



February 19, 2019

AGENDA ITEM 6 C

THARPE STREET & PENSACOLA STREET TRAFFIC AND OPERATIONS ANALYSES

TYPE OF ITEM: Discussion

STATEMENT OF ISSUE

The Final Traffic and Operations Analysis Reports for Pensacola Street and Tharpe Street have been submitted to the CRTPA for review. At this time, the project consultant, RS&H, would like to provide a summary presentation of the reports to the Capital Region Transportation Planning Agency (CRTPA) Board for consideration and approval. The Final Reports have been provided as part of this agenda item as ***Attachments 1*** and ***2***.

RECOMMENDATIONS BY CRTPA COMMITTEES

The CRTPA's two (2) committees (Citizens Multimodal Advisory Committee and Technical Advisory Committee) both met on February 5, 2019 and voted unanimously with a quorum present to recommend approval of the Tharpe Street and Pensacola Street Traffic and Operations Analyses Reports.

RECOMMENDED ACTION

Option 1: Approve the Final Tharpe Street and Pensacola Street Traffic and Operations Analyses Reports.

HISTORY AND ANALYSIS

In February of 2018, the CRTPA directed its general consultant, RS&H, to initiate corridor studies for Pensacola Street and Tharpe Street, both of which are within Leon County. These corridors were identified as needing additional capacity improvements (roadway widening) in the currently adopted 2040 Regional Mobility Plan (RMP). The corridor studies were initiated to identify existing and projected future conditions along the corridor limits for Pensacola Street (Appleyard Drive to Capital Circle SW) and Tharpe Street (Ocala Road to Capital Circle, NW) and to identify potential projects to improve mobility and efficiency without major capacity expansions.

RECENT ACTIONS

Initial findings of the Tharpe Street and Pensacola Street Traffic and operations Analyses were presented to the CRTPA Board at their Board Retreat in November of 2018. Since that time, the reports and recommendations therein have been finalized and were submitted to CRTPA staff for review and consideration in January of 2019. At this time, the consultant for the project is prepared to provide a summary presentation to the CRTPA Board of the findings for each corridor study, which are briefly outlined in the next few pages.

NEXT STEPS

Following adoption of the Final Reports, CRTPA staff will share the reports and findings with the Florida Department of Transportation (FDOT) as well as local agencies and departments as appropriate in order to pursue any potential project funding or further studies. The Final reports will be published on the CRTPA webpage as well.

I. THARPE STREET CORRIDOR REPORT SUMMARY

The Tharpe Street Corridor Report identified three distinct sections along the corridor by characteristic. These sections are identified as the ***Industrial Section***, the ***Residential Section***, and the ***Sheridan Road Section***. The limits and roadway characteristics of the three sections are outlined in Table 1 below.

Table 1. Tharpe Street Section Characteristics

Section	Number of Travel Lanes	Lane Width (Feet)	ROW Width (Feet)
Industrial (East of Capital Circle NW to Mission Road)	2	12	100
Residential (Mission Road to Ivan Drive)	2	12	66
Residential (Devra Drive to West of Ocala Road)	2	12	76
Sheridan (Ivan Drive to Devra Drive)	2	12	123

Physical Deficiencies

The Tharpe Street Corridor Report identified five (5) main physical issues along the corridor that warrant addressing. These issues are as follows:

1. **Transit Accessibility** - Bus stops are not compliant with Americans With Disabilities Act (ADA), shelters and sidewalks are missing, informational materials about the stops are missing.
2. **Spot Congestion** – Spot congestion occurs as a result of frequent bus stops (including school bussing), and trash collections especially during am peak hours, without the means for traffic to maneuver safely around the congestion/delays.
3. **Lack of Bicycle and Pedestrian Facilities** – 90% of the land parcels along the corridor of Tharpe Street have no bicycle lanes or sidewalks.
4. **Desire Lanes** – “Goat Paths” showing where existing foot traffic is occurring alongside the roadway.
5. **Flooding and Runoff** - Storm water runoff is causing erosion and flooding alongside the existing roadway, further complicating the pedestrian’s quest for safe travel.

Level of Service and Crash Data

The existing intersection analysis of Tharpe Street (summarized below in the table) reveals that the ***Mission Road intersection is currently operating at a LOS “E”, which is below the adopted LOS standard considered acceptable for the peak hour.*** Based on this analysis, Capacity Improvements would be warranted.

Table 2. Existing Intersection Operation Analysis.

Intersection	AM	PM
CCNW (SR 366)	D	D
Mission Rd.	D	E
San Luis Rd./Devra Dr.	B	B
N. Ocala Rd. / Fairlane Rd.	C	D

With regard to crash data, analyses from this report show that the corridor segment (Ocala Road to Capital Circle, SW) has a crash rate of 6.14 compared to the state average of .299.

Recommended Priority of Improvement Types for the Corridor

With Tharpe Street classified as an urban minor arterial, it was recommended that priority be placed on improving/installing the following roadway features:

1. Sidewalks
2. Medians
3. Access management
4. Multimodal intersection design
5. Bicycle lanes
6. Sharrows
7. Bus pullouts
8. Bus shelters
9. Landscaping

Overall Recommendations for the Tharpe Street Corridor by Characteristic Segments

The following recommendations are proposed for the segments of Tharpe Street identified below.

A. Industrial Section Recommendations

(East of Capital Circle NW to Mission Road)

- Install 5-foot-wide concrete sidewalk with a 4 foot wide utility strip on the north side;
- Add shared lane markings (Sharrows);
- Convert Blountstown Hwy and Tharpe Street to a “T” Intersection;
- Install a Linear Park on Blountstown Hwy; and
- Install an 8-foot-wide concrete sidewalk (curb and gutter) along the east side of Blountstown Hwy.

B. Residential Section Recommendations

(Mission Road to Ivan Drive & Devra Drive to West of Ocala Road)

- Add 8-foot-wide concrete sidewalk, culvert system, and curb & gutter along north side of Tharpe Street;
- Add 8-foot-wide pedestrian bridge over central drainage system;
- Widen 10 feet along the south side of Tharpe Street for addition of medians;
- Add two Jug handle U turns;
- Install turnout bay; and
- Re-stripe east side of Tharpe Street near Ocala Road to include bike lanes.

C. Sheridan Section Recommendations

(Ivan Drive to Devra Drive)

- Add 8-foot-wide concrete sidewalk, culvert system, and curb & gutter along north side of Tharpe Street.

II. PENSACOLA STREET CORRIDOR REPORT SUMMARY

Physical Deficiencies

The Pensacola Street Corridor Report identified four (4) main physical issues along the corridor that were identified and studied. These issues are as follows:

1. **Spot Congestion** – Spot congestion occurs as uniform dismissal from classes at Tallahassee Community College (TCC) spike traffic as students and faculty begin to exit the TCC parking lot.
2. **Lighting** – A review of the crash history along the Pensacola corridor was conducted in order to identify deficiencies with respect to existing lighting infrastructure. An analysis of data pulled from 2012-2016 revealed that **17** out of **160** crashes occurred during low visibility hours (dusk, dawn, and nighttime). These incidents comprised **9.4%** of total crashes. Additionally, referencing the associated long-form crash reports for these events, none cited low visibility as a primary cause. Therefore, no improvements to existing lighting infrastructure are recommended at this time.
3. **Bottleneck** - Recent road widening has developed the section of Pensacola Street from Capital Circle SW to Blountstown Hwy as a 6-lane section, but as Pensacola Street continues east, it condenses into a 2-lane section at the bridge, creating a bottleneck. Pensacola Street continues as this 2-lane roadway transitioning to a 4-lane roadway at TCC's access point. Increased east bound traffic volumes are likely to occur due to the increased capacity of the 6-lane section of Pensacola Street. The increases in traffic volumes could intensify congestion along Pensacola Street. For this reason, the existing bottleneck is a candidate for remediation.
4. **Lack of Bicycle and Pedestrian Facilities** – Currently, the 2-lane section between Blountstown Hwy and Progress Drive lacks bike and pedestrian facilities. For this reason, cyclists and pedestrians are given no choice but to travel along grassed areas to avoid interaction with motorists. However, grassed ditches are not always made available. The bridge located in this section poses a high-risk area for pedestrians as they are given no choice but to travel on the roadway with vehicular traffic.

Level of Service and Crash Data

The existing intersection analysis is summarized in **Table 2**, on the following page, which reveals that under current conditions, all major intersections appear to be operating at acceptable LOS values for peak hour operations. Based on this analysis, there appears to be no need for major capacity improvements along the Pensacola Street Corridor.

Table 2. Existing Intersection Operation Analysis.

Intersection	AM	PM
CCSW @ Blountstown Hwy	D	D
Progress Dr.	A	C
Nina Rd.	B	C
Appleyard Dr.	D	D

Review of the Annual Average Daily Traffic (AADT) from FDOT revealed that the highest volumes of traffic for the Pensacola Corridor under study appear to be east of Appleyard Drive and west of Blountstown Hwy.

Regarding crash data, analyses from this report show that TCC's current access point on Pensacola Street reported the highest segmental crash rate. Accordingly, the intersection of Appleyard Drive and Pensacola Street experience the highest intersection crash rate within the study area of 1.74 per million vehicle miles of travel (MVMT).

Overall Recommendations for the Pensacola Street Corridor

A. Bottleneck - Widening Alternative of Bridge

- Widen Bridge adding two lanes (12' in width) and two 5-foot sidewalks for a total of 34' in widening (According to FDOT's Transportation Cost Reports (2014), the cost of construction for bridge widening falls between \$85 and \$160 per square foot. To be conservative, the value of \$160 per square foot is applied. The bridge in question is approximately 285.1' in length (according to FDOT SLD). Using the bridge's length and the total widening width, approximately 9693.4 square feet would be added to the existing structure at a cost of \$1,550,944); and
- Widen Pensacola Street at the approach tapers to make the roadway compatible with the widened bridge deck. (According to FDOT's LRE models "Adding 2 Lanes to Existing 3 Lane Undivided Arterial (1 Lane Each Side) with Center Turn Lane and 4' Bike Lanes" (in an urban setting) is approx. \$4,732,174.28 per mile. The length of roadway in question is approximately 0.634 miles in length resulting in a cost estimate of \$3,000,198.50).

NOTE: The combined/total cost estimate of widening Pensacola St. to 4 lanes and the accompanying bridge is \$4,551,142.50. However, this cost does not incorporate closing down and/or altering the CSX lines to facilitate said widening.

B. Spot Congestion - Low Cost Alternative

- Add a “Private Drive, No U-Turn” sign is to entrance(s) of Disc Village, Grainger, and/or Pepsico.

C. Spot Congestion - Comprehensive Alternative

- Reconfigure access points to TCC from Pensacola.
 - Creating a dedicated two lane entrance for TCC -- restriped to create both a left turn and right through lane;
 - Add a two-lane dedicated exit -- southwest of the Social Science Wing of TCC; and
 - Add “Do Not Enter” signs at the heads of the one-way pair to alert drivers.
- Manage access and restrict illegal movements at the existing two-way access point at TCC near the intersection at Appleyard Dr.

OPTIONS

Option 1: Approve the Final Tharpe Street and Pensacola Street Traffic and Operations Analyses Reports. **(Recommended)**

Option 2: Provide other direction.

ATTACHMENTS

Attachment 1: Final Tharpe Street Traffic and Operations Analysis Report

Attachment 2: Final Pensacola Street Traffic and Operations Analysis Report

CRTPA
TRAFFIC AND OPERATIONS ANALYSIS
THARPE STREET

January 2019

PREPARED FOR:



PREPARED BY:



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Tharpe Street

BACKGROUND

The Capital Region Transportation Planning Agency (CRTPA) identified the need for additional capacity along Tharpe Street in the 2040 Regional Mobility Plan (RMP). The RMP proposes the widening of this corridor from Ocala Road to Capital Circle Northwest from two lanes to four lanes. The purpose of this study is to investigate existing conditions along Tharpe Street and identify potential projects to improve mobility and efficiency without major capacity expansions.

Existing conditions were established using the following data sources:

Table 1. List of Data Collection Sources

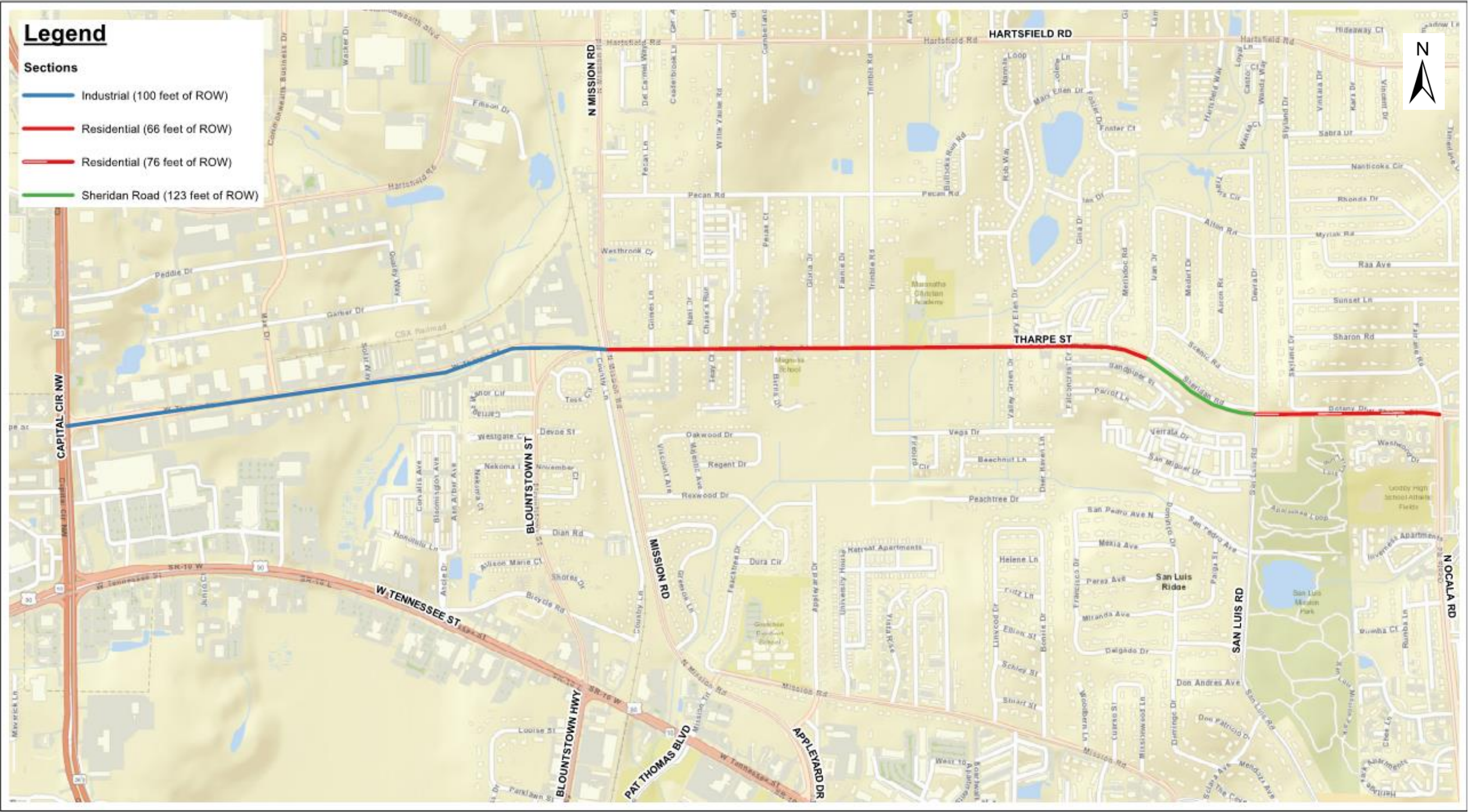
Data Source	Data Set	Dates of sources
Field Visit	Existing Issues	07-25-2018
City of Tallahassee	Operational Analysis	2017
StarMetro	Bus routes and schedules	2017
Congestion Management Plan Update (CMP)	Crash data	2012 – 2016
FDOT Transportation Data	Historical AADT (Annual Average Daily Traffic)	2012-2016
Tharpe Street Corridor Study by Kimley-Horn	Previous recommendations	2005

The corridor exhibits three distinct sections based on character and land use. These sections are identified as the Industrial Section, the Residential Section, and the Sheridan Road Section (see Figure 1). The Residential Section is divided into two sections: Mission Road to Ivan Drive and Devra Drive to west of Ocala Road. Number of lanes, travel lanes widths, and right-of-way (ROW) widths are shown in Table 2. The review of the existing conditions within the corridor resulted in the identification of five major issues and are discussed in the following sections.

Table 2. Tharpe Street Section Distinctions

Section	Number of Travel Lanes	Lane Width (Feet)	ROW Width (Feet)
Industrial (East of Capital Circle NW to Mission Road)	2	12	100
Residential (Mission Road to Ivan Drive)	2	12	66
Residential (Devra Drive to West of Ocala Road)	2	12	76
Sheridan (Ivan Drive to Devra Drive)	2	12	123

Figure 1. Project Overview



ISSUES

Issue #1 –Transit Accessibility

StarMetro serves as the public transit agency for the City of Tallahassee and Florida State University. Currently, bus stops along Tharpe Street are not compliant with the Americans with Disabilities Act (ADA) and offer limited information to passengers (see Figure 2). Current ADA compliance is only required when bus shelters and sidewalks already exist. StarMetro desires to make all public transit links adhere to current ADA standards and to provide schedule and route information, making the system more accessible and safer for all riders.

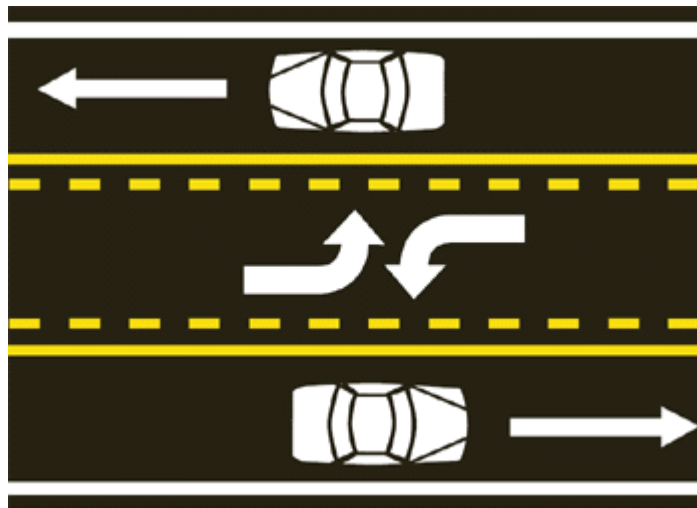
Figure 2. Typical Bus Stop Along Tharpe Street



Issue #2 – Spot Congestion

Spot congestion along Tharpe Street is primarily caused by routine traffic events such as bus pick up/drop off, trash collections, and left turn traffic. Some portions of the corridor have one through lane in each direction that is separated by a dual left turn lane (see Figure 3). Left turn traffic is especially common in the residential section of Tharpe Street where minor streets are clustered together. During routine bus stops, motorists often travel over painted medians due to the lack of maneuvering space provided by the current two-lane design as shown in Figure 4. With these left turn movements, spot congestion is especially prevalent in the residential section of Tharpe Street during peak AM/PM hours.

Figure 3. Existing Lane Design



Source: Florida Driver Handbook

Figure 4. Lack of Maneuvering Space Along Tharpe



Issue #3 – Lack of Bicycle/Pedestrian Facilities

Presently 90% of the land parcels along Tharpe Street have no access to sidewalks or bicycle facilities. For this reason, cyclists and pedestrians have no choice but to travel along grassed ditches to avoid interaction with motorists (see Figure 5). However, grassed ditches are not always made available. One area in particular, located 500 feet east of Trimble Road, poses a high-risk area for pedestrians as they are given no choice but to travel on the roadway with vehicular traffic (see Figure 6).

Figure 5. Pedestrian Travel Pattern



Figure 6. High Risk Area for Pedestrians



Issue #4 – Desire Lanes

Desire lanes are paths that result from on-going pedestrian foot traffic and can be found at multiple locations along Tharpe Street. This not only lacks pedestrian safety benefits but also uniformity throughout the corridor. Prevalence of desire lanes signify the need for sidewalks (see Figure 7).

Figure 7. Desire Lanes along Tharpe Street



Issue #5 – Flooding and Runoff

Evidence of roadside erosion can be observed throughout the corridor. Existing conditions show roadway drainage traveling to nearby roadside ditches that transports water runoff to the nearest outfall point (see Figure 8). Presently, no stormwater treatment is provided for the roadway other than the flow time in grassed ditches.

Figure 8. Slope Erosion Caused by Stormwater Runoff along Tharpe Street



ANALYSIS

Analysis Procedures

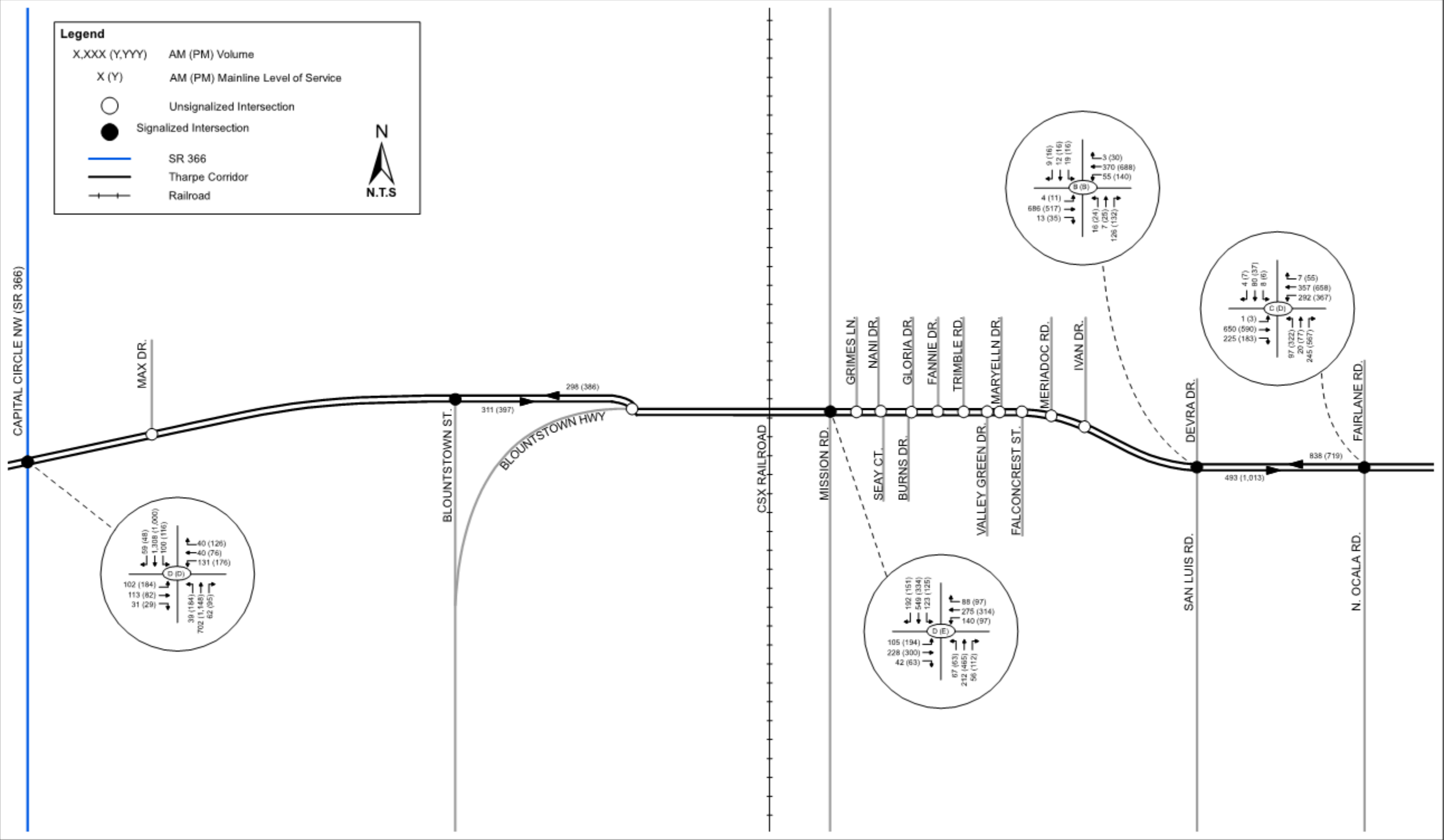
Analysis of traffic volumes is useful in understanding the general nature of traffic in an area, however, the volumes alone do not indicate the ability of the street network to carry additional traffic or the quality of service afforded by the street facilities. To fully understand the operations of the facility, Level of Service (LOS) is utilized to describe traffic performance. LOS can be measured at intersections and along key roadway segments. LOS categories are similar to report card ratings for traffic performance. LOS A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. LOS D and E are progressively worse operating conditions and LOS F conditions represent gridlock where demand exceeds the capacity of an intersection or roadway segment. Operational analysis for Tharpe Street was performed following the Highway Capacity Manual (HCM) 2000 methodologies using Synchro software. This was made available by The City of Tallahassee and reflects AM/PM traffic operations during October 2017.

Historical and county traffic sites provided the source of existing traffic for the Tharpe Street study area. Existing intersection analysis is summarized in Table 3 and shown in Figure 9. Under current conditions, the Mission Road intersection is not operating at an acceptable LOS for the peak hour. Mission Road operates at LOS E under existing traffic conditions, which does not meet established standards and identifies the need for capacity improvements.

Table 3. Existing Intersection Operation Analysis.

Intersection	AM	PM
CCNW (SR 366)	D	D
Mission Rd.	D	E
San Luis Rd./Devra Dr.	B	B
N. Ocala Rd. / Fairlane Rd.	C	D

Figure 9. Existing Peak Hour Volumes and Level of Service



Crash Rates

Crash rates are calculated values used in the comparison of crash experience of similar locations in the region. State agencies typically develop average crash rates for different types of intersections and roadway segment for statewide analyses. Incorporating crash rate with roadway information, such as traffic volume, aid in identifying roadway deficiencies.

Crash data was obtained from the recently updated Congestion Management Plan update. Sourced data encompassed the five-year period from 2012 to 2016. Crash data were then analyzed to determine types and locations of crashes that occurred along the corridor and at intersecting roadways. A total of 709 crashes were reported between 2012 to 2016. Of these, 333 were injury crashes, while only one reported fatality. Rear-end collisions were reported as the most common crash type in the residential section accounting for 50% total accidents. This number of rear-end collisions is likely due to driver response with the frequent spot congestion and left turning movements during AM/PM peak hours.

Currently Tharpe Street within the analysis segment has a crash rate of 6.14 per million vehicle miles of travel (MVMT). The state average for similar facilities consisting of undivided, two to three lanes with two-way traffic is 0.299.

Table 4. Tharpe Street (Ocala to Capital Circle) Crash Rate vs. State Average

	Tharpe Street	Florida's State Average
Crash Rate (MVMT)	6.14	0.299*

Source*: Florida's five-year average crash rate for 2-3 lane, 2-way, undivided roadway section.

RECOMMENDATIONS

The Street Design Priority Matrix, shown in Figure 10, is a tool used in the development of the Connections 2040 Regional Mobility Plan. This tool provides an understanding of the transportation facility elements and features and the connection to complete street components. The tool identifies priority features for different roadway classifications based on the overall character area. With Tarpe Street classified as an urban minor arterial, priority was placed on improving/installing the following roadway features:

1. Sidewalks
2. Medians
3. Access management
4. Multimodal intersection design
5. Bicycle lanes
6. Sharrows
7. Bus pullouts
8. Bus shelters
9. Landscaping

Figure 10. Street Design Priority Matrix

	Freeway	Principal Arterial			Minor Arterial			Collector			Local		
		Urban	Suburban	Rural	Urban	Suburban	Rural	Urban	Suburban	Rural	Urban	Suburban	Rural
Shared Vehicle Zone													
Multiple travel lanes	H	H	H	H	M	M	M	M	M	L	L	L	L
Width of travel lanes	H	H	H	M	H	H	M	H	H	M	L	L	L
Vehicle capacity at intersections	M	H	H	H	H	H	M	H	M	M	L	L	L
Design for large vehicles	H	H	M	M	H	M	M	M	L	L	L	L	L
Multimodal intersection design	H	H	H	M	H	H	M	H	H	M	M	M	L
Bicycle Zone													
Bicycle lanes	L	M	M	L	H	M	L	H	H	L	L	L	L
Wide lanes / paved shoulders	L	H	H	M	M	M	M	M	M	M	L	L	L
Sharrows	L	L	L	L	M	M	L	H	M	L	L	L	L
Parking/Transit Zone													
On-street parking	L	L	M	L	M	M	L	H	H	L	H	L	L
Bus pullouts	L	H	M	L	M	M	L	M	L	L	L	L	L
Green Zone													
Landscaping	H	H	H	M	H	H	L	H	H	L	H	M	L
Lighting	H	H	H	L	H	H	L	H	H	L	H	M	L
Street furniture	L	M	M	L	M	M	L	M	M	L	L	L	L
Bus shelters	L	H	H	L	H	H	L	H	H	L	L	L	L
Sidewalk Zone													
Wide sidewalks	L	H	M	L	H	M	L	M	M	L	L	L	L
Standard sidewalks	L	M	H	L	H	H	L	H	H	L	H	M	L
Multiuse Paths	L	L	M	M	M	M	L	L	M	L	L	L	L
Median Zone													
Narrow medians	L	H	M	L	H	M	L	H	M	L	L	L	L
Wide medians	H	L	M	H	L	M	H	L	M	L	L	L	L
Other Elements													
Access management	H	H	H	M	H	H	M	M	M	M	L	L	L
	H	High Priority			M	Medium Priority			L	Low Priority			

H High Priority M Medium Priority L Low Priority

Source: Connections 2040 Regional Mobility Plan

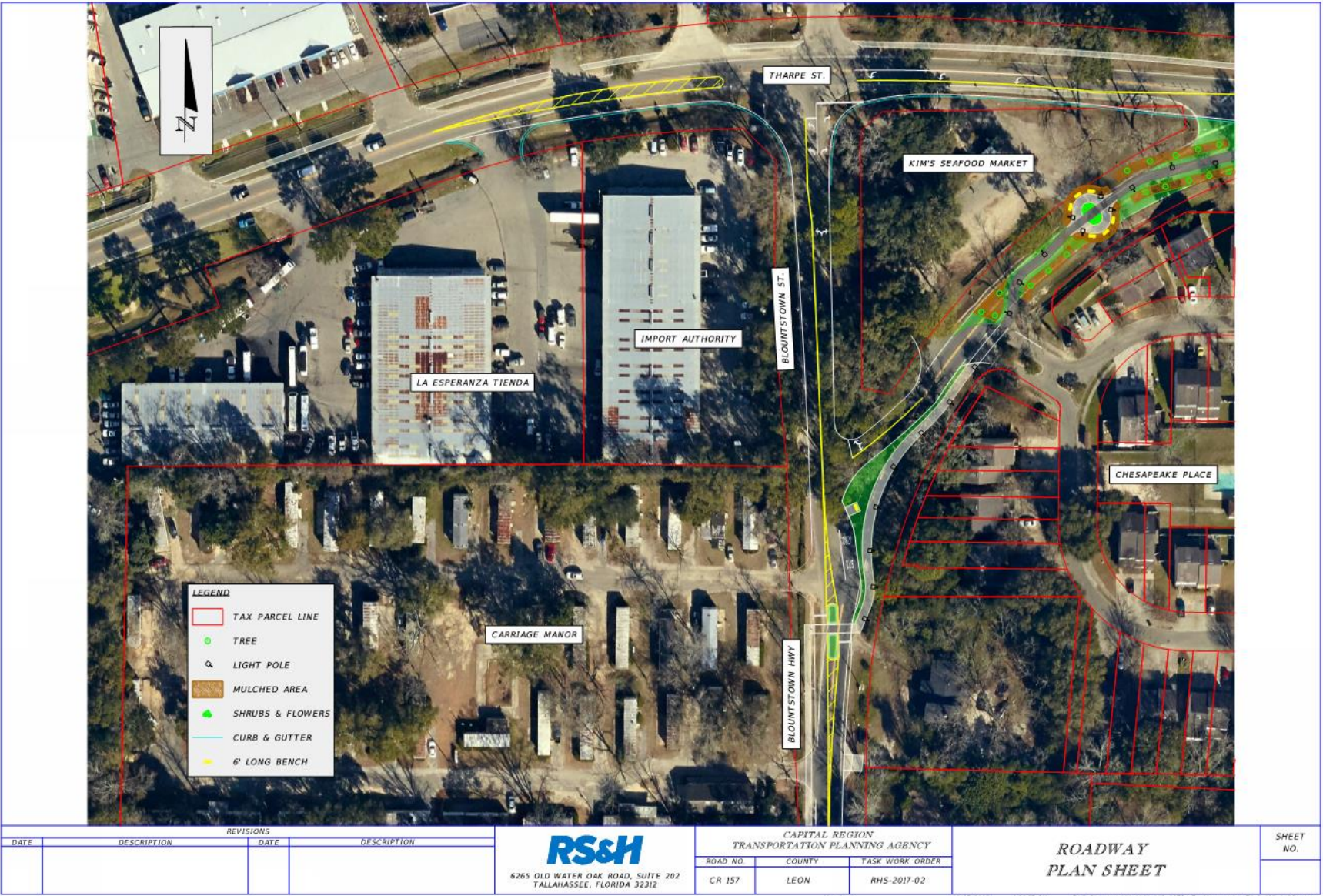
Industrial Section Recommendations

Proposed recommendations for the Industrial section of Tharpe Street:

- Install 5-foot wide concrete sidewalk with a 4-foot wide utility strip on the north side.
- Addition of shared lane markings (Sharrows).
- Conversion of Blountstown Hwy and Tharpe Street to a “T” intersection.
- Install 8-foot wide concrete sidewalk and curb and gutter along east side of Blountstown Hwy.

Figure 11 displays the recommended conversion of the Blountstown Highway and Tharpe Street intersection.

Figure 11. Blountstown Highway and Tharpe Street Intersection



Residential Section Recommendations

Proposed for the Residential section of Tharpe Street:

- Addition of 8-foot wide concrete sidewalk, culvert system, and curb and gutter along north side of Tharpe Street.
- Addition of 8-foot wide pedestrian bridge over central drainage system.
- Widen 10 feet along the south side of Tharpe Street for addition of medians from Mission Road to Trimble Road.
- Addition of two Jug handle U turns allowing U-turn for vehicles needing left turn access
- Install turnout bays.
- Re-striping east side of Tharpe Street near Ocala Road to include bike lane.

Figures 12 through 16 display the recommendations identified for this section.

Figure 12. Mission Road at Tharpe Street



Figure 13. Nani Drive to Burns Drive

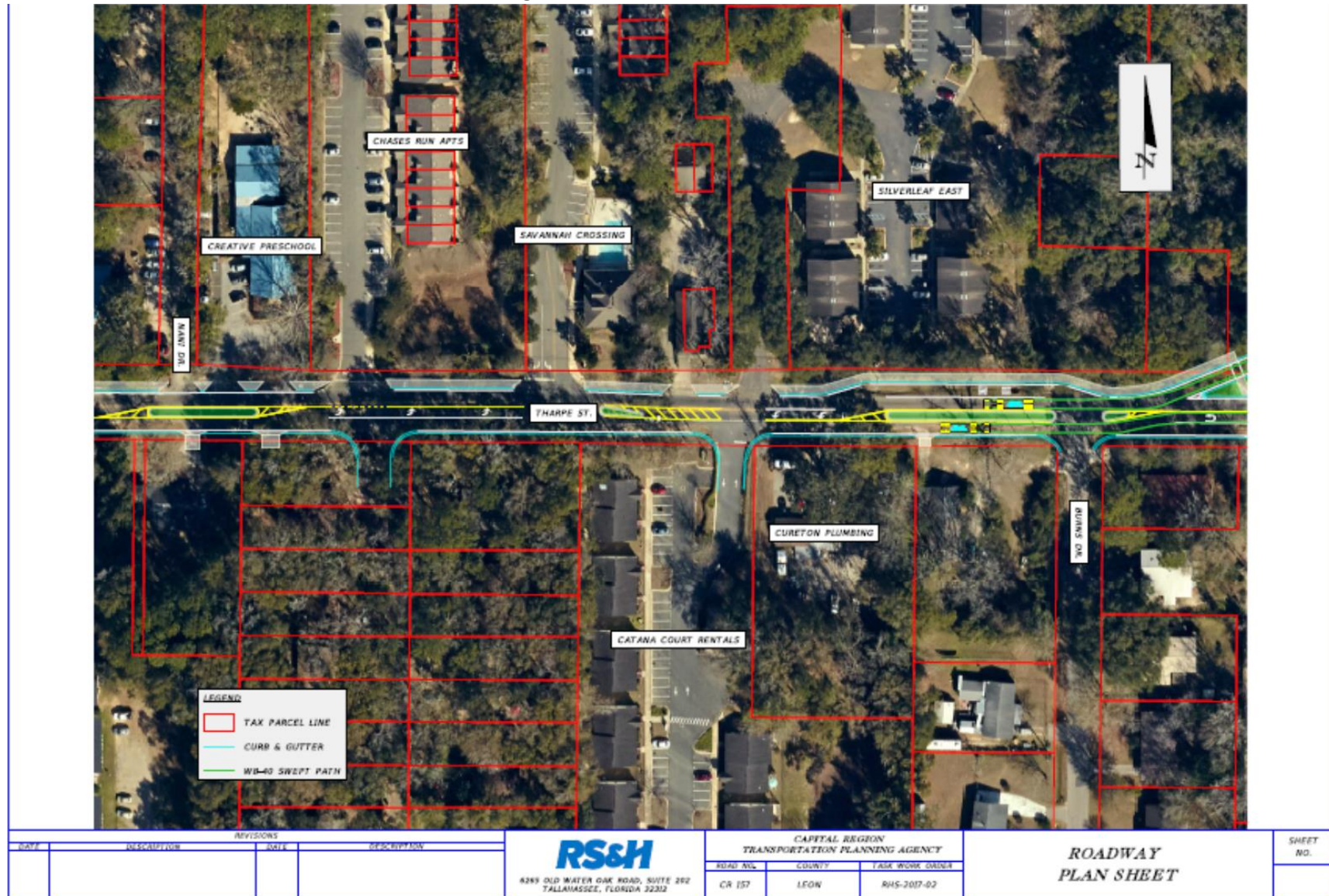


Figure 14. Gloria Drive to Trimble Road

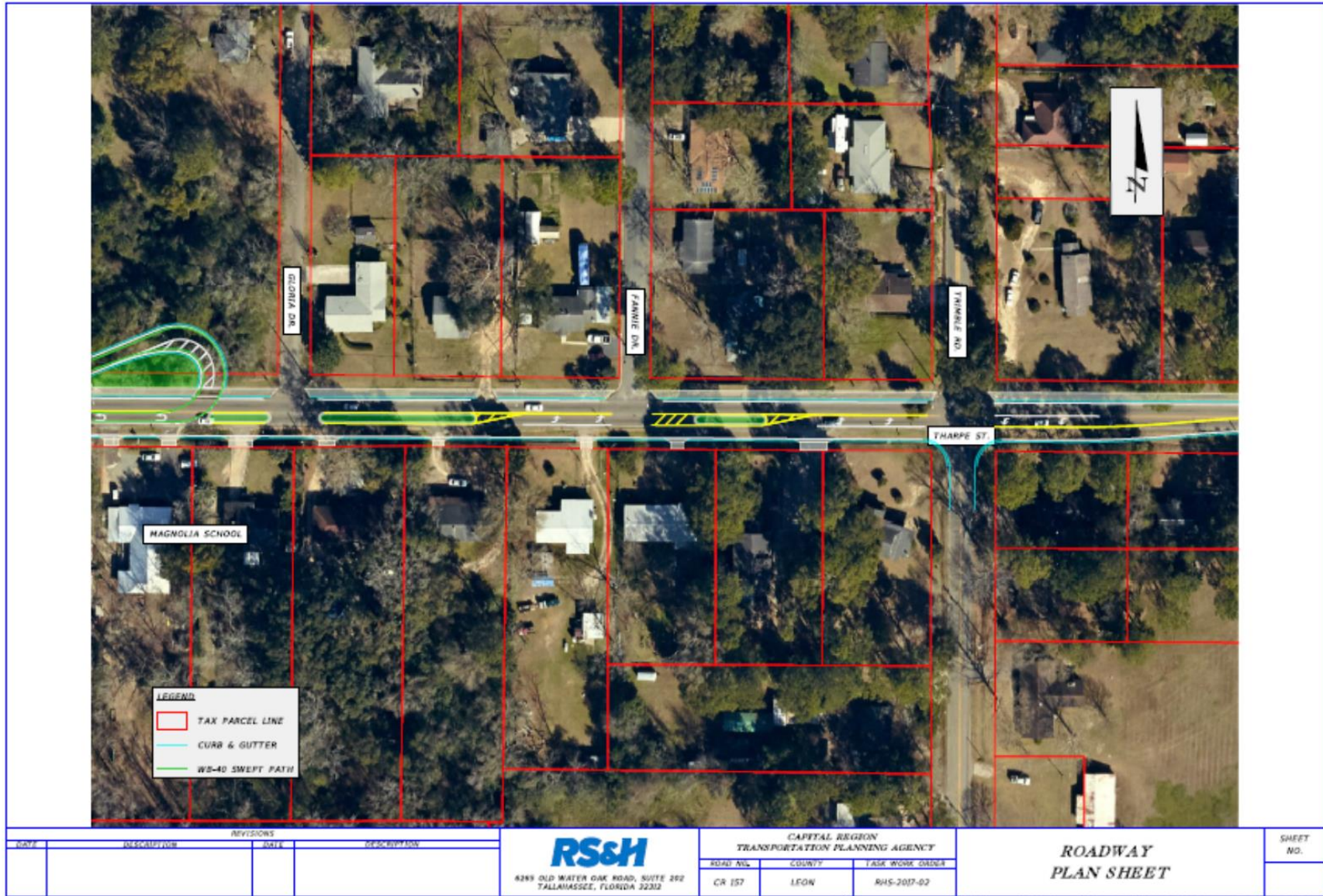


Figure 15. Pedestrian Bridge

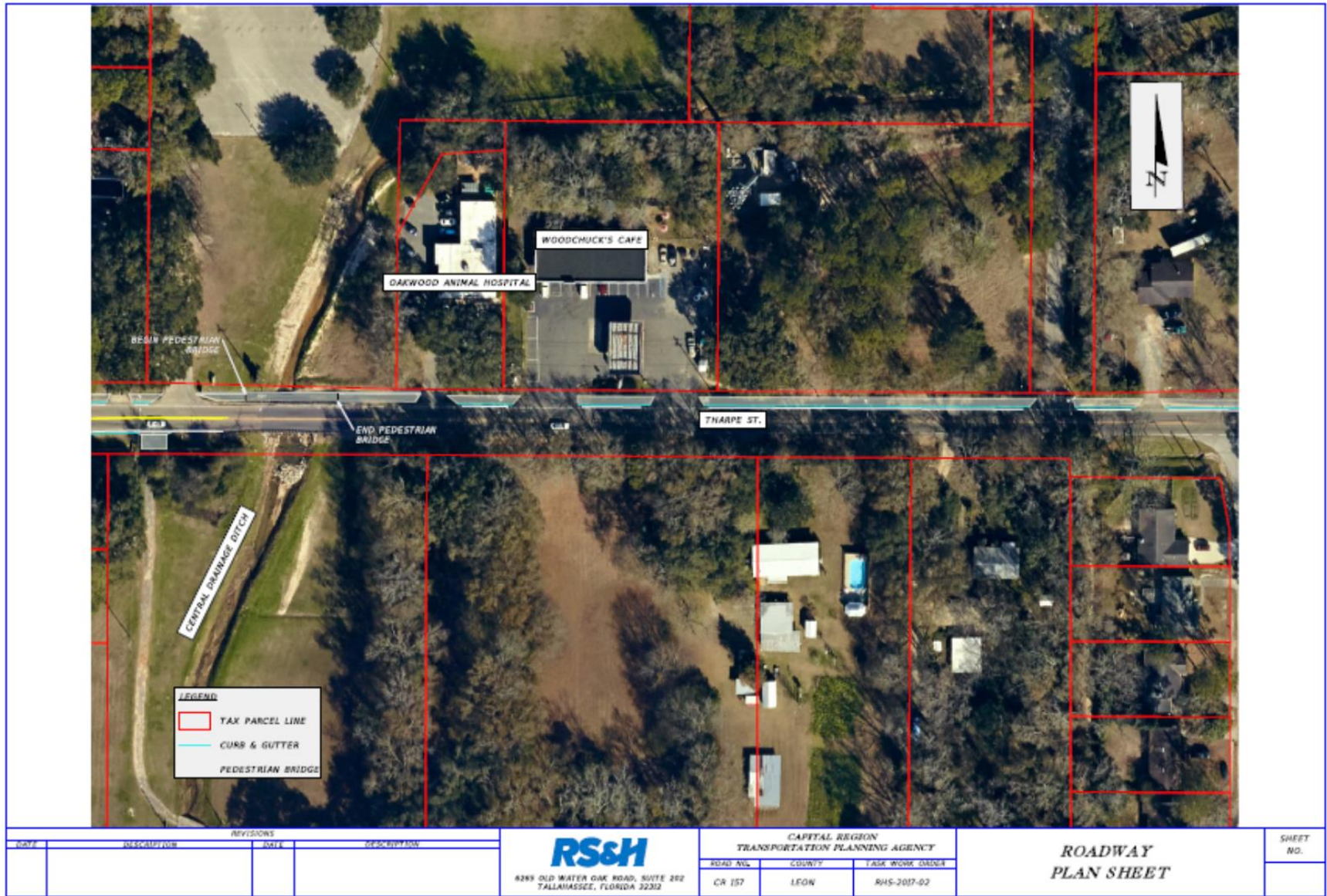


Figure 16. Valley Green Drive to Meriadoc Drive



Sheridan Section Recommendations

- Addition of 8-foot wide concrete sidewalk, culvert system, and curb and gutter along north side of Tharpe Street.

Figures 17 and 18 display the Ivan Drive and Devra Drive areas.

Figure 17. Ivan Drive



Figure 18. Devra Drive



Summary of Recommendations

Restricting allowed turning movements on the residential segments between Mission and Trimble Road may benefit traffic operations with the use of restrictive medians. By limiting the number of allowed turning movements, this segment would experience reduced crashes caused by crossover traffic from minor streets along the residential segment. Medians would eliminate spot congestion in the area by removing traffic events that block through movements. As a result, this would improve operational efficiency. Addressing the issue of congestion would have the added benefit of eliminating the need for additional lanes. Furthermore, medians provide a refuge for pedestrian crossing Tharpe Street allowing them to be more visible to drivers, hence improving pedestrian safety.

In addition to safety and operations benefits, medians would improve the appearance of Tharpe Street. With a more unified street design a better sense of community is to be expected. Further details including supporting data, project limits, pros and cons for proposed recommendations can be found in Table 5 and Table 6.

Table 5. Summary of Industrial Section Recommendations

Tharpe Street (CR 185)					
Section	Potential Improvement	Supporting Data	Pro	Con	Project Limits
Industrial	Addition of 5' concrete sidewalk with a 4' utility strip on the north	Addresses lack of Bicycle/Pedestrian facilities and runoff issue. Satisfies Street Design Priority Matrix	<ul style="list-style-type: none"> Connects sidewalk network. Improves pedestrian safety. Reduces friction associated with drivers navigating between opposing flow and pedestrians. Addresses pedestrian facility needs. Improved visibility for motorists. Encourages walking and biking 	<ul style="list-style-type: none"> Requires about 100' of gravity wall, and the extension of box culvert cross drains. 	East of Capital Circle NW to Mission Road
	Addition of shared lane markings (Sharrows)	Address lack of bicycle facilities and satisfies Street Design Priority Matrix	<ul style="list-style-type: none"> Facilitates advanced cyclists who prefer shared roadways in lieu of striped bike lanes and paths (represent about 20% of adult cyclists but account for nearly 80% of bicycle miles). Keep the road as narrow as possible 	<ul style="list-style-type: none"> May cause spot congestion from cyclists. 	East of Capital Circle NW to Mission Road
	Conversion of Blountstown Hwy and Tharpe Street to T intersection	Higher than average segmental crash rate (see Table 3)	<ul style="list-style-type: none"> Reduce conflict points that exist with current roadway geometry thus improving segmental crash rate in this area. 	<ul style="list-style-type: none"> Limits access to Kim Seafood Market and adjacent mobile home development. Requires removal of 600' of existing Blountstown Hwy roadway. Possible right of way impacts StarMetro bus routes will have to be redirected to Blountstown St. Encroaches on submitted (TAP) project --Blountstown Street Sidewalk Improvement. 	Blountstown Hwy at Tharpe St intersection
	Addition of 8' wide concrete sidewalk and curb and gutter along east side of Blountstown Hwy.	-Addresses lack of Bicycle/Pedestrian facilities and runoff issue. Street Design Priority Matrix	<ul style="list-style-type: none"> Connects sidewalk network. Improves pedestrian safety. Reduces friction associated with drivers navigating between opposing flow and pedestrians. Addresses unsightly travel walkways along corridor created by pedestrian traffic. Improved visibility for motorists. Encourages walking and biking. Control drainage and rainwater 	<ul style="list-style-type: none"> Drainage impact. Converting the open flow ditch to a closed flowing culvert system. 	Intersection of Blountstown Hwy and Blountstown Street

Table 6. Summary of Residential Section Recommendations					
Tharpe Street (CR 185)					
Section	Potential Improvement	Supporting Data	Pro	Con	Project Limits
Residential	Addition of 8' concrete sidewalk, culvert system, and curb & gutter along north side of Tharpe Street	Addresses lack of Bicycle/Pedestrian facilities and runoff issue.	<ul style="list-style-type: none"> • Connects sidewalk network. • Improves pedestrian safety. • Benefits pedestrian safety. • Addresses unsightly travel walkways along corridor created by pedestrian traffic. • Improved visibility for motorists. • Encourages walking and biking. • Control drainage and rainwater. 	<ul style="list-style-type: none"> • Drainage impact. Converting the open flow ditch to a closed flowing culvert system. 	Mission Road to Falconcrest Street
	Addition of 8' wide pedestrian bridge over central drainage system	Addresses lack of Bicycle/Pedestrian facilities	<ul style="list-style-type: none"> • Avoid extension of box culvert over central drainage ditch. • Pre-fabricated bridges are an affordable building option. • Can be quickly constructed. 	<ul style="list-style-type: none"> • Drainage impact. Converting the open flow ditch to a closed flowing culvert system. • Sign and utility pole might need to be relocated with the addition of pedestrian bridge. • Weaken as they get older. • Maintenance cost. 	Box culvert over central drainage ditch
	Widen 10' along the south side of Tharpe Street for addition of medians	Addresses lack of Bicycle/Pedestrian facilities and runoff issue.	<ul style="list-style-type: none"> • Benefits safety, and operational efficiency. • Landscaped medians prevent crossover and head on accidents, • Provide refuge for pedestrians. • Addition of turn lanes increases the capacity of the roadway. 	<ul style="list-style-type: none"> • Restricts single home owners from left turn access to their property. • Drainage impacts. Converting the open flow ditch to a closed flowing culvert system. • 12 Driveways will be impacted for residents living on this section of Tharpe Street 	Mission Road to Trimble Road
	Addition of two Jug handle U turns	Solution to accessibility issue with addition of proposed medians	Resolves accessibility issue for single homeowners unable to make left turns to their properties.	<ul style="list-style-type: none"> • Right of way acquisition is required. • Proposed recommendation encroaches three land parcels. 	At Mission Road and West of Gloria Drive
	Install turnout bays	Addresses spot congestion caused by truck traffic.	<ul style="list-style-type: none"> • Provide queue space for left turning vehicles allowing greater capacity. • Removes stopped vehicle from travel lane, reduces delay and increases vehicle capacity. • Reduced risk of rear-end crashes generally • Potential to consolidate and more clearly define StarMetro stops. • Locates riders awaiting pickup further from fast moving traffic. • Serves as safe pull off location for incapacitated vehicles. 	<ul style="list-style-type: none"> • Buses utilizing turnout may have trouble re-entering travel lane, potentially effecting StarMetro schedules. • Increased risk of sideswipe crashes. • Creates additional paving and may require right-of-way acquisition. 	West of Mission Road to West of Meriadoc Road
	Re-striping east side of Tharpe near Ocala Road to include bike lane	Evidence of desire lanes.	<ul style="list-style-type: none"> • Facilitates advanced cyclists who prefer shared roadways in lieu of striped bike lanes and paths (represent about 20% of adult cyclists but account for nearly 80% of bicycle miles). • Keep the road as narrow as possible 	<ul style="list-style-type: none"> • May cause increase congestion. 	Ocala Road to 800' West of Ocala Road

Summary of Recommendations					
Tharpe Street (CR 185)					
Section	Potential Improvement	Supporting Data	Pro	Con	Project Limits
Sheridan Road	Addition of 8' concrete sidewalk, culvert system, and curb & gutter along north side of Tharpe Street	Pedestrians and bicyclists travel through the grass alongside roadway.	<ul style="list-style-type: none">• Connects sidewalk network.• Improves pedestrian safety.• Reduces friction associated with drivers navigating between opposing flow and pedestrians.• Addresses unsightly travel walkways along corridor created by pedestrian traffic.• Improved visibility for motorists.• Encourages walking and biking.	<ul style="list-style-type: none">• Drainage impact. Converting the open flow ditch to a closed flowing culvert system.• Relocation of 9 COT Utility poles	Ivan Drive to Devra Drive

CRTPA
TRAFFIC AND OPERATIONS ANALYSIS
PENSACOLA STREET

January 2019

PREPARED FOR:



PREPARED BY:



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Pensacola Street

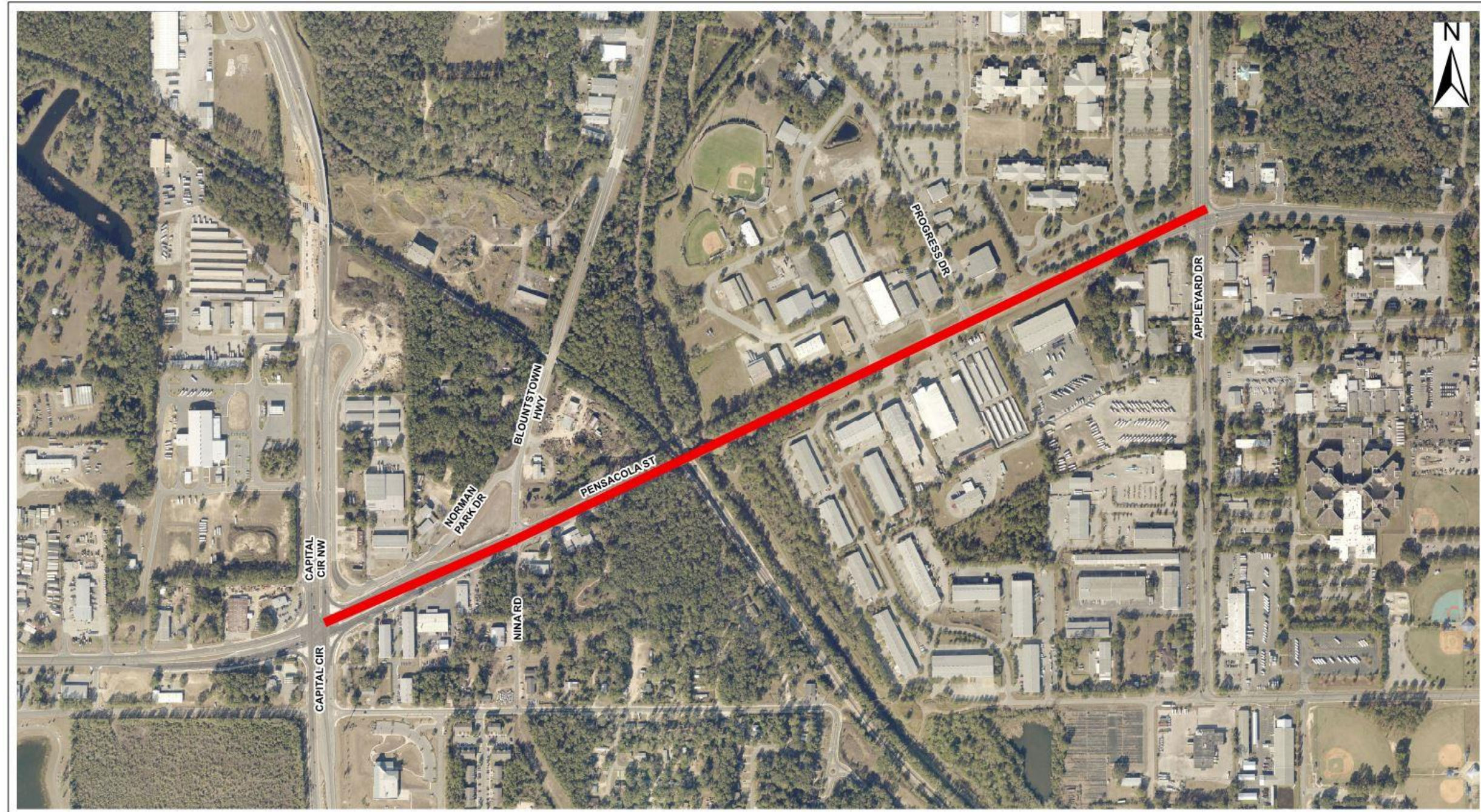
BACKGROUND

The Capital Region Transportation Planning Agency (CRTPA) identified the need for additional capacity for Pensacola Street in the 2040 Regional Mobility Plan (RMP). The RMP proposes the widening of this corridor. The purpose of this study is to investigate existing and future conditions along Pensacola Street (SR 366) and identify potential projects to improve mobility and efficiency without major capacity expansions. This study will identify potential improvements from Appleyard Drive to Capital Circle (see Figure 1). Existing conditions were established using the following data sources listed in Table 1 below:

Table 1. List of Data Collection Sources

Data Source	Data Set	Dates of sources
Field Visit	Existing Issues	07-25-2018
City of Tallahassee	Operational Analysis	2017
Congestion Management Plan Update (CMP)	Crash data	2012 – 2016
FDOT Transportation Data	Historical AADT (Annual Average Daily Traffic) report	2012 - 2016

Figure 1. Study Limits



ISSUES

Issue # 1 - Spot Congestion

Field observations report uniform dismissal from classes at Tallahassee Community College (TCC) as the primary cause of congestion along the corridor. The result is a short-term spike in traffic as students and faculty begin to exit the TCC parking lot. As congestion worsens internally, motorists tend to follow a “path of least resistance” strategy in order to exit the campus.

Figure 2 illustrates typical congestion conditions from high (red) to low (yellow). Field observations report drivers located in the southeast – Learning Commons - parking lot egress exit to the south onto Pensacola Street. Left turn movements are restricted at this location due to its proximity to the intersection at West Pensacola Street and Appleyard Drive. Despite left turn restrictions, motorists often make illegal left turns, crossing double yellow lane lines in U-turn maneuvers, utilizing private driveways to turn around. These traffic patterns exacerbate spot congestion during AM/PM peak hours.

Figure 2. Typical Congestion from TCC Campus



Issue # 2 - Bottleneck

When a road has limited physical capacity (i.e., bottlenecks), it contributes to recurring congestion according to the Federal Highway Administration (FHWA). Recent road widening has developed the section of Pensacola Street from Capital Circle SW to Blountstown Highway as a six-lane section. As Pensacola Street continues east, it narrows to a two-lane section at the bridge over the railroad, shown in Figure 3, consequently creating a bottleneck. Pensacola Street continues as a two-lane roadway transitioning into a four-lane roadway at TCC's access point.

Increased traffic volumes, an effect from the recent widening of Pensacola, will not only further exacerbate the bottleneck situation but also the spot congestion identified near the TCC campus.

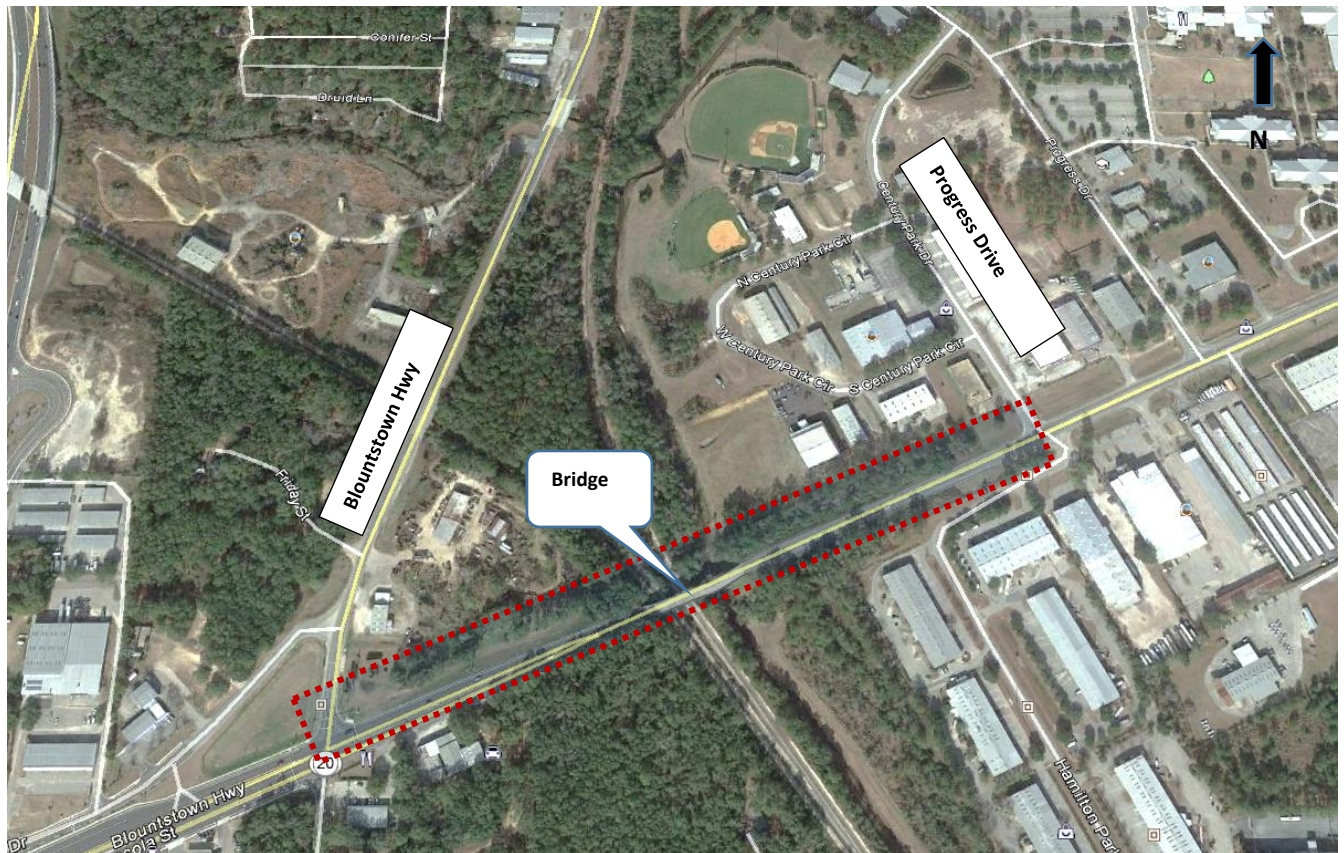
Figure 3. Bottleneck along Pensacola Street



Issue # 3 - Lack of Bicycle/Pedestrian Facilities

Currently, the two-lane section between Blountstown Highway and Progress Drive lacks bicycle and pedestrian facilities (see Figure 4). For this reason, bicyclists and pedestrians are given no choice but to travel along grassed areas to avoid interaction with motorists. However, grassed shoulders and/or ditches are not present throughout the corridor, particularly at the bridge. The lack of facilities and shoulder refuge in this area poses a high risk area for pedestrians as they are given no choice but to travel on the roadway with vehicular traffic.

Figure 4. Lack of Bicycle/Pedestrian Facilities Along Pensacola Street



ANALYSIS

Analysis Procedures

Analysis of traffic volumes is useful in understanding the general nature of traffic in an area, but by itself indicates neither the ability of the street network to carry additional traffic nor the quality of service afforded by the street facilities. To fully understand the operational capabilities of the roadway, the concept of level of service (LOS) has been applied to describe traffic performance. LOS can be measured at intersections, as well as on roadway segments.

LOS categories are similar to report card ratings for traffic performance. LOS A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. LOS D and E are progressively worse peak hour operating conditions and LOS F conditions represent gridlock where demand exceeds the capacity of an intersection or roadway segment. FDOT sets level of service D as the minimum acceptable level of service for peak hour operation and plans for level of service C or better for all other times of the day.

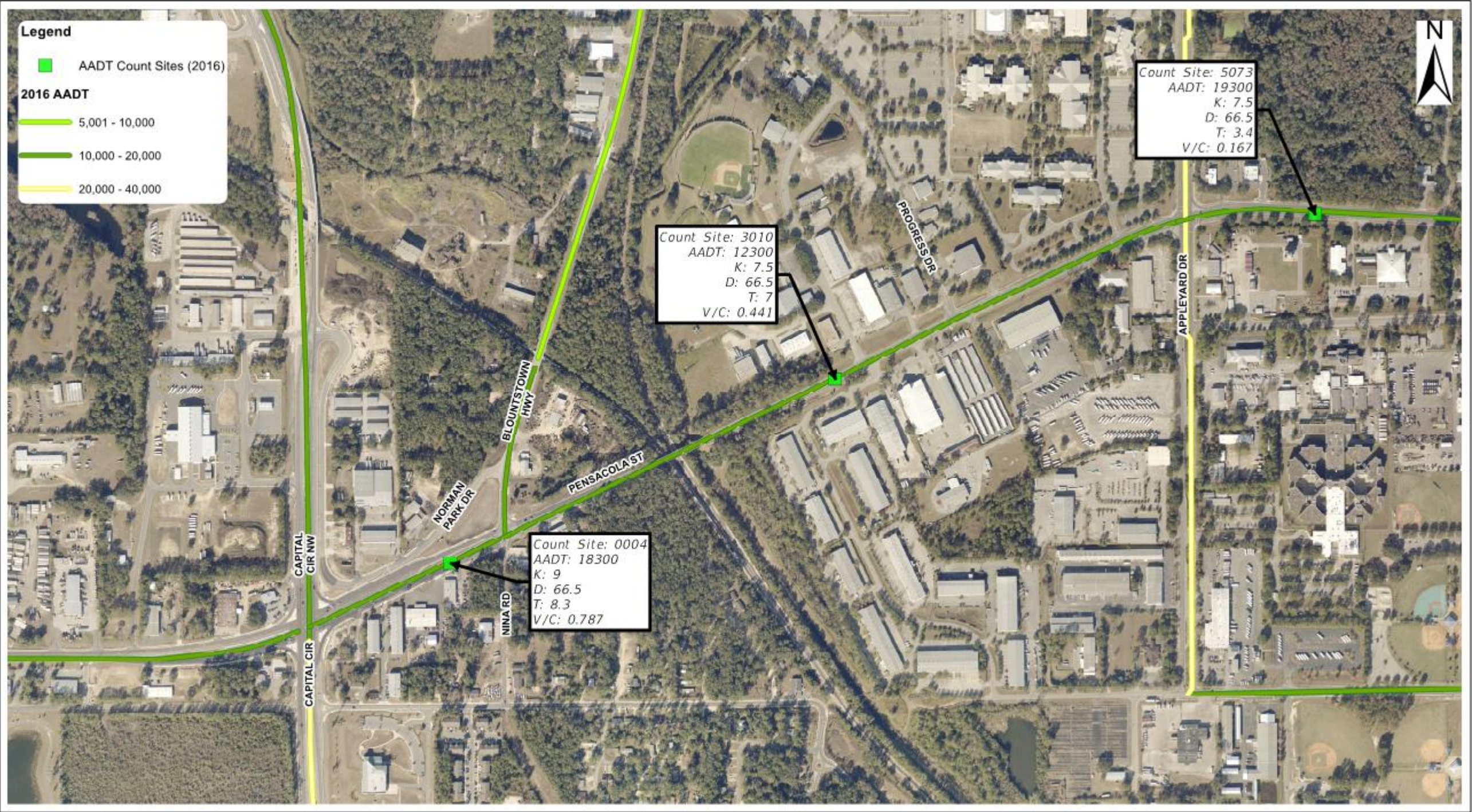
Historical traffic data and county traffic sites provided the source of existing traffic for the Pensacola Street study area. Figure 5 summarizes Annual Average Daily Traffic (AADT) from the Florida Department of Transportation traffic information. The highest traffic volumes within the study segment in 2016 are found between Blountstown Highway and Capital Circle SW, with an Average Annual Daily Traffic (AADT) of 18,300. The traffic information is displayed in Figure 5.

Operational analysis for Pensacola Street was performed following the Highway Capacity Manual (HCM) 2000 methodologies using Synchro software. This was made available by the City of Tallahassee and reflects AM/PM traffic operations during October 2017. Existing intersection analysis is summarized in Table 2. Under current conditions, all major intersections appear to be operating at acceptable LOS values for peak hour operations.

Table 2. Existing Intersection Operation Analysis.

Intersection	AM	PM
CCSW @ Blountstown Hwy	D	D
Progress Dr.	A	C
Nina Rd.	B	C
Appleyard Dr.	D	D

Figure 5. 2016 Traffic Volumes



Crash Rates

Crash rates are calculated values used to compare the crash experience of similar locations and normalize the crash data over the period of time to account for any large data anomalies. The Florida Department of Transportation develops average crash rates for intersections and for roadway segments and provide insight into identifying any safety deficiencies.

The crash data for this assessment was obtained from the recently updated Congestion Management Plan. The data period is five years from 2012 to 2016. The data was analyzed to determine the types and locations of crashes that occurred along the corridor and at intersections within the study segment.

TCC's current access point (see Figure 6) reported the highest segmental crash rate of 1.96 per million vehicle miles of travel (MVMT). The access point is also adjacent to the intersection of Appleyard Drive and Pensacola Street, an area that experiences the highest intersection crash rate within the study area at 1.74 MVMT. The state average for similar facilities consisting of undivided, two to three lanes with two-way traffic is 0.2999. Table 3 summarizes comparison results for Pensacola Street and Florida's state average.

Table 3. Pensacola Street Crash Rate vs. State Average

	Pensacola Street	Florida's State Average
Crash Rate (MVMT)	1.96	0.299*

Source *: Florida's five year average crash rate for 2-3 lane, 2 way, undivided roadway section.

The crash history along the Pensacola corridor was also assessed to identify deficiencies with respect to existing lighting infrastructure. The analysis of crash data revealed that 17 out of 160 crashes occurred during low visibility hours (dusk, dawn, and nighttime). These incidents comprised 9.4% of total crashes. Additionally, referencing the associated long-form crash reports for these events, none cited low visibility as a primary cause, therefore, no improvements to existing lighting infrastructure are recommended at this time.

Figure 6. Highest Reported Crash Rate Along Pensacola Street



Congestion Analysis Scan Results

The Federal Highway Administration maintains a database of travel information gathered from cellular and GPS units. This database, the National Performance Monitoring Research Data Set (NPMRDS) provides the information for use in network and corridor analyses. The data serves as one analysis tool and can provide insights into the operations of facilities, however, to comprehensively understand the operations of a facility, this data must be combined with other data sources, however it can provide some indication of existing issues.

According to the NPMRDS data, the westbound congestion analysis reports average travel speed between Appleyard Drive and Blountstown Hwy as 20 miles-per-hour (mph) between the AM/PM peak hours (see Figure 7). This is significantly lower than the current posted speed limit of 45 mph and similar results are reported for eastbound traffic. Figure 8 is the NPMRDS scan of the segment and graphically displays the generalized travel speed along Pensacola Street from east of Appleyard Drive to Capital Circle SW.

Figure 7. Generalized AM/PM Peak Hour Travel Speeds

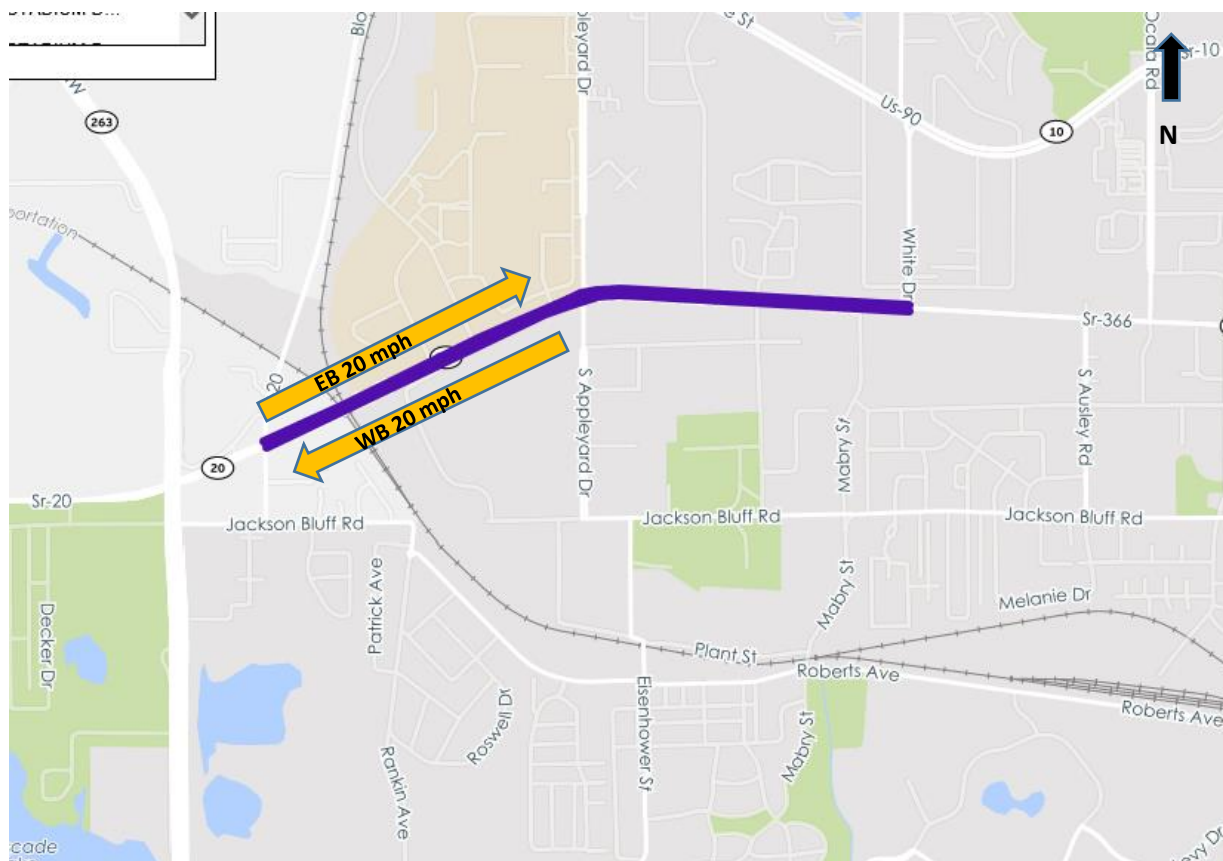
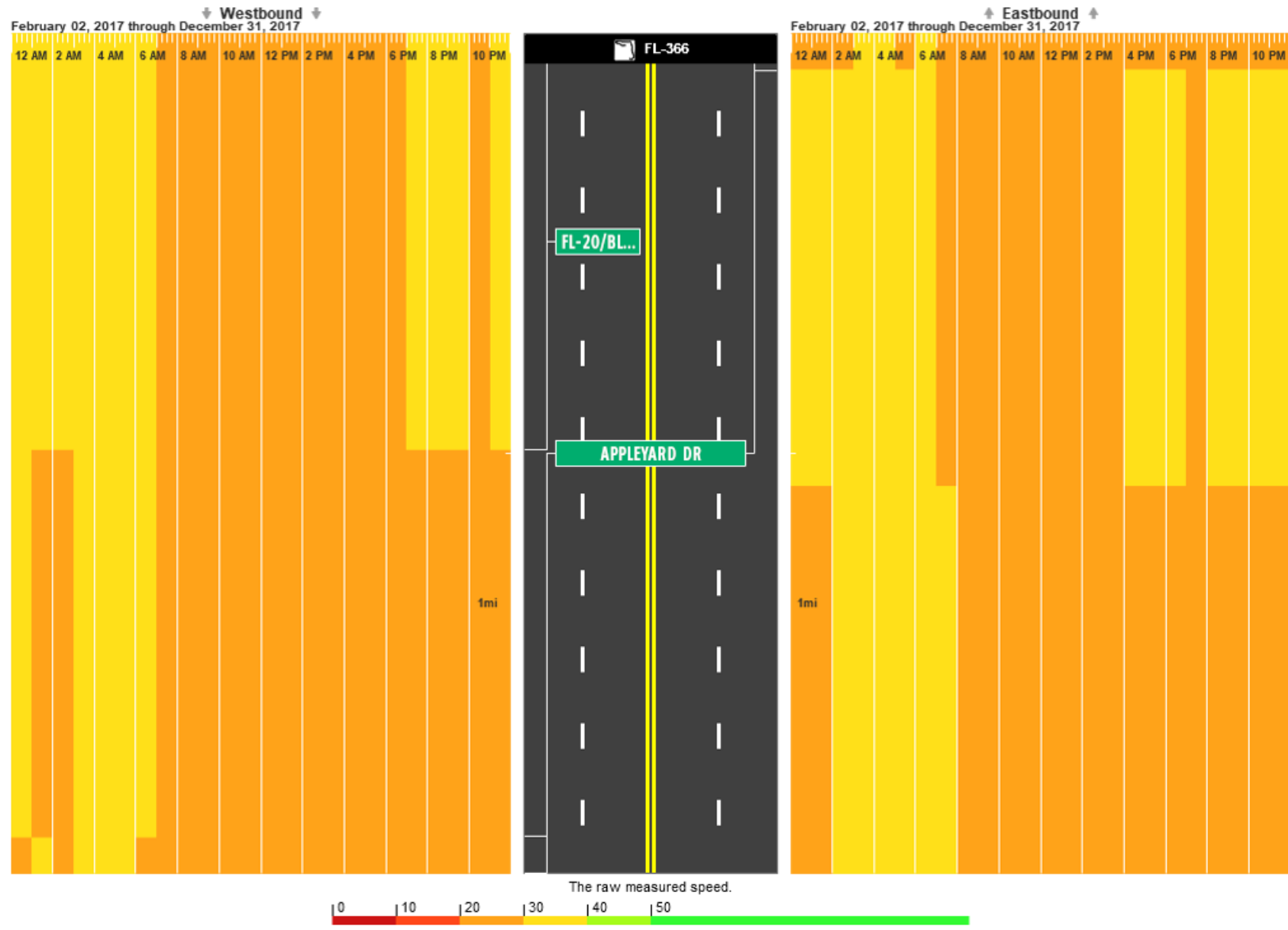


Figure 8. Pensacola Street NPMRDS Corridor Scan

Averaged by 1 hour for February 02, 2017 through December 31, 2017



RECOMMENDATIONS

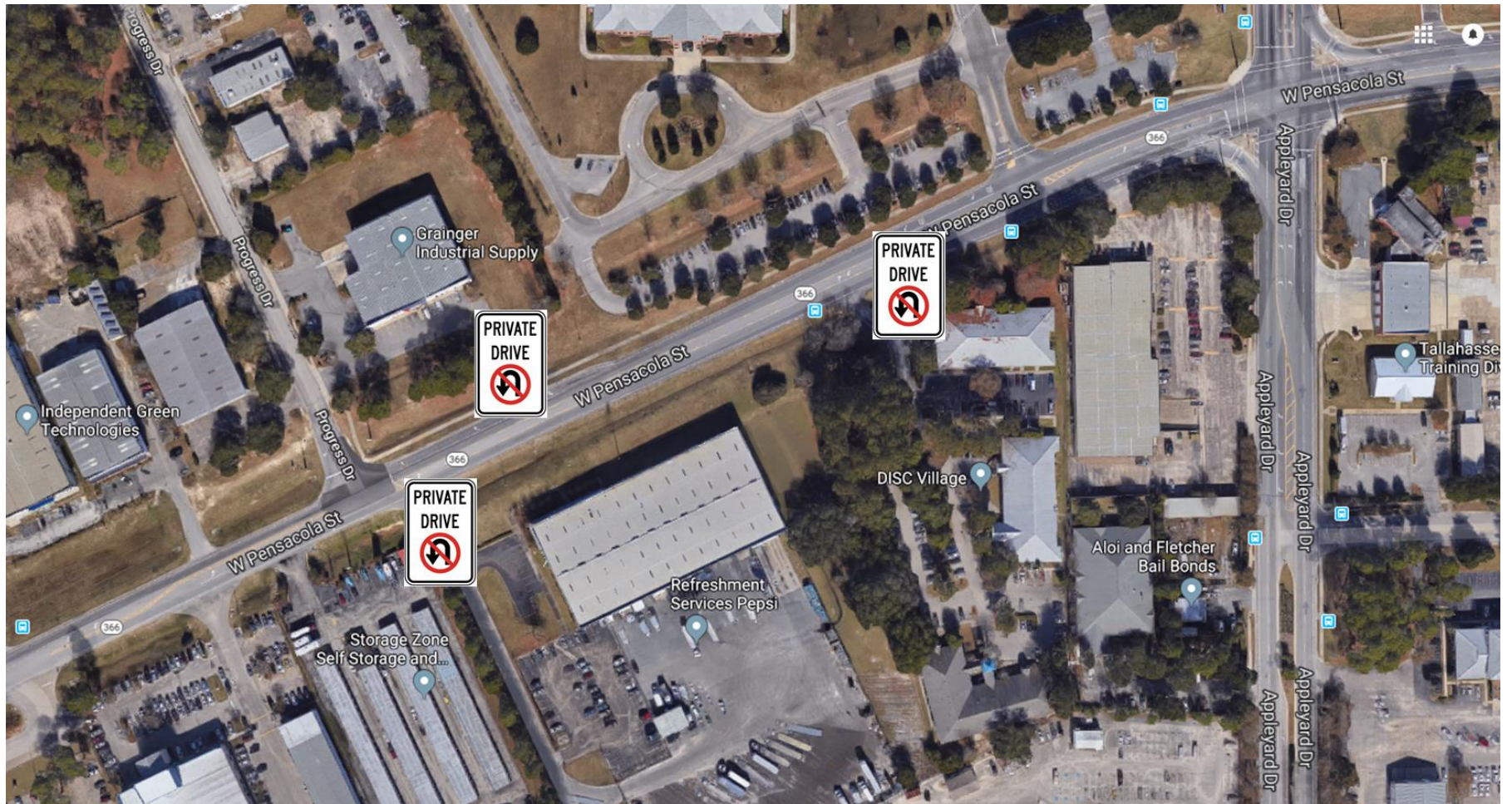
Bottleneck and Pedestrian/Bicycle Safety

In order to address the bottleneck existing at the bridge over the railroad, the bridge and the remaining two-lane section of Pensacola Street should be widened. This widening to four lanes should also incorporate bicycle and pedestrian facilities to address safety concerns for pedestrians and bicyclists on the current bridge. Coordination with CSX railroad will need to be undertaken to facilitate the widening.

Spot Congestion – “Quick Fix”

As a quick fix and low cost improvement to address one of the identified “work around” traffic movements resulting from the spot congestion at TCC, the addition of signage may deter a portion of motorists making the movement. With the consent of all parties, a “Private Drive, No U-Turn” sign is proposed to be placed at the entrances of Disc Village, Grainger, and Pepsico. Figure 9 displays the signage and locations.

Figure 9. Private Drive Signage and Locations



Spot Congestion - Comprehensive Alternative

A more comprehensive solution to the issues described regarding spot congestion involves reconfiguring the points of access to TCC from Pensacola. The first element of the proposed approach involves creating a dedicated two-lane entrance for TCC. The entrance will be restriped to create both a left turn and right through lane.

A second element involves the addition of a two-lane dedicated exit -- southwest of the Social Science Wing of TCC (see Figure 10). Locating this access further upstream from the Pensacola/Appleyard intersection allows motorists to safely make left turns eastward without affecting the queue and increasing the site distance of oncoming traffic. Minor striping changes, depicted below, will need to take place in order to guide motorists in a seamless fashion. Additionally, "Do Not Enter" signs will be warranted at the heads of the one-way pair to alert drivers who may be unaware of the scheme.

As described earlier, the highest incidence of crashes occurs at the existing two-way access point near the intersection at Appleyard Dr. Managing access and reducing illegal movements will contribute to improved safety conditions along the corridor.

Figure 10. Spot Congestion – Comprehensive Alternative



Summary of Recommendations

In order to address the issues identified in the analysis, the following recommendations have been identified.

- Widen the existing two-lane section of Pensacola and the bridge spanning the CSX railroad
- Include pedestrian and bicycle facilities in the widening project
- Addition of signage at three locations along Pensacola Street to address illegal and/or dangerous traffic movements by drivers attempting to avoid spot congestion issues
- Reconfigure the ingress/egress access from Pensacola Street to the TCC parking lots