Downtown Valdosta Truck Traffic Mitigation Study

final

report

prepared for

Southern Georgia Regional Commission

prepared by

Cambridge Systematics, Inc.

This document is prepared in cooperation with the Georgia Department of Transportation, the Federal Highway Administration and Federal Transit Administration.

The public involvement process for the Transportation Improvement Program (TIP) is used to satisfy the Georgia Department of Transportation public participation process for the Program of Projects (POP).

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Cambridge Systematics, Inc.
730 Peachtree Street, NE, Suite 500
Atlanta, GA 30308

date

June 30, 2016

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1.0 Background and Introduction

The purpose of this report is to evaluate alternatives for mitigating truck traffic in downtown Valdosta. U.S. 84 is the primary east-west route into, out of, and through downtown. It is heavily used by trucks, because it is one of the few multi-lane east-west routes across far south and southeast Georgia connecting I-95 and I-75. U.S. 84 also typically operates at a high level of service, thereby providing Fast and reliable travel speeds for trucks. It is also on the U.S. Surface Transportation Assistance Act (STAA) of 1982 National Network, so it has been designed and is required to handle oversize trucks and their cargo. U.S. 84 is also a state-designated Governor's Road Improvement Program (GRIP) route, so the route is also intended to provide safer travel and greater connectivity to the Interstate Highway System, particularly for rural cities with population of 2,500 or more.

Figures 1.1 and 1.2 show the NHS routes for Georgia and the Valdosta region, respectively. Figure 1.3 shows the Georgia GRIP routes. U.S. 84connects the Port of Savannah with south Georgia shippers (including several major warehouse/distribution centers in Valdosta and Lowndes County), as well as goods moving to/from points in far southwest Georgia and southern Alabama. U.S. 84 serves as the southernmost east-west connection to the Port of Savannah with more northern alternatives including I-16 which connects the port with Macon (and ultimately with Atlanta) and U.S. 280 which connects the port to Cordele.

Downtown is also a local shopping and dining area in Valdosta with many passenger vehicles and pedestrians. The city has reported concerns regarding trucks traveling the route through downtown in regards to noise, air pollution, comfort, and safety. This is of particular concern given efforts underway to improve the vibrancy and livability of downtown, including the Valdosta Main Street initiative. As part of the 2009 VLMPO Freight Movement Study, a survey on goods movement was conducted of members and non-members of the Valdosta-Lowndes Chamber of Commerce. The survey results identified traffic issues on U.S. 84 as a major concern for the freight community in Valdosta. It also noted that the total number of trucks in Downtown Valdosta was an issue for the broader community.

There have been previous discussions to mitigate truck traffic in downtown Valdosta. During the recent construction of the grade separation of U.S. 84/Hill Avenue and the Norfolk Southern rail line just west of downtown Valdosta, a temporary truck bypass route was developed that resulted in a significant decrease in truck traffic through downtown. Based on this reduction in traffic, the City of Valdosta formally requested to the Georgia Department of Transportation (GDOT) that the truck detour route be made permanent. This request was reviewed by GDOT and denied based on conflicts with official American Association of State Highway and Transportation Officials (AASHTO) U.S. Routing Criteria. Overall, AASHTO mandates that U.S. Routes be designated only on the shortest and best roadways for interregional and interstate travel. More specifically, GDOT explained that the detour route could not be made permanent due to:

- An increase in the number of turning movements on the detour route from no turning movements to five turning movements;
- An increase in the number of at-grade rail crossings; and
- An increase in trip length from approximately 4.9 miles to approximately 11.3 miles (over double the travel distance).

It was also noted that adjusting a U.S. route designation is an extremely challenging process requiring approval through both the AASHTO Special Committee on U.S. Route Numbering as well as the AASHTO Standing Committee on Highways.

The Downtown Valdosta Truck Traffic Mitigation Study identified and evaluated several potential alternatives for routing truck traffic through and around downtown Valdosta. This planning effort is consistent with the three priority statements described in the introduction section of the Valdosta-Lowndes Metropolitan Planning Organization (VLMPO) 2035 Transportation Plan by: 1) considering safety impacts of each alternative for moving people and goods, 2) incorporating outreach to a broad spectrum of stakeholders, and 3) considering the needs of disadvantaged populations and the context of the nearby built and natural environments.

The project limits along U.S. 84 extend from Inner Perimeter Road in the east to St. Augustine Road in the west with a particular emphasis on U.S. 84 between Forrest Street and Wells Street. U.S. 41 between Central Avenue and Savannah Avenue were also included in the project limits. The key sources of information for this study were:

1) The results of pre-existing truck activity data and new data on truck activity in Downtown Valdosta collected specifically for this study,

2) Insights from stakeholder outreach throughout the Valdosta-Lowndes County Region, and

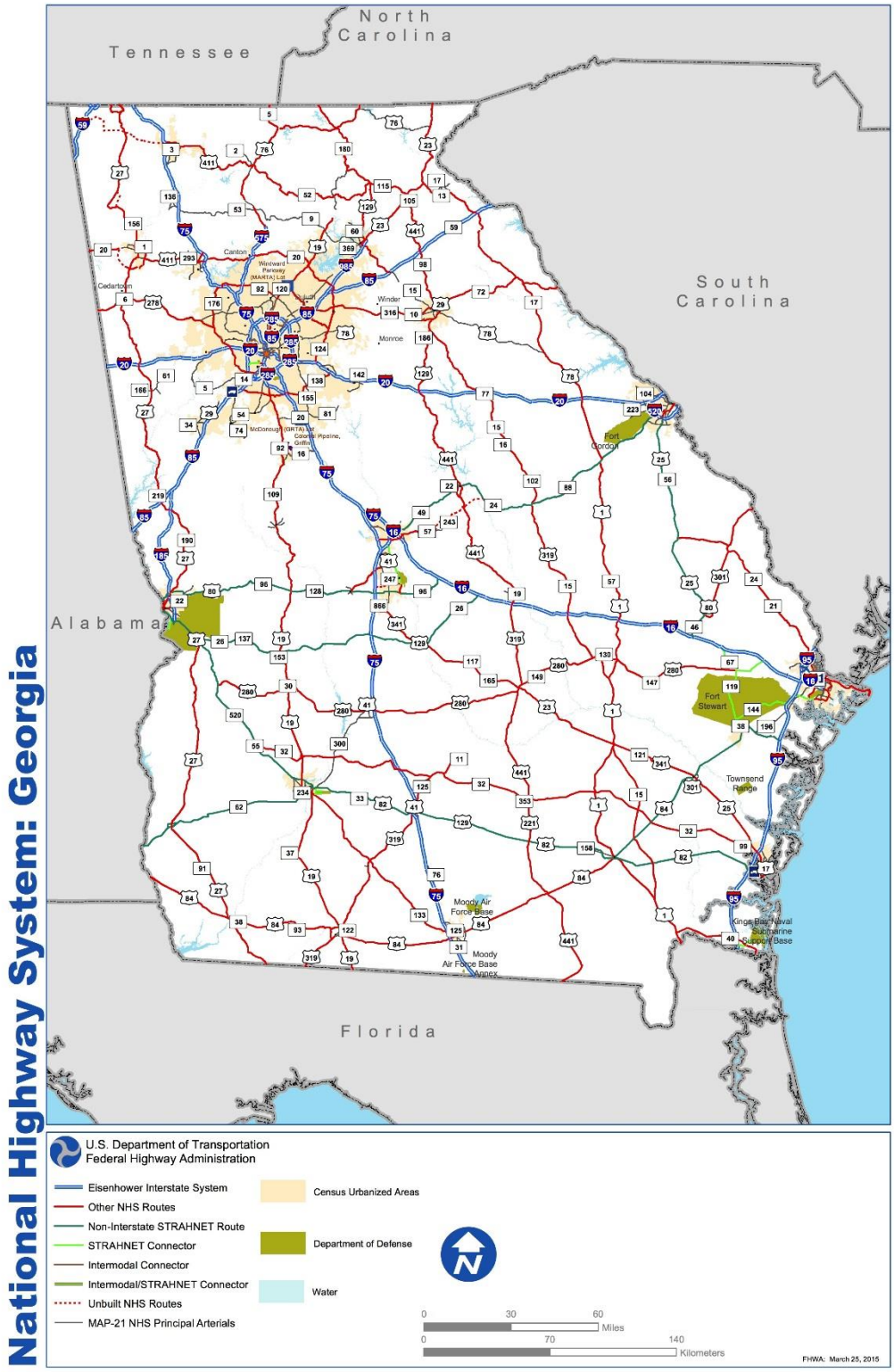
3) The results generated from utilizing the (VLMPO) travel demand model.

Truck following data and truck count data were collected as part of this study to provide information on the specific types of trucks currently operating in downtown, how the trucks incorporate U.S. 84 into their routes, and their typical destinations. The public and stakeholder outreach effort collected information on the needs and concerns of the private sector freight stakeholders (i.e., the shippers and carriers that depend on U.S. 84) and the downtown business community. The VLMPO travel demand model assesses the truck and auto traffic impacts in downtown Valdosta for each alternative.

The remainder of this report is organized as follows:

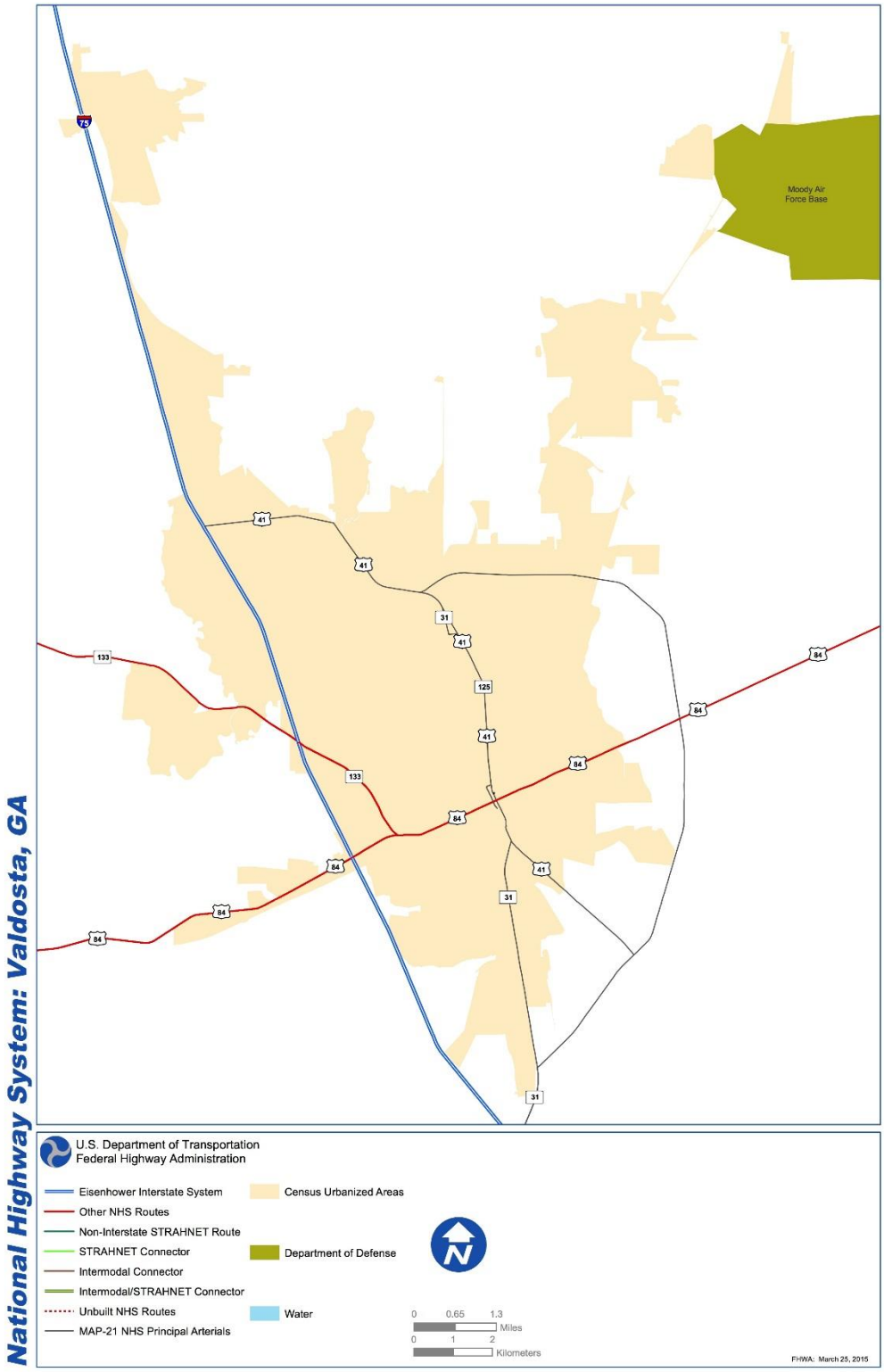
- Section 2.0 provides a summary of the stakeholder outreach conducted on this study;
- Section 3.0 presents current truck volumes, speeds and crash data on U.S. 84 and in downtown Valdosta;
- Section 4.0 describes truck origin-destination and commodity data for trucks moving through downtown Valdosta;
- Section 5.0 describes the results of the truck-following data collection effort conducted for this study;
- Section 6.0 provides a description of the potential alternatives for consideration;
- Section 7.0 evaluates the alternatives; and
- Section 8.0 provides concluding comments on potential paths forward for mitigating truck traffic in downtown Valdosta.

Figure 1.1 Map of Georgia NHS Routes



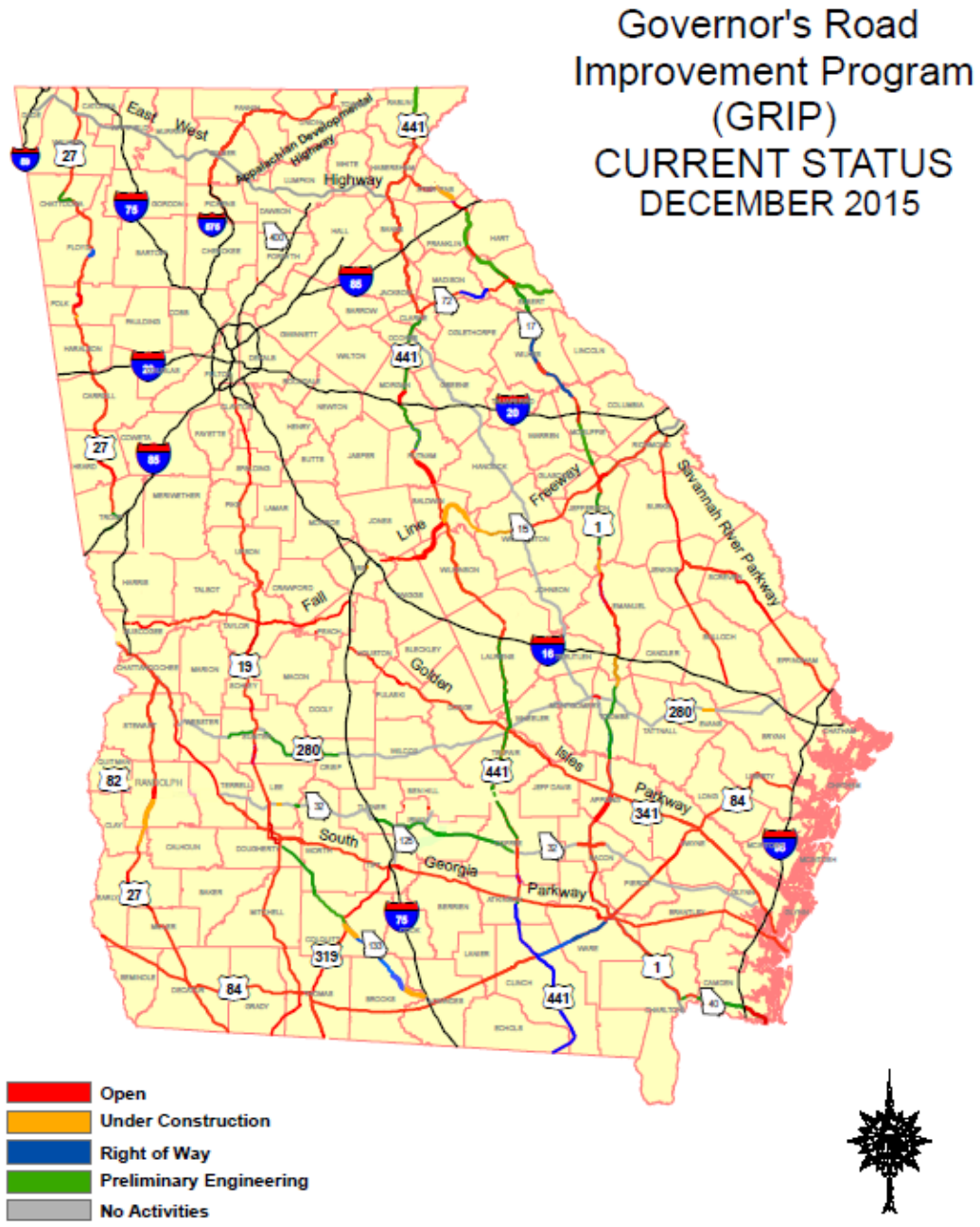
Source: FHWA Office of Planning, Planning Environment, and Realty.

Figure 1.2 Map of Georgia NHS Routes in Valdosta Region



Source: FHWA Office of Planning, Planning Environment, and Realty.

Figure 1.3 Map of Georgia GRIP Routes and Current Status of Routes



Source: Georgia DOT Statewide Freight and Logistics Plan, 2010-2050.

2.0 Stakeholder Outreach

Numerous public and private sector stakeholders were interviewed in one-on-one settings to gain perspectives on the impacts of downtown truck traffic along with the potential benefits of alternative solutions proposed for improving downtown traffic. From the public sector, representatives from the following agencies were interviewed:

- City of Valdosta,
- Lowndes County,
- Valdosta Main Street,
- Valdosta Development Authority, and
- Georgia Department of Transportation Office of Transportation Data.

From the private sector, representatives from the following companies were interviewed:

- IDP Housing,
- Southeastern Freight Lines,
- Archer Daniels Midland (ADM),
- ASA Engineering,
- Prime Properties,
- Outsource Logistics, and
- Valdosta-Lowndes Chamber of Commerce.

Additionally, three stakeholder meetings were conducted throughout this study to discuss operations of U.S. 84 and other roadways in downtown Valdosta, the results of the data collection efforts, and the evaluation of alternatives for improving traffic in downtown Valdosta.

Generally, the issues identified by the interviews fell into two broad categories: 1) quality of life and 2) freight operations. Quality of life issues centered on how truck movements through downtown disrupt other economic activities, such as shopping and outdoor events. Freight operations issues focused on the challenges of goods movement at a regional level and the role that downtown thoroughfares play in the overall system.

2.1 Quality of Life

Regarding quality of life, the respondents indicated that noise pollution from trucks is significant and hinders the ability of downtown businesses and local government agencies to host activities (particularly outdoor events), creates a challenging environment for residential developments, and limits pedestrian mobility. Noise pollution is particularly disruptive to businesses along Central and Hill Avenues. Furthermore,

stakeholders noted that there is little reprieve from the noise as trucking activities are persistent throughout the day and not limited to peak periods.

Stakeholders conveyed that noise pollution due to heavy truck volumes also creates a challenging environment for the prospect of increased downtown residential developments. Builders must use construction materials that more strongly reduce outdoor noise than what is typical for other parts of the Valdosta Region. This results in higher costs and limits residential development potential downtown – a stated goal of the Downtown Valdosta Master Plan.[1]

Truck traffic in downtown was identified by stakeholders as a limiting factor to pedestrian mobility due to its deterioration of sidewalks, its obstruction of driver's field of vision, and its overall contribution to a perception of poor safety. Sidewalks in downtown are designed to facilitate larger numbers of pedestrians and extend farther into roadway at major intersections than at other points, namely the intersections of Central and Hill Avenues with Ashley and Patterson Streets. As a result, trucks often strike the sidewalks at these locations causing repeated maintenance issues and contributing to the poor perception of pedestrian safety. The substantial number of trucks traversing the mid-block pedestrian crossings at Ashely and Patterson Streets is also a major contributing factor to safety perceptions.

2.2 Freight Operations

The primary freight operations issues identified by stakeholders include the difficulty of turning movements at the U.S. 41 and U.S. 84 intersections downtown (i.e., Central and Hill Avenues with Ashley and Patterson Streets), the potential unintended consequences of truck restrictions, and the lack of quality alternative routes for east-west movements. The intersections of U.S. 41 and U.S. 84 in downtown Valdosta have a narrow turning radii which makes it difficult for trucks to complete turning movements given their necessarily wide turning radii. As a result trucks must occupy multiple lanes when turning between the two routes. This is directly related to the quality of life issue of trucks striking downtown sidewalks and contributing to a poor perception of safety. Stakeholders also noted the potential unintended consequence of truck restrictions on downtown streets.

Stakeholders also stressed the need for alternative routes for trucks to travel east-west through the Valdosta region without using existing roads in downtown. Though motor carriers prefer not to travel through downtown, existing alternative routes either have substantial passenger vehicle traffic (e.g., Inner Perimeter Road) and/or busy at-grade rail crossings (e.g., Street Augustine Road). Stakeholders noted that any alternative route should be truck-friendly (i.e., limited number of turns, avoids rail crossings, and straight-forward intuitive routing) and avoid areas with significant activity from other roadway users.

2.3 Public Outreach Meetings

This study also included two public meetings that were held as part of stakeholder outreach process. These meetings were attended by community residents, local business owners, and officials from city, county, and state governments. As part of the public meetings, attendees were presented with truck traffic mitigation solutions as had been developed in prior planning efforts to understand the types of alternatives that might be most effective from their perspectives. The results of the travel demand model were also presented and

[1] Valdosta Downtown Master Plan. http://valdostamainstreet.com/wp-content/uploads/2012/03/Valdosta-Downtown-Master-Plan.pdf. Accessed May 4, 2016.

the study team was available to answer questions related to these specific items and the overall study. Participants generally agreed that some action must be taken and that doing nothing was undesirable.

Attendees also expressed a desire for solutions that shift truck traffic far away from downtown as opposed to solutions that would retain truck traffic in or near downtown. The impetus for that approach was that it would avoid creating truck-related congestion and quality of life issues in other neighborhoods. Other attendees suggested solutions that would co-locate the near-downtown trucking and freight rail activities. In addition, some participants suggested that alternatives that connect the region's industrial areas would create new opportunities for economic development while alleviating truck traffic through downtown.

Appendix A shows the public meeting dates, locations, appendices, comments received and evaluation of outreach conducted for this study.

3.0 Truck Volumes, Speeds and Crashes on U.S. 84

3.1 Truck Volumes

Figure 3.1 shows locations of truck count data in downtown Valdosta. As shown in Table 3.1, the truck volumes range from 285 to 714 trucks per day. The portion of U.S. 84 through downtown Valdosta is routed as a one-way pair along Central and Hill Avenues in the eastbound and westbound directions, respectively. Both roadways carry approximately 700 trucks per day at their highest volume locations. These truck volumes also are relatively flat throughout the one-way pairs through downtown.

Figures 3.2, 3.3, 3.4 and 3.5 show hourly truck count data at Stations 6, 7, 1, and 3, respectively. The data indicate that the majority of truck activity in downtown Valdosta occurs during normal business hours – roughly 7:00 A.M. to 6:00 P.M. During the midday truck volume peak period, these locations experience approximately one truck per minute. This frequency of truck traffic has negative impacts on the quality of life in downtown Valdosta as noted by downtown business owners, residents and their representatives.

Figure 3.1 Downtown Valdosta Truck Count Locations, 2013-2014

Source: Georgia DOT Geocounts Database. U.S. Census TIGER.

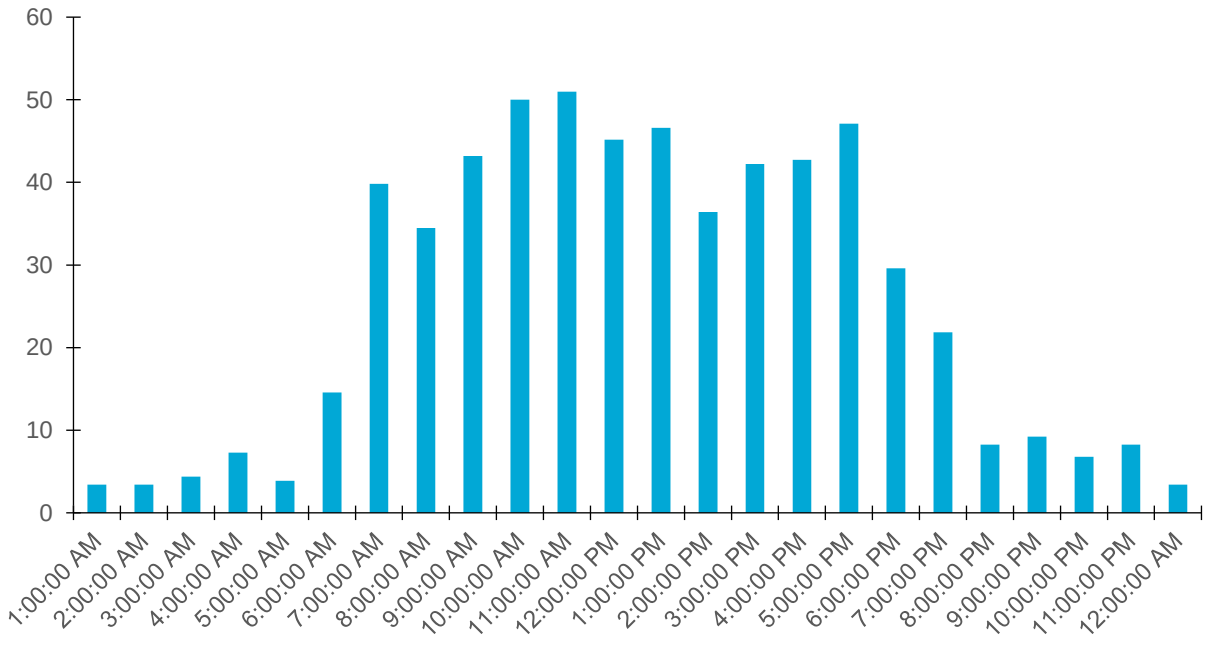
Table 3.1 Downtown Valdosta Annual Average Daily Traffic (AADT) Counts, 2014

Map ID	Roadway Name	Truck AADT	AADT	Truck Percentage	Year
1	U.S. 84/West Hill Avenue	714	8,280	9%	2014
2	U.S. 84/East Central Avenue	647	5,950	11%	2013
3	U.S. 84/East Hill Avenue	627	6,180	10%	2014
4	U.S. 84/East Hill Avenue	627	5,660	11%	2014
5	U.S. 84/West Central Avenue	623	7,970	8%	2014
6	U.S. 84/East Central Avenue	603	7,530	8%	2014
7	U.S. 84/West Central Avenue	577	7,860	7%	2014
8	U.S. 41/Patterson Street	524	9,830	5%	2014
9	U.S. 41/Ashley Street	450	12,000	4%	2013
10	U.S. 84/East Hill Avenue	438	6,870	6%	2014
11	U.S. 41/Patterson Street	416	8,180	5%	2013
12	U.S. 41/Ashley Street	381	9,060	4%	2013
13	U.S. 41/Ashley Street	285	11,200	3%	2014

Source: Georgia DOT Geocounts Database.

Figure 3.2 U.S. 84/Central Avenue Hourly Truck Counts, 2014

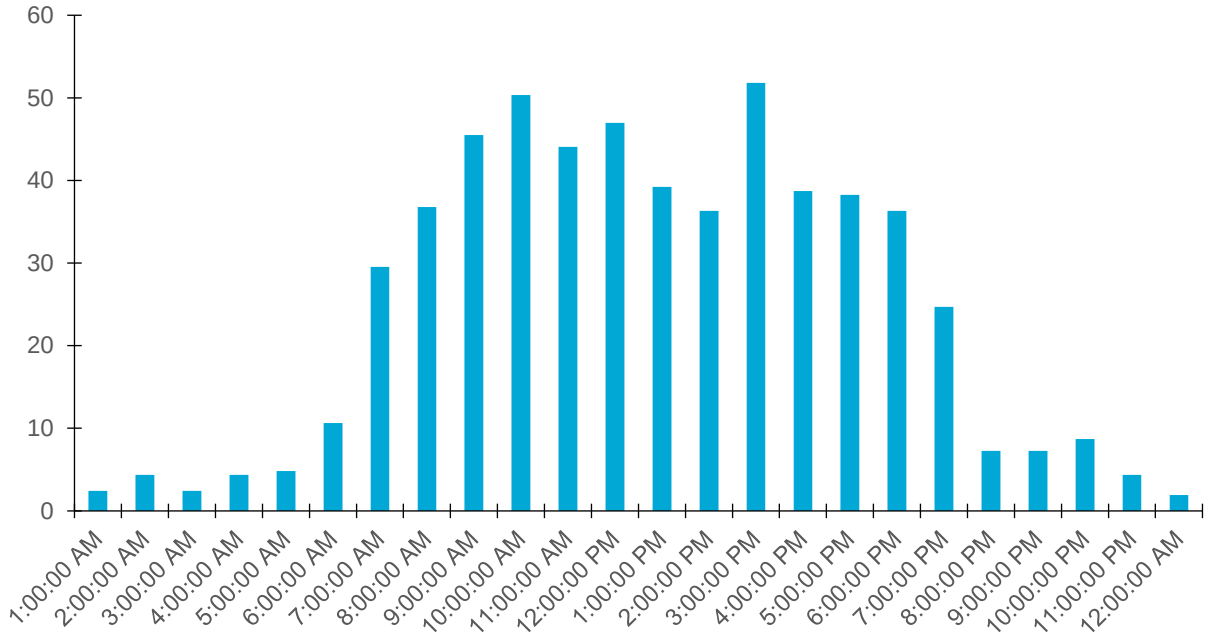
East of Ashley Street



Source: Georgia DOT Geocounts Database.

Figure 3.3 U.S. 84/Central Avenue Hourly Truck Counts, 2014

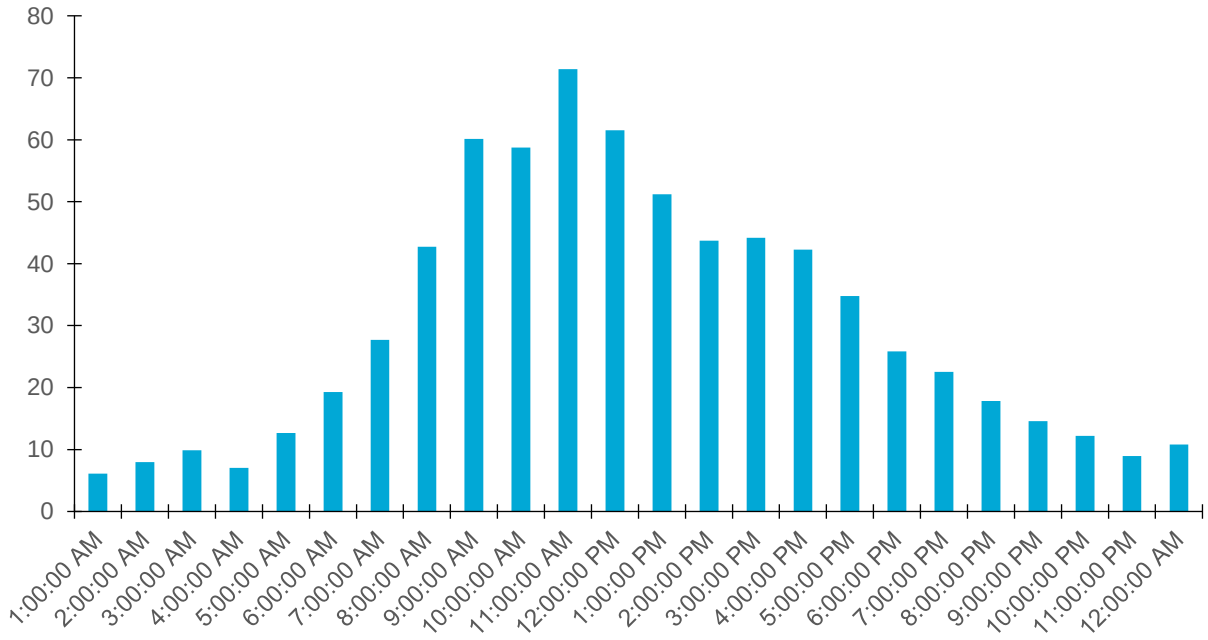
West of Patterson Street



Source: Georgia DOT Geocounts Database.

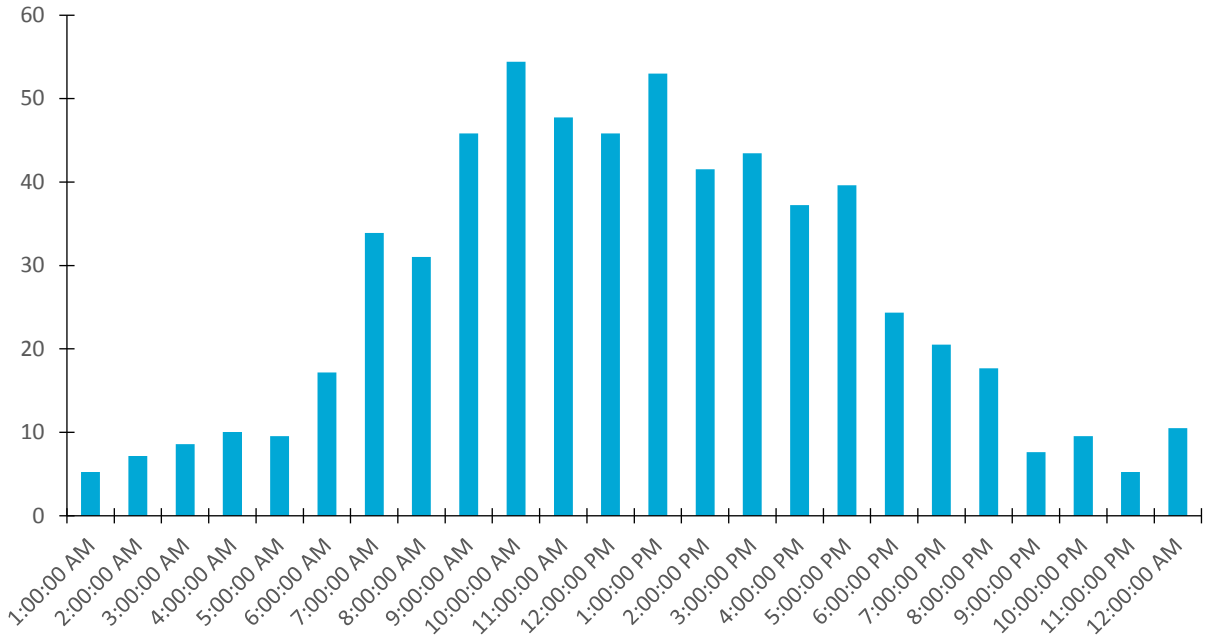
Figure 3.4 U.S. 84/Hill Avenue Hourly Truck Counts, 2014

West of Patterson Street



Source: Georgia DOT Geocounts Database.

Figure 3.5 U.S. 84/Hill Avenue Hourly Truck Counts, 2014
East of Ashley Street



Source: Georgia DOT Geocounts Database.

3.2 Truck Speeds and Delay

3.2.1 Average Truck Speeds

Truck speeds and delay in downtown Valdosta was measured using FHWA National Performance Management Research Data Set (NPMRDS)[2]. This data set provides average truck and total vehicle speeds on National Highway System (NHS) routes in the U.S. Both U.S. 84 and U.S. 41 are part of the NHS network. Truck congestion in the downtown area was analyzed using truck speed data during the afternoon peak period of 5:00 P.M. to 6:00 P.M.

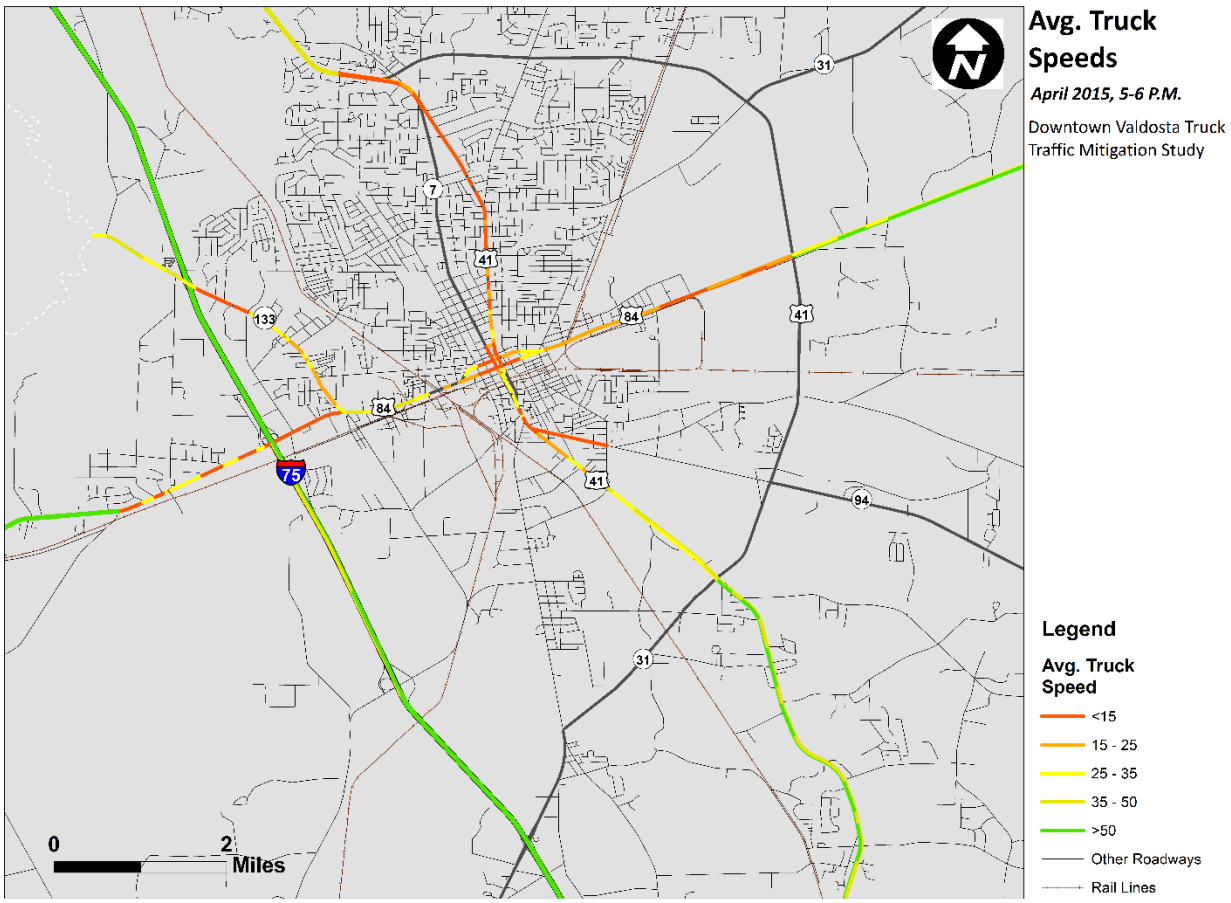
Figure 3.6 shows the average weekday truck speeds in April of 2016 during the afternoon peak period. Average truck speeds along U.S. 84 range from about 15 to 35 miles per hour. In downtown Valdosta, average speeds are generally under 25 miles per hour. This range corresponds to the range of posted speed limits on U.S. 84 as it drops down to 25 mph within downtown and rises to 45 mph outside of downtown. Similarly, truck speeds along U.S. 41 Business from SR 31/Madison Highway south of downtown to SR 125/Bemiss Road north of downtown average between 15 and 35 miles per hour. Average speeds along U.S. 41 Business south of Madison Highway are significantly higher as it is further removed from the core of the City. Like U.S. 84, the observed average speeds correspond to the range of posted speed limits on U.S. 41 which drops down to 25 mph within downtown and rises to 45 mph outside of downtown.

Truck speeds are generally close to the posted speed limits on roadways outside of the downtown core – namely I-75, U.S. 41/Inner Perimeter Road, SR 133/Saint Augustine Road, and SR 31/Madison Highway. Average trucks speeds along I-75 generally exceed 50 mph and are close to the 65 mph speed limit in the

[2] http://www.ops.fhwa.dot.gov/freight/freight_analysis/perform_meas/vpds/npmrdsfaqs.htm

Valdosta area. The vast majority of Inner Perimeter Road throughout Lowndes County is median separated, aiding in its ability to provide a high level of service to truck operations. Truck speeds on Inner Perimeter Road are in the 35-50 mph range, near its posted speed limit of 45 mph. Average truck speeds on SR 133/Saint Augustine Road and SR 31/Madison Highway are similar to what is experienced on U.S. 84. Generally, truck speeds along these corridors are between 15 to 35 miles per hour. However, unlike U.S. 84 and U.S. 41 the range of posted speed limits on these roadways are higher – 35 to 45 mph.

Figure 3.6 April 2015 Average Weekday Truck Speeds
5-6 p.m.



Source: National Performance Management Research Data Set. U.S. Census TIGER. Consultant analysis.

3.2.2 Truck Delay

Truck delay is estimated by combining truck count data with truck speed data. Truck delay is measured as the difference between actual travel time and free flow travel time multiplied by the hourly truck volume. The formula for calculating delay is as follows:

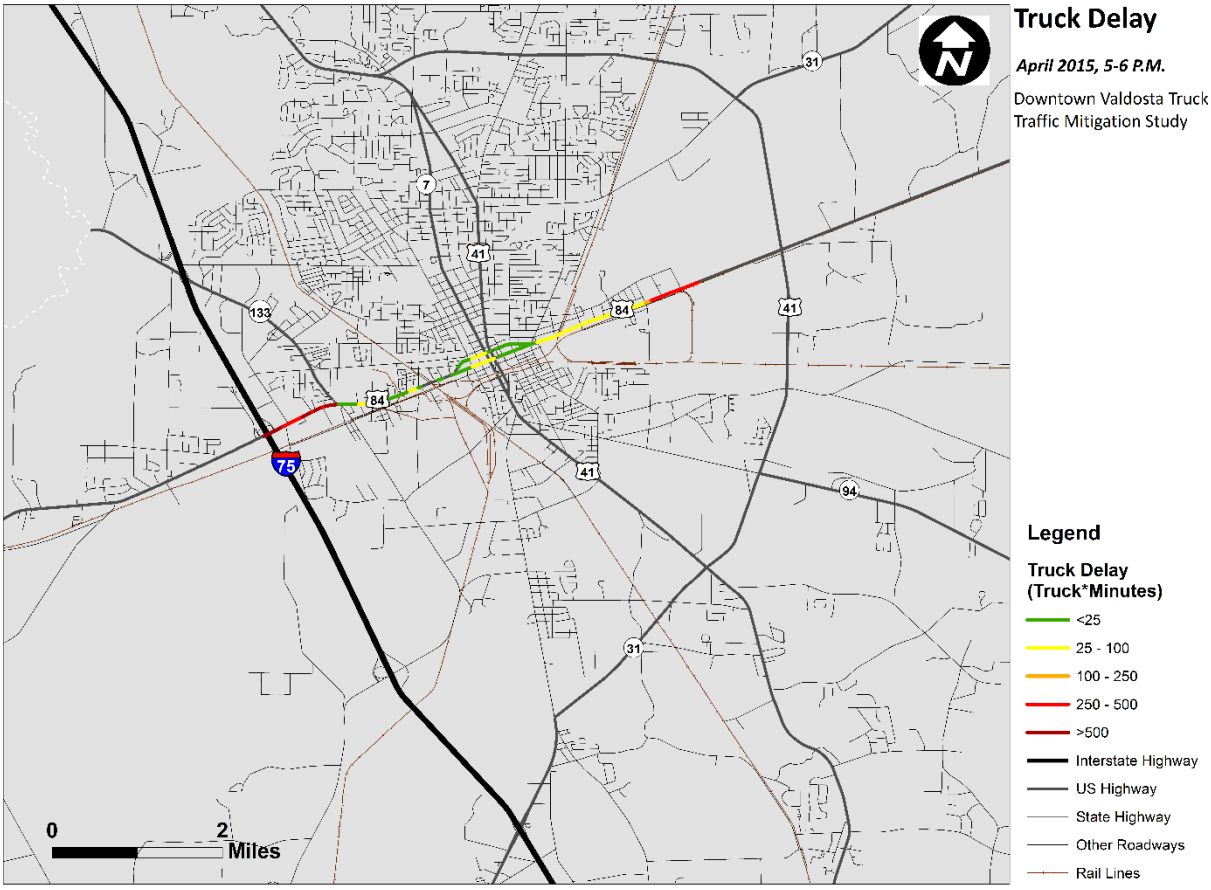
Truck Delay = ((Distance/Actual Truck Speed) – (Distance/Free Flow Truck Speed)) * Hourly Truck Volume

It is assumed that the free flow speed on the portion of U.S. 84 between Wells Street and Forrest Street (i.e., the one-way pairs of Hill Street and Central Avenue) has a free-flow speed of 25 miles per hour based on

posted speed limits. Free flow speeds on U.S. 84 west of Wells Street and east of Forrest Street are assumed to be 45 miles per hour based on posted speed limits.

Truck delay through Downtown Valdosta is relatively low. As depicted in Figure 3.7, for the month of April of 2015 delay along U.S. 84 is much higher outside of the core downtown area. The most significant delay on U.S. 84 occurs in two locations: 1) between SR 133/Street Augustine Road and I-75 and 2) between Clay Road and U.S. 41/ Inner Perimeter Road as shown in Figure 3.7.

Figure 3.7 Truck Minutes of Delay per Day in Evening Peak
April 2015, 5:00-6:00 P.M.



Source: National Performance Management Research Data Set. U.S. Census TIGER. GDOT Geocounts Database. Consultant analysis.

3.3 Truck-Involved Crashes

Between 2010 and 2015, there were 1,135 truck-involved crashes in Lowndes County. Of that total, 105 truck-involved crashes occurred along the Lowndes County portion of U.S. 84 representing just over 9 percent of total truck collisions (Table 3.2). During the same 2010 to 2015 period, only 17 truck-involved crashes occurred on U.S. 41 Business in Lowndes County representing less than 2 percent of total crashes.

Head On, truck-involved crashes were the most severe type of crashes on U.S. 84. These types of crashes accounted for two of the three truck-involved crash fatalities on U.S. 84 between 2010 and 2015. This is particularly noteworthy given that there were only two head-on, truck-involved collisions during this time

period. These two head-on truck-involved crashes also resulted in 17 percent of the total injuries, even though they were just two percent of the crashes.

The largest number of truck-involved crashes on U.S. 84 were angle crashes. Angle crashes usually occur at intersections or driveways where the respective directions of the conflicting traffic flows are nearly perpendicular. They are relatively more severe than the average truck-involved crash because of the potential for the front-end of one of the vehicles to directly strike the driver or front-seat passenger of the other vehicle. There were 39 angle crashes along U.S. 84 over the observation period, accounting for 37 percent of all crashes. Angle crashes also were the largest type of crash on U.S. 41 (Table 3.3).

Truck-involved crashes in Lowndes County that occur on U.S. 84 or U.S. 41-Business are clustered in downtown Valdosta and near I-75 as shown in Figure 3.8. The portion of Downtown Valdosta enclosed by U.S. 84/Central Avenue and U.S. 84/Hill Avenue accounts for approximately 27 percent of U.S. 84 and U.S. 41-Business truck collisions. Of the 52 total injuries that occurred because of all truck-involved collisions along those roadways, 15 percent were in this small area.

The truck crash rates were calculated using the route mileages and daily vehicles for each roadway as indicated in the FHWA Highway Performance Monitoring System (HPMS) database as well as the total number of truck-involved crashes from the Georgia DOT. Truck crash rates are reported as the number of truck-involved crashes per 100 million vehicle-miles traveled (100 MVM). Vehicle-miles traveled along U.S. 84 and U.S. 41 Business are calculated as the summation of link length multiplied by daily traffic volumes over the entire length of the route. The analysis is limited to the extent of these routes within Lowndes County.

As shown in Table 3.4, the truck crash rates on both U.S. 84 and U.S. 41 Business exceed the statewide crash rates on similar roadways for the years 2011 to 2014. (Statewide crash rates were not available for 2015 and HPMS data was not available for 2010.) While the statewide crash rate for non-freeway arterials in urban areas generally is between 500 and 700 crashes per 100 MVM, the crash rate for U.S. 84 ranges from nearly 3,700 to 6,700 crashes per MVM. The primary reason for the large difference in crash rates is the correspondingly large difference in the magnitude of exposure at the statewide versus the local level as captured by vehicle-miles traveled. While roadway usage at the statewide level ranges from 11,000 – 16,000 100 MVM over the analysis period, usage of U.S. 84 in Lowndes County ranges from 0.22 – 0.23 100 MVM. Similarly, usage of U.S. 41 Business ranges from 0.09 - 0.1 100 MVM. This results in much higher crash rates when comparing between the local and statewide levels. It also reflects the tendency of crashes to cluster in areas where there are greater opportunities for trucks to encounter contributing crash factors that are not reflected in usage data such as conflicting vehicle movements, interactions with other roadway users (e.g. bicyclists and pedestrians), and the greater quantity and proximity of fixed objects near roadways (e.g. signs, mailboxes, benches, etc.), among others.

Table 3.2 Truck-Involved Crashes on U.S. 84, 2010 - 2015

Crash Type	Number of Crashes	Number of Injuries	Number of Fatalities	Percent of Total
Angle	39	19	0	37%
Sideswipe	29	5	0	28%
Rear End	17	8	1	16%
Not a Collision with a Motor Vehicle	16	3	0	15%
Head On	2	7	2	2%

Not Given	2	0	0	2%
Total	**105**	**42**	**3**	**100%**

Source: Georgia Department of Transportation. Consultant analysis.

Table 3.3 Truck-Involved Crashes on U.S. 41-Business, 2010-2015

Crash Type	Number of Crashes	Number of Injuries	Number of Fatalities	Percent of Total
Angle	5	4	0	29%
Not a Collision with a Motor Vehicle	4	1	0	24%
Rear End	3	0	0	18%
Sideswipe	1	0	0	6%
Not Given	4	5	0	24%
Total	**17**	**10**	**0**	**100%**

Source: Georgia Department of Transportation. Consultant analysis.

Note: Percentages may not sum to 100 due to rounding.

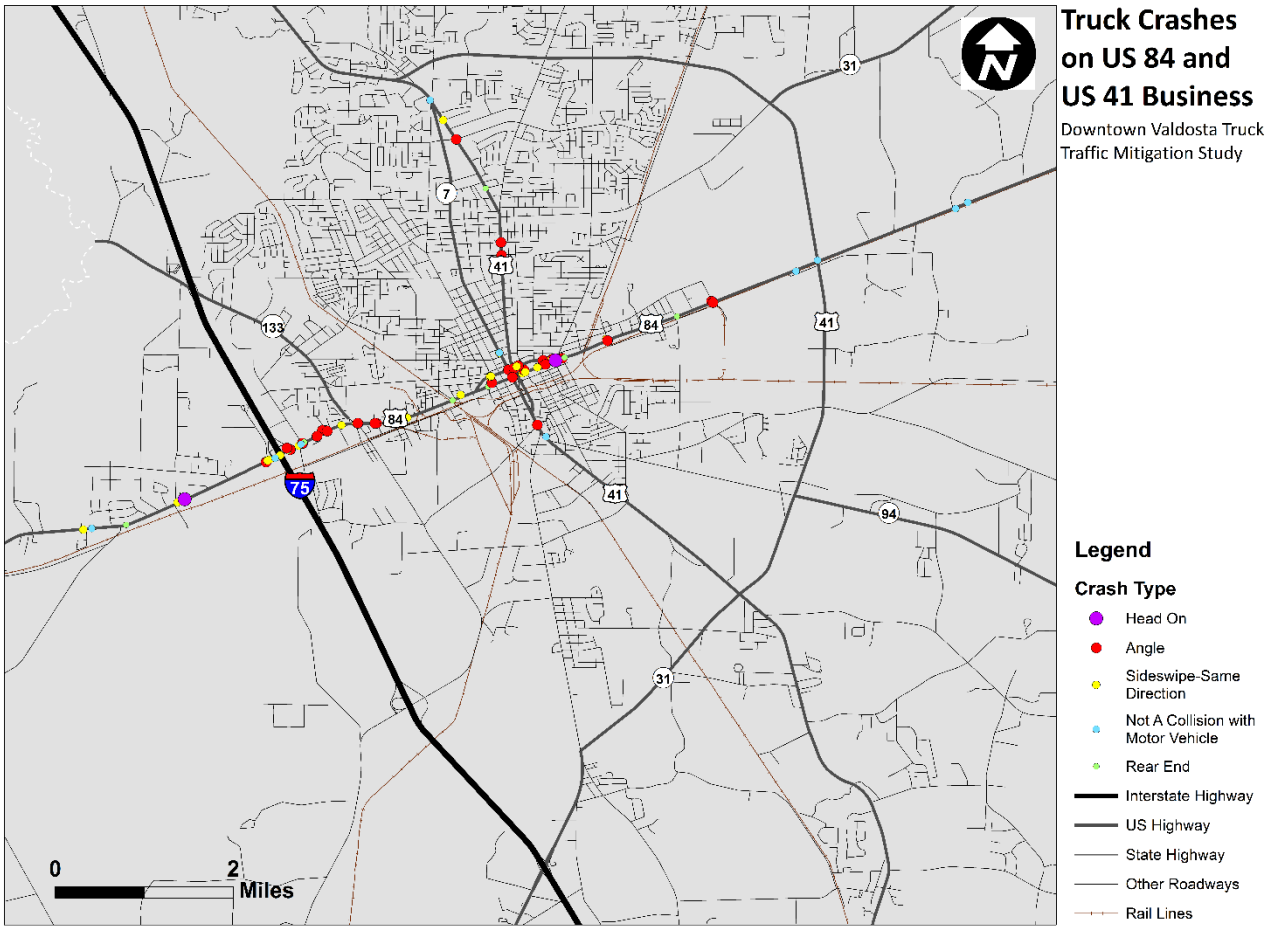
Table 3.4 Comparison to Statewide Crash Rates, Non-Freeway Principal Arterials - Urban

Year	Statewide Crash Rate (100 MVM)	Truck Crash Rate on U.S. 84 (100 MVM)	Truck Crash Rate on U.S. 41 Business (100 MVM)
2011	517	9,673	2,142
2012	579	8,654	1,101
2013	686	3,685	2,190
2014	516	4,903	5,348

Source: GDOT Office of Transportation Data; FHWA Highway Performance Monitoring System; Consultant analysis.

Note: 100 MVM = 100 million vehicle miles.

Figure 3.8 Truck-Involved Crashes near Downtown Valdosta, 2010-2015



Source: U.S. Census TIGER. GDOT Office of Traffic Operations.

4.0 Roadside Truck Surveys and Truck GPS Data

Roadside truck surveys on I-75 and the Port of Savannah along with truck GPS data were used to better understand the origin-destination pairs served by U.S. 84 in Valdosta. Commodity information was also extracted from these data sources.

4.1 Roadside Truck Survey Data

In 2014 and 2015, the Georgia DOT collected roadside truck survey data at 19 weigh stations across the State. The closest weigh station to Valdosta is located on I-75 approximately 9 miles north of Downtown Valdosta near the City of Hahira. The origins and destinations of trucks surveyed at this location were examined to extract information on trucks likely to utilize U.S. 84 as part of their trip.

Truck trips that began or ended in the areas along U.S. 84 were assumed to have traveled on U.S. 84 for a portion of the trip. The result was that out of the 405 truck trips captured at I-75 in Hahira, 42 were found to have utilized U.S. 84. All but two of these trips had a trip end in Lowndes County. This indicates that a large percentage of trucks that access U.S. 84 from I-75 north of Valdosta have destinations in the greater Valdosta region. This is consistent with the alignment of U.S. 84 relative to I-75. Table 4.1 shows truck trip ends of trucks surveyed on I-75 in Hahira that are likely to use U.S. 84.

Trucks that access U.S. 84 from I-75 south of Valdosta or that access U.S. 84 from west of I-75 would not have been captured in these surveyed trucks. These types of trucks are much more likely to run through downtown Valdosta. Through truck trips are described in greater detail in Section 5.0 of this report.

Figure 4.1 shows the distribution of truck body types in the I-75 surveys. Dry vans or refrigerated vans are the largest share of the surveyed trucks with 40 percent of the total. These are closely followed by intermodal container trucks which comprise 29 percent of the 42 truck trips.

Table 4.2 shows that a wide range of commodities were surveyed for trucks using I-75 that are also likely to use U.S. 84. Building materials and household goods each represented 10 percent of the trucks surveyed and no commodities were greater than 10 percent of the total. Twenty-six percent of the trucks were empty.

As shown in Table 4.3, the vast majority of truck trip ends were from warehouses and distribution centers. This facility type represents 44 percent of all truck trip ends surveyed. Manufacturing facilities, retail/restaurant locations, and farms ranged from 10 to 15 percent of the total each. Combined these four facility types are 79 percent of all of the trucks surveyed. The general locations of these facilities are presented in Figure 4.2 and 4.3.

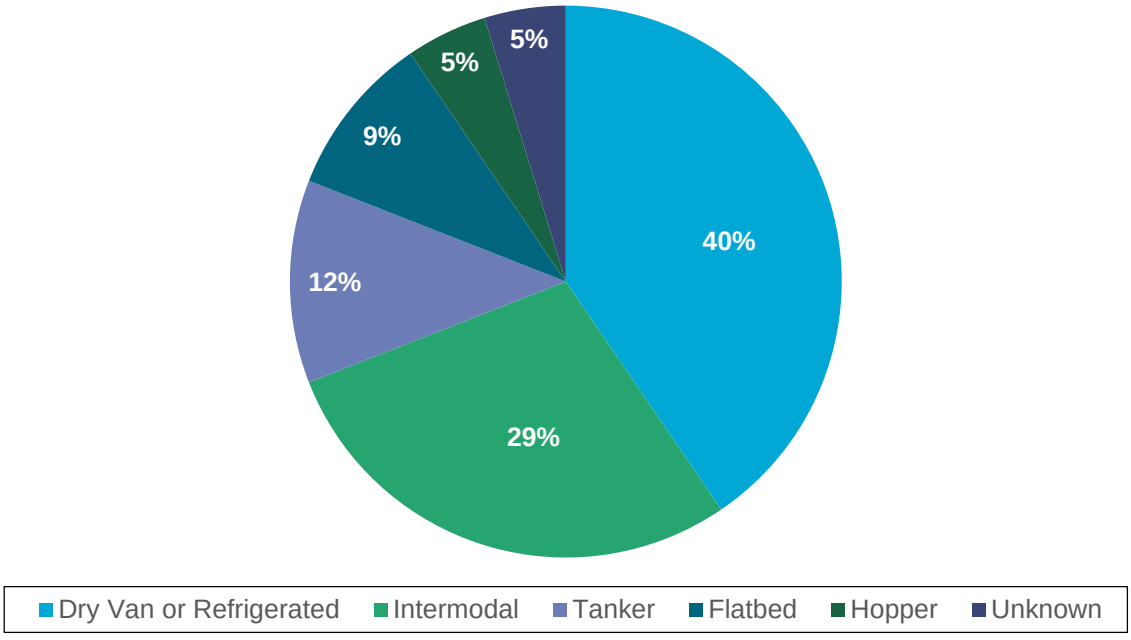
Table 4.1 Truck Trip Ends of Trucks Surveyed at I-75 Weigh Station Likely to Use U.S. 84

Location	Number of Trucks	Percent of Total
Lowndes County	41	49%
Georgia (excluding Lowndes County)	32	38%
Florida	2	2%
Illinois	2	2%
Tennessee	2	2%
Ohio	1	1%
North Carolina	1	1%
South Carolina	1	1%
Alabama	1	1%
Not Given	1	1%
Total	**84**	**100%**

Source: Georgia DOT 2014-15 Roadside Truck Survey.

Note: Percentages may not sum to 100 due to rounding.

Figure 4.1 Distribution of Truck Body Types Surveyed at I-75 Weigh Station Likely to Use U.S. 84



Source: Georgia DOT 2014-15 Roadside Truck Survey.

Table 4.2 Commodities of Trucks Surveyed at I-75 Weigh Station Likely to Use U.S. 84

Commodity	Number of Trucks	Percent of Total
Building Materials	4	10%
Household Goods	4	10%
Water, Milk, Cooking Oil	3	7%
Animal Supplies and Feed	3	7%
Parcels	2	5%
General Freight	2	5%
Hardware	2	5%
Automotive Parts	2	5%
Other commodities	7	17%
Not Given	2	5%
Empty	11	26%
Total	**42**	**100%**

Source: Georgia DOT 2014-15 Roadside Truck Survey.

Note: Percentages may not sum to 100 due to rounding.

Table 4.3 Facility Types at Trip Ends of Trucks Surveyed at I-75 Weigh Station Likely to Use U.S. 84

Location	Number of Truck Trip Ends	Percent of Total
Warehouse/Distribution Center	37	44%
Manufacturing	11	13%
Retail/Restaurant	10	12%
Farm	8	10%
Forest	4	8%
Home Base	3	5%
Construction Site	2	2%
Unknown	2	2%
Other Locations	7	4%
Total	**84**	**100%**

Source: GDOT 2014-15 Roadside Truck Survey.

Note: Percentages may not sum to 100 due to rounding.

4.2 Port of Savannah Gate Survey

The most recent gate surveys conducted at the Port of Savannah were done in 2006. Similar to the I-75 roadside truck surveys, the origins and destinations of trucks surveyed at the Port of Savannah were examined to extract information on trucks likely to utilize U.S. 84 as part of their trip. The result was that out of the 886 truck trips captured using the Port of Savannah gate survey, 17 (1.9 percent) were estimated to have utilized U.S. 84.

The estimated trucks per day at the Port of Savannah is between 5,000 and 6,000. Assuming 1.9 percent of these trucks use U.S. 84, it can be estimated that between 95 and 115 trucks per day access the Port of Savannah and use U.S. 84 through downtown Valdosta (Table 4.4). While this is a small percentage of the total trucks at the Port of Savannah, it represents up to 10 percent of the trucks that use U.S. 84 in downtown Valdosta. Note that this likely represents the lower bounds of the estimate as it is possible that there are inbound goods that are transloaded at distribution centers in Savannah prior to moving by truck along U.S. 84 through Valdosta.

Table 4.4 Estimate of Port of Savannah Trucks Using U.S. 84 in Valdosta

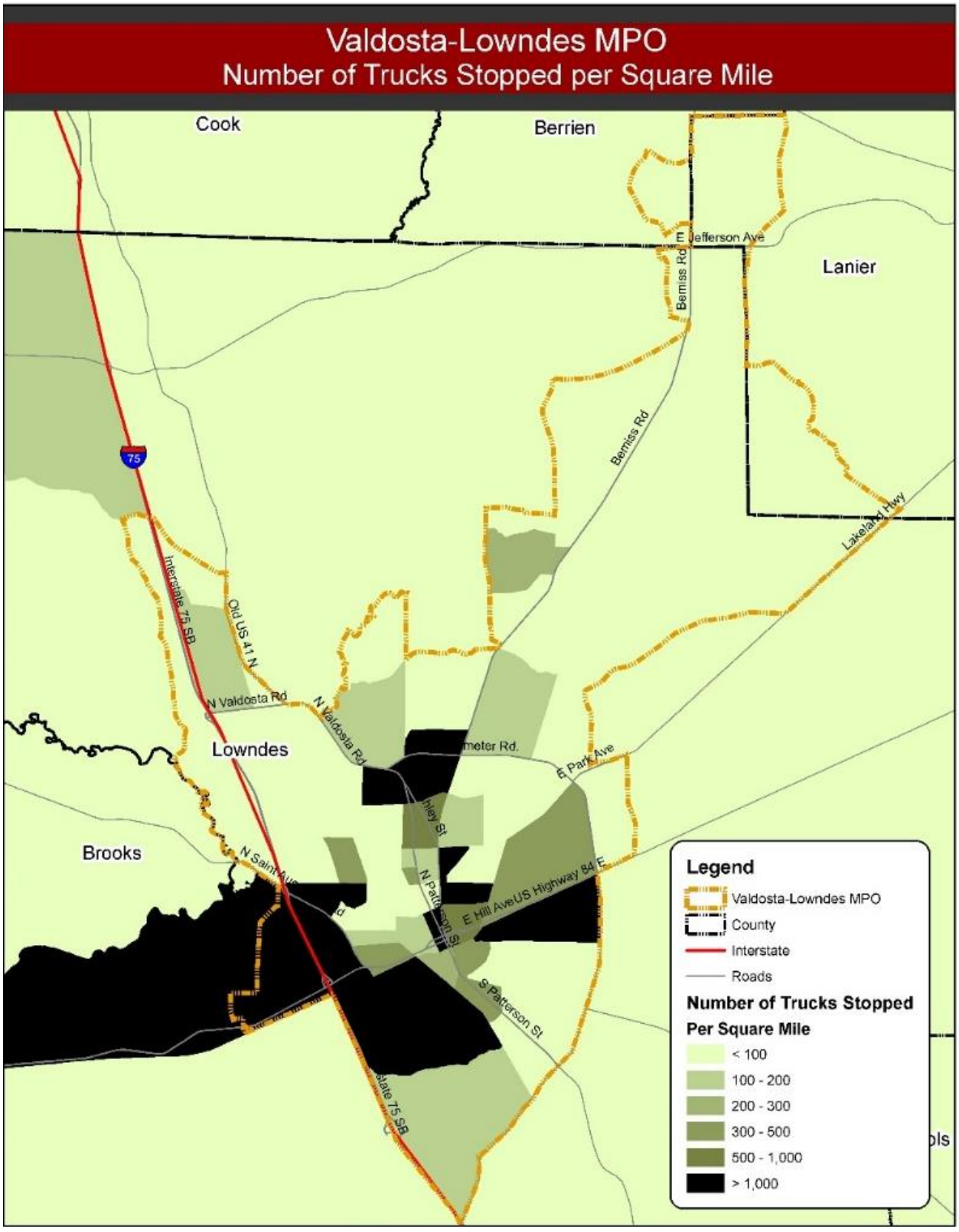
Category	Number of Trucks
Estimated number of daily Trucks Accessing Port	5,000 - 6,000
Percent of Trucks Accessing Port Likely to Use U.S. 84 Through Downtown Valdosta	1.9%
Number of Trucks Accessing Port Likely to Use U.S. 84 Through Downtown Valdosta	95 – 115
Estimated Total Number of Trucks on U.S. 84 Through Downtown Valdosta (See Table 3.1)	1,200-1,500
Percent of Trucks Through Downtown Valdosta Accessing the Port of Savannah	6%-10%

4.3 Truck Trip End Data

As part of the Georgia Statewide Freight and Logistics Plan, GDOT analyzed truck trip end data for the entire State using truck GPS data provided by the American Transportation Research Institute. This data was provided at the Census Block Group-level for the State. Figure 4.2 shows the locations of truck trip ends in the Valdosta region. The truck GPS data show that the heaviest concentrations of truck trip origins and destinations are in the region's industrial areas as indicated by location data for freight-intensive industries (Figure 4.3). Notably, these clusters are located in parts of the Valdosta region to which U.S. 84 and U.S. 41 Business provide the most direct access.

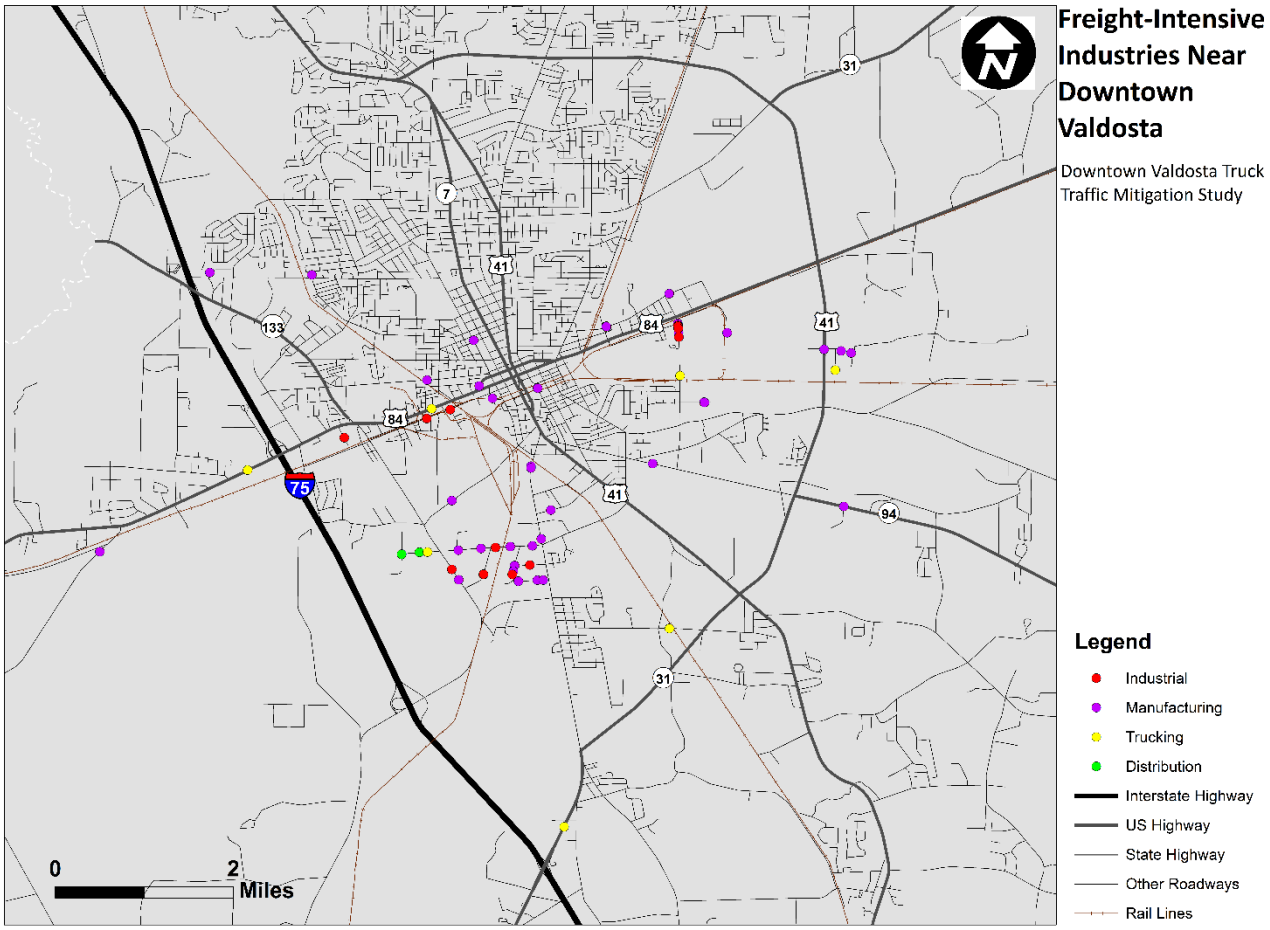
The Valdosta Lowndes MPO 2040 Transportation Vision Plan indicates that there will be continued growth of freight-related businesses in the southern part of the region. Figure 4.4 shows the expected growth areas for land use across Valdosta through 2040. The locations for industrial growth are either along U.S. 84 or south of U.S. 84.

Figure 4.2 Map of Truck Trip Ends in Valdosta, 2009



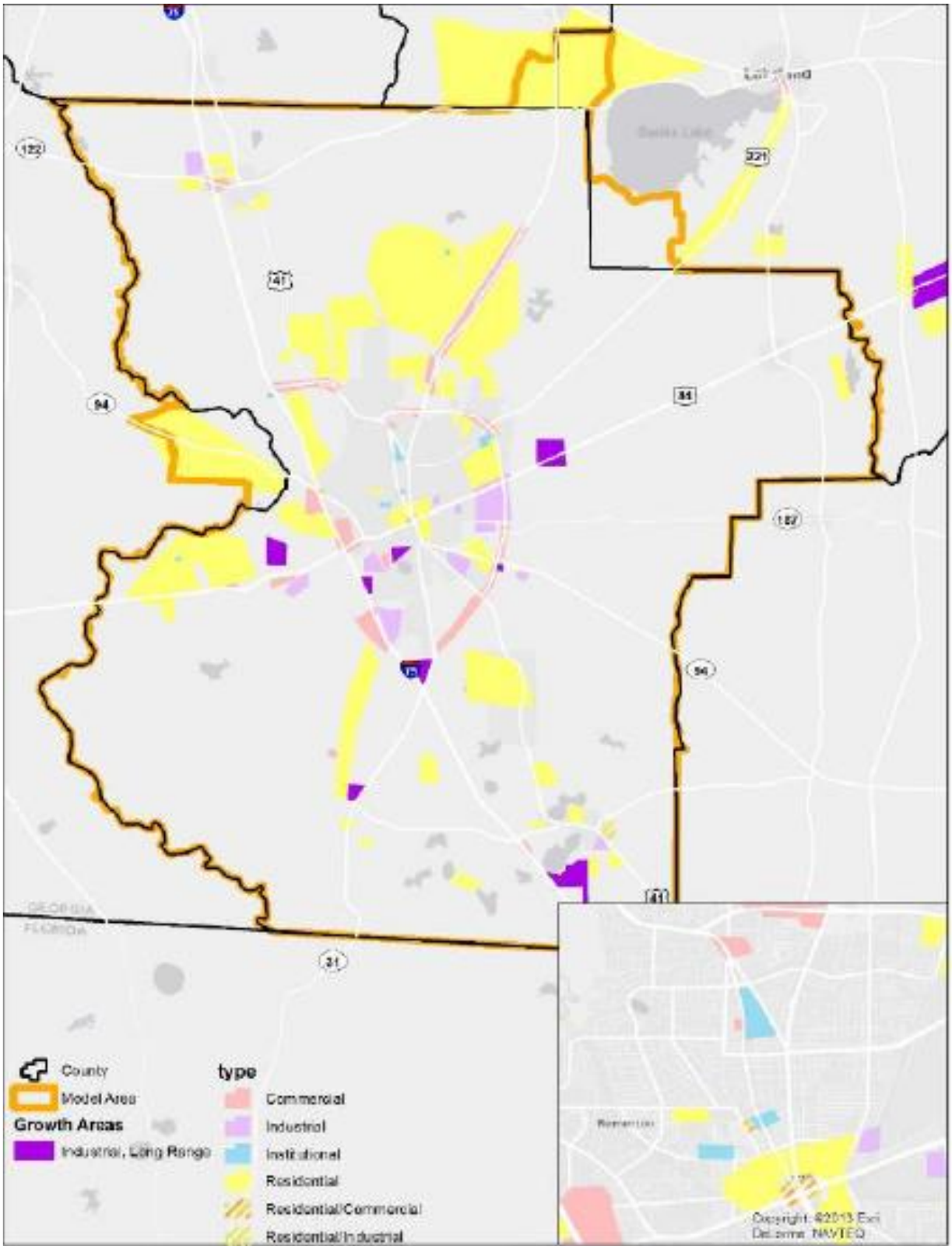
Source: Georgia DOT Statewide Freight and Logistics Plan, 2010-2050.

Figure 4.3 Near-Downtown Freight-Intensive Industries



Source: Georgia Power Company.

Figure 4.4 2040 Land Use Growth Areas



Source: Valdosta-Lowndes MPO 2040 Transportation Vision Plan

5.0 Truck-Following Data Collection

To understand local truck travel patterns through downtown, truck following and stationary count data was collected as part of a new data collection initiative. The truck following data provides greater information on truck movements that are routed through Downtown Valdosta, including their routes, what type of trucks are present, and the final destinations of those trucks. Truck following was executed in two phases – the first from January 20 to 22, 2016 which followed trucks using U.S. 84 at a regional scale and the second from February 10 to 12, 2016 which followed trucks specifically focused on downtown Valdosta.

5.1 Phase 1 of Truck-Following Data Collection

5.1.1 Phase 1 Data Collection Methodology

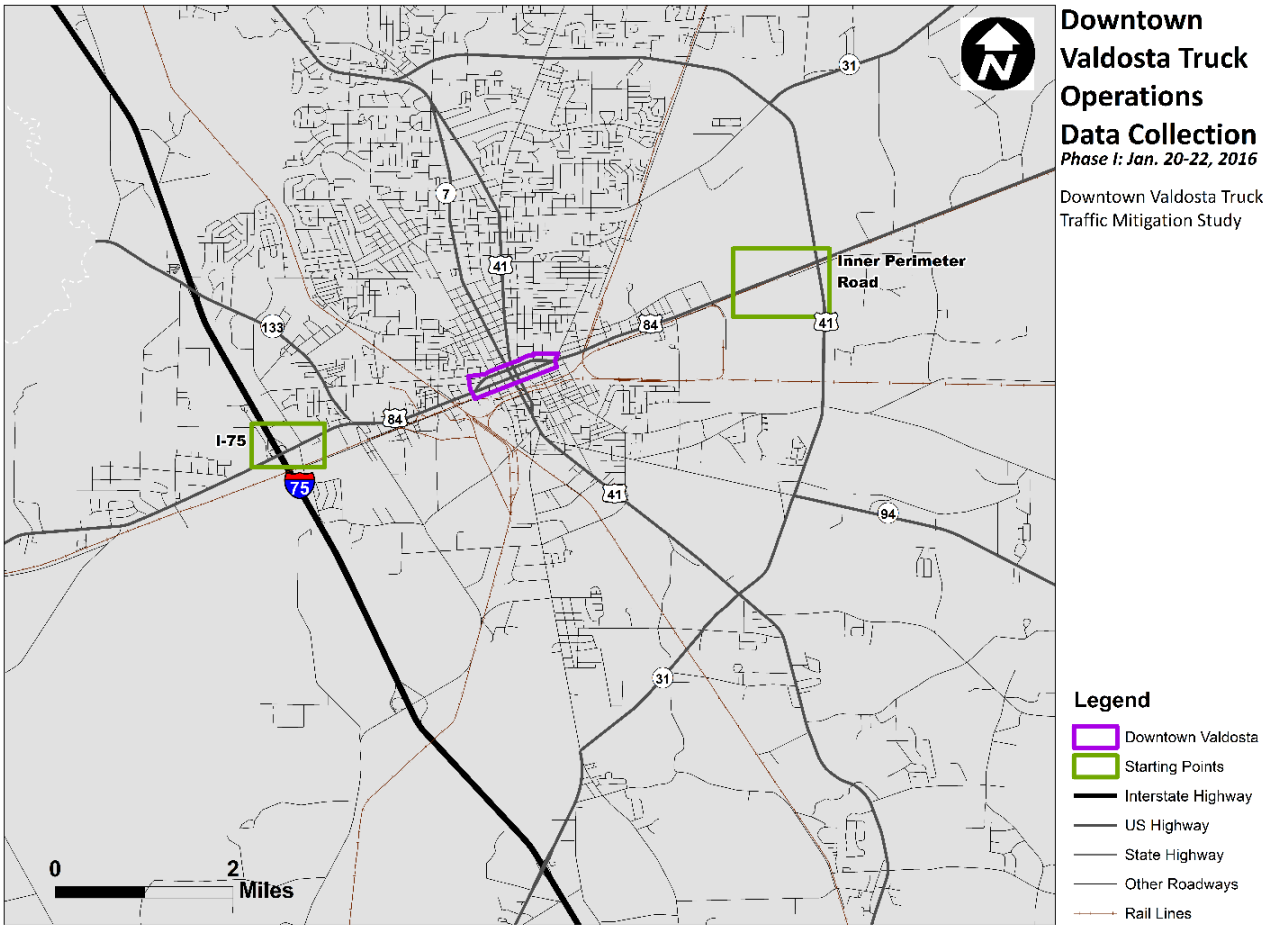
During the first phase of data collection, trucks were trailed from two starting points along U.S. 84 shown in Figure 5.1. One starting point, termed "I-75," was located in the western portion of the Valdosta Region near the I-75/U.S. 84 interchange. The general area from which trucks were followed is the length of U.S. 84 between its entry/exit ramps with I-75 and Avenue B, just west of SR 133/Street Augustine Road. It should be noted that many of the trucks that were followed exited off of I-75 and several others came from west of I-75 on U.S. 84.

The other starting point, termed "Inner Perimeter Road," was located in the eastern portion of the Valdosta Region near the intersection of U.S. 84 and U.S. 41/Inner Perimeter Road. The general area from which trucks were followed is the length of U.S. 84 from its intersection with Inner Perimeter Road and Blanchard Street. Over the three-day period, a total of 65 trucks were followed across the Valdosta Region – 36 trucks starting at I-75 and 29 trucks starting at Inner Perimeter Road.

5.1.2 Phase 1 Data Collection Results – Percent of U.S. 84 Trucks Moving Through Downtown

Virtually all of the followed trucks travelled through downtown without stopping. Ninety-seven percent of the trucks followed from both starting points traveled through downtown and did not stop at a downtown business. Only two of the 36 trucks starting at I-75 stopped to serve a business in downtown (Table 5.1). One of the two trucks turned off of U.S. 84 before reaching downtown. None of the 29 trucks starting from Inner Perimeter Road stopped in downtown Valdosta (Table 5.2). This indicates that of the 65 trucks that use U.S. 84 in downtown Valdosta only 1.5 percent of these trucks are destined to locations within the downtown area.

Figure 5.1 Starting Points for Phase I Truck Following



Source: U.S. Census TIGER.

Table 5.1 Destination Region of Followed Trucks for I-75 Starting Point, 2016

Generalized Destination	Destination Region	I-75 Starting Point	
		Number of Trucks	Percent of Total
Through Downtown		**34**	**94%**
	Outside Valdosta Region to the east	15	42%
	East of Downtown	9	25%
	South of Downtown	7	19%
	North of Downtown	3	8%
Into Downtown		**1**	**3%**
	Downtown	1	3%
Stopped Prior to Downtown		**1**	**3%**
	West of Downtown	1	3%
Total		**36**	**100%**

Source: Consultant analysis. Phase I Data Collection.

Table 5.2 Destination Region of Followed Trucks for Inner Perimeter Road Starting Point, 2016

Generalized Destination	Destination Region	Inner Perimeter Road Starting Point	
		Number of Trucks	Percent of Total
Through Downtown		**29**	**100%**
	Outside Valdosta Region to the west	18	62%
	South of Downtown	8	28%
	West of Downtown	3	10%
Into Downtown		**0**	**0%**
Stopped Prior to Downtown		**0**	**0%**
	Total	**29**	**100%**

Source: Consultant analysis. Phase I Data Collection.

5.1.3 Phase 1 Data Collection Truck Travel Paths Through Downtown

Figures 5.1 and 5.2 show traces of the travel paths of the trucks that were followed from the I-75 and Inner Perimeter Road starting points, respectively. For trucks that were followed from the I-75 starting point, two-thirds of the trucks travelled through downtown entirely along U.S. 84. Fifteen of the 36 trucks left the Valdosta region entirely staying on U.S. 84 all the way past Inner Perimeter Road on the east side of the region.

The most popular single destination within the region for trucks travelling east was the ADM Plant which was accessed from U.S. 84 using Clay Road. This location and other nearby destinations was the endpoint for nine of the 36 trucks followed. Therefore, 25 percent of the trucks followed from the I-75 starting point were destined for this location. It should be noted that this phase of the data collection occurred towards the end of the peak season for ADM operations when they can have over 200 trucks per day accessing their facilities.

For trucks that were followed from the I-75 starting point, 9 of the 36 trucks turned off of U.S. 84 on to U.S. 41 Business. Three of these trucks turned left off of U.S. 84 and travelled north along U.S. 41 Business. Six of these trucks turned right off of U.S. 84 and travelled south along U.S. 41 to the more industrialized southern portion of the Valdosta region.

For trucks that were followed from Inner Perimeter Road starting point, over 60 percent (18 of the 29 trucks) travelled all the way through the region to I-75 and beyond using U.S. 84 as their sole route through downtown. Of the remaining eleven trucks, five turned left on to U.S. 41 Business to go south of downtown. No trucks turned right on U.S. 41 to go north of downtown. Three of the 29 trucks turned left on to St. Augustine Road to go south of downtown.

The U.S. 84/U.S. 41 Business intersection is critical for trucks moving through downtown. Based on the truck following data and the GDOT truck count data, it can be estimated that there are approximately 220 trucks (approximately 120 from Hill Avenue and 100 from Central Avenue) that turn off of U.S. 84 and onto U.S. 41 on a daily basis.

Figure 5.2 Truck Paths from I-75 Starting Point, 2016

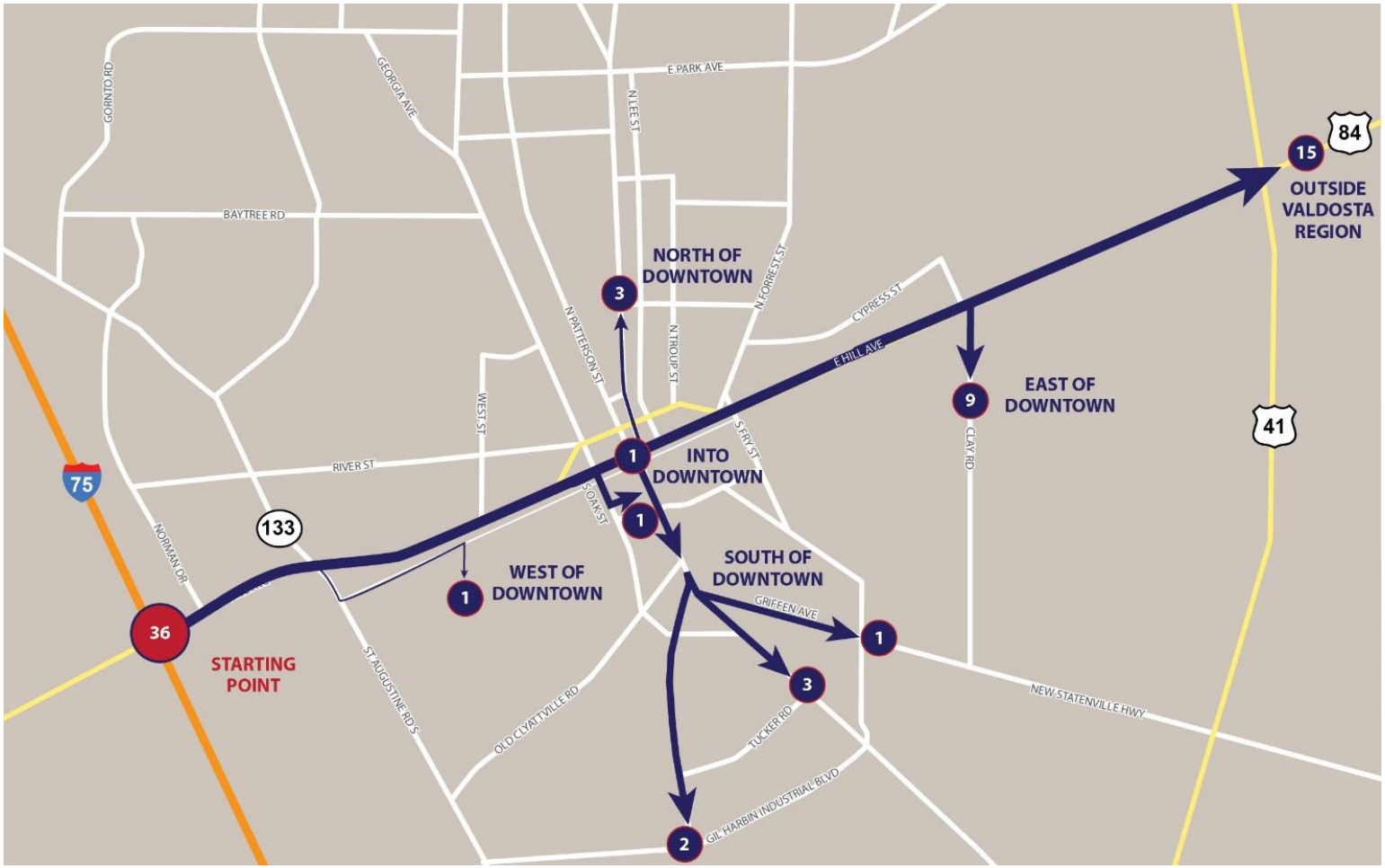
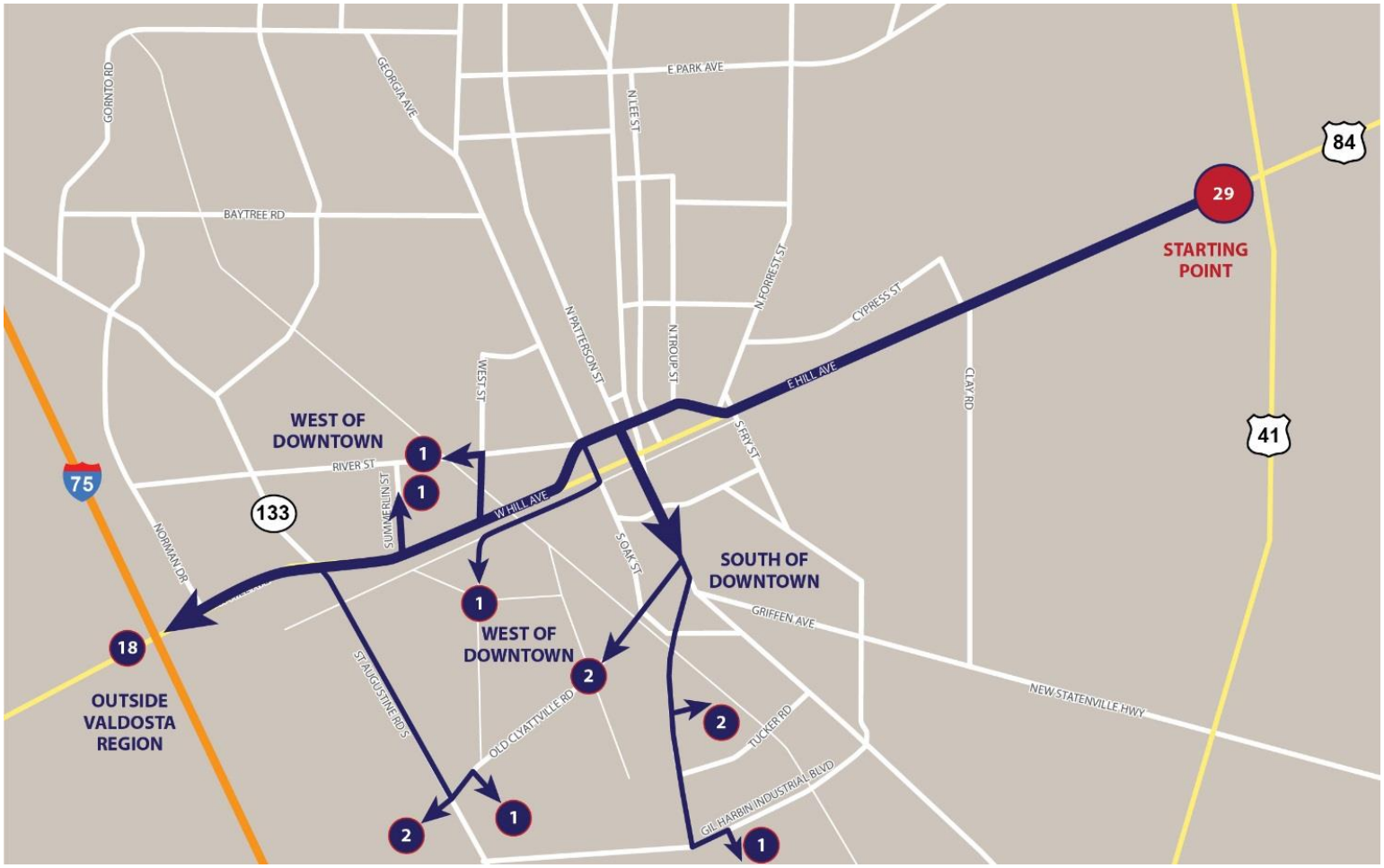


Figure 5.3 Truck Paths from Inner Perimeter Road Starting Point, 2016



5.1.4 Phase 1 Data Collection Results – Facility Types at Trip Ends and Commodities

The destinations of the trucks that stopped in the Valdosta region included manufacturing, distribution centers/warehouses, truck terminals, waste/ recycling facilities, and other commercial firms (i.e., grocery stores, automotive repair shops, furniture stores, etc.). Table 5.3 shows that of the 21 trucks starting from I-75 with destinations in the Valdosta region, 48 and 38 percent were destined for manufacturing and commercial areas, respectively. For trucks that were followed from Inner Perimeter Road, manufacturing, distribution center, and commercial firms were the predominant destination facility types. These accounted for a combined 81 percent of facility types of trucks with destinations in the Valdosta region.

Information about trucks in downtown was also inferred from truck body types and specific destinations as shown in Tables 5.4 and 5.5. For trucks that were followed from I-75, 24 percent of the trucks were carrying either agriculture or food products. Another 18 percent were carrying containers that arrived by port. For the trucks that were followed from Inner Perimeter Road, 21 percent were log trucks and 28 percent were port based.

Table 5.3 Destination by Facility Type of Trucks on U.S. 84

	I-75 Starting Point		Inner Perimeter Road Starting Point	
Destination Facility	**Number of Trucks**	**Percent of Total**	**Number of Trucks**	**Percent of Total**
Manufacturing	10	47%	4	37%
Other Commercial	8	38%	2	18%
Distribution/ Warehouse	0	0%	3	27%
Truck Terminal	1	5%	1	9%
Waste/ Recycling	1	5%	1	9%
Other	1	5%	3	0%
Total	**21**	**100%**	**11**	**100%**

Source: Consultant analysis. Phase I Data Collection.

Table 5.4 Commodities of Trucks with Destinations in the Valdosta Region
I-75 Starting Point

Commodity	Number of Trucks	Percent of Total
Agriculture/Food	9	24%
Port Based	7	18%
Packaging Materials	2	6%
Petroleum Products	1	3%
Automotive Parts	1	3%
Waste/Recycling	1	3%
Wood/Wood Products	1	3%
Furniture/Fixtures	1	3%
Large Household Goods	1	3%
Unknown	14	37%
Total	**36**	**100%**

Source: Consultant analysis. Phase I Data Collection.

Table 5.5 Commodities of Trucks with Destinations in the Valdosta Region
Inner Perimeter Road Starting Point

Commodity	Number of Trucks	Percent of Total
Port Based	8	28%
Logs	6	21%
Agriculture/Food	2	7%
Concrete	1	3%
Waste/Recycling	1	3%
Automotive Parts	1	3%
Unknown	10	34%
Total	**29**	**100%**

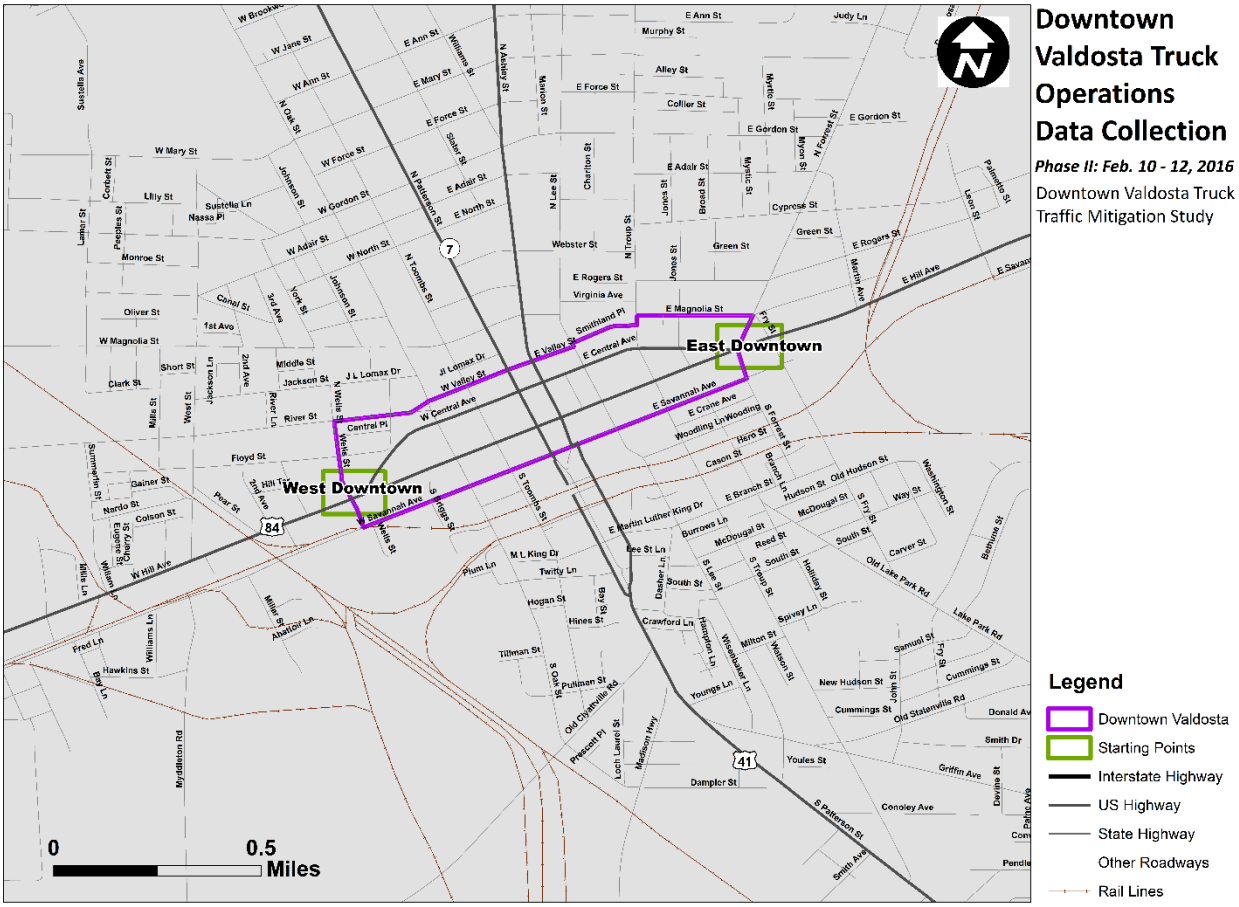
Source: Consultant analysis. Phase I Data Collection.

5.2 Phase 2 of Truck-Following Data Collection

5.2.1 Phase 2 Data Collection Methodology

The second phase of data collection focused on the core of downtown Valdosta to enable the capturing of information on a large number of trucks. Trucks were followed along U.S. 84 starting from the eastern and western edges of downtown as shown in Figure 5.4. In addition, trucks were followed only as far as the extents of downtown – roughly the area bounded by Wells and Forrest Streets to the west and east, and Valley Street and Savannah Avenue to the north and south. Over the three-day period, a total of 226 trucks were followed through downtown Valdosta – 111 trucks starting at the eastern starting point and 115 trucks starting at the western starting point.

Figure 5.4 Starting Points for Phase II Data Collection



Source: U.S. Census TIGER.

5.2.2 Phase 2 Data Collection Results – Percent of Through Trucks and Travel Paths

As shown in Tables 5.5 and 5.6, the overwhelming majority of the trucks followed from both starting points traveled through downtown. Two percent of the trucks followed from the west downtown location stopped in downtown Valdosta and 3 percent of trucks starting from the east downtown location stopped in downtown Valdosta. Over 97 percent of the trucks traveling in the core of downtown are traveling through downtown. This is consistent with the percent of through trucks that were observed in the Phase I data collection.

Figures 5.5 and 5.6 show the travel paths of trucks through downtown Valdosta. 108 of the 111 trucks followed in the westbound direction traveled through downtown Valdosta. Of the 108 westbound trucks that traveled through Downtown Valdosta, 72 percent used U.S. 84 exclusively. 22 percent of trucks followed also used U.S. 41 (north or south) in their routes. This indicates that the left turn from Central Avenue approaching from the east on to Patterson Street in the southbound direction is an important maneuver for trucks as they move through the downtown region.

The majority of eastbound trucks that traveled through downtown exclusively used U.S. 84. 111 of the 115 trucks followed in the eastbound direction traveled through downtown Valdosta. Of the 111 eastbound trucks that traveled through Downtown Valdosta, 89 percent used U.S. 84 exclusively. There were far fewer trucks

utilizing U.S. 41 (north or south) in their routes in this direction, approximately 3 percent. The remaining through trucks, about 8 percent, used Forrest Street, Oak Street, and Troup Street.

Table 5.6 Destination Region of Trucks on U.S. 84 from West of Downtown Starting Point

		West Downtown Starting Point	
Generalized Destination	Destination Region	Number of Trucks	Percent of Total
Through Downtown		**111**	**97%**
	East of Downtown	105	92%
	South of Downtown	4	3%
	North of Downtown	2	2%
Into Downtown		**4**	**3%**
	Downtown	4	3%
Total		**115**	**100%**

Source: Consultant analysis. Phase I and II Data Collection.

Table 5.7 Destination Region of Trucks on U.S. 84 from East of Downtown Starting Point

		East Downtown Starting Point	
	Destination Region	Number of Trucks	Percent of Total
Through Downtown		**109**	**98%**
	West of Downtown	82	74%
	South of Downtown	24	21%
	North of Downtown	3	3%
Into Downtown		**2**	**2%**
	Downtown	2	2%
Total		**111**	**100%**

Source: Consultant analysis. Phase I and II Data Collection.

Figure 5.5 Truck Paths from West Downtown Starting Point

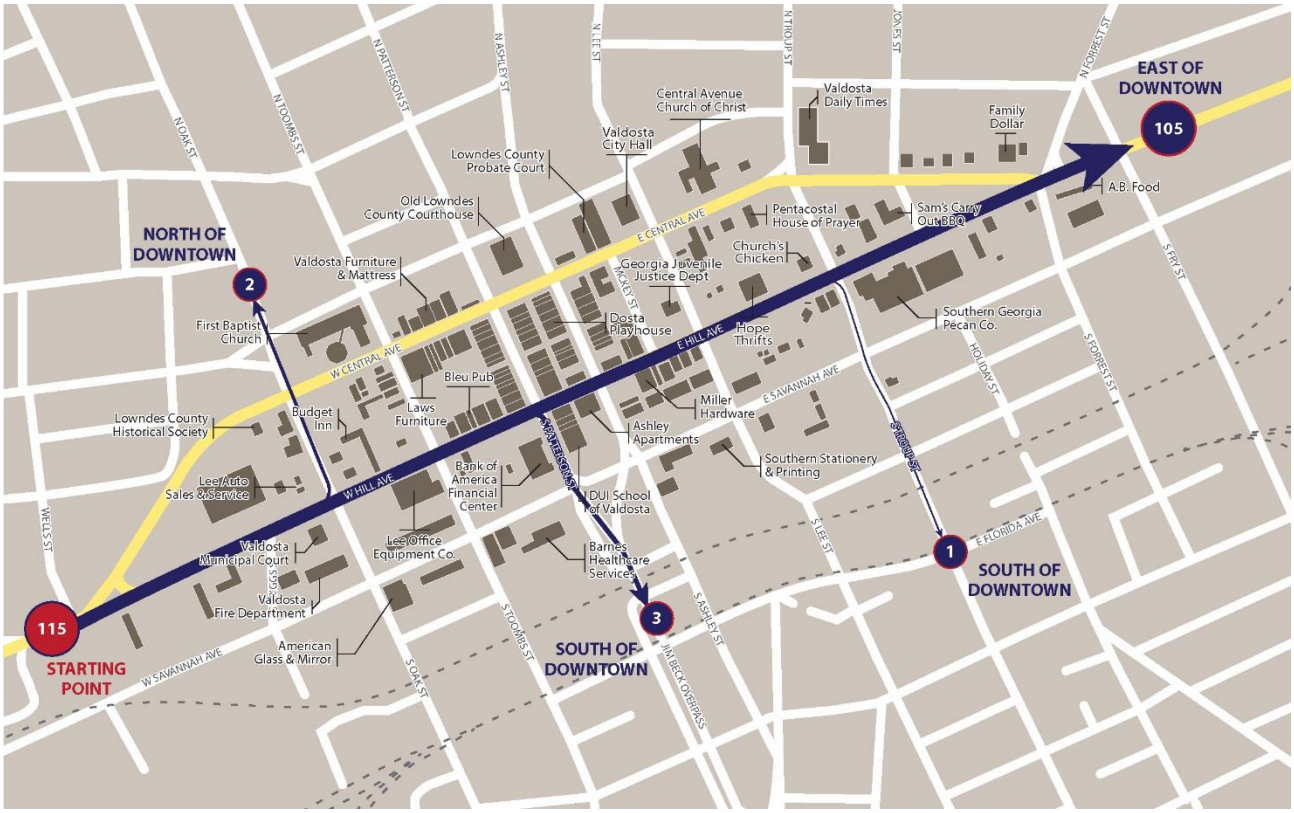
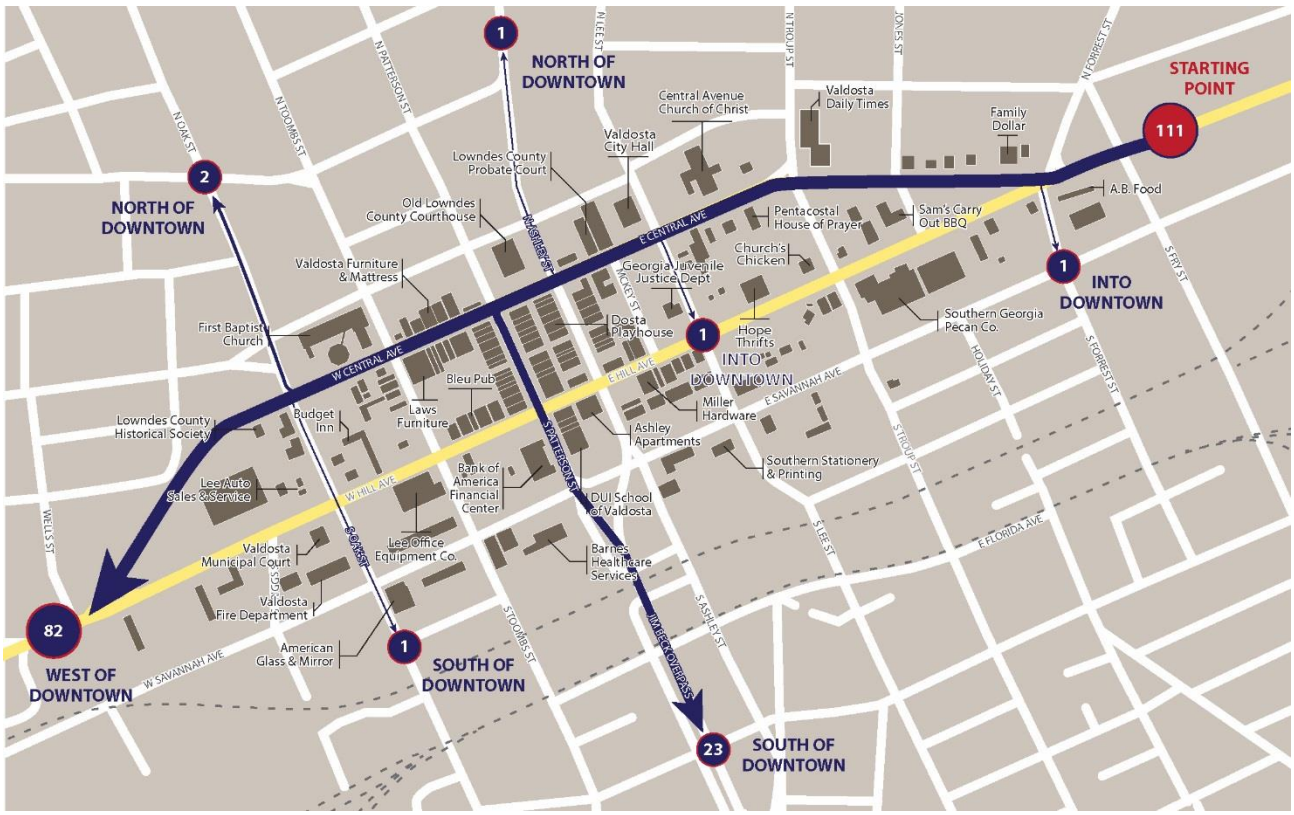


Figure 5.6 Truck Paths from East Downtown Starting Point



5.3 New Truck Classification Counts

Table 5.8 shows the location, time periods, and trucks counted at four stationary truck count locations on U.S. 84 and U.S. 41.locations. The average hourly volume at these locations is 79 trucks at U.S. 84 and Central Avenue and 61 trucks at U.S. 84 and Hill Avenue. The average hourly volume on U.S. 41 is 33 trucks on Ashley Street and 13 trucks on Patterson Street. Overall, the truck counts on both U.S. 84 and U.S. 41 were consistent with GDOT data. The newly collected hourly truck volumes are in the same range as the GDOT data for similar time periods which confirms the accuracy of the GDOT classification count data in downtown Valdosta.

Truck body types also yield insight into the likely origins and destinations of trucks. Some truck body types are used to transport general freight and serve a variety of shippers, while other truck types are specialized to handle certain types of cargo. Table 5.9 shows the different body types observed during data collection and their primary purposes. The percentage of truck body types is shown in Table 5.10 for U.S. 84 and U.S. 41. Vans, hoppers, dump, intermodal, and log trucks are the predominant truck body types utilizing U.S. 84 in the downtown core. This indicates that there is a large component of general freight, port-based trucks, and logging activity that is supported by trucks moving through downtown Valdosta.

Table 5.8 Stationary Truck Count Data

Data Collection Location	Time Period of Data Collection	Duration of Data Collection	Number of Trucks Counted	Hourly Average of Newly Collected Data
U.S. 84/ Central Avenue	January 21, 2016	3:00-5:30 P.M.	118	79
U.S. 84/ Hill Avenue	February 10, 2016	9:00-10:30 A.M.	91	61
U.S. 41 Business/ Ashley Street	February 10, 2016	9:00-10:30 A.M.	49	33
U.S. 41 Business/ Patterson Street	February 12, 2016	1:00-2:00 P.M.	13	13

Source: Consultant analysis. Phase I and II Data Collection.

Table 5.9 Truck Body Types and Primary Purposes

Truck Body Type	Primary Purpose
Van	General freight, refrigerated goods
Hopper	Grains
Dump	Loose materials (e.g., sand, gravel, dirt, etc.)
Intermodal	Containerized goods
Log	Unprocessed forest products
Straight/Single-Unit Van	General freight, parcels, packages, appliances
Flatbed	General freight too large for vans
Tank	Liquids (e.g., fuel, milk, etc.)

Source: Consultant analysis.

Table 5.10 Distribution of Truck Body Types (Percent of Total)

U.S. 84 and U.S. 41

Truck Type	U.S. 84/ Central Avenue (118 Trucks)	U.S. 84/ Hill Avenue (91 Trucks)	U.S. 41/ Ashley Street (49 Trucks)	U.S. 41/ Patterson Street (13 Trucks)
Van	27%	20%	10%	23%
Hopper	18%	11%	0%	0%
Dump	13%	2%	2%	15%
Flatbed	8%	10%	4%	8%
Straight/Single-Unit Van	7%	12%	37%	23%
Tanker	7%	4%	4%	0%
Log	5%	1%	20%	0%
Intermodal	3%	13%	0%	0%
Other	15%	26%	22%	31%
Total	**100%**	**100%**	**100%**	**100%**

Source: Consultant analysis. Phase I and II Data Collection.

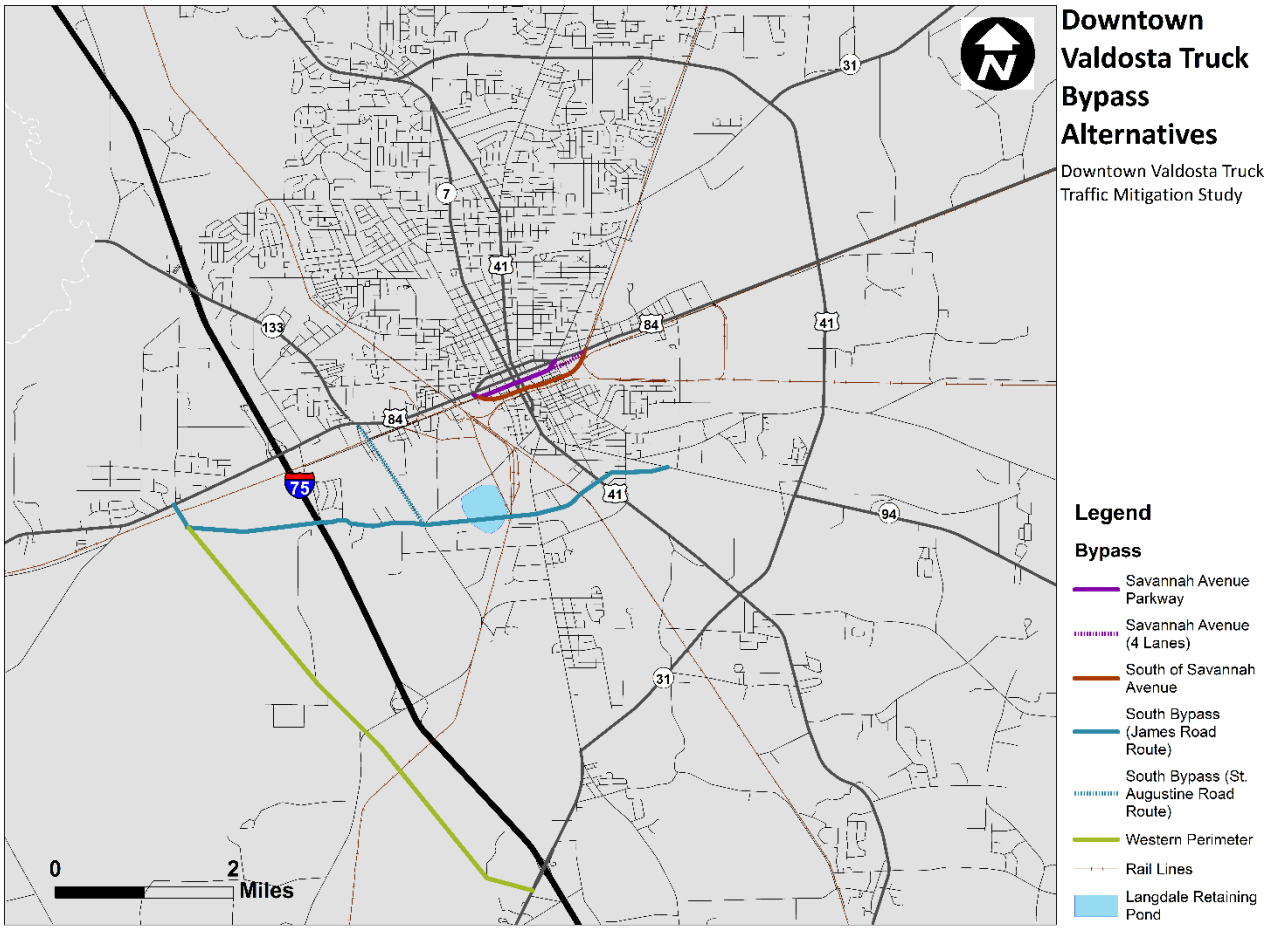
6.0 Description of Alternatives

Alternatives for alleviating truck traffic through downtown were developed by reviewing proposed solutions from past planning efforts and by incorporating insights from stakeholders and the truck following analysis into new and/or modified alternatives. As a result, the following alternatives were further evaluated:

1) Do-Nothing,
2) Savannah Avenue Parkway,
3) South of Savannah Avenue,
4) South Bypass, and
5) Western Perimeter.

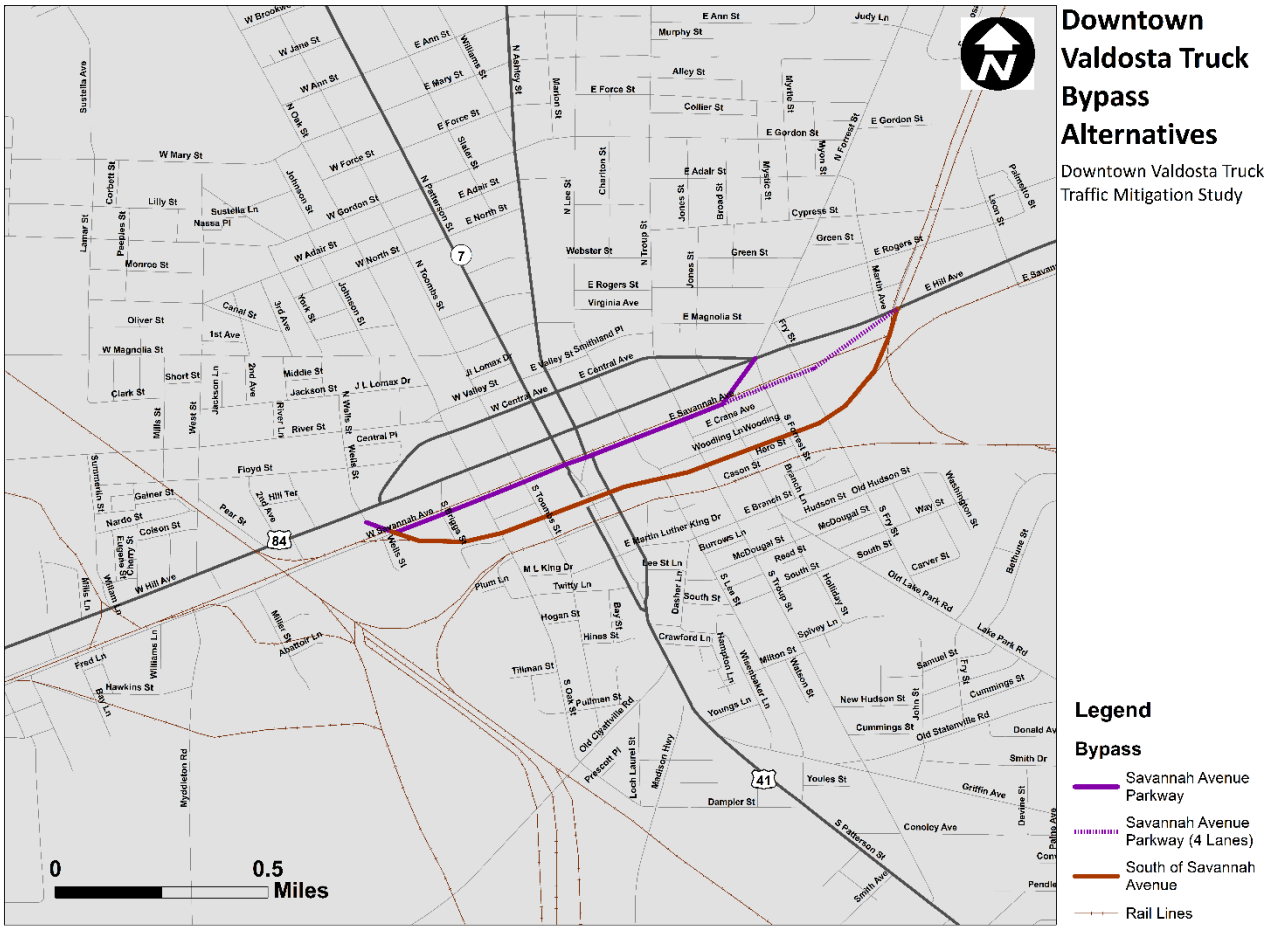
Figure 6.1 shows a map of the five alternatives. Figure 6.2 shows a close-up map of the two alternatives that are located close to downtown Valdosta.

Figure 6.1 U.S. 84 Bypass Alternatives



Source: U.S. Census TIGER; Bureau of Transportation Analysis National Transportation Atlas Database.

Figure 6.2 Near-Downtown U.S. 84 Bypass Alternatives



Source: U.S. Census TIGER; Bureau of Transportation Analysis National Transportation Atlas Database.

Alternatives 2 through 5 also provide the option to redesignate U.S. 84 to the truck bypass. If this option were exercised, then there is also the possibility of redesignating Central Avenue and Hill Avenue in downtown Valdosta as local roads. This in turn would give local control over decisions about redesigning the roads away from one-way pairs, reducing the number of travel lanes, redesigning parking on the roads, and other measures to make the roadways more compatible for downtown residents and visitors. A description of the alternatives is provided below.

1) Do Nothing Alternative. Assumes that no new roadways will be constructed or existing roadways widened. Effectively, it gauges what will likely happen if no action is taken to alleviate truck traffic through downtown. It is used as the baseline by which all other alternatives are measured.

2) Savannah Avenue Parkway Alternative. Initially, this alternative was identified in the Valdosta Downtown Master Plan as a solution for diverting truck traffic away from downtown.[3] As specified in this study, the Savannah Avenue Parkway alternative consists of three subalternatives that upgrade the existing Savannah Avenue Parkway by modifying the existing alignment and/or operation to divert trucks away from

[3] Valdosta Downtown Master Plan. http://valdostamainstreet.com/wp-content/uploads/2012/03/Valdosta-Downtown-Master-Plan.pdf. Accessed May 4, 2016.

the downtown core. The subalternatives comprising the Savannah Avenue Parkway option are: All Vehicles, Trucks-Only, and 4 Lanes.

- The first two subalternatives maintain the existing alignment but provide better connections to U.S. 84 at Wells and Forrest Streets. Furthermore, they reconnect Savannah Avenue between Ashley and Patterson Streets allowing for east-west through movements south of downtown. While the All Vehicles subalternative would allow all traffic on the improved Savannah Avenue, the Trucks-Only subalternative would only make the roadway available to trucks.

- In the Savannah Avenue Parkway 4 Lanes subalternative, the same improvements as the All Vehicles and Trucks-Only options would be implemented. However, Savannah Avenue would be expanded to four lanes and connect into Hill Avenue at Railroad Avenue. In addition, Central and Hill Avenues would be converted to two-way streets and the routing for U.S. 84 diverted to the expanded Savannah Avenue.

3) South of Savannah Avenue Alternative. This alternative was identified by the City of Valdosta Planning Department. The South of Savannah Avenue alternative would construct a new roadway near the existing CSX Transportation rail corridor. The new roadway would connect to the current U.S. 84 route near Wells Street in the west and Railroad Avenue in the east and be routed under the U.S. 41 overpass. To implement this alternative the rail right-of-way must be acquired from CSX Transportation, the existing rail line must be relocated south of its current location, and Olympic Park south of downtown must be removed, among other challenges. In addition, this alternative would shift truck movements closer to the neighborhoods immediately south of downtown.

4) **South Bypass Alternative.** This alternative was identified in the Valdosta-Lowndes MPO 2040 Long-Range Transportation Plan.[4] It includes two subalternatives: 1) the James Road route and 2) the Saint Augustine Road routes.

- The James Road route begins at the intersection of U.S. 84/Hill Avenue and James Road in the west and extends to Griffin Avenue in the west. It combines new roadway construction with extending and widening existing roadways to form a new east-west connection. The South Bypass will use the right-of-way that currently is Lloyd Jackson Road and Tucker Road and new construction where there are gaps to form the connection. Importantly, the South Bypass will provide a connection at Clay Road which has significant industrial development along its corridor.

- The St. Augustine route version of the South Bypass alternative would only extend to Saint Augustine Road and use that roadway's right-of-way to connect into the current U.S. 84. This would require a fly-over on top of I-75 to connect to James Road. Though the St. Augustine route avoids impacting the residential community along Lloyd James Road, there is a busy grade-level crossing along Saint Augustine Road that would require separation.

5) **Western Perimeter Alternative.** This alternative was also initially identified in the VLMPO Transportation Vision Plan. This alternative diverts truck traffic to the southern portion of the Valdosta Region where it connects with SR 31/Madison Highway. Madison Highway and Inner Perimeter Road would provide access to the north and east portions of the Valdosta Region. The Western Perimeter

[4] Valdosta-Lowndes Metropolitan Planning Organization. 2040 Transportation Vision Plan. September 2, 2015.

bypass connects to the current U.S. 84 west of I-75 at James Road and at Madison Highway, near its interchange with I-75, in the east.

6.1 Operational Improvements Considered

This study did consider operational improvements to existing roads as an alternative way to mitigate truck traffic in downtown Valdosta. One alternative that was considered was reducing the number of lanes from three to two in the core of downtown Valdosta on Central Avenue and Hill Avenue, while increasing the lane widths. This has the potential to increase safety by making the roadways more compatible with truck activity. This would be most beneficial at U.S. 41 Business, where trucks often have difficulty navigating the turns on and off of U.S. 84. There appears to be sufficient capacity on Central Avenue and Hill Avenue that would allow for a reduction in travel lanes. Based on feedback received during the interview process, this alternative was considered to not be optimal because the noise, pollution and movements from nearby trucks would still be problematic for downtown businesses, particularly retail outlets and restaurants.

An alternative was also considered to mitigate downtown truck traffic by improving intersections along U.S. 41. The truck-following data indicated that the only significant truck turning movement along U.S. 84 was at the intersection of U.S. 41 Business. Specifically, the problematic truck turning movement was for trucks traveling west on U.S. 84 and turning left to go south on to U.S. 41 Business. Some trucks making this turn often swing out of their lane thereby blocking other travel lanes on U.S. 84 or U.S. 41 Business. Other trucks making this turn hit the curb at the intersection causing physical damage to the intersection. Making this intersection more truck-friendly would require taking of pedestrian friendly sidewalks or widening lanes which would decrease the number of through lanes along U.S. 84.

Another alternative that was considered was the removal of parking along Central Avenue and Hill Avenue accompanied by the use of this space for improved pedestrian facilities. Specifically, the sidewalks could be widened, and barriers such as trees and shrubs could better separate vehicles and pedestrians. Consistent with the example discussed above, this potential alternative was seen as not comprehensively solving the truck issues in downtown, particularly those related to noise. There was also a sense by stakeholders that merely the presence of log trucks, old container trucks and other large vehicles created an unpleasant atmosphere downtown for the operation of businesses.

An additional consideration was the restriction of trucks to using the right lane when travelling along U.S. 84. Some stakeholders agreed with this as a slight improvement over the current operation of trucks through downtown. However, most stakeholders did not feel that this would address the primary issues related to truck activity. Additionally, as determined through the truck-following survey, there are a large percentage of trucks that enter downtown Valdosta from the east on U.S. 84, then turn left and go south on to U.S. 41 Business. A right lane restriction would likely result in significant weaving just prior to this intersection which would add to safety issues in downtown.

A final example that was considered was making Hill Avenue a local road in the core of downtown and redesigning Central Avenue as a two-way four lane road that would exclusively serve as U.S. 84 in the core of downtown. This alternative would have involved significant new right of way in the core of downtown, including several heavily used facilities and a mix of public and private buildings. This was seen as having a significant negative impact on downtown that would exceed the benefits of relocating trucks from Hill Avenue. Additionally, this alternative was determined to make turns between U.S. 84 and U.S. 41 Business even more difficult than today.

Overall, it was determined that it was necessary to remove as many trucks as possible form Central Avenue and Hill Avenue and that incremental improvements to these two roadways and their operations would not sufficiently solve the problem of trucks in downtown Valdosta.

7.0 Evaluation of Alternatives

This section evaluates the alternatives described in Section 6.0. The traffic impacts of the alternatives are estimated using the VLMPO travel demand model. Qualitative factors are also considered for each alternative, including environmental factors, pedestrian and vehicle safety, cost, consistency with regional planning efforts, and quality of life impacts.

7.1 Travel Demand Model Results

The alternatives were presented to public and private sector stakeholders through one-on-one interviews. Through this process, the Western Perimeter alternative was eliminated from consideration primarily due to the additional mileage needed for vehicles to use this route as an option to moving through downtown on U.S. 84. This additional mileage makes it less likely that truck drivers would use it. Additionally, adding significant mileage to a State Route is an undesirable outcome from a broader network management perspective.

The remaining alternatives were analyzed using the Valdosta-Lowndes County MPO travel demand model. The model estimates truck and auto volumes, speeds, and delay for a base year of 2010 and a future year of 2040. The alternatives are compared by measuring the change in truck and auto volumes along U.S. 84 and U.S. 41 in downtown over the forecast period – 2010 to 2040. The analysis also examines the effect of the alternatives on roadway service levels by measuring volume-to-capacity (V/C) ratios. V/C ratios are a measure of the amount of capacity being utilized by vehicles. A V/C ratio above 1.0 means that a roadway is above capacity and that speeds will be significantly negatively impacted. A V/C ratio of 0.75 or lower typically represents free flow conditions. A V/C ratio between 0.75 and 1.0 indicates a roadway that is crowded and speeds are somewhat impacted by the number of vehicles. The locations where V/C ratios, truck volume estimates, and auto volume estimates were taken are labeled as points 1 through 8 in Table 7.1 and Figure 7.1.

The model assumptions for the alternatives are as follows:

- **No-Build –** The No-Build alternative measures the growth in downtown truck volumes if no action is taken. It assumes that in the forecast year, only the infrastructure that currently is existing plus those projects that were committed in the 2040 Transportation Vision Plan will be in existence.

- **Savannah Avenue Parkway –** This alternative consists of three subalternatives: 1) All-Vehicles, 2) Trucks-Only, and 3) Four Lanes. The first two subalternatives assume that Savannah Avenue will be extended to connect to Wells Street to the west and Forrest Street to the east. The one-way portion of Savannah Avenue between Ashley and Patterson Streets will be converted to a two-way roadway. The last subalternative assumes the same improvements as the first two, but that Savannah Avenue is expanded to four lanes. It also converts Central and Hill Avenues to two-way streets. Furthermore, it connects Savannah Avenue to Hill Avenue at Railroad Avenue as opposed to Forrest Street. For all three alternatives, the speed limit on Savannah Avenue is increased to 35 mph. Trucks are not restricted from using U.S. 84 with any of these subalternatives.

- **South of Savannah Avenue –** This alternative assumes that a new roadway will be built near the CSX Transportation rail corridor immediately south of Savannah Avenue. The routing of U.S. 84 would be diverted from Central and Hill Avenues to the new roadway. The relocated U.S. 84 route would extend

from Wells Street in the west to Railroad Avenue in the east. The new route will have four lanes and a speed limit of 45 miles per hour. Trucks are not restricted from using U.S. 84 with this alternative.

- **South Bypass –** The South Bypass subalternatives use the same geometry as described in Section 2. In addition, the entire corridor is assumed to consist of four lanes (i.e., two eastbound and westbound through lanes each) and have a speed limit of 45 miles per hour (mph). Furthermore, it is assumed that truck traffic will be restricted on Central Avenue and Hill Avenue. This requires that U.S. 84, U.S. 221, and SR 38 be diverted to the South Bypass as truck restrictions are not allowed on Federal and state roadways.

7.1.1 No-Build Alternative

The model results for the No-Build alternative are shown in Table 7.2. They indicate that if no action is taken truck volumes will increase on Central and Hill Avenues within the downtown core. On both Central and Hill Avenues, increases in truck volumes will be as much as 50 percent more than 2010 base year levels. Increases in truck volumes will be exacerbated by forecast increases in passenger car volume. For Central Avenue, passenger vehicle volumes will growth by 30 percent by 2040. A similar outcome is expected for Hill Avenue as its passenger-vehicle volume growth ranges from 20 percent to 50 percent in the downtown core.

Growth in truck and passenger volumes in the downtown core translate to roadways that begin to approach capacity constraints as shown in Table 7.3. For this table and subsequent tables, V/C ratios of 0.75 or above are highlighted in yellow to indicate congested road conditions. Particularly, West Central and Hill Avenues will approach volume-to-capacity (V/C) ratios of 0.76 and 0.74 by 2040 indicating that approximately 74 to 76 percent of their capacity is being utilized. Similarly, South Patterson and Ashley Streets exhibit V/C ratios of 0.76 and 0.68.[5]

Table 7.1 Modeled Truck Volume Measurement Locations

Map ID	Location Name	Location Description
1	West Central Avenue	West of Oak Street
2	East Central Avenue	East of Jones Street
3	West Hill Avenue	West of Oak Street
4	East Hill Avenue	East of Jones Street
5	South Patterson Street	South of Central Avenue
6	South Ashley Street	South of Central Avenue
7	West Savannah Avenue (Eastbound and Westbound)	West of Patterson Street
8	East Savannah Avenue (Eastbound and Westbound)	East of Ashley Street

[5] Performance measures in this report reflect traffic moving in both directions.

Figure 7.1 Modeled Truck Volume Measurement Locations

Table 7.2 Results of the No-Build Alternative

2010-2040

Location (Map ID)	2010 Truck Volumes	Truck Volume Growth	2010 Passenger Vehicle Volumes	Passenger Vehicle Volume Growth
West Central Avenue (1)	1,200	27%	5,610	31%
East Central Avenue (2)	790	57%	3,560	33%
West Hill Avenue (3)	1,270	14%	5,830	23%
East Hill Avenue (4)	600	50%	3,030	52%
South Patterson Street (5)	1,170	-7%	6,780	15%
South Ashley Street (6)	940	3%	5,610	24%
West Savannah Avenue (7)	200	55%	1,350	18%
East Savannah Avenue (8)	600	32%	2,890	42%

Source: VLMPO Travel Demand Model; Consultant analysis.

Table 7.3 Service-Level Results of the No-Build Alternative
2040 Volume-to-Capacity Ratios

Location (Map ID)	2040 V/C Ratio
West Central Avenue (1)	0.76
East Central Avenue (2)	0.51
West Hill Avenue (3)	0.74
East Hill Avenue (4)	0.47
South Patterson Street (5)	0.76
South Ashley Street (6)	0.68
West Savannah Avenue (7)	0.13
East Savannah Avenue (8)	0.33

Source: VLMPO Travel Demand Model; Consultant analysis.

7.1.2 Savannah Avenue Parkway Alternatives

Table 7.4 shows the current and forecast traffic levels in downtown Valdosta from the Savannah Avenue Parkway Alternatives. This alternative was modeled using three subalternatives:

1. An enhanced roadway open to all vehicles;
2. An enhanced roadway open only to truck traffic; and
3. The expansion of Savannah Avenue to four lanes and the conversion of Central and Hill Avenues to two-way streets.

The truck-only Savannah Avenue Parkway subalternative is forecast to divert more truck traffic out of downtown Valdosta than any of the other Savannah Avenue Parkway subalternatives. For this subalternative, truck traffic on Central Avenue would decrease by over half. Nearly all truck traffic would be diverted from Hill Avenue by 2040.

For the all vehicle subalternative, increases in truck volumes on downtown's main thoroughfares are expected to be lower than they would be if no action was taken. Truck volumes would only increase by up to 10 percent above their current levels.

In the four-lane subalternative, the model indicates that truck traffic would substantially decrease in downtown, though not as much as the truck-only subalternative. This occurs because capacity on Savannah Avenue is no longer reserved for trucks as it is in the truck only option. Truck volumes on Central and Hill Avenues would decrease by 15 to 66 percent in the four-lane subalternative. Truck volumes on Savannah Avenue would increase by as much as 450 to 1,310 percent.

The truck-only Savannah Avenue Parkway alternative is forecast to have the largest increase in passenger car traffic. This is in part due to the fact that the majority of truck traffic shifts to Savannah Avenue Parkway freeing up capacity for passenger cars on Central and Hill Avenues. The four-lane subalternative generates the largest decreases in passenger car traffic on Central and Hill as many of these vehicles elect to utilize the new expanded Savannah Avenue Parkway.

The service level results in Table 7.5 indicate that the all vehicles and four-lane subalternatives would preserve more capacity on downtown streets. In these options, generally one-third to one-half of roadway capacity is utilized. The trucks-only option of this alternative exhibits service levels similar to the No-Build alternative, though it does remove truck traffic from the downtown core.

Table 7.4 Results of the Savannah Avenue Parkway Alternative

2010-2040

Location (Map ID)	2010 Truck Volumes	Truck Volume Growth Compared to 2010			2010 Passenger Volumes	Passenger Volume Growth Compared to 2010		
		All Vehicles	Trucks Only	4 Lanes		All Vehicles	Trucks Only	Expanded
West Central Avenue(1)	1,200	-11%	-68%	-15%	5,610	-2%	49%	3%
East Central Avenue (2)	790	11%	-54%	-22%	3,560	-1%	50%	-41%
West Hill Avenue (3)	1,270	-29%	-85%	-62%	5,830	-17%	39%	-34%
East Hill Avenue (4)	600	2%	-93%	-66%	3,030	-2%	79%	-34%
South Patterson Street (5)	1,170	-33%	-45%	-40%	6,780	-7%	4%	7%
South Ashley Street (6)	940	-11%	-24%	-26%	5,610	8%	22%	2%
West Savannah Avenue (7)	200	850%	2,670%	1,310%	1,350	537%	-100%	801%
East Savannah Avenue (8)	600	242%	823%	450%	2,890	286%	-100%	429%

Source: VLMPO Travel Demand Model; Consultant analysis.

Table 7.5 Service-Level Results of the Savannah Avenue Parkway Alternative

2040 Volume-to-Capacity

Location (Map ID)	Savannah Avenue Parkway Subalternative			
	No-Build	All Vehicles	Trucks Only	4 Lanes
West Central Avenue (1)	0.76	0.56	0.75	0.58
East Central Avenue (2)	0.51	0.38	0.49	0.37
West Hill Avenue (3)	0.74	0.49	0.71	0.37
East Hill Avenue (4)	0.47	0.31	0.47	0.35
South Patterson Street (5)	0.76	0.61	0.65	0.56
South Ashley Street (6)	0.68	0.59	0.65	0.56
West Savannah Avenue (7)	0.13	0.55	0.29	0.39
East Savannah Avenue (8)	0.33	0.71	0.29	0.49

Source: VLMPO Travel Demand Model; Consultant analysis.

7.1.3 South of Savannah Avenue Alternative

The South of Savannah Avenue alternative is forecast to divert more truck traffic from downtown Valdosta than the all vehicles and four-lane options of the Savannah Avenue Parkway alternative, but not as much as the trucks only subalternative (Table 7.6). Under this alternative, by 2040 truck traffic on Central and Hill Avenues would decrease by as much as 30 to 65 percent their current levels, respectively. Similarly, truck volumes on Ashley and Patterson Streets would decrease by about 14 and 21 percent below their current levels, respectively.

By comparison, under the No-Build Alternative, Central and Hill Avenues would experience truck volume increases up to 50 percent above 2010 levels. Truck volumes on Patterson and Ashley Streets would largely hold steady at their current levels if no action were taken while the South of Savannah alternative would decrease their levels of freight traffic. Similar to Central and Hill Streets, as opposed to gaining truck traffic if no action was taken much of the truck traffic on Savannah Avenue is expected to be diverted to the bypass.

A greater share of passenger vehicle traffic is expected to be diverted away from Downtown Valdosta if the South of Savannah Avenue alternative is built. This is likely due to the new roadway offering a higher level of service for through passenger traffic than what currently is experienced on Central and Hill Avenues. Passenger volumes on Central and Hill Avenues are expected to drop by as much as 32 and 50 percent below their current levels. Portions of Savannah Avenue also are expected to lose substantial amounts of passenger traffic.

The South of Savannah Avenue alternative would relieve much of the anticipated congestion in Downtown Valdosta. Central and Hill Avenues would particularly benefit from this alternative as much of their capacities would be retained for local traffic as compared to if no action were taken. Instead of V/C ratios that range from 0.47 to 0.76 on Central and Hill Avenues if no action is taken, V/C ratios would range from 0.2 to 0.65 (Table 7.7). Congestion on South Ashley and Patterson Streets would also be relieved, though not to the same extent.

Table 7.6 Results of the South of Savannah Avenue Alternative
2010-2040

Location (Map ID)	2010 Truck Volumes	Truck Volume Growth Compared to 2010	2010 Passenger Volumes	Passenger Volume Growth Compared to 2010
West Central Avenue (1)	1,200	-33%	5,610	-13%
East Central Avenue (2)	790	-20%	3,560	-32%
West Hill Avenue (3)	1,270	-56%	5,830	-33%
East Hill Avenue (4)	600	-65%	3,030	-50%
South Patterson Street (5)	1,170	-21%	6,780	4%
South Ashley Street (6)	940	-14%	5,610	6%
West Savannah Avenue (7)	200	-80%	1,350	-91%
East Savannah Avenue (8)	600	-18%	2,890	-6%

Source: VLMPO Travel Demand Model; Consultant analysis.

Table 7.7 Service-Level Results of the South of Savannah Avenue Alternative
2040 Volume-to-Capacity Ratio

Location (Map ID)	No-Build	South of Savannah Avenue
West Central Avenue (1)	0.76	0.65
East Central Avenue (2)	0.51	0.35
West Hill Avenue (3)	0.74	0.51
East Hill Avenue (4)	0.47	0.20
South Patterson Street (5)	0.76	0.68
South Ashley Street (6)	0.68	0.58
West Savannah Avenue (7)	0.13	0.01
East Savannah Avenue (8)	0.33	0.22

Source: VLMPO Travel Demand Model; Consultant analysis.

7.1.4 South Bypass Alternatives

The South Bypass Alternatives were modeled with the assumption that this alternative would become the new U.S. 84 and that truck traffic would then be restricted on Central and Hill Avenues in the core of downtown Valdosta. It should be noted that without this restriction very few trucks would divert away from the current U.S. 84 alignment. This alternative was also modeled using both a James Road connection as the western terminus and Street Augustine Road as the western terminus.

Using these assumptions, the South Bypass subalternatives divert 100 percent of the truck traffic away from downtown Valdosta (Table 7.8). This is due to the assumption that a truck restriction would be enacted on Central and Hill Avenues. With this alternative, the results suggest that by 2040 nearly all truck traffic would be removed from those roadways onto the bypass. While truck traffic on Patterson Street is predicted to decrease below its current level, truck volumes on Ashley Street are expected to increase by nearly 70 percent in both versions of this alternative. This is significantly more than if no action was taken – effectively no truck traffic growth. Savannah Avenue also would experience significantly more growth than if no action was taken. In some cases, truck traffic growth would be as much as 11 times current levels.

Predicted passenger volume growth is similar for the South Bypass subalternatives to expected levels if no action was taken. For both versions of this alternative volumes on Central and Hill Avenues would increase by as much as 1.4 and 1.9 times their current levels, respectively. Ashley and Patterson Streets would experience modest passenger volume growth over this period. Savannah Avenue, however, would actually decrease in passenger volumes. In some cases, this decrease would be as much as 44 percent.

If implemented, the South Bypass is expected to slightly relieve the predicted level of congestion in downtown Valdosta if no action were taken as shown in Table 7.9. The predicted V/C ratios on downtown roadways are very close to what they would be in the No-Build alternative. However, these volumes would consist nearly entirely of passenger-vehicles due to the truck restriction. The absence of through truck movements would ease pedestrian and passenger-vehicle mobility within downtown.

Table 7.8 Results of the South Bypass Alternative
2010-2040

Location (Map ID)	2010 Truck Volumes	Truck Volume Growth Compared to 2010		2010 Passenger Volumes	Passenger Volume Growth Compared to 2010	
		James Road Route	Saint Augustine Road Route		James Road Route	Saint Augustine Road Route
West Central Avenue (1)	1,200	-100%	-100%	5,610	42%	51%
East Central Avenue (2)	790	-100%	-100%	3,560	41%	57%
West Hill Avenue (3)	1,270	-100%	-100%	5,830	34%	44%
East Hill Avenue (4)	600	-100%	-100%	3,030	64%	86%
South Patterson Street (5)	1,170	-16%	-17%	6,780	17%	15%
South Ashley Street (6)	940	67%	70%	5,610	9%	12%
West Savannah Avenue (7)	200	220%	325%	1,350	-19%	7%
East Savannah Avenue (8)	600	228%	235%	2,890	0.3%	10%

Source: VLMPO Travel Demand Model; Consultant analysis.

Table 7.9 Service-Level Results of the South Bypass Alternative
2040 Volume -to-Capacity Ratio

Location (Map ID)	No-Build	James Road Route	Street Augustine Road Route
West Central Avenue (1)	0.76	0.68	0.72
East Central Avenue (2)	0.51	0.43	0.48
West Hill Avenue (3)	0.74	0.67	0.72
East Hill Avenue (4)	0.47	0.42	0.48
South Patterson Street (5)	0.76	0.76	0.75
South Ashley Street (6)	0.68	0.66	0.67
West Savannah Avenue (7)	0.13	0.12	0.16
East Savannah Avenue (8)	0.33	0.32	0.35

Source: VLMPO Travel Demand Model; Consultant analysis.

7.1.5 Comparison of Alternatives

The travel demand model results indicate that there are several options which successfully move a large fraction of trucks out of the downtown Valdosta. As shown in Table 7.10, all of the Build Alternatives, reduce truck traffic at multiple locations in downtown relative to today's truck traffic volumes. Table 7.11 shows that the impact on passenger vehicle volumes vary significantly between alternatives and subalternatives. A summary of some of the key comparisons between alternatives is as follows:

- The Savannah Avenue Parkway trucks-only subalternative reduces truck traffic in downtown Valdosta by the highest percentage of all of the options which do not restrict truck traffic. Truck traffic is reduced by an average of 75 percent on Central and Hill Avenues relative to 2010 base year truck traffic levels.

- Both the South of Savannah Alternative and the four-lane Savannah Avenue Parkway subalternative reduce about 40 percent of the truck traffic out of downtown Valdosta with more significant reductions on Hill Avenue relative to Central Avenue.

- The South of Savannah Alternative reduces total traffic in downtown Valdosta by the highest percentage of all options with average passenger volumes decreasing by an average of about one-third relative to 2010 base year traffic.

- The Savannah Avenue Parkway four-lane subalternative is a close second to the South of Savannah Alternative in terms of reducing total traffic in the core downtown area. It reduces passenger volumes by roughly average of 27 percent relative to 2010 base year traffic levels.

- The South Bypass subalternatives reduces truck traffic on Central and Hill Avenues by the highest percentage, but this is solely due to the restriction on truck traffic that was embedded into the model. Absent this restriction, truck traffic in the core downtown area would not decrease at all relative to the 2040 No-Build.

- There is little difference in performance between the James Road South Bypass Alternative and the Street Augustine Road South Bypass Alternative in terms of removing truck traffic from downtown Valdosta.

- The Savannah Avenue Parkway all vehicle subalternative has a relatively minimal impact on truck traffic in downtown Valdosta relative to 2010 base year truck volumes.

Table 7.10 Estimated Change in Truck Volumes Compared to 2010 Base Year

2010-2040

	Savannah Avenue Parkway					South Bypass	
Location (Map ID)	No-Build	All Vehicles	Trucks-Only	4 Lanes	South of Savannah Avenue	James Road Route	Saint Augustine Road Route
West Central Avenue (1)	27%	-11%	-68%	-15%	-33%	-100%	-100%
East Central Avenue (2)	57%	11%	-54%	-22%	-20%	-100%	-100%
West Hill Avenue (3)	14%	-29%	-85%	-62%	-56%	-100%	-100%
East Hill Avenue (4)	50%	2%	-93%	-66%	-65%	-100%	-100%
South Patterson Street (5)	-7%	-33%	-45%	-40%	-21%	-16%	-17%
South Ashley Street (6)	3%	-11%	-24%	-26%	-14%	67%	70%
West Savannah Avenue (7)	55%	850%	2,670%	1,310%	-80%	220%	325%
East Savannah Avenue (8)	32%	282%	823%	450%	-18%	228%	235%

Source: VLMPO Travel Demand Model; Consultant analysis.

Table 7.11 Estimated Change in Passenger Vehicle Volumes Compared to 2010 Base Year

2010-2040

	Savannah Avenue Parkway					South Bypass	
Location (Map ID)	No-Build	All Vehicles	Trucks-Only	4 Lanes	South of Savannah Avenue	James Road Route	Saint Augustine Road Route
West Central Avenue (1)	31%	-2%	49%	3%	-13%	42%	51%
East Central Avenue (2)	33%	-1%	50%	-41%	-32%	41%	57%
West Hill Avenue (3)	23%	-17%	39%	-34%	-33%	34%	44%
East Hill Avenue (4)	52%	-2%	79%	-34%	-50%	64%	86%
South Patterson Street (5)	15%	-7%	4%	7%	4%	17%	15%
South Ashley Street (6)	24%	8%	22%	2%	6%	9%	12%
West Savannah Avenue (7)	18%	537%	-100%	801%	-91%	-19%	7%
East Savannah Avenue (8)	42%	286%	-100%	429%	-6%	0.3%	10%

Source: VLMPO Travel Demand Model; Consultant analysis.

Table 7.12 Service-Level Results
2040 Volume-to-Capacity Ratios

	Savannah Avenue Parkway					South Bypass	
Location (Map ID)	No-Build	All Vehicles	Trucks-Only	4 Lanes	South of Savannah Avenue	James Road Route	Saint Augustine Road Route
West Central Avenue (1)	0.76	0.56	0.75	0.58	0.65	0.68	0.72
East Central Avenue (2)	0.51	0.38	0.49	0.37	0.35	0.43	0.48
West Hill Avenue (3)	0.74	0.49	0.71	0.37	0.51	0.67	0.72
East Hill Avenue (4)	0.47	0.31	0.47	0.35	0.20	0.42	0.48
South Patterson Street (5)	0.76	0.61	0.65	0.56	0.68	0.76	0.75
South Ashley Street (6)	0.68	0.59	0.65	0.56	0.58	0.66	0.67
West Savannah Avenue (7)	0.13	0.55	0.29	0.39	0.01	0.12	0.16
East Savannah Avenue (8)	0.33	0.71	0.29	0.49	0.22	0.32	0.35

Source: VLMPO Travel Demand Model; Consultant analysis.

7.2 Comparison of Additional Factors Across Alternatives

This section describes additional factors which can be considered in comparing the impacts of the alternatives analyzed for this study. The additional aspects are cost, wetlands, Federal and State approval, construction duration, consistency with existing plans, safety, downtown business impact, environmental justice, and historic buildings/districts.

7.2.1 Preliminary Sketch Planning Level Cost Estimates

The right-of-way impacts of each alternative are estimated by measuring the total length of the alternative and counting the number of land parcels that are in their respective paths (Table 7.13). This is not a final determination that all of the potentially affected parcels must be acquired or will be significantly impacted. This will be determined by the final design and engineering requirements. The number of potentially impacted parcels does provide an idea of which alternatives are likely to be more disruptive to land owners.

Table 7.13 also presents preliminary planning level cost range estimates for each alternative. For the Western Perimeter and South Bypass subalternatives, right-of-way and construction cost estimates are taken from the 2040 Transportation Vision Plan. For the other alternatives, cost estimates were developed using the Georgia DOT's Right-of-way and Utility Relocation Cost (RUCEST) and Cost Estimation System (CES) tools. The cost estimates from these sources were used as the lower bound with the upper bound doubling the preliminary planning level cost estimate based on potential additional cost factors likely to be identified in the preliminary design phase.

Table 7.13 Number of Potentially Affected Parcels

Alternative	Number of Potentially Affected Parcels	Approximate Corridor Length	Approximate Cost Range ($ millions)
No-Build	0	1 mile (Existing)	N/A
Savannah Avenue Parkway (All Vehicles and Trucks-Only)	4	1.2 miles	9 to 18
Savannah Avenue Parkway (4 Lanes)	39	1.2 miles	13 to 26
South of Savannah Avenue	66	1.3 miles	19 to 38
South Bypass (James Road Route)	119	5 miles	80 to 120
South Bypass (Saint Augustine Road Route)	82	3 miles (Excluding Saint Augustine Road)	69 to 138
Western Perimeter	46	6 miles	40 to 80

Source: Lowndes County Assessor's Office; Google Maps; GDOT Right-of-way and Utility Relocation Cost Tool; GDOT Cost Estimation System Tool; 2040 Transportation Vision Plan; Consultant analysis.

Alternatives located along Savannah Avenue are estimated to be less expensive as these options are shorter in length, would likely affect fewer parcels, and would require the acquisition of less right-of-way. Estimated costs for these alternatives range from about $9 to $25 million. In the analysis of these alternatives, it was assumed that the City of Valdosta already owns much of the existing right-of-way and that few residential and commercial properties would have to be taken in order to implement these alternatives. It was also assumed that the same intersections that are signalized along Hill Avenue would be signalized for the Savannah Avenue Parkway subalternatives.

The South of Savannah Avenue alternative is estimated to have a higher cost than the Savannah Avenue Parkway subalternatives with a cost range estimate of $19 to $38 million. The South of Savannah Avenue alternative would require the purchase of freight rail right-of-way and the relocation of an existing rail line, which are significant drivers of cost. It was assumed that right-of-way along this corridor would be as costly as commercial property. It was also assumed that it would cost $1 to $2 million to relocate the existing rail line which is just over 1 mile in length.

The South Bypass subalternatives are estimated to cost between $69 million to $120 million. For these subalternatives, it was assumed that right-of-way consists of a mix of land uses (industrial, agricultural, and commercial) and that major intersecting roadways would be signalized. In addition to route length, estimated costs for the South Bypass subalternatives are driven by the need for an overpass above I-75 (James Road Route subalternative only) and the potential need to acquire residential and/or commercial properties between Tucker Road and Ulmer Avenue. For the St. Augustine Road subalternative, the cost estimate in Table 7.13 assumes that the at-grade crossing along St. Augustine Road would be removed. The construction cost of this grade separation would likely be of the same magnitude as the grade separation of U.S. 84 and the Norfolk Southern rail line – about $23 million In addition, both subalternatives require a bridge over the large wetland enclosed by Old Clyattville Road, Gil Harbin Industrial Blvd., and the rail spur into the Langdale Forest Products processing facility. At a span of about 2,000 feet the bridge is expected to have a construction cost of at least $16 million.

The Western Perimeter alternative is estimated to be the most expensive option with a cost range between $40 million to $80 million. Right-of-way consists primarily of agricultural land, so land acquisition is not a major cost driver. Cost is primarily driven by the length of the alternative, which exceeds all other bypass options.

More detailed cost estimates would be developed during a design phase and will include environmental considerations such as the mitigation of impacts to wetlands or other water bodies, rail crossings, and the relocation of utilities among other factors which are not included in this analysis.

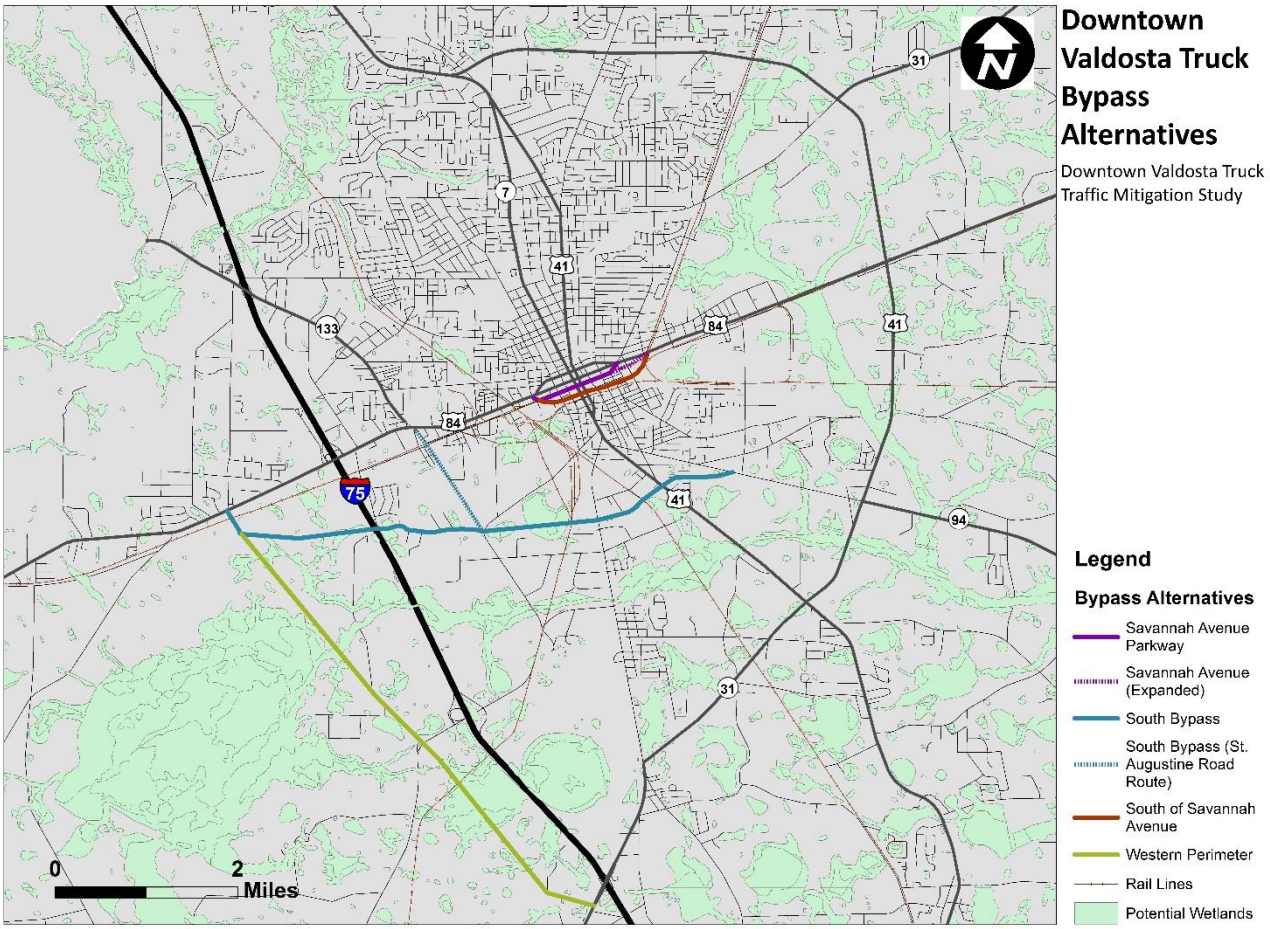
7.2.2 Wetlands

The U.S. Fish and Wildlife Service (FWS) maintains a geospatial database on the approximate location, type, and size of wetlands throughout the U.S. The data is intended to provide reconnaissance level information as it is produced from high-altitude imagery and identifies wetlands based on vegetation, visible hydrology, and geography.[6]

The data suggests that the general paths of the Western Perimeter and the South Bypass may most heavily affect the region's wetlands. The actual extent to which these alternatives will affect the area's wetlands will be determined in part by the design of the roadways, if one is chosen as the preferred alternative. In addition, the existence and exact boundaries of the wetlands depicted in Figure 7.2 must be confirmed by detailed on-the-ground inspection.

[6] http://www.fws.gov/wetlands/Data/Limitations.html.

Figure 7.2 Potential Wetlands in the Study Area



Source: Valdosta-Lowndes County Metropolitan Planning Organization.

7.2.3 Federal and State Approval

To some extent, all of the bypass alternatives require Federal and state approval since they must tie into U.S. 84. However, alternatives that consider truck restrictions on Central and Hill Avenues, the conversion of those roadways into two-way streets, and/or the rerouting of U.S. 84 to the preferred alternative require approval from the Georgia DOT along with the AASHTO Special Committee on U.S. Route Numbering and the AASHTO Standing Committee on Highways. Therefore, the South Bypass, South of Savannah Avenue, and the Savannah Avenue Parkway four lanes alternatives would require the most coordination with Federal and state agencies.

The South of Savannah Avenue alternative would also require extensive coordination and cooperation with the Federal Railroad Administration and CSX Transportation and as this proposed alternative would require a relocation of the CSXT rail line.

7.2.4 Construction Duration

Construction duration will be affected by engineering design decisions and environmental factors that must be mitigated. The Western Perimeter and South Bypass are likely to require longer construction periods

because they are longer routes and contain wetlands and grade-level rail crossings in their paths. In addition, the Western Perimeter and the South Bypass (James Road Route) would require an overpass to cross I-75. The South of Savannah Avenue alternative also is likely to have a relatively long construction period as it would require the relocation of the rail line that is along its proposed route.

The Savannah Avenue Parkway alternative would likely have the shortest construction period as it is the shortest alternative and much of the proposed route is existing. This alternative would require a redesign of the intersection at Savannah Avenue Parkway and U.S. 41 Business.

7.2.5 Consistency with Existing Plans

The Downtown Valdosta Master Plan, Valdosta-Lowndes MPO 2040 Transportation Vision Plan, and VLMPO Freight Movement Study provide extensive short and long-term recommendations on transportation and land use development in downtown Valdosta and throughout the entire region. It is preferable for recommendations developed in this study to be consistent with these previous planning documents.

The 2009 VLMPO Freight Movement Study identified some freight-related concerns of businesses that are intense users of the freight system as well as the region's residents. This part of the analysis determines the extent to which the alternatives support the region's guiding strategic transportation and land use plans.

One of the primary mobility needs identified in the Downtown Valdosta Master Plan was to mitigate the effects of truck circulation. Mitigating truck traffic was identified at the master plan's first public meeting as the most important transportation issue for downtown.[7] The master plan identified the rerouting of U.S. 84 to Savannah Avenue as a potential solution for diverting truck traffic away from downtown. To accommodate the increased traffic on Savannah Avenue, the Master Plan also recommended that the roadway be widened to three travel lanes with room for additional expansions if needed. Additionally, the Master Plan recommended that Central Avenue, Hill Avenue, Ashley Street, and Patterson Street be converted to two-way roadways and for the implementation of reverse angle parking.

As part of the long-range transportation plan, the VLMPO surveyed the region's residents and businesses to ascertain their concerns regarding the freight system. The survey results indicated interest in diverting truck traffic away from the downtown core – possibly by completing the perimeter road that would connect Inner Perimeter Road to West Hill Avenue west of I-75. The impetus for this suggestion was to improve the quality of life in downtown for businesses, visitors, and residents.

The VLMPO Freight Study also highlighted that there is a strong desire to maintain and increase the Valdosta region's status as a regional warehouse and logistics hub. South Georgia, and Valdosta in particular, give logistics firms access to major interstate corridors (I-75, I-10), Class I rail carriers (Norfolk Southern and CSX Transportation), and major seaports in Georgia and north Florida. Therefore, the chosen alternative should complement the existing highway network such that the entire system can facilitate various, and sometimes competing, economic interests.

The Savannah Avenue Parkway and South of Savannah alternatives would divert truck traffic away from downtown while minimally impacting regional freight flows. These two alternatives would not negatively impact the Valdosta region's role as a freight hub. The other alternatives would divert truck traffic, but they add significant mileage to trucks traversing the region making goods movement more difficult.

[7] Valdosta Downtown Master Plan. http://valdostamainstreet.com/wp-content/uploads/2012/03/Valdosta-Downtown-Master-Plan.pdf. Accessed May 4, 2016.

7.2.6 Safety

As reported in Section 3.3, GDOT data indicates that from the 2010 to 2015 time-period, there were 122 truck-involved crashes on U.S. 84 and U.S. 41 Business in Lowndes County.[8] Of that total, 33 truck-involved crashes occurred in the core of downtown Valdosta, representing 27 percent of all truck-involved crashes. Thirteen of these crashes were of the most severe crash types, Angle and Head-On, and resulted in eight injuries and three fatalities.

All of the bypass alternatives have some potential to improve safety above current conditions by removing heavy truck traffic from the core of downtown and relocating it to more truck-friendly roadways. This typically happens because the design speed of these alternatives is far higher than the current 25 mph speed limit on U.S. 84 through downtown. For the South of Savannah alternative, the design speed is as high as 45 mph. For the Savannah Avenue Parkway alternative and the South Bypass alternative design speeds average approximately 35 mph. Trucks are attracted to roadways that have higher speeds.

The diversion of trucks off of Central Avenue and Hill Avenue reduces the potential for truck conflicts with other roadway users. It also improves the sight lines of passenger vehicle operators, pedestrians, and cyclists in downtown Valdosta as large trucks often obscure their field of vision limiting the ability of other roadway users to avoid potential hazards. This is particularly important at intersections and pedestrian crossings.

The South of Savannah Avenue alternative would likely have the most significant benefit in terms of safety as it would create an entirely new roadway that would be designed based on current truck and auto volumes. This new facility would similarly remove trucks from Central and Hill Avenues, but it would also reduce truck volumes on Ashley and Patterson Streets. Efforts could be made in its design to limit conflicting movements and interactions between various roadway users. This would be achieved by limiting driveway access to the South of Savannah Avenue as well as intersecting roadways. The alternative would be median-separated which would reduce the potential for both head on and angle truck-involved crashes. This alternative would need to consider passenger car, pedestrian and bicycle needs to cross the alignment in the north-south direction, particularly for downtown access for residents in south Valdosta..

The South Bypass would improve safety by removing through truck traffic from Central and Hill Avenues. This eliminates potential conflicts between trucks and pedestrians and other roadway users. However, the South Bypass subalternatives are projected to increase the amount of truck traffic on Ashley and Patterson Streets, both of which contain signalized mid-block pedestrian crossings, which increases the potential for pedestrian-truck conflicts at those locations. The safety benefits of this alternative also will be heavily influenced by its geometric design. If the bypass is median-separated, there is much less potential for the head-on collisions that have occurred at the confluence of Hill and Central Avenues on the eastern edge of downtown. This option also includes several turning movements and a lot of alignment that would be challenging to add a median barrier, so this alternative would not be as beneficial for safety as the South of Savannah Alternative.

The Savannah Avenue alternatives would similarly remove trucks from the more heavily traveled Central and Hill Avenues to the less utilized Savannah Avenue. Though this would potentially shift safety concerns to Savannah Avenue, those impacts would not be as far away from downtown as the other alternatives. The

[8] GDOT Office of Traffic Operations.

safety benefits of this alternative would be maximized with a median-separated roadway with pedestrian infrastructure upgrades.

The Western Perimeter alternative is not expected to divert truck traffic from U.S. 84. This alternative would result in trucks taking a much longer and circuitous route than what they currently utilize. Only if trucks were restricted from Central and Hill Avenues would trucks divert to this bypass. However, that would require that U.S. 84 be rerouted to the Western Bypass which is not likely.

7.2.7 Impact on Downtown Businesses

The primary effect of the bypass alternatives on downtown businesses is the degree to which they shift truck and passenger-vehicle traffic towards or away from those businesses. There was universal support for the idea that reducing truck traffic through downtown Valdosta would greatly improve the operation of businesses in downtown Valdosta. However, the impact of diverting passenger car traffic was mixed. Some downtown business representatives stated that they preferred lots of passenger car traffic through downtown to maximize the potential of capturing impulse shopping and dining decisions. Other downtown business operators stated that over the long run, passenger car traffic in downtown Valdosta needed to be mitigated as well.

All of the alternatives would generally reduce truck traffic in the downtown core therefore relieving the noise, safety issues and truck-pedestrian interaction. Some alternatives may shift that burden to other parts of downtown – namely Savannah Avenue. Some alternatives may likewise shift passenger-vehicle traffic away from Savannah Avenue, which could negatively impact businesses in that corridor.

Based on the model results in Section 7.1, the South Bypass and South of Savannah Avenue alternatives would shift most through truck traffic out of the downtown core. The Western Perimeter would likely do the same if U.S. 84 were rerouted and a truck restriction were put in place on Central and Hill Avenues. The Savannah Avenue Parkway alternatives, however, would effectively shift truck traffic from the core of downtown (i.e., the perimeter formed by Central and Hill Avenues) to the southern part of downtown – Savannah Avenue. Thus, businesses along Savannah Avenue (shown in Figure 7.3) would likely experience much more truck traffic than current levels.

The alternatives would likewise affect passenger-vehicle traffic. Based on the model results in Section 7.1, the South Bypass and Savannah Avenue Parkway (Trucks-Only) alternatives would shift passenger-vehicle traffic away from Savannah Avenue and towards downtown's main thoroughfares (Central Avenue, Hill Avenue, Ashley Street, and Hill Street). On the other hand, the Savannah Avenue Parkway (All Vehicles) alternative would shift passenger-vehicle traffic away from the downtown core to Savannah Avenue. The South of Savannah Avenue alternative, however, would shift passenger-vehicles away from all downtown streets.

7.2.8 Environmental Justice Impacts

A 2015 Valdosta State University study identified the region's most economically disadvantaged areas by examining the distribution of poverty rates, age, motor-vehicle access, race, and low levels of English proficiency.[9] It concluded by identifying three Census tracts near downtown as particularly economically disadvantaged across indicators. These include Census tracts 105, 108, and 110 as shown in Figure 7.4.

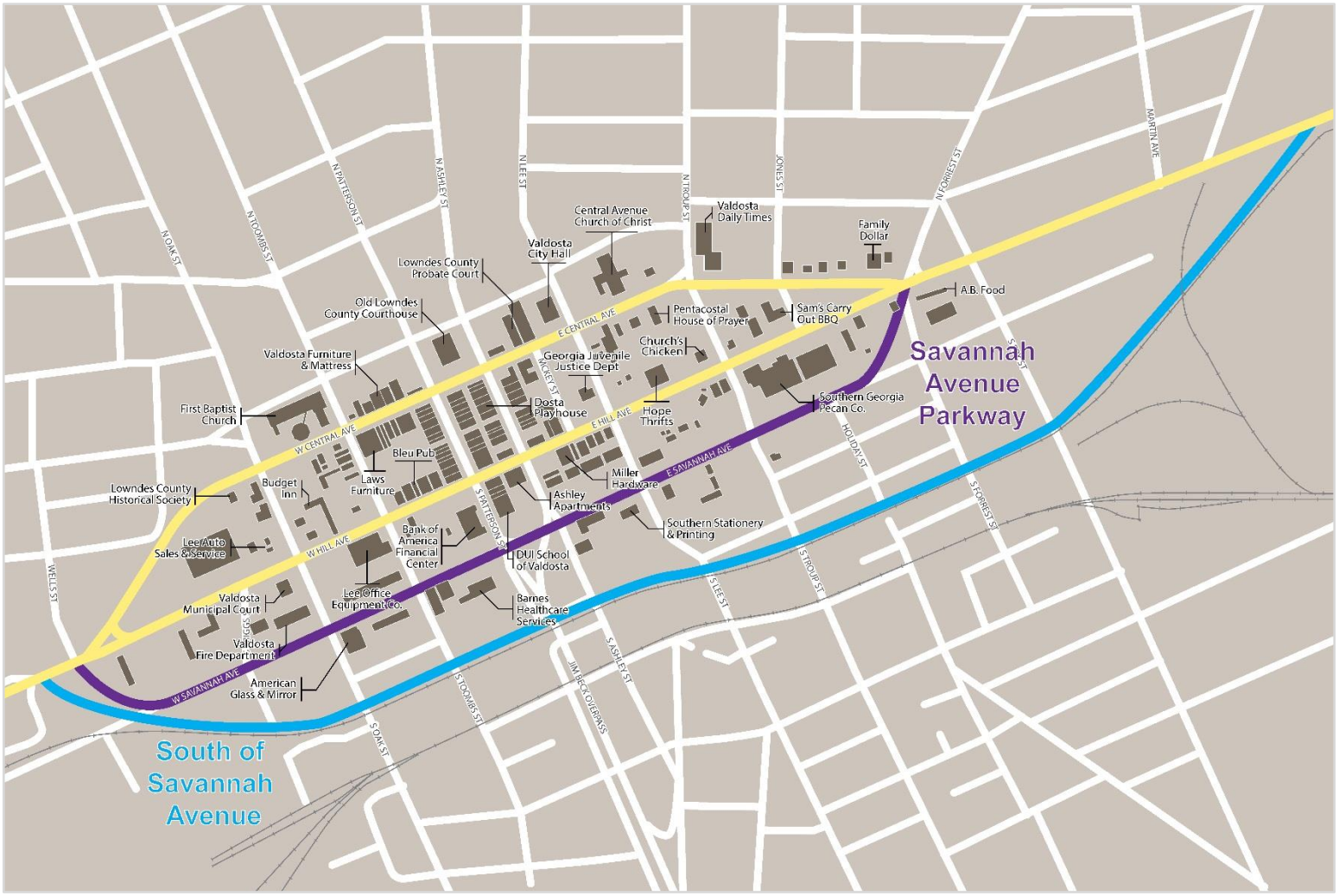
[9] A Report on Key Indicators for Establishing Environmental Justice in Transportation Planning in Lowndes County, 2015. http://nebula.wsimg.com/bc008e84cc7e7508545f6630d2c503c4?AccessKeyId=4581ECC54C434D3CB020&disposition=0&alloworigin=1.

The study recommended that these communities receive increased focus in transportation planning initiatives. As a result, those portions of the Valdosta Region were recognized as environmental justice areas in the 2040 Transportation Vision Plan.

Of the three Census tracts that the study identified as being particularly sensitive areas, tracts 108 and 110 would be most heavily impacted by the alternatives. The Savannah Avenue Parkway alternative is completely within Census tract 110; the South Bypass alternative is completely within Census tract 108; the South of Savannah Avenue alternative straddles Census tracts 108 and 110. Only the Western Perimeter alternative avoids these areas.

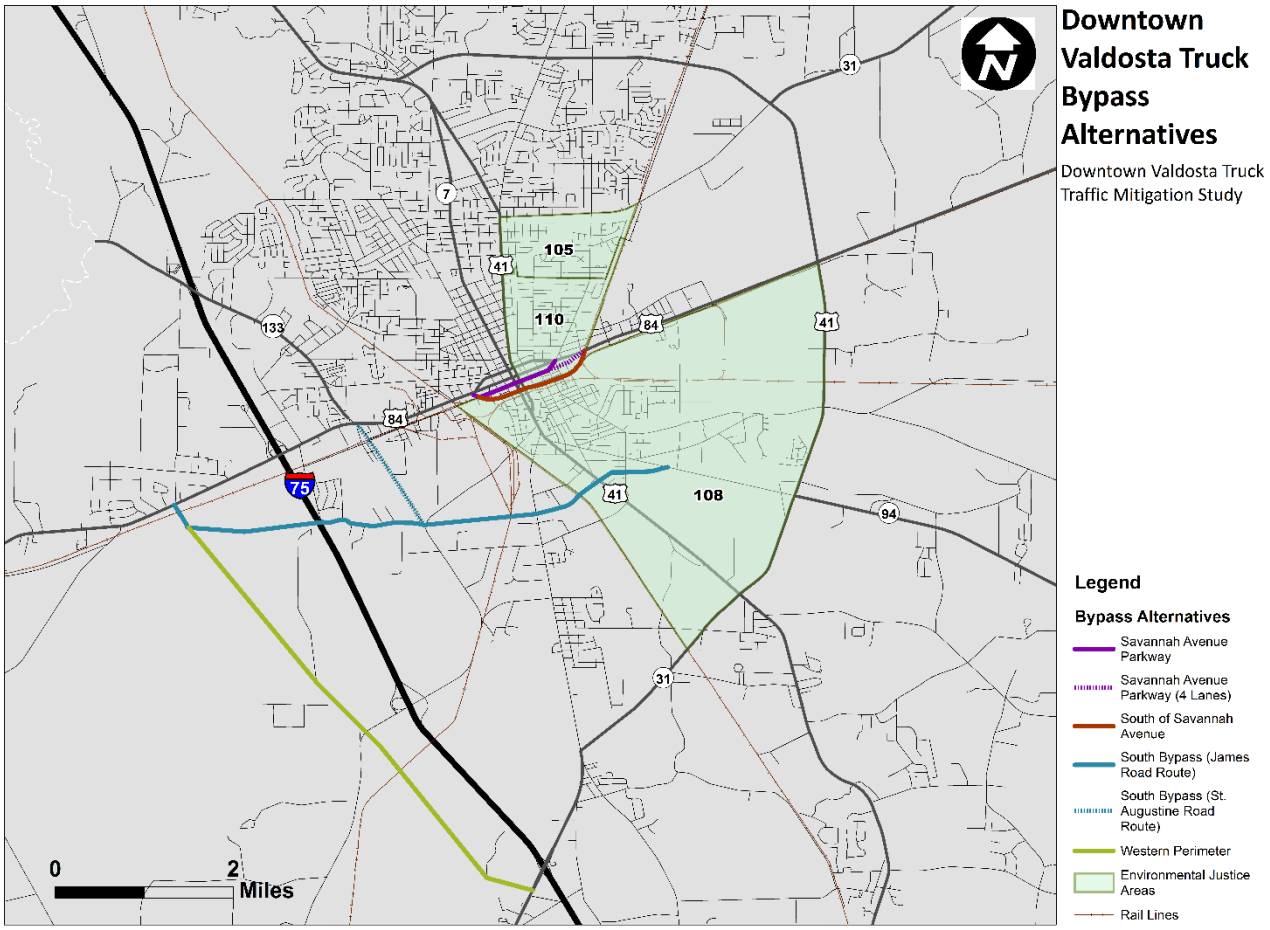
Close examination of the location of residences along the Savannah Avenue Parkway and South of Savannah alignments indicate that few residences would be impacted by construction or operation of the improved roadways. However, the South of Savannah alternative would relocate a rail line to be slightly closer to the neighborhoods and it would cause significant negative impacts to Olympic Park which is located close to the neighborhoods. This park is located between two active freight rail lines. A few stakeholder interviews mentioned that the proximity of the park and the rail lines resulted in very little use of the park. Because the majority of the alternatives traverse the region's environmental justice areas, it is likely that the chosen alternative would have to mitigate the negative effects of increased truck traffic through these communities.

Figure 7.3 Downtown Businesses



Source: Google Maps; Consultant analysis.

Figure 7.4 Environmental Justice Areas



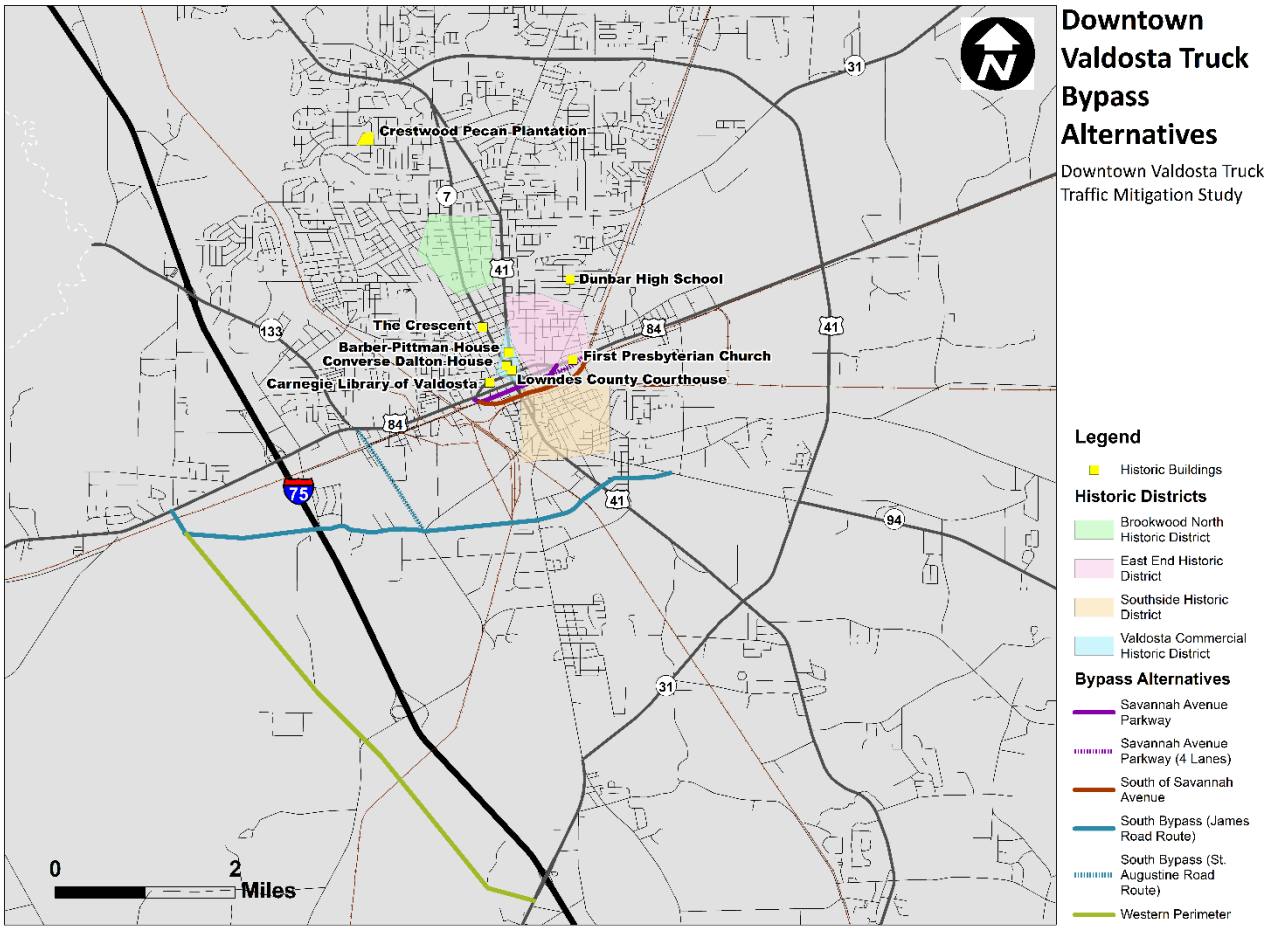
Source: Valdosta-Lowndes Metropolitan Planning Organization; U.S. Census TIGER; Bureau of Transportation Analysis National Transportation Atlas Database.

7.2.9 Historic Buildings and Districts

Another consideration of the alternatives is their potential impact on historic buildings and districts. Based on information from the National Register of Historic Places[10], all of the alternatives avoid historic buildings which are primarily clustered in and near downtown (Figure 7.5). However, some of the alternatives would traverse one or more of the City of Valdosta's four historic districts. The Savannah Avenue Parkway alternatives would affect the southern portions of the Valdosta Commercial and East End historic districts. The South of Savannah Avenue alternative would affect the northern end of the Southside historic district. If these alternatives are pursued, it must be determined if they would detrimentally affect any structure relevant to those districts' historic status.

[10] National Register of Historic Places. National Geospatial Data Asset National Park Service National Register Dataset. irma.nps.gov/App/Reference/Profile/2210280.

Figure 7.5 Historic Buildings and Districts



Source: National Park Service National Register of Historic Places; U.S. Census TIGER; Bureau of Transportation Analysis National Transportation Atlas Database.

7.3 Summary Rating of Alternatives

The alternatives are rated according to their likely impacts to several categories (Table 7.14). A "negative impact" rating indicates that an alternative does not perform well relative to the desired outcome for that category. A "likely minimal impact" rating indicates that a given alternative lacks a consequential effect for the relevant category. Lastly, a "Likely positive impact" rating indicates that an alternative would advance the region's goals that are relevant to the given category. "Very positive" and "very negative" ratings are also indicated on this table.

The scoring results indicate that the Savannah Avenue Parkway and South Bypass alternatives would generally have a positive impact across more categories than other alternatives. In particular, these alternatives would likely improve the quality of life for downtown businesses, increase vehicle and pedestrian safety, and are consistent with the region's transportation and land use planning. The drawback to the four lane versions of these alternatives is that they are likely to require lengthy construction schedules and their potential impacts to environmental justice areas. If the South Bypass or Savannah Avenue Parkway (4 Lanes) alternatives were implemented and U.S. 84 is redesignated to these roadways, it also would likely require the local government to take on the cost of maintaining and operating Central and Hill Avenues.

Table 7.14 Rating of Alternatives

Potential Impacts	No-Build	Alternatives: Savannah Avenue Parkway (All Vehicles)	Savannah Avenue Parkway (Trucks-Only)	Savannah Avenue Parkway (4 Lanes)	South of Savannah Avenue	South Bypass (James Road Route)	South Bypass (Saint Augustine Road Route)	Western Perimeter
Impact to Downtown Businesses	○	✓	✓✓	✓	✓	✓	✓	○
Vehicle Safety	○	✓	✓	✓	✓✓	✓	✓	○
Pedestrian Safety	○	✓	✓	✓	✓✓	✓	✓	○
Federal and State Approval	✓	✓	✓	×	×	×	×	×
Impact to Environmental Justice Areas	○	○	○	○	×	××	××	○
Right-of-Way Needs	○	○	○	×	×	×	×	×
Consistent with Previous Plans	×	○	○	✓	✓	✓	✓	✓
Time/ Impact of Construction	✓✓	✓	✓	×	×	×	×	×
Wetlands	○	○	○	○	○	××	××	○
Cost to Local Governments	✓✓	×	××	○	○	○	○	×
Historic Buildings and Districts	○	×	×	×	×	○	○	○

Source: Consultant analysis.

✓✓ = Very positive impact ✓ = Positive impact × = Negative impact ×× = Very negative impact ○ = Likely minimal impact

8.0 Potential Paths Forward

Developing a preferred option for improving traffic in downtown Valdosta depends on weighing the traffic benefits with other types of impacts for each alternative. As discussed in Section 4.0, the alternatives and their potential impacts were presented to many stakeholders in the public and private sector freight communities in addition to the general public. Through these outreach efforts, the following two options received the most positive response:

1. Savannah Avenue Parkway – upgraded two lane alternative
2. South of Savannah Alternative

The primary benefits and drawbacks of these alternatives are summarized below.

8.1 Savannah Avenue Parkway (upgraded 2 lane alternative)

The primary benefits of the Savannah Avenue Parkway alternative are that: 1) it has the potential to remove the vast majority of truck traffic from the core of downtown Valdosta and 2) the alternative can be completed in a relatively short amount of time. As demonstrated in the truck-following data results and the travel demand model results, the alignment of the Savannah Avenue Parkway is consistent with what is needed to provide an alternative for the vast majority of trucks to use to avoid Central Avenue and Hill Avenue in downtown. Even for local trucks that access the southern part of Valdosta, the alignment of the Savannah Avenue Parkway ensures that these trucks will not travel through downtown to access U.S. 41 or any of the other north-south routes that are commonly used by trucks today.

There are several improvements that are needed to make the Savannah Avenue Parkway alternative truck-friendly. The primary physical improvements that are needed are:

- Redesign the intersection at Savannah Avenue Parkway and U.S. 41 Business.
- Design the connections between the Savannah Avenue Parkway endpoints and U.S. 84.
- Make the eastern portion of Savannah Avenue Parkway two direction rather than one.
- Develop a median barrier for the roadway to minimize head-on and angle collisions along Savannah Avenue Parkway.
- Repave the Savannah Avenue Parkway road surface to prepare for roughly 1,000 large trucks per day to utilize the roadway.
- Specify improvements to be made to the road to ensure that truck travel speeds of 35 mph can be achieved. This will potentially include reducing curb cuts, blocking multiple intersection roadways, and improvements to remaining intersections to handle the estimated mix of truck, passenger car and pedestrian activity.

Under this alternative, all of these elements can be designed, implemented and operated by local transportation planning and engineering staff. Coordination with GDOT will only be needed to ensure appropriate tie-ins are made with U.S. 84 and to determine signage and markings that can be used to

encourage trucks. There would also be significantly less environmental issues with this alternative as much of the upgraded roadway would be within the current right-of-way.

The primary drawback of this alternative is that it is uncertain if trucks will use this upgraded roadway even after the improvements are made. Usage cannot be made mandatory as Central Avenue and Hill Avenue will remain on U.S. 84 and trucks cannot be prohibited from a U.S. route. Close coordination will be needed between the design team and the trucking community to ensure that the upgraded roadway is indeed more conducive to truck traffic relative to the existing roadway. There will also need to be a significant outreach and education component included in this alternative, so that the primary generators of local truck activity will understand that the roadway is being upgraded to divert trucks out of downtown and of the importance of using the new roadway. To aid in this process, it may be helpful to rename the roadway to something that highlights the truck-friendly nature of the roadway such as the "Savannah Avenue Thru Truckway" or "Downtown Valdosta Truck Expressway". Additionally, signage and road markings will need to be added as appropriate to direct trucks to the desired route around the core of downtown Valdosta.

8.2 South of Savannah Avenue

The South of Savannah Avenue alternative is also considered by local stakeholders to meet the needs of diverting truck traffic out of the core of downtown Valdosta. Designating this roadway as the new U.S. 84 and combining that with a prohibition on through trucks on Central Avenue and Hill Avenue has the potential to eliminate virtually all of the downtown trucks. The other significant traffic impact of this alternative is that it would also remove through auto traffic from downtown Valdosta. Some downtown business owners view that as a positive in terms of making downtown more livable, while others view it as a negative for attracting retail and restaurant commerce. This alternative also has the most safety benefits for U.S. 84 as the roadways would be designed specifically for trucks, truck operations would become far removed from downtown, and the new alignment would be far removed from both downtown commercial activity and residential activity south of downtown.

The other significant benefit of this alternative is that it places Central Avenue and Hill Avenue in the downtown core back to local control. These would become local roads with the South of Savannah Avenue alternative being the new U.S. 84. Under local control, a wide range of options could be considered, particularly in regards to the number of throughput lanes, the directionality of traffic, curbside parking, pedestrian and bicycle friendly options, and shutting down traffic for special events. These elements could all be redesigned to be consistent with the long term vision for downtown as consistent with the Valdosta Main Street initiative.

However, there are significant drawbacks to this alternative. The primary ones are as follows:

- High cost construction option with no currently identified funding source.
- Requirement for an extensive environmental process to understand and mitigate environmental justice and historic structures issues.
- Need to closely coordinate with GDOT to request approval to alter the state route designation for U.S. 84 and associated adjustments needed in other elements of the nearby transportation system.
- Need to negotiate and closely coordinate with CSX (and potentially Norfolk Southern) to secure current rail right-of-way and develop alternative alignments for the railroads.

- Other significant right-of-way issues will need to be resolved as there are several structures that are in the current path of this alternative, including but not limited to, Olympic Park and a Georgia Pecan administrative building.

- The time required for environmental, design, engineering and construction will be extensive compared to the two-lane Savannah Avenue alternative.

- Ongoing maintenance costs of Central Avenue and Hill Avenue as they are added to the local road network.

The traffic benefits and drawbacks of this options would need to be fully considered by a wide range of stakeholders prior to moving forward with this option.

8.3 Incorporation into MPO LRTP Process

This study has examined traffic patterns in detail, conducted outreach to many stakeholders, and conducted an extensive quantitative and qualitative analysis of several alternatives. The next step is to consider incorporating an improvement alternative into the Valdosta Lowndes MPO Long Range Transportation Plan (LRTP) process. Ultimately, the development of a specific project will require full and detailed traffic forecasts and the initiation of a formal environmental process.

Appendix A. Public Outreach

Two public meetings were conducted as part of this study. The first public meeting occurred on May 10, 2016 at the Steel Magnolias Restaurant (132 North Patterson Street, Valdosta, GA 31601) from 5:00 P.M. to 6:00 P.M. The second public meeting was held on June 21, 2016 from 5:00 P.M. to 6:00 P.M. at the Southern Georgia Regional Commission office (327 West Savannah Avenue, Valdosta, GA 31601).

At the May 10th meeting, attendees were presented with various results of the truck traffic mitigation study to date including: stakeholder feedback, the truck following results, the potential alternatives for mitigating truck traffic, the potential impacts of those alternatives on truck traffic via the VLMPO travel demand model, and the preliminary evaluation of the alternatives, among others. Attendees were encouraged to provide feedback on the alternatives they liked or disliked the most and also if they believed that any action should be taken at all. The sign-in sheet from the May 10th meeting is included as an attachment to the report.

A summary of the general comments from the May 10th meeting are as follows:

- Some action should be taken to mitigate truck traffic in downtown.
- Alternatives such as Savannah Avenue Parkway may help in the short-term, but not as much in the long-term.
- Alternatives such as the South Bypass may also help to spur economic development, particularly in the industrial and logistics sectors.
- The City of Valdosta should consider the potential cost of assuming ownership of Central and Hill Avenues should they be removed from the State system.
- The project team should consider an alternative in which the South Bypass is routed along Saint Augustine Road as opposed to James Road.

At the June 21st meeting, attendees were presented with much of the same information as before. However, they were also presented with the model results of the South Bypass (Saint Augustine Road Route). This alternative was generated in response to comments received at the May 10th meeting. Again, attendees were encouraged to provide feedback on the potential mitigation strategies. The sign-in sheet from the June 21st meeting is included as an attachment to the report.

A summary of the general comments from the June 21st meeting are as follows:

- While most attendees still agreed that some action should be taken to mitigate truck traffic in downtown, some attendees did express that truck traffic in downtown is not a major concern.
- Some attendees expressed doubt over the ability of the Savannah Avenue Parkway alternatives to relieve truck traffic in downtown unless U.S. 84 is diverted to that route. Others noted that with these alternatives truck traffic would still be very close to downtown and that Savannah Avenue has businesses and pedestrians, though not as numerous as Central and Hill Avenues.
- Some attendees expressed their preference for the South Bypass as it traverses many industrial areas. Some noted that this alternative could potentially be routed along Gil Harbin Industrial Blvd.

- Other attendees expressed their preference for the South of Savannah Avenue alternative as it would grant the opportunity to co-locate highway freight and rail freight activities. However, other attendees noted that this alternative would shift truck traffic closer to the residential neighborhoods south of downtown and that it would require the relocation of the rail line.

- Participants also requested that overtures be made to CSX Transportation and South Georgia Pecan as they own facilities that would potentially be affected by the South of Savannah Avenue alternative.

Appendix B. Cost Estimate Assumptions

In developing cost estimates for the potential alternatives, both construction costs and right-of-way costs were estimated. Construction cost estimates were generated using the various cost per mile figures for different cross-sectional roadway configurations as indicated in the Georgia DOT Cost Estimation System (CES). Right-of-way costs were estimated using the Georgia DOT's Right-of-Way and Utility Relocation Cost (RUCEST) tool. Given that the potential paths forward are preliminary and no single alternative has been decided upon, only the right-of-way costs and not the utility relocation costs are included in the analysis. Furthermore, the cost estimates as developed using the CES and RUCEST tools are informed by cost information from similar projects throughout the State, particularly the grade separation of U.S. 84 and the Norfolk Southern rail line near downtown.

The construction cost estimate assumptions are contained in Table A.1. In addition to the information in Table B.1, the analysis assumed $110,000 per signal, $40,000 per turn lane, and $120 per square foot of bridge deck. Bridge decks are assumed to be necessary for all rail crossings and also for the South Bypass (James Road Route) over I-75. For the bridge decks, it is assumed that each deck must be wide enough to support 48 feet of travel lanes, 17 feet of paved shoulders, and 3 feet of parapets. Rail crossings are assumed to require spans of at least 200 feet while the I-75 fly-over is assumed to require at least 400 feet.

The right-of-way cost estimate assumptions are contained in Table B.2. Right-of-way cost estimates are significantly affected by the alternatives' surrounding land uses. Impacts to residential properties are assumed to be more costly than all others while impacts to agricultural and industrial properties are assumed to be the least costly. In addition, potential paths forward such as the South Bypass alternatives are assumed to require that more properties be potentially taken than others. This is primarily due to these alternatives potentially affecting the residential area between South Patterson Street and Griffin Avenue/New Statenville Highway.

Table B.1 Construction Cost Estimate Assumptions

Alternative	Typical Section	Cost per Mile	Approximate Length (Miles)	Approximate No. of Signals	Approximate No. of Turn Lanes	Bridges over Rail Crossings
Savannah Avenue Parkway (All Vehicles and Trucks-Only)	2 Lane Urban (Sidewalk + Gutter)	$3,600,000.00	1.2	5	5 – 7	0

Savannah Avenue (4 Lanes)	4 Lane Urban (Sidewalk + Gutter)	$5,300,000.00	1.33	5	5	0
South of Savannah Avenue	4 Lane Urban (Sidewalk + Gutter)	$6,250,000.00	1.33	3	3	0
South Bypass (James Road Route)	4 Lane Rural (Grass Median) and 4 Lane Rural (Flush Median)	$4,200,000.00	5	4	4	3
South Bypass (St. Augustine Road Route)	4 Lane Rural (Flush Median)	$4,700,000.00	3	3	5	2
Western Perimeter	4 Lane Rural (Grass Median) and 4 Lane Rural (Flush Median)	$4,200,000.00	6	3	3	2

Source: Georgia DOT Cost Estimation System (CES) Tool; Consultant analysis.

Table B.2 Right-of-Way Cost Estimate Assumptions

Alternative	Land Use	Approximate No. of Taken Properties	Right-of-Way Cost
Savannah Avenue Parkway (All Vehicles and Trucks-Only)	Commercial	2	$3,552,000.00
Savannah Avenue (4 Lanes)	Commercial	2	$4,646,400.00
South of Savannah Avenue	Commercial	2	$16,413,091.00
South Bypass (James Road Route)	Agricultural, Residential, and Industrial	10	$14,103,273.00
South Bypass (St. Augustine Road Route)	Industrial, Residential	10	$12,357,818.00
Western Perimeter	Agricultural	0	$2,792,727.00

Source: Georgia DOT Right-of-Way and Utility Relocation Cost Estimate Tool (RUCEST); Consultant analysis.