\$650K - \$750K
Anderson Avenue at Jefferson St.

Alt 1: \$525K - \$575K Construction
Alt 1: \$125K - \$175K Traffic Signals
Alt 2: \$650K - \$700K Construction

C

\$60K - \$90K
Anderson Avenue at Dupree St.

\$60K - \$90K Construction

D

\$20K - \$30K
Dupree Street at Washington Ave

\$20K - \$30K Construction

E

\$325K - \$425K
Dupree Street at E. Main Street

\$200K - \$250K Construction
\$125K - \$175K Traffic Signals

F

\$325K - \$425K
Mercer Road at Dupree Street

\$200K - \$250K Construction
\$125K - \$175K Traffic Signals

FEDERAL AND STATE
GRANT PROGRAMS

<p>MULTIMODAL ACCESS GRANT* Match: 95% State, 5% Local Maximum for Project: \$1M</p>	<p>TDOT’s Multimodal Access Grant is a state-funded program created to support the transportation needs of transit users, pedestrians, and bicyclists through infrastructure projects that address existing gaps along state routes.</p>	<p>Typical Projects: Sidewalks, bike lanes, park-and-ride facilities, greenways, transit facilities, streetscapes</p>
<p>TRANSPORTATION ALTERNATIVES GRANT (TAP) Match: 80% Federal, 20% Local</p>	<p>More than \$317 million in grants has gone to 267 communities across the Volunteer State to build sidewalks, bike and pedestrian trails and to renovate historic train depots and other transportation related structures. These projects serve to improve access and providing a better quality of life for people in the state of Tennessee.</p>	<p>Typical Projects: sidewalks, bike and pedestrian trails, streetscapes, renovation of historic train depots and other transportation related structures</p>
<p>LOCAL PARKS AND RECREATION FUND (LPRF) Match: 50% State, 50% Local Maximum for Project - \$1M</p>	<p>The LPRF program provides state funding for the purchase of land for parks, natural areas, greenways and the purchase of land for recreational facilities. Funds also may be used for trail development and capital projects in parks, natural areas and greenways.</p>	<p>Typical Projects: Land acquisition, indoor and outdoor recreation facilities, trail development</p>
<p>RECREATIONAL TRAILS PROGRAM (RTP) Match: 80% State, 20% Local Maximum for Project - \$250K</p>	<p>The RTP provides grant funding for land acquisition for trails, trail maintenance, trail construction, trail rehabilitation and for trail head support facilities on publicly owned land.</p>	<p>Typical Projects: Hard/natural-surfaced trails and greenways (land acquisition, maintenance, construction, trail heads)</p>
<p>SPOT SAFETY AND HIGHWAY SPOT IMPROVEMENT PROGRAM</p>	<p>The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned roads and roads on tribal land.</p>	<p>Typical Projects: Safety improvements (e.g., guardrail, turn lanes, signage, signals)</p>