



# APPENDIX A

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## EXISTING CONDITIONS REPORT

# CHAPMAN HIGHWAY IMPLEMENTATION PLAN

## Existing Conditions

June 6, 2019



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## ON GOING INITIATIVES

### Recode Knoxville

#### *Overview*

Recode Knoxville, currently in progress, seeks to reestablished land use regulations for the City of Knoxville, TN. The primary goal of the updated code is to promote orderly economic development, public health, safety, and welfare - while maintaining the character of distinct places and preserving open space. The updated code designates several subdistricts including, but not limited to, the neighborhoods of Old Sevier and Scottish Pike, the Knoxville South Waterfront, Bell Tower Walk, and the Henley Gateway which lie within the Chapman Highway corridor.

#### *Application*

Recode Knoxville includes streetscape standards which may serve as a guideline when redesigning the Chapman Highway corridor. According to Recode, Chapman Highway will most likely be categorized as “Street D” (refer to figure 2). Once the new zoning maps have been complete, the code will help designate the character, type of use, and building setbacks along the different segments of the corridor. In lieu of the new zoning maps, the document will serve as a template for future development and give a glimpse of future zoning changes.

New development in the subdistrict for Old Sevier and Scottish Pike should preserve the existing neighborhood orientated atmosphere such as detached houses, cottages, duplex houses, attached townhouses, and rowhouses. The minimum setback is 10 feet and the maximum setback is 25 feet for this subdistrict. Future street alignments and existing roads combine to form a “figure eight” loop. A new rail underpass which will connect to August Avenue and Augusta Avenue will change from a tertiary street to a boulevard. Pedestrian circulation will be improved, and street trees incorporated in the proposed street rights-of-way.

South Waterfront includes higher density with larger buildings, along with a mix of office, residential, commercial, and hospitality uses. New developments should include publicly accessible landscapes and plazas setback from the river to allow for a continuous promenade and marinas. Parking lots should be incorporated into structures or located beneath buildings wherever possible. Buildings should maintain a maximum setback of 10 feet.

The Bell Tower Walk subdistrict serves as an activity center including retail, entertainment, civic, cultural, and residential uses organized around the civic plaza “Bell Tower Walk.” Low to mid-rise mixed used or multiple unit housing buildings with commercial development on the first floor are encouraged with underground parking.

The Henley Gateway subdistrict will serve as a new entrance to downtown Knoxville and capitalizes on economic opportunities provided by Baptist Hospital. The new area will include multi-story office buildings, an open green space, and will continue the Shoals Promenade Riverwalk.

Residential zones designate different standards which accommodate the needs of low density, mixed, and high-density neighborhoods. The typical setback for residential zones will be either be 25 feet minimum and 35 feet for structures over 35 feet in height. Commercial zones are broken into types based upon the use, surrounding development, and adjacent traffic. The minimum setback for each zone varies from 10 feet to 25 feet depending upon the density and building heights. The commercial zoning districts which could potentially be assigned to areas adjacent to Chapman Highway include the neighborhood, general, and highway commercial zones. The typical setback for general commercial zones is between 0 and 15 feet and highway commercial zones a minimum of 20 feet. The industrial zones are broken up into heavy industry, research and development, office parks, and retail. Most industrial districts have a minimum setback of 25 feet. Research and development zones have a minimum setback of 50 feet and industrial mixed-use zones does not have any setback requirement at this time.

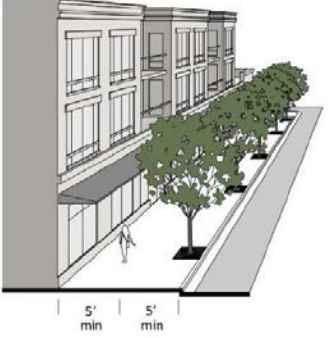
Table 5-6: Required Streetscape	
	
<b>Streetscape</b>	
Min. Sidewalk	5'
Min. Planting Zone	5'
<b>Details</b>	
Planting Zone Type	Tree lawn/tree grate
Tree Spacing	Every 30' on center, on average

Figure 1: Recode Knoxville: Required Streetscape, page 5-22



Table 5-8: Streetscape Standards					
	Side Road	Street D	Commercial Street	Street E	Boulevard
ROW Width	56'	70'	58'	52'	70'
Pavement Width	36'	40'	38'	22'	50'
Movement Type	Slow Movement	Free Movement	Slow Movement	Slow Movement	Slow Movement
Design Speed	20 mph	30-35 mph	25 mph	25 mph	25 mph
Pedestrian Crossing Time	10.3 seconds	11.4 seconds	10.3 seconds	6.9 seconds	10.3 seconds
Traffic Lanes	2 lanes	2 lanes	2 lanes	2 lanes	2 lanes
Parking Lanes	Both Sides at 8' Marked	One Side at 8' Marked	Both Sides at 8' Marked	N/A	One Side at 8' Marked
Bike Lanes	N/A	Both Sides at 5' Marked	N/A	N/A	Both Sides at 5' Marked
Curb Radius	15'	15'	15'	15'	15'
Walkway Type	5' Sidewalk	5' Sidewalk	10' Sidewalk	5' Sidewalk	10' Sidewalk
Planter Type	5' Continuous Planter	5' Continuous Planter	5' Continuous Trench	5' Continuous Planter	5' Continuous Trench
Curb Type	Curb or Swale	Curb or Swale	Curb	Curb or Swale	Curb
Landscape Type	Trees at 30' On Center	Trees at 30' On Center	Trees at 30' On Center	Trees at 30' On Center	Trees at 30' On Center
Transportation Provision	N/A	N/A	Bus Route	Bus Route	Bus Route
Utilities	All Underground	All Underground	All Underground	Overhead Power, Cable, Phone	All Underground

Figure 2: Recode Knoxville: Streetscape Standards, page 29

## Chapman Highway Advanced Traffic Management System (ATMS)

The City of Knoxville is designing an ATMS project for the 17 traffic signals along Chapman Highway. The project will include new traffic signal cabinets and signal controllers, fiber optic connections between all 17 traffic signals, and improved vehicle detection that provides video surveillance. The signal data and video streams will be able to be viewed/modified at the City's planned traffic operations center. Additionally, this project has designed improvements to the pedestrian infrastructure at several of the traffic signals, including curb ramps, crosswalks, and enhanced pedestrian signal equipment.

## Improving Manufacturing, Public Roads and Opportunities for Vibrant Economy (IMPROVE) Act

The IMPROVE Act is Public Chapter No. 181 in the State of Tennessee. This legislation was passed by the Senate and House of Representatives on 04/24/2017, and signed by the governor on 04/26/2017.

Within the IMPROVE Act, 962 projects were identified throughout Tennessee; #558 is "Knox, Blount, and Sevier counties, SR-71/US-441, (Chapman Highway) Blount Avenue to SR-338 (Boyds Creek Highway) in Seymour, operations and safety improvements (multiple locations);"

The Tennessee Department of Transportation hosts a web page

(<https://www.tdot.tn.gov/projectneeds/spot#/>) that provides more information on each of these projects.

On that webpage, the Chapman Highway project between Blount Avenue and SR-338 (Boyds Creek Highway) is identified to be 10.28 miles in length and having an 'IMPROVE Act Investment' amount of \$45,268,000.

The City of Knoxville portion of Chapman Highway is located between Blount Avenue and Governor John Sevier Highway, which is a distance of approximately 5.9 miles.

### Blount Avenue Streetscape

The Blount Avenue Streetscape is currently under construction, in conjunction with the Riverwalk development on the site of the old Baptist Hospital. Blount Avenue was previously a 5-lane roadway with sidewalks on both sides. The streetscape improvement project will transform Blount Avenue to a multi-modal connection between Henley Street/Chapman Highway and Gay Street, including a 2-lane roadway with a landscaped median, sidewalks on both sides, and bicycle lanes on both sides.

### Chapman Highway at Woodlawn Pike North/Fort Dickerson Road Intersection

The intersection construction project along Chapman Highway at Woodlawn Pike North/Fort Dickerson Road was completed in 2015. Fort Dickerson Road was previously offset from Woodlawn Pike North by approximately 150 feet, and this project realigned Fort Dickerson to intersect Chapman Highway directly across from Woodlawn Pike North as a 4-leg signalized intersection. This improvement created a gateway into Fort Dickerson, and creates a sense of place along Chapman Highway. The project was recommended in the 2007 Chapman Highway Corridor Improvement Study.

## SUMMARY OF PREVIOUS PLANNING DOCUMENTS

### Mobility Plan 2040

#### *Overview*

The Mobility Plan 2040 is the long-range transportation plan for the Knoxville area that guides transportation decision making for the next two decades. The plans' goals are to promote prosperity and livability. A performance framework was created to detail goals, strategies, and performance measures that should guide policy and funding decisions. The Plan prioritizes \$2.3 billion in multimodal transportation projects over the next 20+ years that focus on maintaining the existing transportation network. One of the goals of the Mobility Plan is to increase pedestrian safety and reduce the frequency and severity of motor vehicle/pedestrian crashes by implementing engineering countermeasures such as refuge islands, high-visibility crosswalks, rectangular rapid-flashing beacons (RRFBs), pedestrian overpasses and underpasses, roundabouts, road diets which create space for other modes of transportation, speed humps, and curb extensions.

#### *Application*

The plan includes several prioritized projects relevant to the Chapman Highway Implementation Plan and will be a key reference when outlining the implementation of improvements along the corridor.



## Southside Flats TIS Report 2017

### *Overview*

The Southside Flats proposed residential development project is located east of Chapman Highway at the northeast corner of Lippencott Street and E. Martin Mill Pike intersection and south of the Knoxville Central Business District. Lippencott Street primarily serves residential traffic and E. Martin Mill Pike serves both residential and commercial traffic. Unsignalized levels of service for the proposed development were found to be acceptable. Sight distances also exceeded what was required of a 30 mile per hour speed limit zone. Left and right turn lanes for the proposed access road were not warranted.

### *Application*

The overall conclusion of the study was that efficient and safe traffic flows will be maintained with the development of the Southside Flats residences. Any changes to Chapman Highway should consider the development in order to accommodate for future transit, traffic, pedestrians, and cyclists.

## Knoxville Bike Design Report 2016

### *Overview*

The Knoxville Bike Design highlights five corridors within the plans' study area, one being Chapman Highway from Blount Avenue to Woodlawn Pike. Existing conditions and proposed alternatives are provided for each corridor. Detailed traffic analysis was performed along the corridor including both intersection and corridor capacity analysis. The concept shows separated bicycle and pedestrian facilities, protected intersections, and details how drivers, pedestrian, and cyclists will interact and move through the spaces.

### *Application*

The Knoxville Bike Design report is relevant to the Chapman Highway Implementation Plan because it provides strong concepts and a clear vision for a future complete street design that safely integrates bicyclists. This study and traffic research will be a guiding document utilizing the concepts provided in the report will be a baseline for future design.

## Bicycle Facilities Presentation 2016

### *Overview*

The Bicycle Facilities Design from 2016 introduced viewers to concepts of bicycle facilities on Chapman Highway, Henley Street Bridge, Middlebrook Pike, Woodland Avenue, and Adair Drive. Facilities varied by roadways.

### Application

The concepts developed for Chapman Highway should be considered during the Implementation Plan. Concepts between Blount Avenue and Woodlawn Pike included a separated bicycle facility with a landscape buffer on either side of Chapman Highway, along with a shared use path on the east side and a buffered sidewalk on the west side.

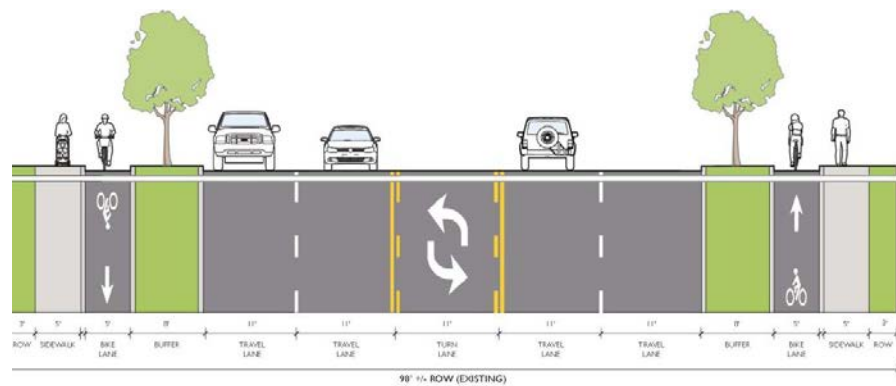


Figure 3: Chapman Highway, Bicycle Facilities Presentation 2016: Recommended Cross Sections, Page 9

## 2015 Bicycle Facilities Plan

### Overview

In response to increased interest in cycling in the City of Knoxville, the 2015 Bicycle Facilities Plan outlines the future of bicycle infrastructure throughout the city. The plan identified over fifty miles of roadway for new or improved bicycle infrastructure.

### Application

Portions of Chapman Highway were included in the plan. Potential cross sections, facility types, and cost estimates were provided in the document for Chapman Highway. The Plan should be referenced during the Implementation Plan to ensure cross streets are considered and critical connections are made on and off Chapman Highway.

## Blount Avenue Streetscape Improvements 2015

### Overview

The Blount Avenue Streetscape Improvements are a construction documentation set that detail roadway improvements to Blount Avenue between the CSX Railroad and Gay Street / Sevier Avenue. Existing drainage and utilities will be demolished and reconstructed in order to accommodate a roadway with striped bicycle lanes. The existing plans show Blount Avenue with four lanes and the occasional center left turn lanes while

the new layout details a two-lane roadway with left turn lanes and large planter islands. The sidewalk facilities proposed are continuous and provide separation from the roadway on the north side of Blount Avenue.

#### *Application*

The design for the intersection of Blount Avenue and Chapman Highway is included in the plan set. Portions of the improvements have been completed or are currently under construction, including some sidewalk on the north side of the roadway and utility relocations along East Blount Avenue.

### Riverwalk Traffic Impact Study 2014

#### *Overview*

The Riverwalk Traffic Impact Study was conducted for the proposed development, Riverwalk. The site of the proposed development is south of the Tennessee River on all four quadrants of the signalized intersection of Henley Street / Chapman Highway at Blount Avenue. The study suggests providing sidewalk with a minimum width of 5 feet and bicycle lanes along both sides of East Blount Avenue.

The study proposes modifying the intersection geometry of Henley Street / Chapman Highway at Blount Avenue to remove the channelized westbound, northbound, and southbound right turn lanes. Both the northbound and southbound right turn lanes are recommended to remain and the westbound right turn movement from the through lane. Due to the proximity of the traffic signal from the un-signalized intersection at St. Paul Street, the intersection geometry should include tighter radii to slow down right turn movements. There is also a proposed “Gateway Plaza” on the northeast quadrant of Henley Street / Chapman Highway at Blount Avenue.

#### *Application*

The intersection of Chapman Highway and Blount Avenue is currently in the design and construction phase. The study also highlighted a proposed extension of the Riverwalk bicycle and pedestrian network along the south bank of the Tennessee River and infrastructure improvements to Blount Avenue.

### Knoxville Regional Transit Corridor Study 2013

#### *Overview*

The Knoxville Regional Transit Corridor Study comprises studies of twelve major corridors in the Knoxville area and their suitability for transit investment. The studies were conducted after the Knoxville Regional Transportation Planning Organization sought guidance in reducing the effects of steady population growth: increased congestion and air quality issues. Goals of the studies include expanding transit opportunities, enhancing the city’s image to become more competitive in the region in terms of rapid transit systems,

exploring the role of transit technologies, and developing and recommending transit supportive land use guidelines, policies and tools to support TOD.

#### *Application*

Chapman Highway was included in Tier 1 Analysis along with the remaining 12 corridors, but was not recommended for advancement into Tier 2 Analysis because of a lack of current diversity in transit mode accommodation, low ridership numbers, low population adjacent to the corridor, low connectivity to the region and a low level of stakeholder support. The corridor did, however, have low environmental issues and minimal property impacts given its sufficient right of way.

### State Route 71 Re-Evaluation Candidate Project Report 2012

#### *Overview*

The Re-Evaluation Candidate Project Report for State Route (SR) 71 re-evaluated a proposed segment of James White Parkway by identifying and recommending feasible and cost-effective roadway improvements, while improving safety and mobility to Chapman Highway between the Governor John Sevier Highway overpass to the Henley Street Bridge. James White Parkway is an alternative route to Chapman Highway. The outcome of recommended improvements is broken down into two phases. Phase I focuses on safety improvements of Chapman Highway, including installation of curb and gutter to limit access, installing median pavement, installing sidewalk, signing and pavement markings. Phase II focuses on operational improvements, including roadway and intersection realignments as well as widening of the Highway in specified areas.

#### *Application*

The re-evaluation proposes projects at a total cost of \$8,700,000, whereas the original proposed project costs ranged between \$112,000,000 to \$115,200,000. At the time of the report, three intersections along the highway corridor were being evaluated under the Intersection Action Plan program.

### 2011 South City Sector Plan

#### *Overview*

The 2011 South City Sector Plan is a component of the Metropolitan Planning Commission's comprehensive plan. Seven special land use districts are identified for potential mixed-use development. The South Waterfront District and potential additions, the Log Haven District, The Chapman Highway District, and the Downtown Vestal District all fall along or within proximity to the corridor. In the plan, each Special Land Use District details individualized transportation improvements, community facilities and rezoning recommendations. Additionally, 5-year and 15-year improvement plans are detailed for land-use, transportation, and parks and recreation.

### Application

The Implementation Plan will need to accommodate for the proposed Special Land Use Districts in all designs and recommendations in order for transportation to be effective for all modes along Chapman Highway and the surrounding areas.



Figure 4: 2011 South City Sector Plan: Existing Land and Town Center Concept Drawing, Page 25

## KAT Transit Development Plan Corridor Analysis 2009

### Overview

The KAT Transit Development Plan analyzes eight corridors to determine their potential for supporting Transit-Oriented Development (TOD) or higher capacity transit services. TOD is designed to support both pedestrian and vehicular activities. According to the plan, the transit options with the greatest impact are various levels of Bus Rapid Transit (BRT), Light Rail Transit (LRT), and commuter rail.

### Application

Chapman Highway / James White Parkway is one of eight potential transit corridors studied in the KAT Transit Development Plan. Advantages this corridor offers TOD are high ridership on existing bus routes, strong commercial presence, and few right of way restrictions close to downtown Knoxville. The disadvantages of building more transit along Chapman Highway include the presence of less developed areas, low density further from downtown, relatively low employment density adjacent to the route, and possible right of way restrictions through Town of Seymour.

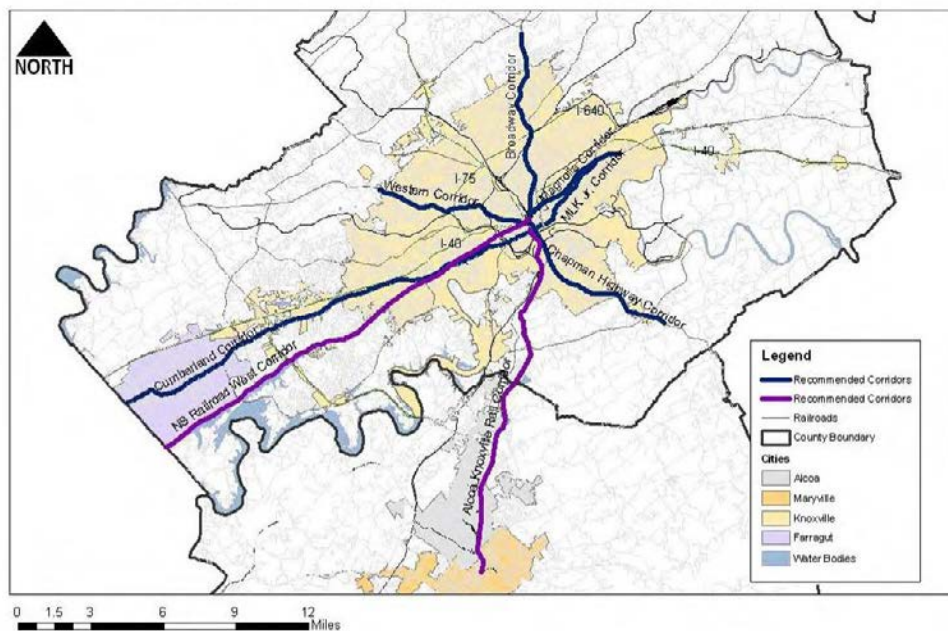


Figure 5: KAT Transit Development Plan Corridor Analysis: Corridors with Greatest Potential for High Capacity Transit, Page 16

## Traffic Study Report: Chapman Highway Corridor Improvement Study 2007

### Overview

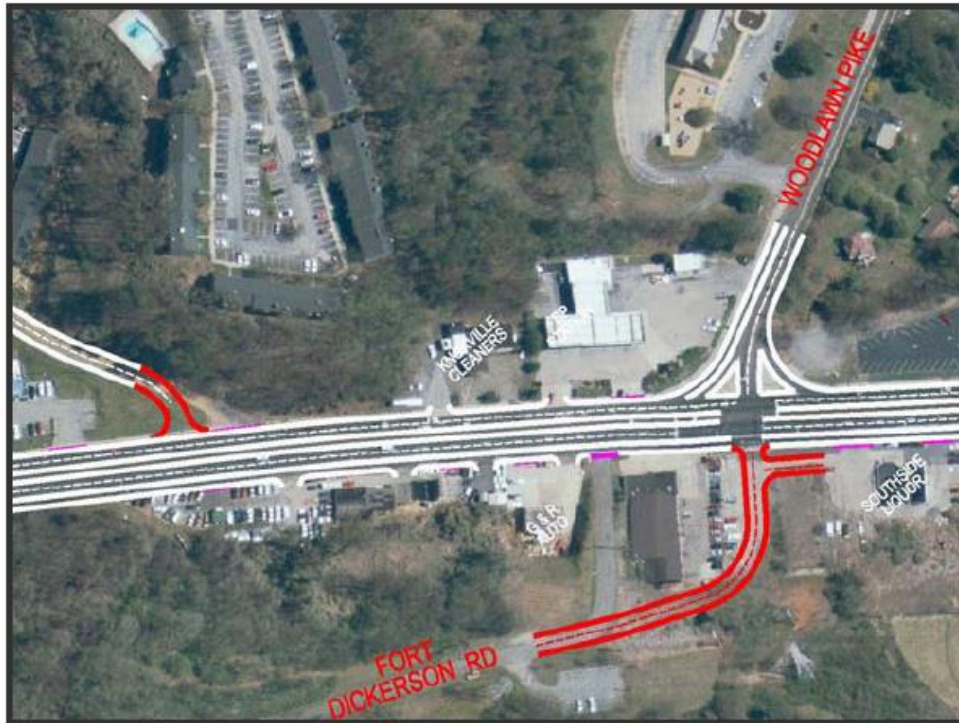
The Chapman Highway Corridor Improvement Study's purpose is to provide solutions to traffic issues along Chapman Highway from Henley Street Bridge to State Route (SR) 35 / 338 in Seymour, TN. Suggested improvements include consolidating undefined driveway access points, adding turn lanes at critical intersections, improving sight distance, and improving and / or adding signals where applicable.

An extensive data collection effort was performed, which included traffic volume data, current signal timing and operational settings, aerial photography, results from previous studies, Enhanced Tennessee Roadway Information System (E-TRIMS) database information, and field inventories and observations. The study cited the Annual Average Daily Traffic (AADT) forecasts and arterial levels of service.

### Application

The Corridor Study identifies six unique segments and outlines key issues and suggested improvements for each. Since this study was completed in 2006, these recommendations will be vetted to ensure current relevancy or completion status and incorporated into the Chapman Highway Implementation Plan.





### *Section 1B - Fort Dickerson Drive Realignment*

Figure 6: An Example of Proposed Intersection Improvements. Chapman Highway Study: Driveway Consolidations, Removal of Fort Dickerson Drive intersection, and the Realignment of Woodlawn, Page 16. It should be noted that the intersection of Fort Dickerson Road and Woodlawn Pike has been constructed.

## **South Waterfront Traffic Study 2007**

### *Overview*

The South Waterfront Traffic Study details the effects of a proposed development on 3.9 square miles immediately south of downtown Knoxville. Ten major intersections were identified in the study as being significant for traffic impact analysis. The report reviews nine existing and one proposed intersection that would impact the mixed-use, waterfront development. The study resulted in a proposed street network that includes improvements to existing streets and intersections, as well as the addition of new location streets to enhance east-west connectivity. Benefits of a new network, including improved traffic circulation, vehicle parking, pedestrian circulation, public safety and service, and development value are detailed throughout the study.

### *Application*

The study is relevant to the Chapman Highway Implementation Plan in that analysis of roadways for the proposed South Waterfront development should be included in any conceptual design for the corridor. This study encourages the implementation of a complete street concept along Chapman Highway by implementing access management, streetscaping, and bicycle and pedestrian accommodations. Since the

completion of this study in 2007, the Chapman Highway and Blount Avenue intersection has been improved, and much of the South Waterfront development has been constructed or is currently under construction.

### Traffic Capacity Analysis

#### AM Peak

Intersection	Existing		2015 With Project	
	Delay (Seconds)	LOS	Delay (Seconds)	LOS
1 Blount/Cherokee Connector	N/A	N/A	2	A
2 Augusta/ Hawthorne	N/A	N/A	N/A	A
3 Chapman/Blount	41	D	148	F
4 Chapman /Hawthorne	N/A	N/A	N/A	F
5 Chapman /Martin Mill	13	B	10	A
6 Blount /Gay/Sevier	18	B	Acceptable*	Acceptable*
7 Sevier/Davenport	4	A	7	A
8 Sevier/Island Home/Anita	2	A	N/A	A
9 Anita/James White SB	5	A	5	A
10 Anita/James White NB	9	A	19	A

#### PM Peak

Intersection	Existing		2015 With Project	
	Delay (Seconds)	LOS	Delay (Seconds)	LOS
1 Blount/Cherokee Connector	N/A	N/A	2	A
2 Augusta/ Hawthorne	N/A	N/A	N/A	A
3 Chapman/Blount	86	F	298	F
4 Chapman /Hawthorne	N/A	N/A	N/A	F
5 Chapman /Martin Mill	11	B	12	B
6 Blount /Gay/Sevier	19	B	Acceptable*	Acceptable*
7 Sevier/Davenport	2	A	3	A
8 Sevier/Island Home/Anita	3	A	N/A	A
9 Anita/James White SB	6	A	6	A
10 Anita/James White NB	7	A	19	A

\* Analysis based on Roundabouts: An Informational Guide, FHWA-RD-00-67, June 2000

Figure 7: Traffic Capacity Analysis from South Waterfront Study, Page 12

## South Waterfront Vision Plan 2006

### Overview

The South Waterfront Vision Plan outlines an implementation plan for the revitalization of the south waterfront area to include provision of numerous developments, public amenities, access to the water front, and upgraded streets for the area of Knoxville south of the Tennessee River. The project area consists of retail, residential, and industrial mixed-use areas. Areas include a core commercial and institutional district in the bluff area between the Henley Street and Gay Street bridges, commercial and retail businesses along the Chapman Highway corridor, and a commercial and housing neighborhood in the center of the South Waterfront.

### Application

The South Waterfront Vision Plan imagines Chapman Highway as a key gateway and revived commercial entrance to South Knoxville. The Chapman Highway Implementation Plan will consider this vision for growth and enhanced public infrastructure. The plan also outlined three pedestrian infrastructure projects and recommended bike lanes or shared use paths along all existing and new major or connector roads.



Figure 8: South Waterfront Vision Plan: 0-10 Year Phasing Plan, Page 93

## South Waterfront Action Plan 2006

### Overview

The Knoxville South Waterfront Action Plan calls for revitalizing the low-lying land between the Tennessee River and the Chapman Ridge. Currently, the area has a substantial amount of underutilized industrial land along the waterfront, which if redeveloped, would offer an attractive viewshed, connections to downtown, and attract mixed-use development. The intersections of Chapman Highway and Blount Avenue, Gay Street and Sevier Avenue, and the James White Parkway interchange have the access and visibility needed for retail development. The increased mixed-use development would in turn increase demand for hotel rooms. The intersection of Chapman Highway and Blount Avenue is an optimum location for a hotel facility due to its

waterfront views and proximity to the convention center. Public transit also serves the project area, with bus lines running along Chapman Highway, Sevier Avenue, and Blount Avenue.

#### *Application*

The plan is beneficial to any reconfiguration or construction of Chapman Highway near the proposed development as it details land ownership, policy changes, funding resources, and economic strategies.

### Chapman Highway Corridor Study 2006

#### *Overview*

The Metropolitan Planning Commission (MPC) prepared a Chapman Highway Corridor Study in 2006, with the support of the City of Knoxville. The Chapman Highway Corridor Study serves as a basis for land use, site and building design, and thoroughfare characteristics along Chapman Highway. The three principles that influenced the development of this study included safety and operations for all modes of transportation, beautification, and economic development. The current land use is primarily composed of fast food restaurants, gas stations, and other auto-related shops. Residents desired a more diverse retail shopping experience, a pedestrian friendly neighborhood, more landscaping, and safer streets. Suggestions from the community included center medians with trees, better lighting, improved sidewalks, and bike lanes. According to the Chapman Highway Corridor Study, priority should be placed on creating mixed-use, compact development with building facades close to the street and a multimodal circulation network.

#### *Application*

Traffic operation improvements are recommended with the use of access management, coordinated signal timing, removal of unwarranted signals, and the accommodation of turning traffic at intersections. Additional safety improvement suggestions include allowing space for multiple modes of transportation, adding center turn lanes, medians, right turn lanes, and providing adequate sight distances. The plan also suggests constructing bike lanes along Chapman Highway from the waterfront to Moody Avenue, providing shoulder space for anticipated bike lanes for the rest of the corridor, and filling in sidewalk gaps.



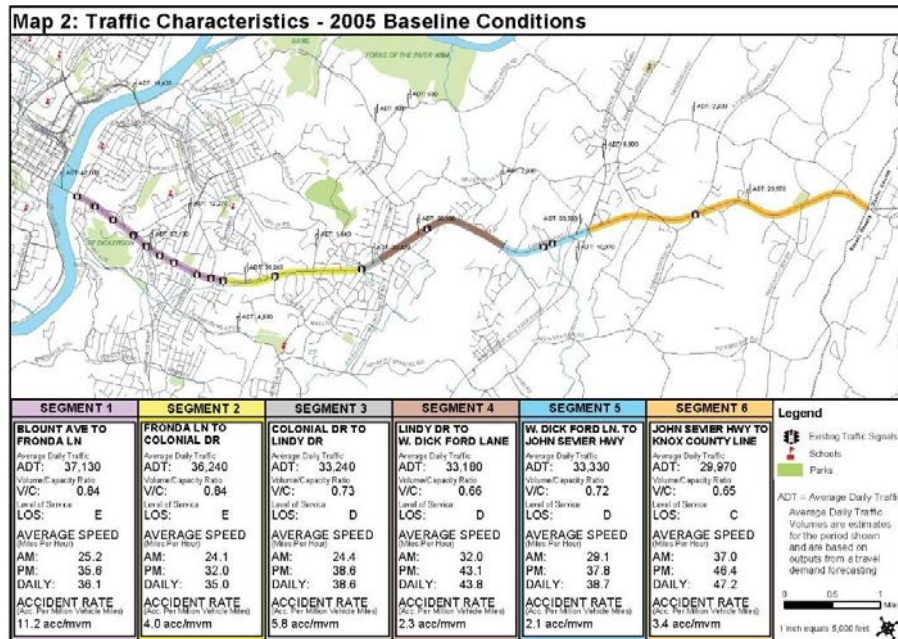


Figure 9: Chapman Highway Corridor Study: Traffic Characteristics of Different Sections, Page 22

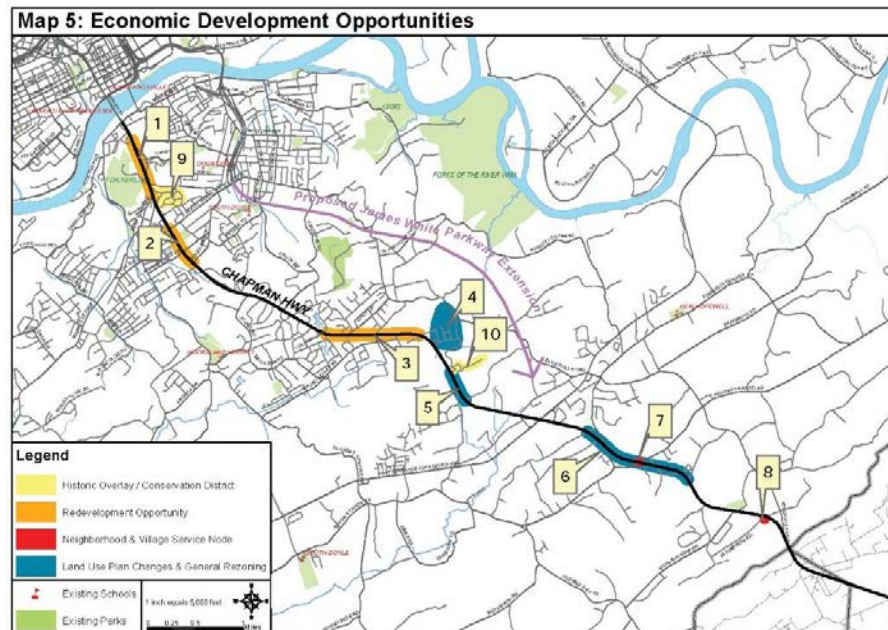


Figure 10: Chapman Highway Corridor Study: Redevelopment Opportunities, Page 49

## Plan East Tennessee Playbook

### Overview

The Plan East Tennessee Playbook is a guide focused on ensuring the region is attractive, healthy, and offers pathways to success for residents. Using research, analysis, and public input, the plan provides strategies for the future growth of the region and how to accomplish the playbooks' goals while involving the community. Goals include clean air and water, healthy people, regional prosperity, local food production, transportation choices, efficient infrastructure, great places, and housing choices.

### Application

The regional prosperity, transportation choices, efficient infrastructure, and great places are particularly important to consider in reference to the Chapman Highway Implementation Plan as they will all be impacted by growth and development along the corridor.

## EXISTING FACILITIES

### Vehicle Access

There are 17 traffic signals along Chapman Highway, and approximately 295 unsignalized intersections (either public roads or private driveways).

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	TOTAL
# of Traffic Signals	10	1	2	0	4	17
# of Access / Driveways	125	45	65	25	35	295

Table 1: Existing Signalized and Unsignalized Vehicle Access

### Motorized Vehicles

TDOT classifies Chapman Highway as an Urban Principal Arterial.

- South of Martin Mill Pike, Chapman Highway is designated as US-441 / SR-71
- North of Martin Mill Pike, Chapman Highway is designated as US-441 / SR-33 / SR-71

The posted speed limit varies along Chapman Highway:

- 35 miles per hour, north of Hawthorne Avenue (south of the railroad crossing owned by the Knoxville & Holston River Railroad Company, Inc.)



- 45 miles per hour, between Hawthorne Avenue and Chapman Ford Crossing
- 50 miles per hour, south of Chapman Ford Crossing

The typical section varies along Chapman Highway:

- 4-lane with center two-way left-turn lane, between Blount Avenue and Overbrook Drive/Frona Lane
- 4-lane undivided, between Overbrook Drive/Frona Lane and Nixon Road (although some segments are wider to provide left-turn storage bays at some intersections)
- 4-lane with center two-way left-turn lane, between Nixon Road and Mountain Grove Drive

### Pedestrian

Along the east side of Chapman Highway, there is sidewalk between Blount Avenue and Young High Pike (approximately 1.5 miles). For the remainder of Chapman Highway (between Young High Pike and Mountain Grove Road), there is no sidewalk along the east side of Chapman Highway.

Along the west side of Chapman Highway, there is no sidewalk along the corridor. The only exceptions are recent development and redevelopment in the vicinity of Young High Pike and Overbrook Drive/Frona Lane.

Roadways intersecting with Chapman Highway that have facilities include: West Young High Pike, East Moody Avenue, Woodlawn Pike, Lippencott Street, and Blount Avenue.

### Bicycle

There are currently no bicycle facilities along Chapman Highway. The Knoxville Regional Transportation Planning Organization's Knoxville Bicycle Map designates it as a roadway with limited or no shoulder and moderate to high speeds. Some roadways that intersect with Chapman Highway do have facilities present or are designated as comfortable routes. Designated comfortable Routes include: Blount Avenue, Woodlawn Pike, East Moody Avenue, Young High Pike, Colonial Drive, East Lake Forest Drive, and Ford Valley Road.

Bicycle facilities connecting to the corridor include:

Bike Lanes	Signed Routes	Sharrows	Buffered Bike Lanes	Greenways	Shared Use Trails
-Henley Street Bridge	-Henley Street Bridge	-South Gay Street -West Blount Avenue	-Sevier Avenue -East Moody Avenue	-Harold Lambert Overlook Park	-Harold Lambert Overlook Park

Table 2: Existing Bicycle Facilities

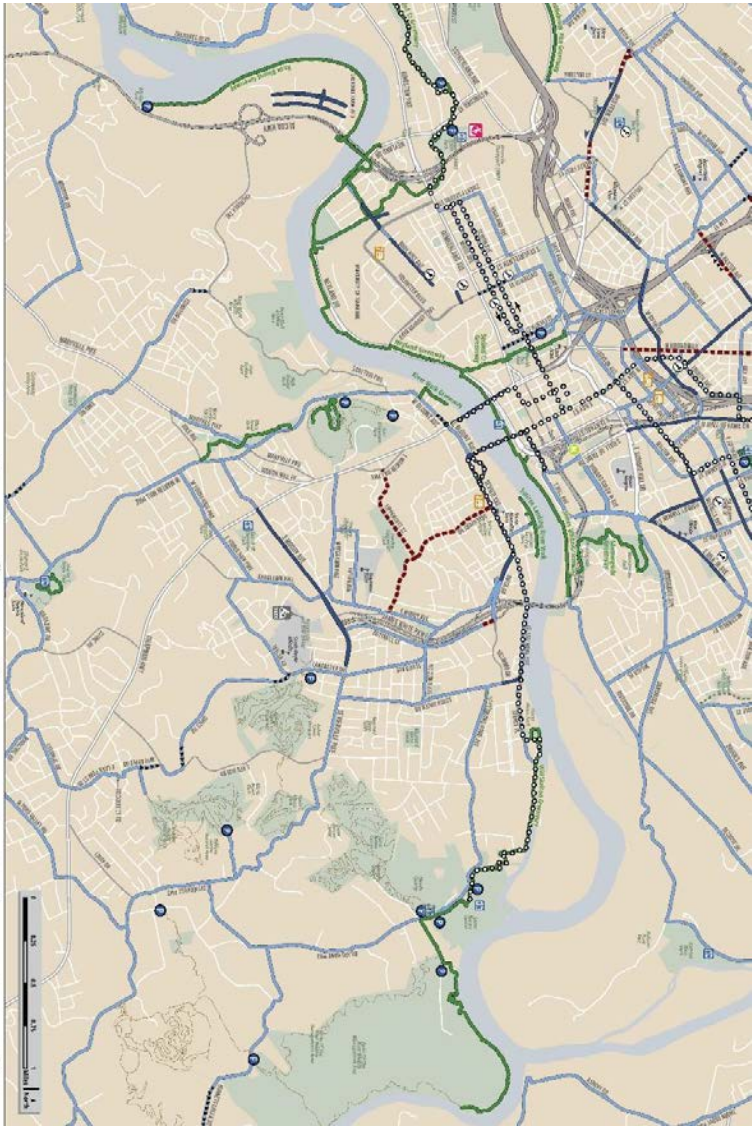


Figure 11: Knoxville Bicycle Map, 2017

## Transit

Knoxville Area Transit (KAT) currently provide four (4) bus routes along Chapman Highway and throughout South Knoxville. They are Routes 40, 41, 44, and 45.

**Route 40** (a.k.a. South Knoxville) provides a transit connection between Knoxville Station/Downtown, Island Home, Tennessee School for the Deaf, and Chapman Square. Route 40 offers 60-minute headways during the Weekdays and Saturday, but does not operate on Sunday. Near the intersection of Chapman Highway at Young High Pike, there are transfer points to Route 41 and Route 45.

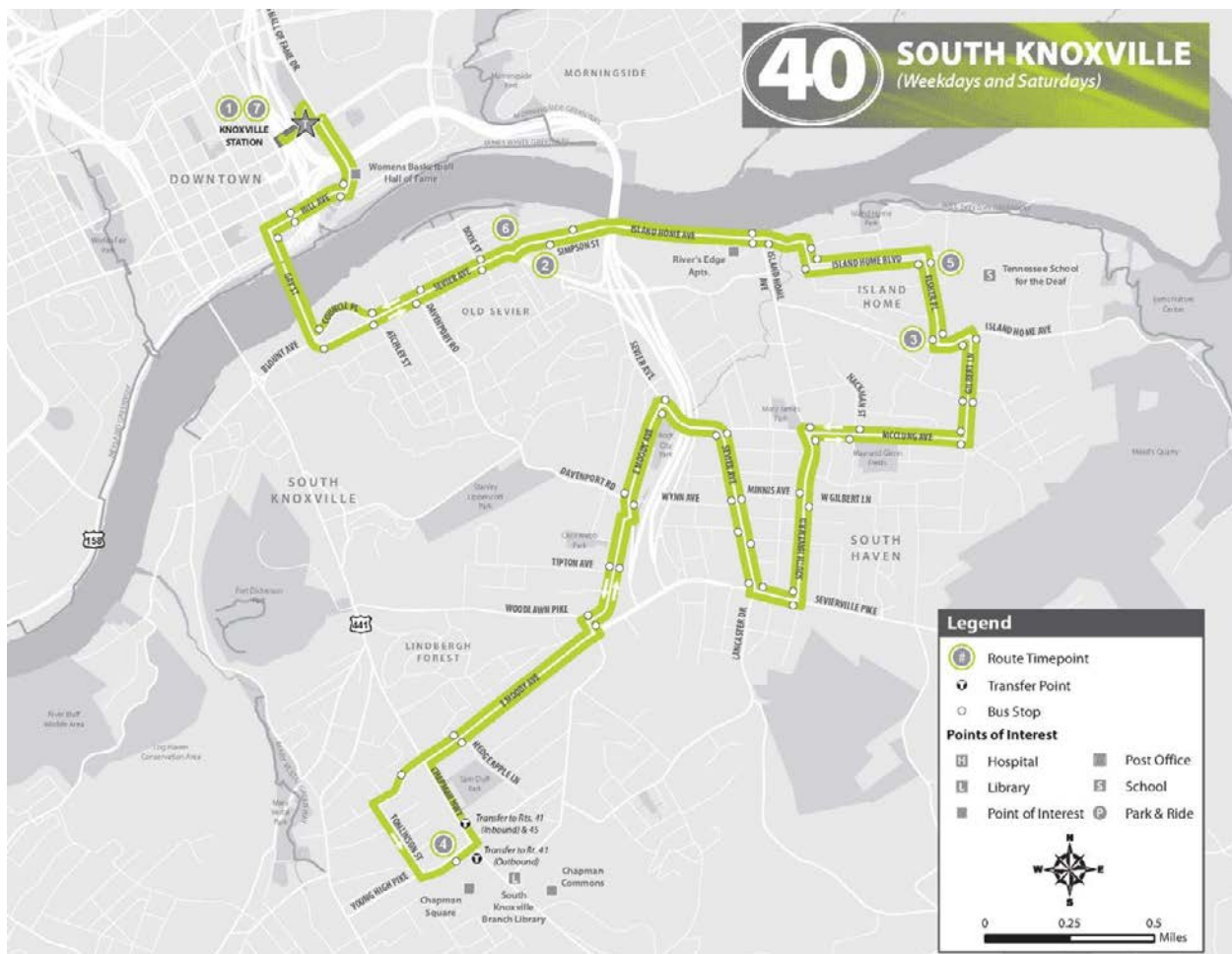


Figure 12: Route 40, Knoxville Area Transit

**Route 41** (a.k.a. Chapman Highway) provides a transit connection between Knoxville Station/Downtown, Chapman Square, South Knoxville Branch Library, Chapman Commons, Chapman Plaza, Tennova South, South Grove Shopping Center, and Walmart. Route 41 offers 30-minute headways during the Weekdays and Saturday, and offers 60-minute headways on Sunday. Near the intersection of Chapman Highway at Young High Pike, there are transfer points to Route 40 and Route 45. Additionally, Route 41 serves as the 'South Route' within KAT's *Passenger Playbook* for Vols football games.

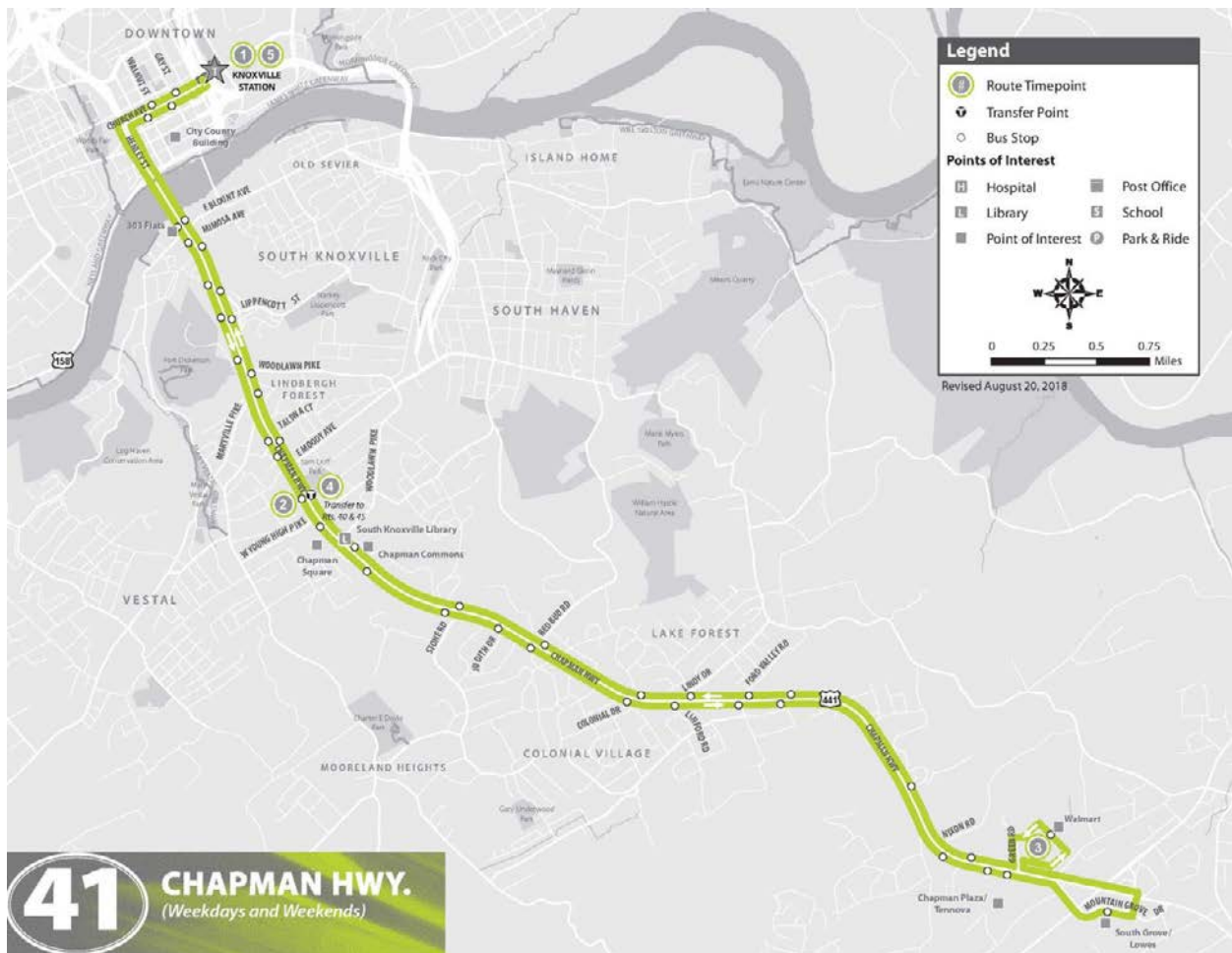


Figure 13: Route 41, Knoxville Area Transit



*Route 44* (a.k.a. University Park Apartments/303 Flats) provides a transit connection between the University of Tennessee, University Park, and 303 Flats. Route 44 offers 15-minute headways during the Weekdays and 30-minute headways on Saturday, but does not operate on Sunday.

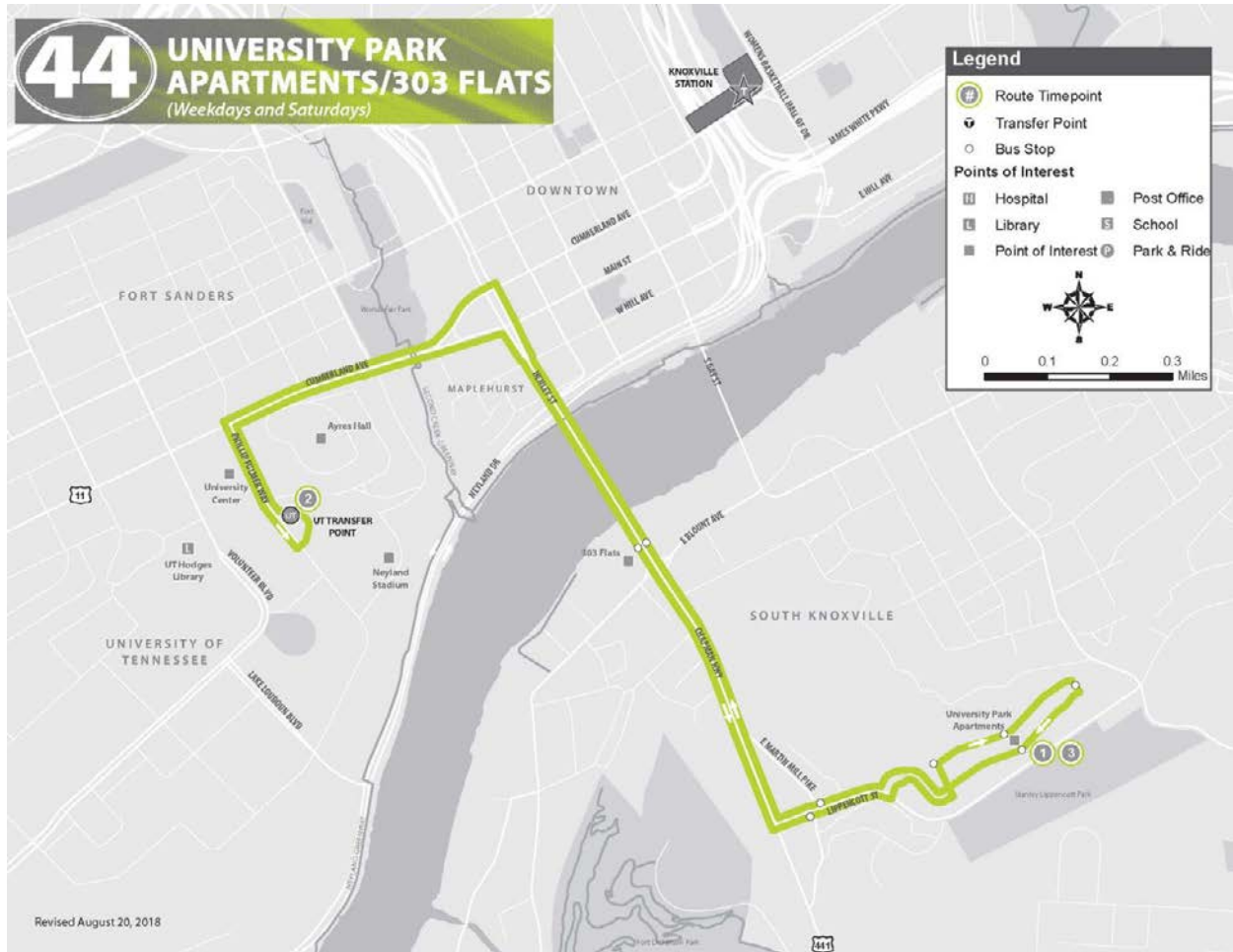


Figure 14: Route 44, Knoxville Area Transit

**Route 45** (a.k.a. Vestal) provides a transit connection between Knoxville Station/Downtown, Montgomery Village, Mary Vestal Park, South Knoxville Library, and Chapman Square. Route 45 offers 60-minute headways during the Weekdays and Saturday, but does not operate on Sunday. Near the intersection of Chapman Highway at Young High Pike, there are transfer points to Route 40 and Route 41.



Figure 15: Route 45, Knoxville Area Transit



## CHAPMAN HIGHWAY CORRIDOR SEGMENTS

### Analyzing the Corridor

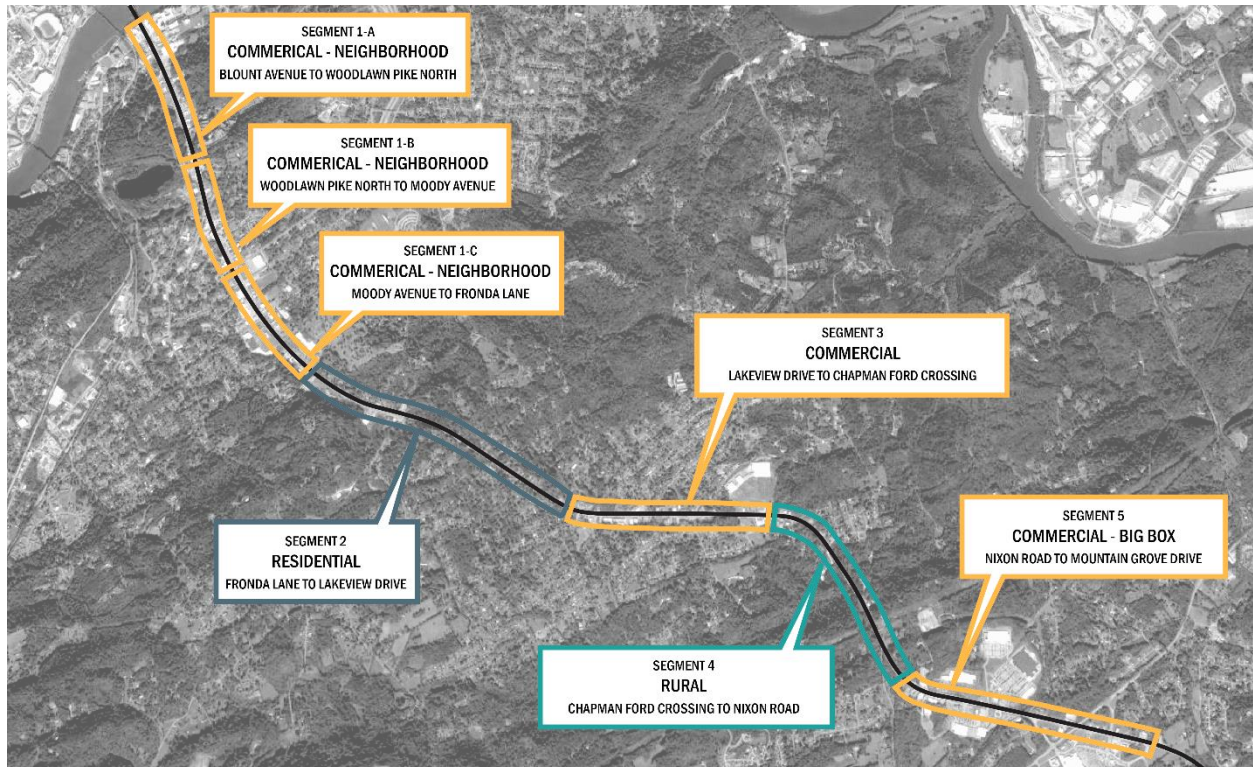
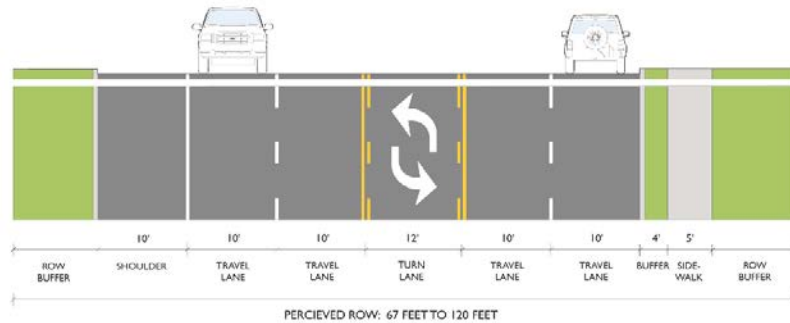


Figure 16: Segments of the Chapman Highway Corridor

Chapman Highway is identified as US Route (US) 441 and State Route (SR) 33 / 71. From Mountain Grove Drive to Martin Mill Pike, Chapman Highway is identified as US 441 / SR 71. However, north of Martin Mill Pike, Chapman Highway is identified as US 441 / SR 71 / SR 33. Chapman Highway was subdivided into segments with similar landuses and existing facility types. Reviewing KGIS data for existing landuses and zoning, as well as reviewing existing physical conditions, the corridor was then broken down into five segments with three types of classification: commercial, residential, and rural. Commercial segments are detailed further, as their uses, layout, and relationship with their surrounding areas differ.

### 1-A. Commercial-Neighborhood: Blount Avenue to Woodlawn Pike North

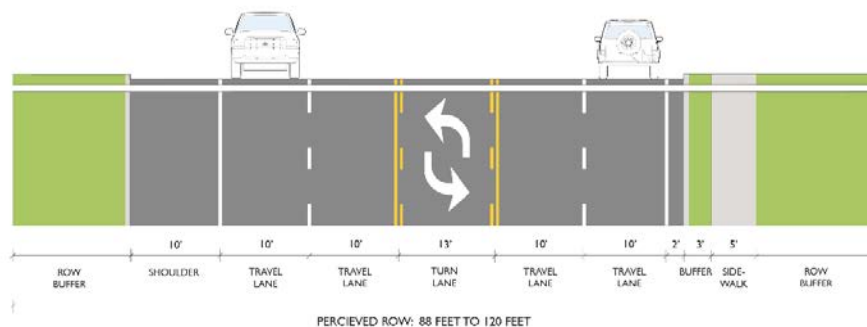


SEGMENT 1-A

Segment 1-A begins at Blount Avenue as a 5-lane highway with a center turn lane and ends at the intersection of Woodlawn Pike North and Fort Dickerson Road. The roadway land use along the Commercial-Neighborhood segment is primarily commercial with some office use, with residential land uses surrounding the area. Commercial land use for this segment is characterized by businesses which are servicing the neighborhoods that surround this portion of Chapman Highway. Almost every parcel along the corridor has direct access to Chapman Highway. The perceived maximum and minimum right of way measurements for this segment, according to KGIS, are 67 feet to 120 feet between property lines.

This segment of Chapman Highway lies within the proposed South Waterfront of Knoxville and is a proposed mixed-use area with bicyclist and pedestrian facilities from the waterfront to Moody Avenue. The existing waterfront is comprised of residential and commercial uses with a substantial amount of underused industrial land. This portion of Chapman Highway experiences heavy traffic and a higher amount of bicycle volumes due to proximity to University of Tennessee-Knoxville and downtown.

### 1-B. Commercial-Neighborhood: Woodlawn Pike North to Moody Avenue



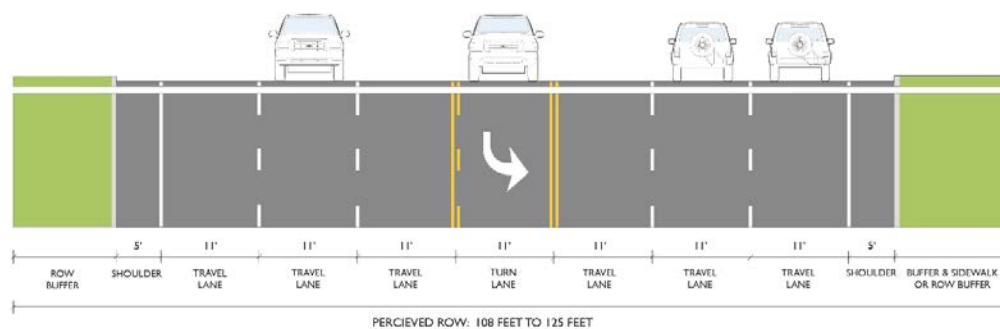
SEGMENT 1-B

Segment 1-B begins at Woodlawn Pike North and ends at Moody Avenue. The roadway primarily consists of a 5-lane highway with a center turn lane. Land use along the Commercial-Neighborhood segment is largely commercial, with residential land use surrounding the area. Commercial land use for this segment is

characterized by businesses which are servicing residents throughout the Chapman Highway corridor. Every parcel along the corridor has direct access to Chapman Highway. The perceived maximum and minimum right of way measurements for this segment, according to KGIS, are 88 feet to 120 feet between property lines.

There is also a proposed mixed-use Town Center between Taliwa Court and Fronda Lane which builds from existing business and community activity and includes commercial, office, medium density residential uses, walk-in retail, and bike lanes extended throughout the segment.

### 1-C. Commercial-Neighborhood: Moody Avenue to Fronda Lane

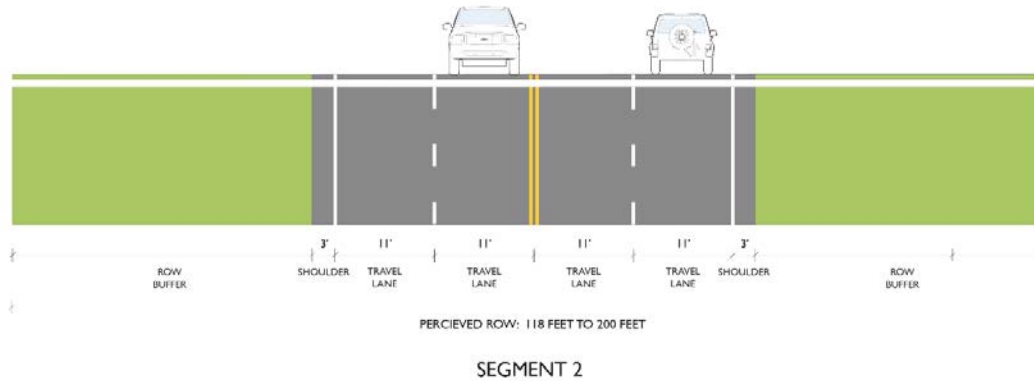


SEGMENT 1-C

The concluding section of the Commercial -Neighborhood area, Segment 1-C, begins at Moody Avenue and ends at Fronda Lane. The road transitions from a 5-lane highway with center turn lane to a 6-lane highway with center left turn lanes with no existing sidewalk. The roadway land use along the Commercial -Neighborhood segment is commercial, with residential land uses surrounding the area. Commercial land use for this segment is characterized by retail and personal service businesses which are serving the neighborhoods that surround this portion of Chapman Highway. All parcels in this section along the corridor have direct access to Chapman Highway. The perceived maximum and minimum right of way measurements for this segment, according to KGIS, are 108 feet to 125 feet between property lines.

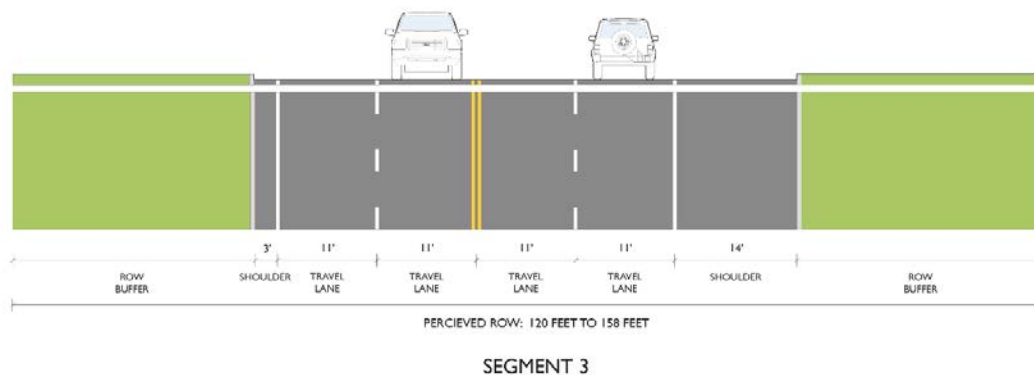
The proposed mixed-use Town Center between Taliwa Court and Fronda Lane continues in this segment. A portion of a shared use path planned from Young High Pike to Stone Road for the year 2026 also lies within segment 1-C.

## 2. Residential: Fronda Lane to Lakeview Drive



The Residential segment begins south of Fronda Lane where it transitions from five lanes to four and ends at Lakeview Drive. Much of this segment has no curb and gutter. This land-use is almost entirely residential with intermittent commercial uses. There are topographical constraints from Gwinfield Drive to Fronda Lane, from west of Stone Road to Red Bud Road, near Lake Forest Drive (northern intersection), and Brandau Drive. The perceived maximum and minimum right of way measurements for this segment, according to KGIS, are 118 feet to 200 feet between property lines.

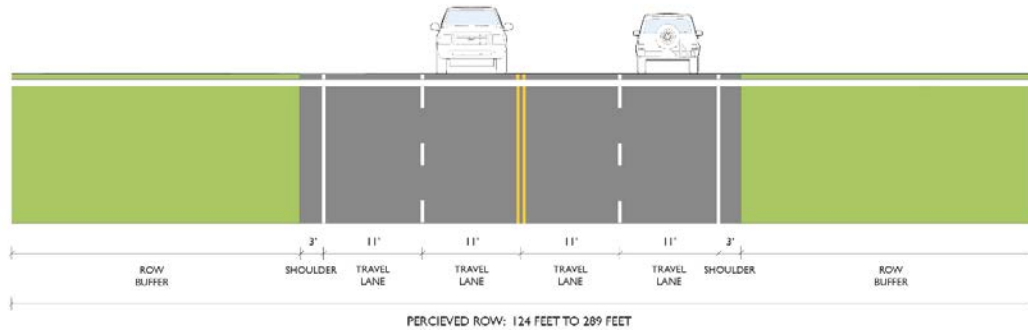
## 3. Commercial: Lakeview Drive to Chapman Ford Crossing



The Commercial segment begins at Lakeview Drive and ends at the entrance to Chapman Ford Crossing. The roadway transitions between four and five lanes. The land use changes back to primarily commercial use, with residential areas located off side streets. The commercial land use in this area is characterized mostly by single-story small businesses on smaller parcels, each with individual access points to Chapman Highway. There are significant topography changes on the north and south sides of Chapman Highway between East Ford Valley Road and Meridian Road.

There is a proposed mixed-use development for the portion of Chapman Highway between Lakeview Drive and Lindy Drive which would include neighborhood, commercial, and office uses, as well as bike lanes. The perceived maximum and minimum right of way measurements for this segment, according to KGIS, are 120 feet to 158 feet between parcels.

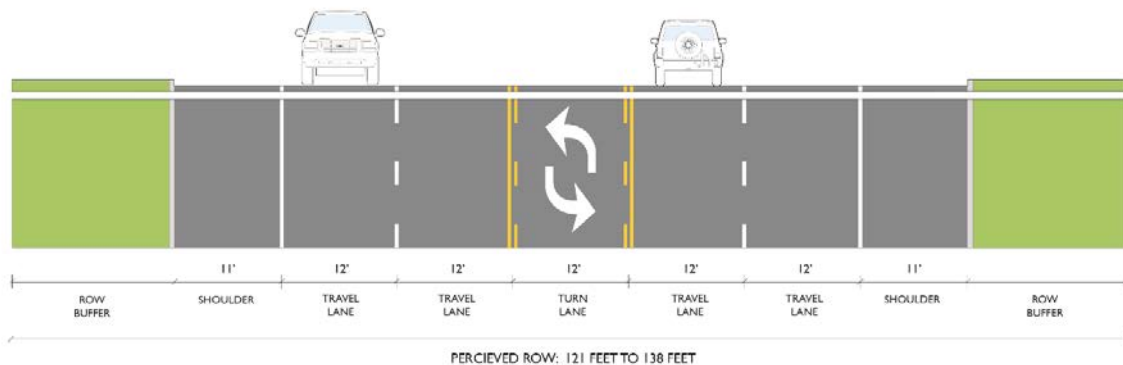
#### 4. Rural: Chapman Ford Crossing to Nixon Road



SEGMENT 4

The Rural segment stretches between the entrance of Chapman Ford Crossing and Nixon Road and is the narrowest section of roadway along the corridor, with four lanes throughout. The segment also has no curb and gutter. It is comprised of mostly rural residential dwellings and some agricultural lands. There are significant topography changes on both sides of Chapman Highway for the entire length of the segment. The perceived maximum and minimum right of way measurements for this segment, according to KGIS, are 124 feet to 289 feet between property lines.

#### 5. Commercial-Big Box: Nixon Road to Mountain Grove Drive



SEGMENT 5

The Commercial-Big Box segment begins at Nixon Road and ends at Mountain Grove Road. Most of the segment has five lanes with a center turn lane and curb beginning just south of Nixon Road. Land use along this segment of the corridor is characterized by chain commercial buildings with large parking lots. The land uses surrounding this portion of the corridor are predominantly suburban housing developments. There are large landscape buffers on either side of the corridor and numerous access points along the segment to businesses. Topographical constraints exist near Nixon Road and East Norton Road. The perceived maximum and minimum right of way measurements for this segment, according to KGIS, are 121 feet to 138 feet between property lines.

## TRAFFIC DATA

### Average Annual Daily Traffic (TDOT Data)

Average Annual Daily Traffic (AADT) was obtained from TDOT count stations along Chapman Highway, as well as along Alcoa Highway for comparison purposes. The growth at these count stations between the years of 1985 and 2016 is shown in **Figure 16**.

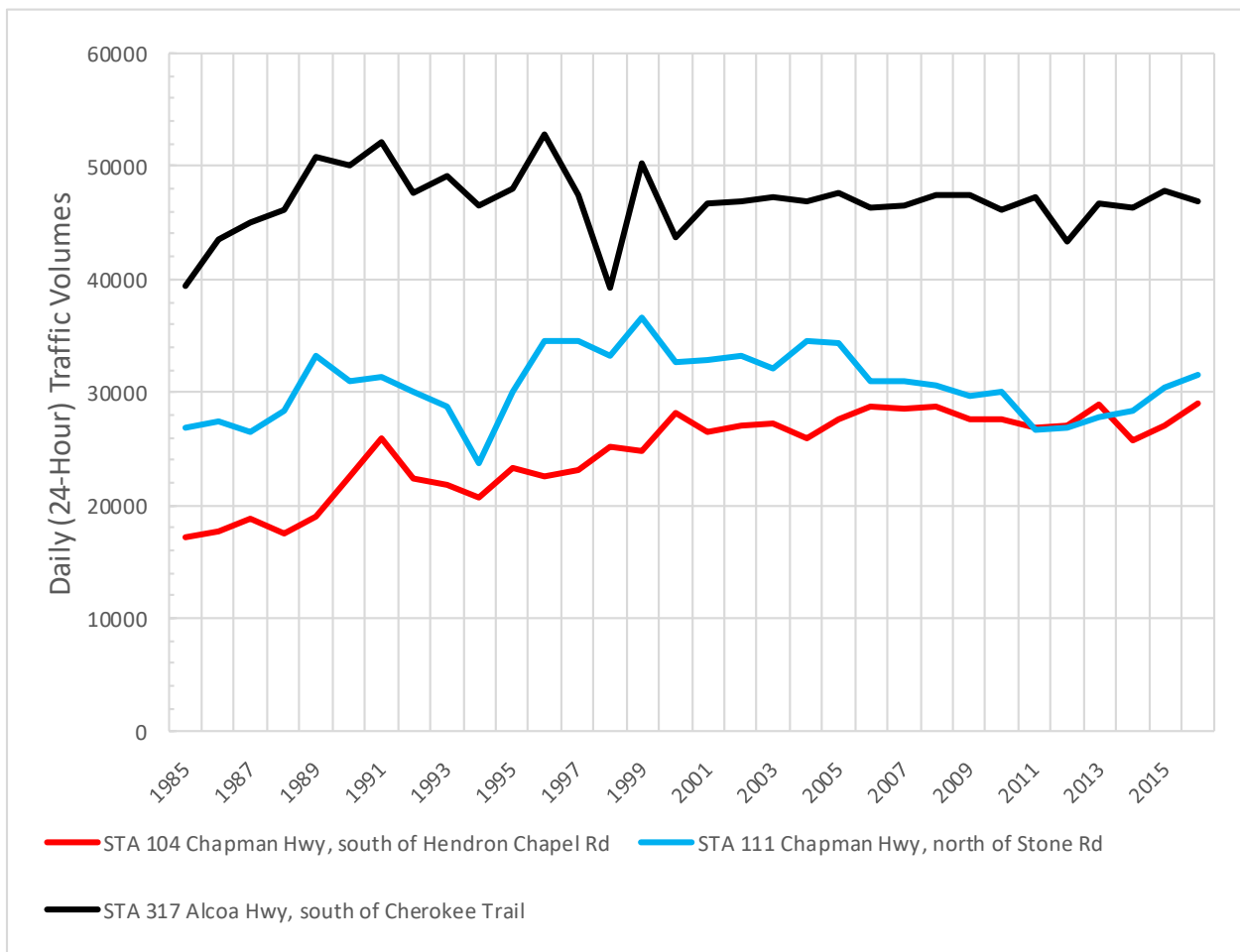
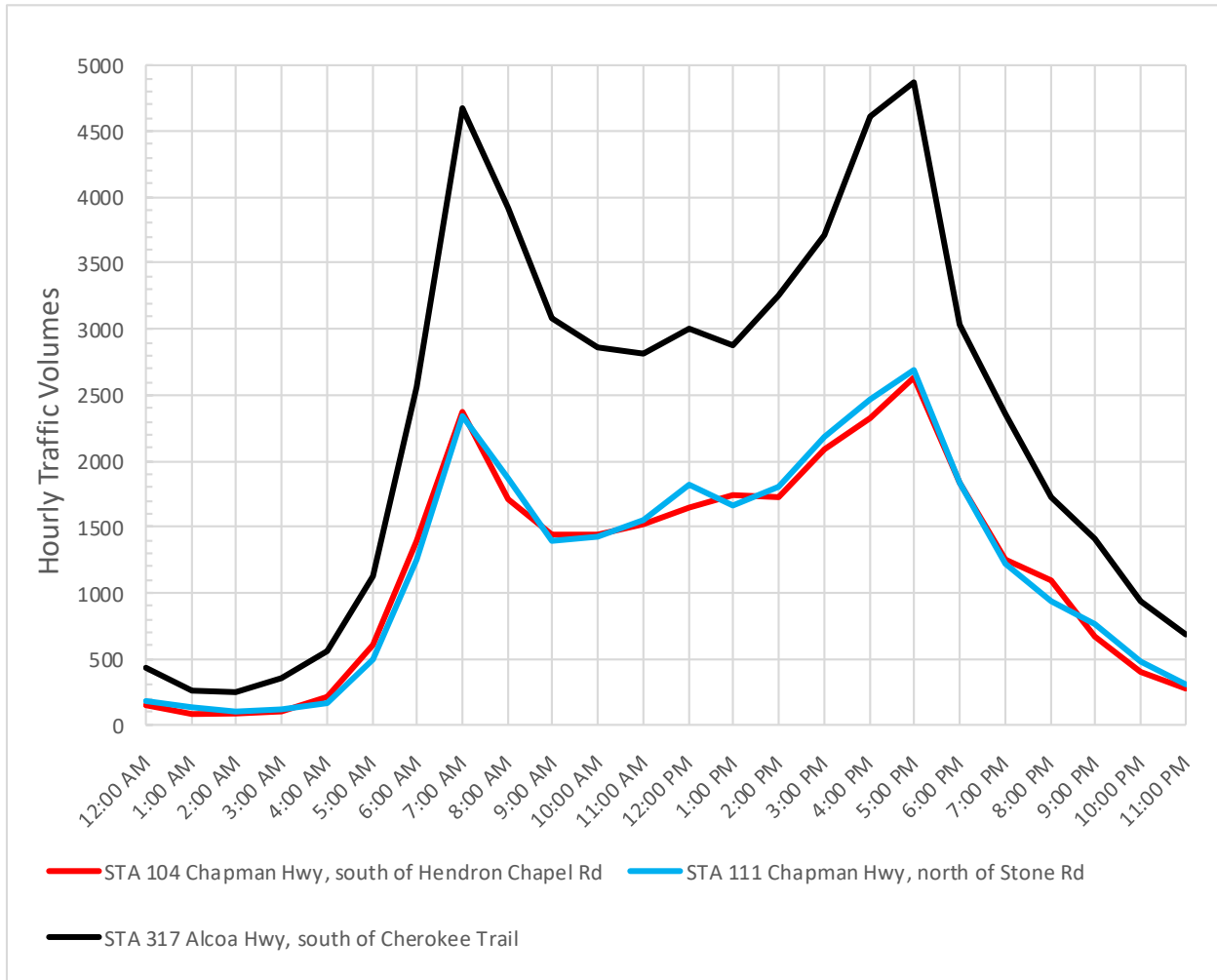


Figure 17: Historical Growth 1985 - 2016



The hourly volumes, for 24-hours is shown in **Figure 17** at the TDOT count stations.



Source: TDOT

Figure 18: Chapman Highway – Hourly Traffic Volumes (TDOT Count Stations)

### Average Daily Traffic (Tube Counts)

Average Daily Traffic (48-Hour tube counts) data were collected at five (5) locations along Chapman Highway in October 2018. Traffic data was collected during 48 consecutive hours on Monday, October 29, 2018 and Tuesday, October 30, 2018. The count locations are shown in **Table 3**.

Table 3: Chapman Highway – ADT Count Locations

Count Location	Location
1	Between Fort Avenue and Lippencott Street
2	Between Overbrook Drive/ Fronda Lane and Stone Road
3	Between Stone Road and Colonial Drive
4	Between Colonial Drive and Chapman Ford Crossing
5	Between Chapman Ford Crossing and Chapman Plaza

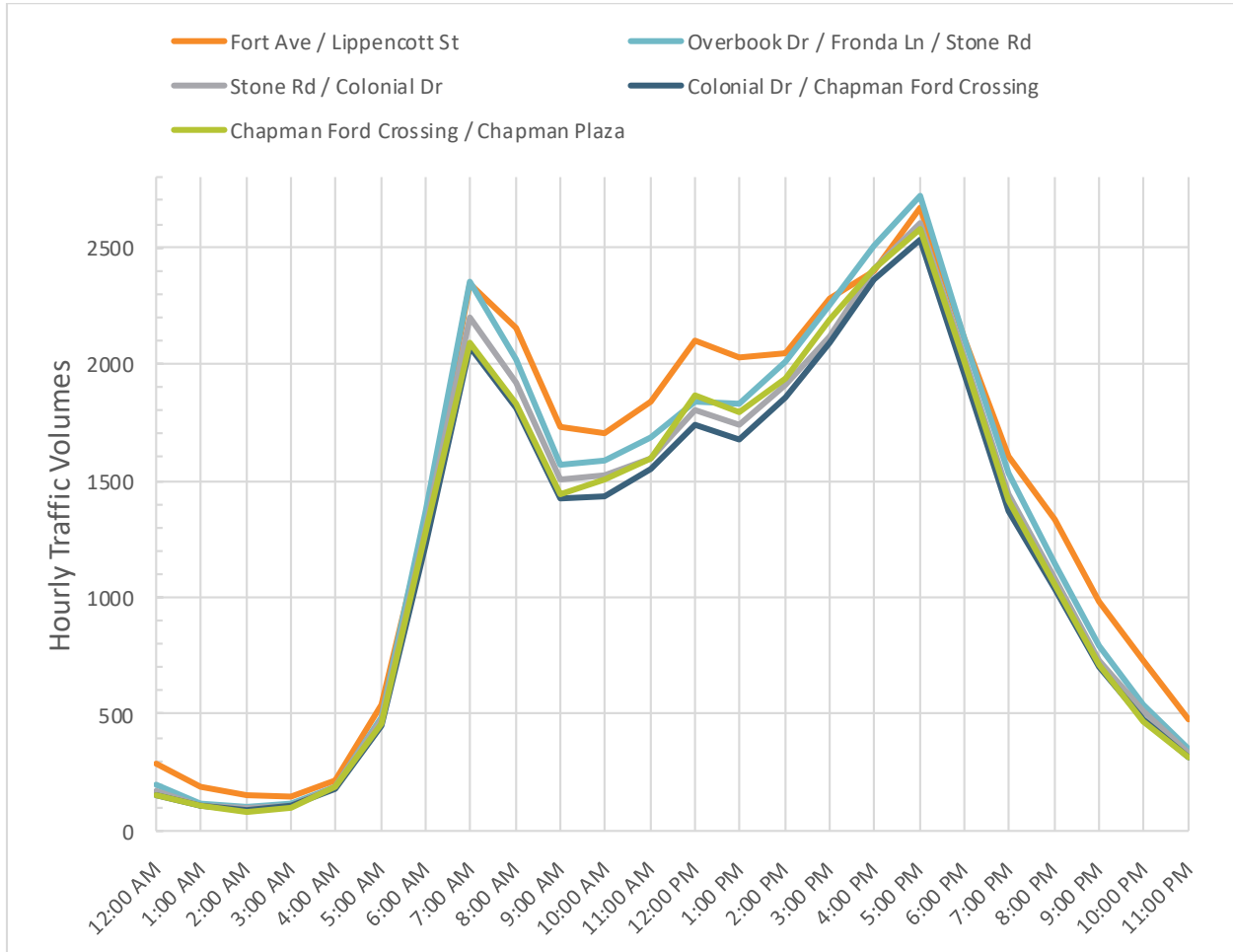
**Figure 18** displays graphically the ADT at the five (5) count locations for both Monday (October 29, 2018) and Tuesday (October 30, 2018) data.



Source: NDS

Figure 19: Chapman Highway – Average Daily Traffic

Figure 19 displays graphically the ADT at the five (5) count locations for both Monday and Tuesday data.



Source: NDS

Figure 20: Chapman Highway – Hourly Traffic Volumes

### Intersection Peak Hour Turning Movement Counts

Intersection turning movement counts were collected in September 2016 at 17 signalized intersections, and in October 2018 at 6 unsignalized intersections. Using the AADT provided by TDOT and the 48-hour tube counts obtained in October 2018, 24-hour entering volumes were estimated for each intersection for three (3) transportation modes: motorized vehicles, bicycles, and pedestrians. This information, as well as the intersection numbering is shown in **Table 4** for signalized intersections and **Table 5** for unsignalized intersections.

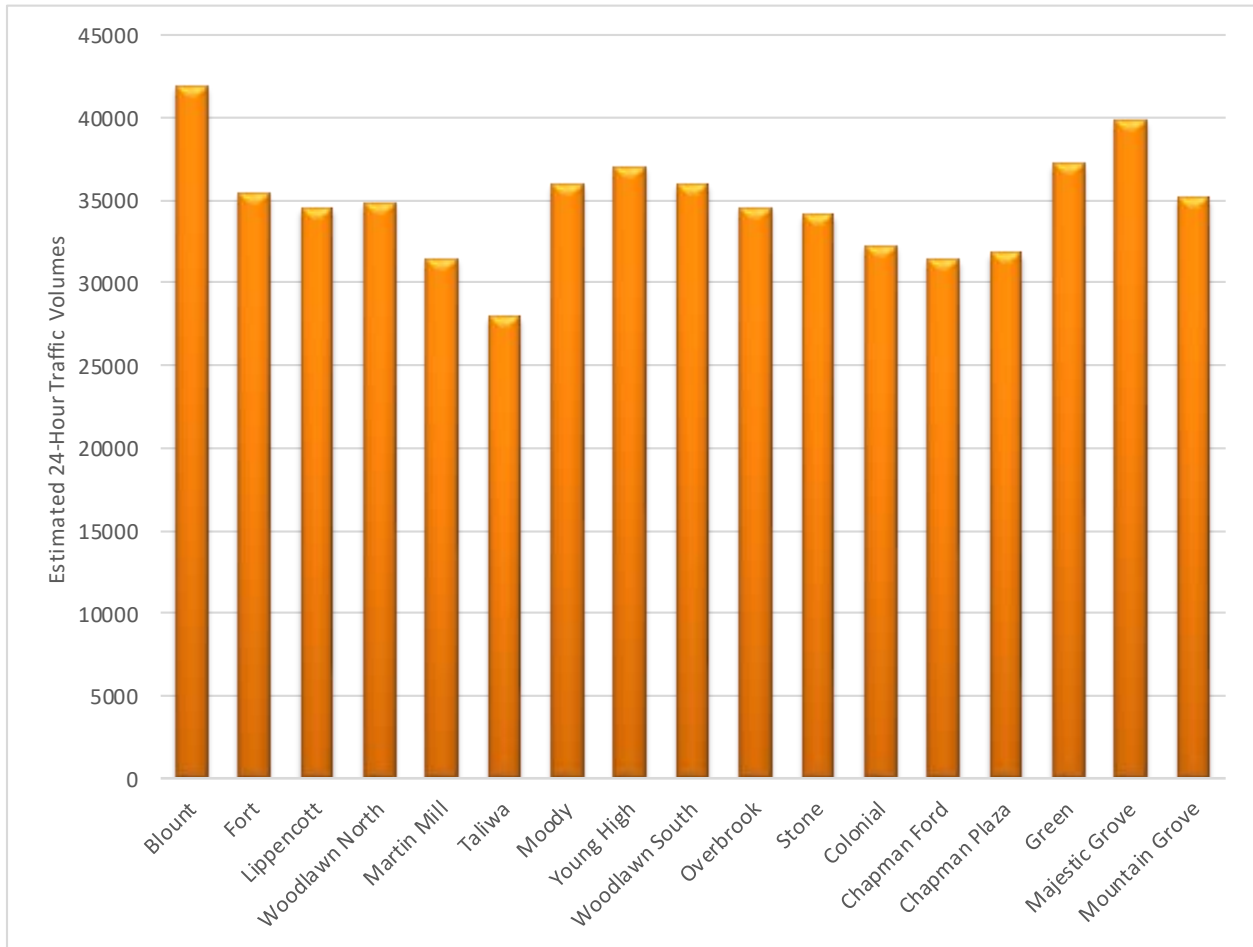
Table 4: Chapman Highway – Estimated 24-Hour Volumes at Signalized Intersections

Intersection ID	Intersection	Est. 24-Hr Traffic	Est. 24-Hr Bicycles	Est. 24-Hr Pedestrians
1	Blount Avenue	41,899	86	57
2	Fort Avenue	35,351	55	90
3	Lippencott Street	34,447	5	88
4	Fort Dickerson / Woodlawn Pike North	34,778	19	64
5	Martin Mill Pike	31,464	14	76
6	Taliwa Court	27,918	14	57
7	Moody Avenue	35,985	17	45
8	Young High Pike	37,017	21	45
9	Woodlawn Pike South	35,970	17	14
10	Overbrook Drive / Fronda Lane	34,533	2	5
11	Stone Road	34,109	2	5
12	Colonial Drive	32,214	5	2
13	Chapman Ford Crossing	31,399	2	0
14	Chapman Plaza	31,736	0	14
15	Green Road	37,162	0	2
16	Majestic Grove Boulevard	39,820	0	2
17	Mountain Grove Drive	35,149	0	2

Table 5: Chapman Highway – Estimated 24-Hour Volumes at Unsignalized Intersections

Intersection ID	Intersection	Est. 24-Hr Traffic	Est. 24-Hr Bicycles	Est. 24-Hr Pedestrians
18	East Martin Mill Pike (north)	33,358	29	32
19	Red Bud Road	30,960	0	16
20	Lake Forest Drive	30,750	0	3
21	Linford Road / Lindy Drive	30,630	0	52
22	Ford Valley Road	29,473	0	0
23	West Dick Ford Lane	29,638	0	0

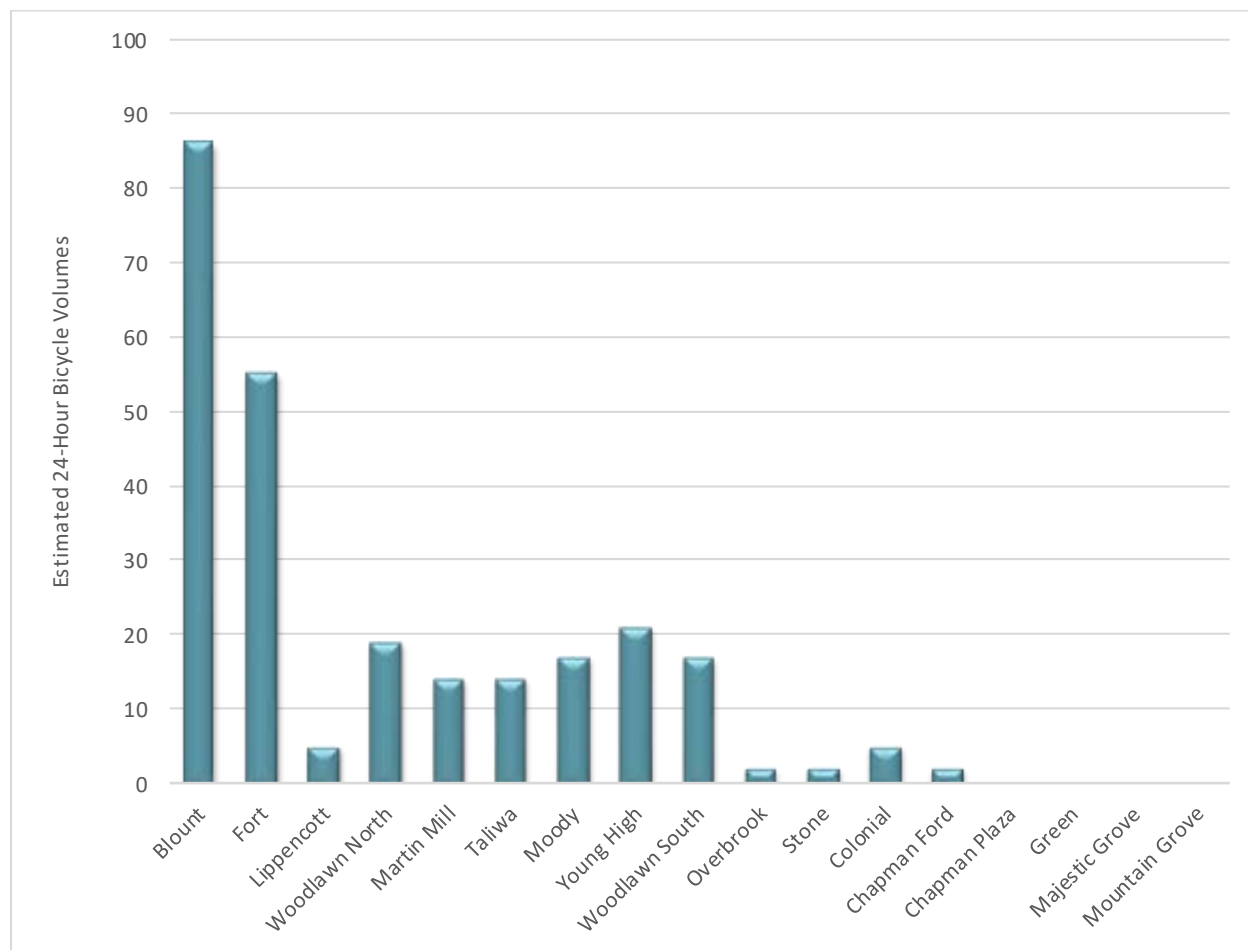
Figure 20, 21, and 22 display the estimated 24-Hour Traffic Volumes, Bicycle Volumes, and Pedestrian Volumes, respectively.



Source: NDS

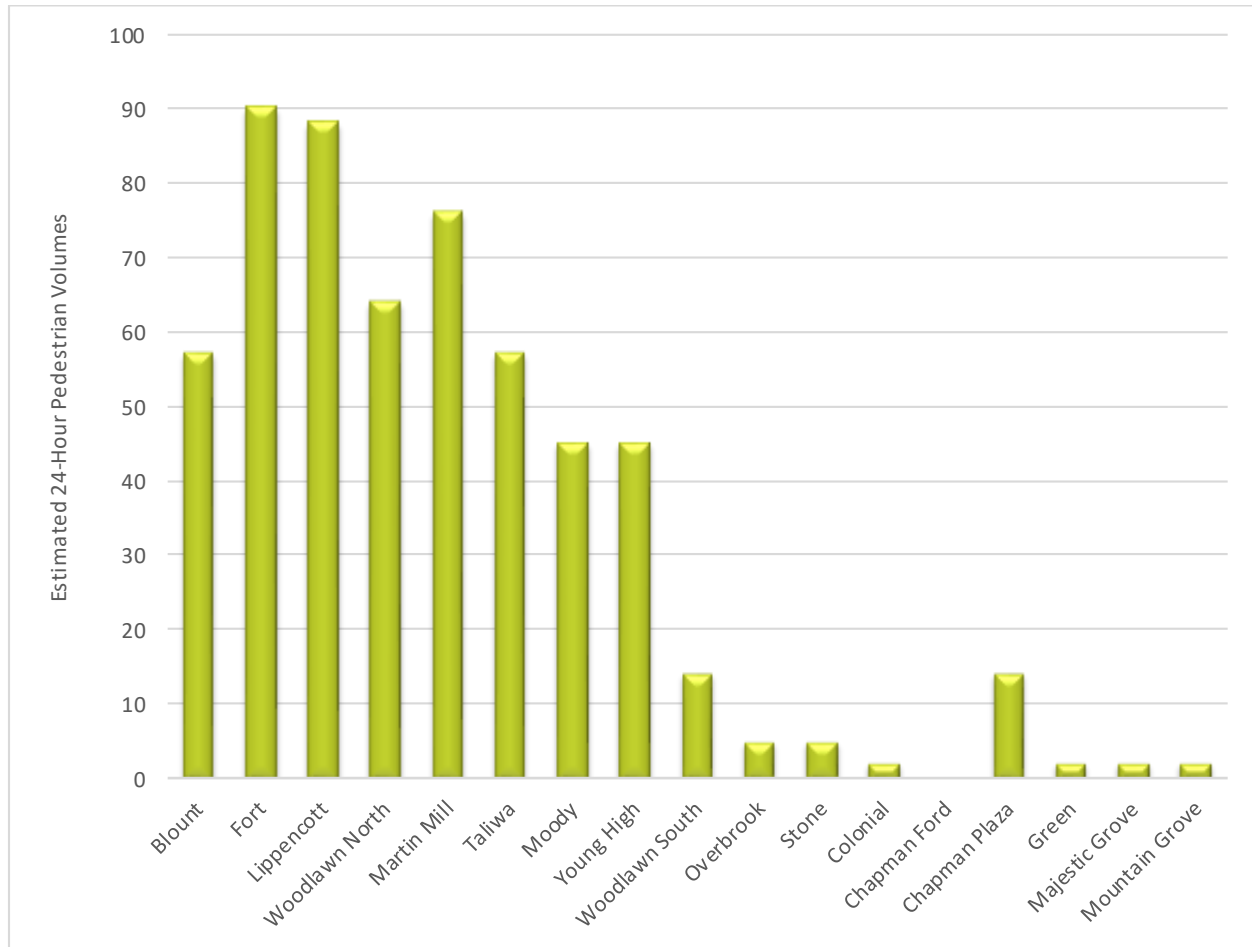
Figure 21: Chapman Highway Intersections – Estimated 24-Hour Traffic Volumes





Source: NDS

Figure 22: Chapman Highway – Estimate 24-Hour Bicycle Volumes



Source: NDS

Figure 23: Chapman Highway – Estimate 24-Hour Pedestrian Volumes

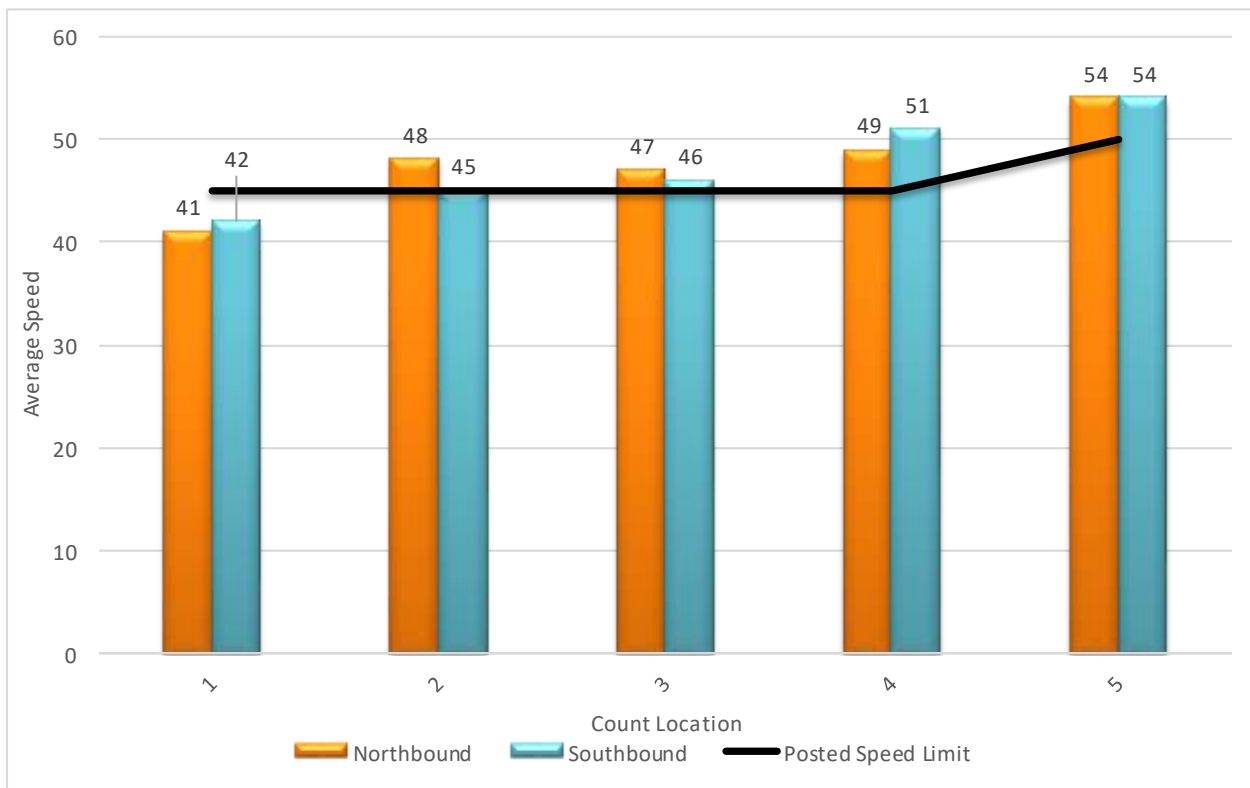
### Chapman Highway Speed Data (NDS)

Speed Data was collected at five (5) locations along Chapman Highway in October 2018. Traffic data was collected during 48 consecutive hours on Monday, October 29, 2018 and Tuesday, October 30, 2018. The count locations as well as the posted speed limit, average speeds, and 85<sup>th</sup> percentile speeds by direction are shown in **Table 6**.

Table 6: Speed Data along Chapman Highway – Two Day Average

Count Location	Count Location	Posted Speed Limit	Northbound		Southbound	
			Average	85th	Average	85th
1	Between Fort Avenue and Lippencott Street	45	41	49	42	49
2	Between Overbook Drive / Fronda Lane and Stone Road	45	48	54	45	51
3	Between Stone Road and Colonial Drive	45	47	55	46	54
4	Between Colonial Drive and Chapman Ford Crossing	45	49	55	51	58
5	Between Chapman Ford Crossing and Chapman Plaza	50	54	61	54	61

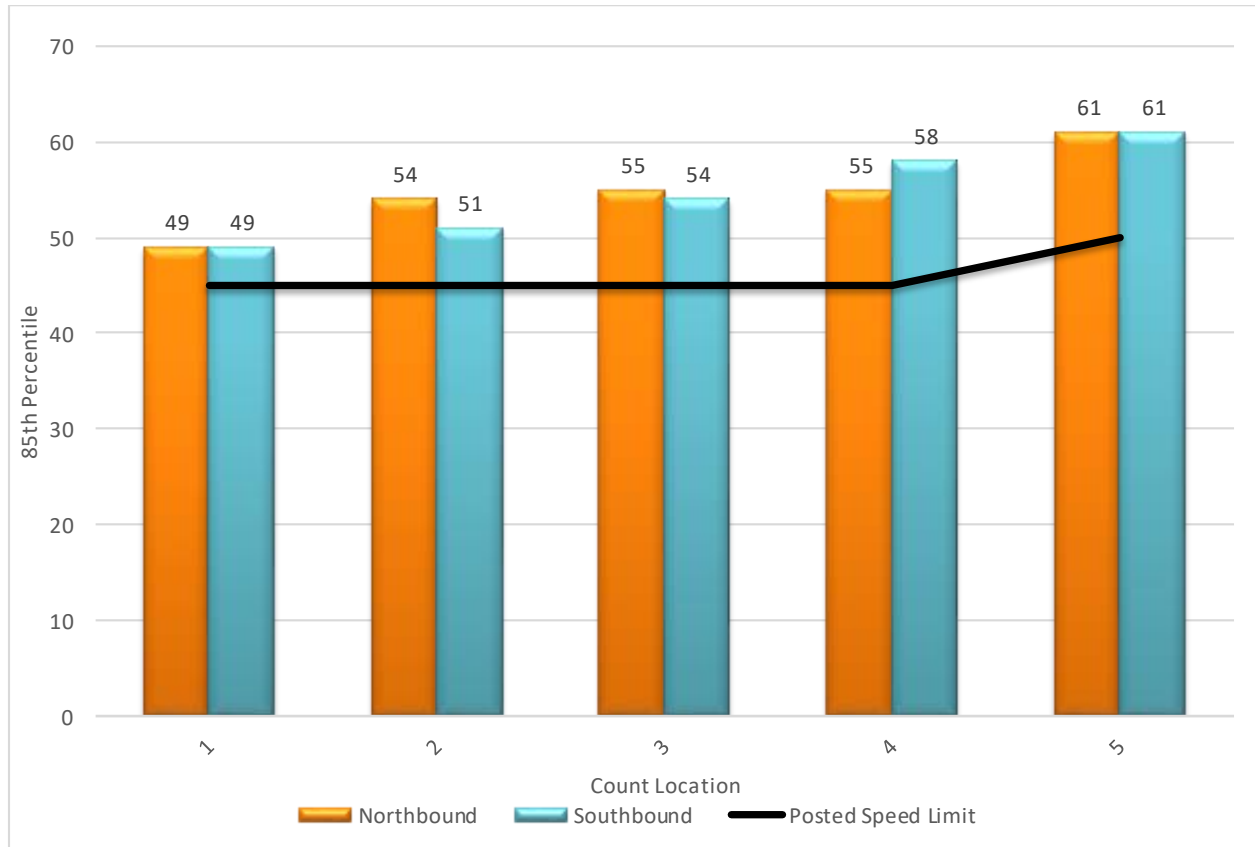
Figure 23 displays the average speed at each count location.



Source: NDS

Figure 24: Average Speed along Chapman Highway

Figure 24 displays the 85th percentile speed at each count location.



Source: NDS

Figure 25: 85<sup>th</sup> Percentile Speed along Chapman Highway

## CRASH DATA

Crash data was reviewed along Chapman Highway between Blount Avenue and Mountain Grove Drive. Crash data was obtained from TDOT's ETRIMS database for a 3-year period between January 1, 2016 and December 31, 2018. Over the course of three years, 927 crashes occurred throughout the Chapman Highway Corridor.

**Table 7** summarizes the 3-year crash total categorized by crash severity. **Table 8** displays the number of pedestrian and pedalcycle (e.g. bicycle) crashes that occurred along Chapman Highway.

Table 7: Chapman Highway – 3-Year (2016-2018) Crash Total

Type of Crash	Number of Crashes
Prop Damage (under)	47
Prop Damage (over)	636
Suspected Minor Injury	195
Suspected Serious Injury	44
Fatal	5
TOTAL	927

Table 8: Chapman Highway – Pedestrian and Pedalcycle Crashes

Type of Crash	Number of Crashes
Pedestrian	8
Pedalcycle	1



The crash data was used to calculate the crash rate, both at intersections and along segments of Chapman Highway. Additionally, the TDOT Statewide Average was used to calculate the Critical Crash Rate Factor (A/C). A Critical Crash Rate Factor (A/C) of 1.0 or higher can indicate that a safety issue may exist. The Severity Index was also calculated, which considers the number of fatal crashes, suspected serious injury crashes, and suspected minor injury crashes. **Table 9** displays the crash analysis for the five (5) segments along Chapman Highway.

Table 9: Chapman Highway – Crash Analysis by Segment

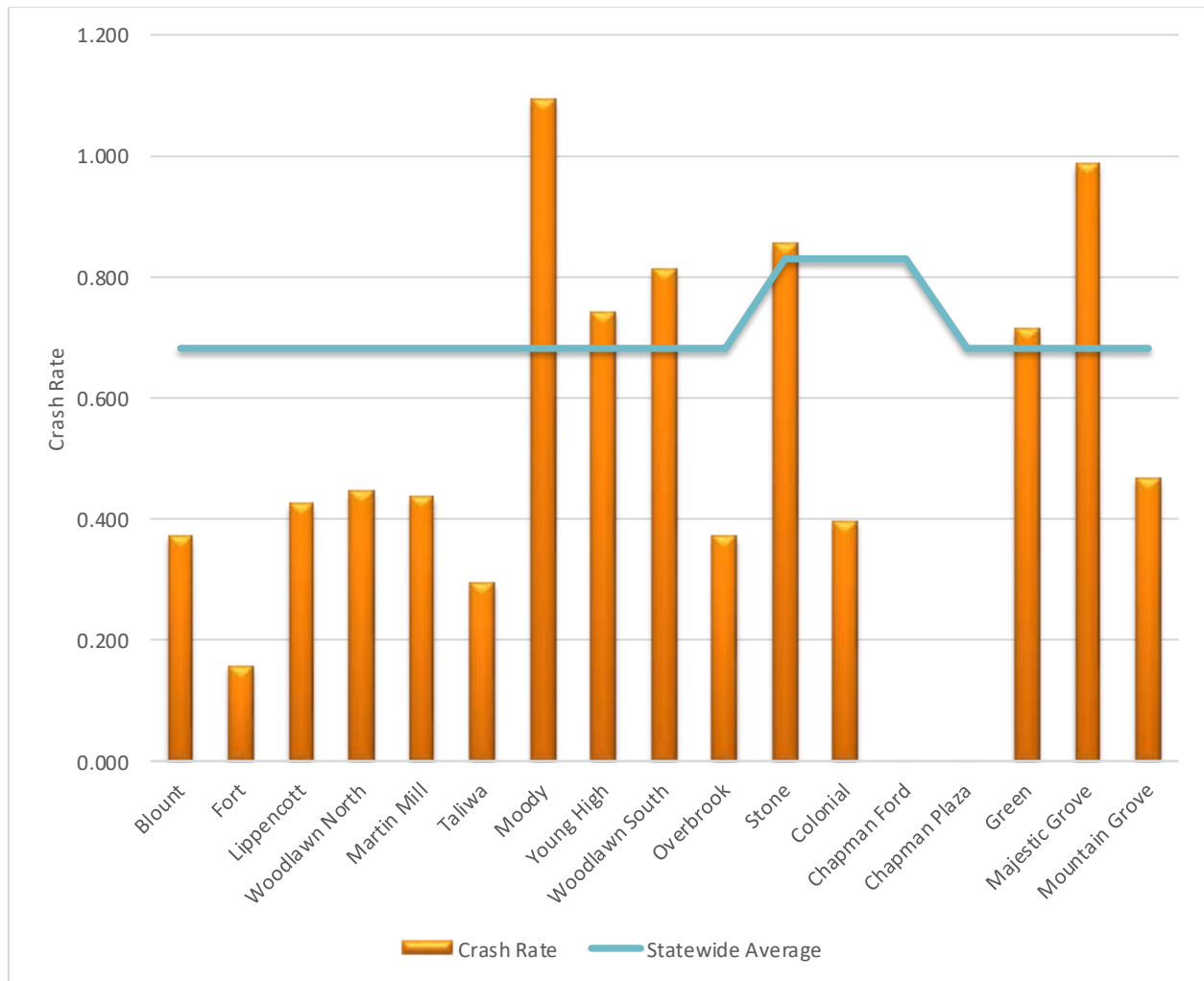
	Crash Rate	TDOT Statewide Average	Critical Crash Rate Factor (A/C)	Severity Index	Number of Traffic Signals	Number of Access/ Driveways
<b><u>Segment 1</u></b> from Blount Avenue to Overbrook Drive / Fronda Lane	6.620	3.297	1.724	0.29	10	125
<b><u>Segment 2</u></b> from Overbrook Drive / Fronda Lane to Lakeview Drive	2.849	3.954	0.616	0.39	1	45
<b><u>Segment 3</u></b> from Lakeview Drive to Chapman Ford Crossing	4.074	3.954	0.844	0.35	2	65
<b><u>Segment 4</u></b> from Chapman Ford Crossing to Nixon Road	1.762	3.954	0.370	0.48	0	25
<b><u>Segment 5</u></b> from Nixon Road to Mountain Grove Drive	3.757	3.297	0.941	0.31	4	35

**Table 10** displays the crash analysis at the signalized intersections along Chapman Highway.

Table 10: Chapman Highway – Crash Analysis at Signalized Intersections

Intersection ID	Intersection	Crash Rate	Statewide Average	Critical Crash Rate Factor (A/C)	Severity Index
1	Blount Avenue	0.371	0.682	0.379	0.12
2	Fort Avenue	0.155	0.682	0.154	0.17
3	Lippencott Street	0.424	0.682	0.421	0.31
4	Fort Dickerson Road / Woodlawn Pike North	0.446	0.682	0.444	0.29
5	Martin Mill Pike	0.435	0.682	0.425	0.53
6	Taliwa Court	0.294	0.682	0.281	0.44
7	Moody Avenue	1.091	0.682	1.090	0.23
8	Young High Pike	0.740	0.682	0.743	0.43
9	Woodlawn Pike South	0.812	0.682	0.812	0.34
10	Overbrook Drive / Fronda Lane	0.370	0.682	0.367	0.29
11	Stone Road	0.857	0.830	0.720	0.34
12	Colonial Drive	0.397	0.830	0.330	0.14
13	Private Drive / Chapman Ford Crossing	0.000	0.830	0.000	0.00
14	Chapman Plaza	0.000	0.682	0.000	0.00
15	Green Road	0.713	0.682	0.716	0.24
16	Majestic Grove Boulevard / Gov. John Sevier Hwy	0.986	0.682	1.002	0.23
17	Mountain Grove Drive	0.468	0.682	0.465	0.44

Figure 26 displays the crash rate at the signalized intersections against the statewide average crash rate.



Source: ETRIMS

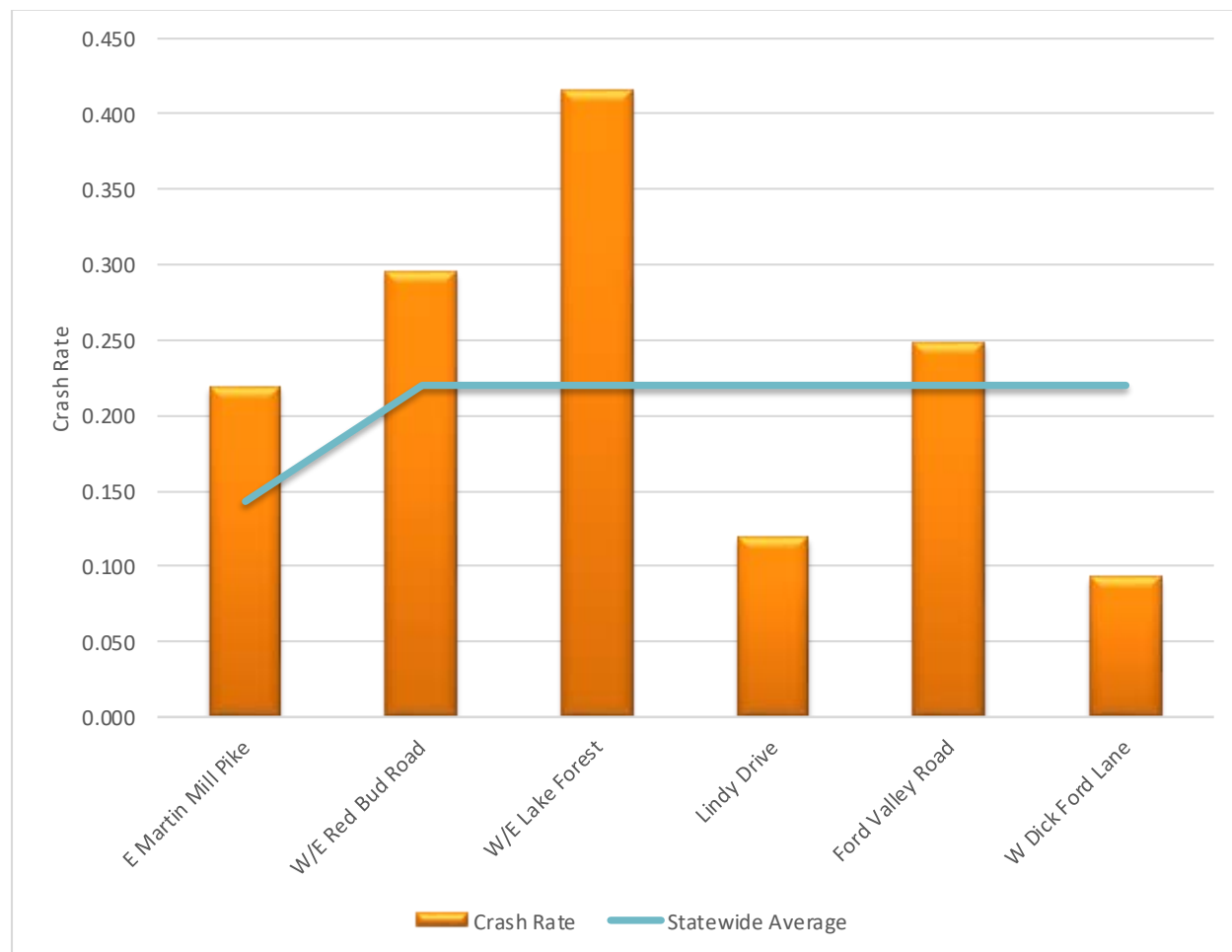
Figure 26: Signalized Intersection Crash Rates

**Table 11** displays the crash analysis at the unsignalized intersections along Chapman Highway.

Table 11: Chapman Highway – Crash Analysis at Unsignalized Intersections

Intersection ID	Intersection	Crash Rate	Statewide Average	Critical Crash Rate Factor (A/C)	Severity Index
18	East Martin Mill Pike	0.219	0.143	0.725	0.00
19	West Red Bud Road / East Red Bud Road	0.295	0.220	0.699	0.00
20	West Lake Forest Drive / East Lake Forest Drive	0.416	0.220	0.983	0.14
21	Lindy Drive / Linford Drive	0.119	0.220	0.282	1.50
22	East Ford Valley Road	0.248	0.220	0.580	0.38
23	West Dick Ford Lane	0.092	0.220	0.216	0.33

**Figure 27** displays the crash rate at the unsignalized intersections against the statewide average crash rate.



Source: ETRIMS

Figure 27: Unsignalized Intersection Crash Rates

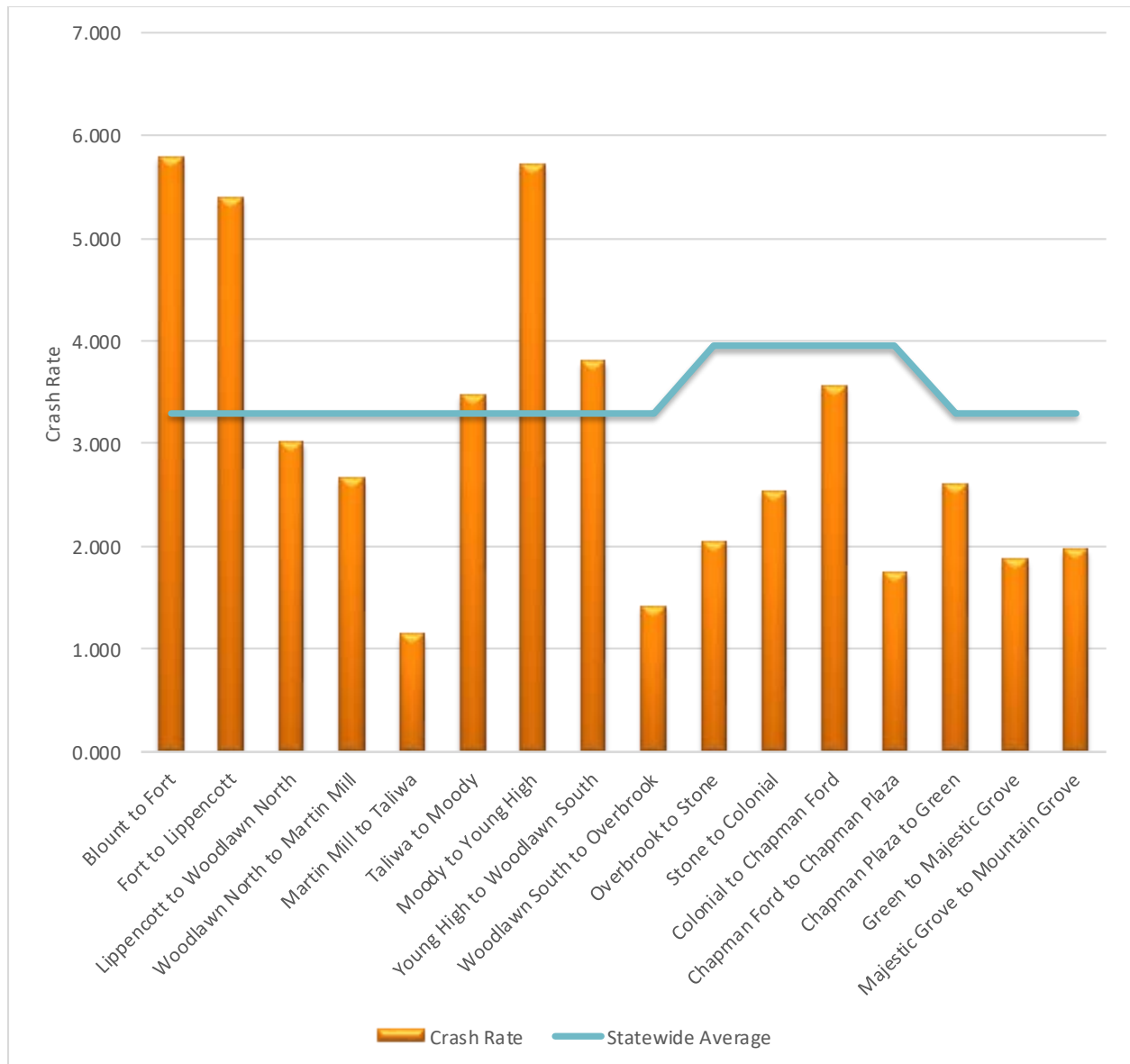


**Table 12** displays the crash analysis between signalized intersections along Chapman Highway.

Table 12: Chapman Highway – Crash Analysis between Signalized Intersections

From	To	Crash Rate	Statewide Average	Critical Crash Rate Factor (A/C)	Severity Index
Blount Avenue	Fort Avenue	5.791	3.294	1.197	0.06
Fort Avenue	Lippencott Street	5.391	3.294	1.131	0.31
Lippencott Street	Fort Dickerson Road / Woodlawn Pike North	3.012	3.294	0.640	0.41
Fort Dickerson Road / Woodlawn Pike North	Martin Mill Pike	2.658	3.294	0.533	0.33
Martin Mill Pike	Taliwa Court	1.143	3.294	0.218	0.50
Taliwa Court	Moody Avenue	3.468	3.294	0.638	0.13
Moody Avenue	Young High Pike	5.711	3.294	1.210	0.26
Young High Pike	Woodlawn Pike South	3.795	3.294	0.726	0.15
Woodlawn Pike South	Overbrook Drive / Fronda Lane	1.415	3.294	0.267	0.43
Overbrook Drive / Fronda Lane	Stone Road	2.050	3.954	0.409	0.34
Stone Road	Colonial Drive	2.537	3.954	0.529	0.39
Colonial Drive	Chapman Ford Crossing	3.568	3.954	0.731	0.42
Chapman Ford Crossing	Chapman Plaza	1.752	3.954	0.376	0.44
Chapman Plaza	Green Road	2.615	3.294	0.457	0.67
Green Road	Majestic Grove Boulevard / Gov. John Sevier Hwy	1.869	3.294	0.435	0.43
Majestic Grove Boulevard / Gov. John Sevier Hwy	Mountain Grove Drive	1.967	3.294	0.387	0.17

**Figure 28** displays the crash at the segments between signalized intersections against the statewide average crash rate.



Source: ETRIMS

Figure 28: Crash Rates between Signalized Intersections

## CAPACITY ANALYSIS

A capacity analysis was performed for the 17 signalized intersections and six (6) unsignalized intersections for the Existing 2018 AM and PM peak hours. The results of this capacity analysis are shown in **Table 13** and **Table 14** for signalized intersections and unsignalized intersections, respectively.

Table 13: Chapman Highway – Signalized Intersection Level of Service

Intersection ID	Signalized Intersection	AM		PM	
		Level of Service	Control Delay	Level of Service	Control Delay
1	Chapman Highway at Blount Avenue	D	38.1	C	29.5
2	Chapman Highway at Fort Avenue	A	1.7	A	1.6
3	Chapman Highway at Lippencott Street	A	7.0	A	1.9
4	Chapman Highway at Fort Dickerson Road / Woodlawn Pike North	C	22.4	B	10.9
5	Chapman Highway at Martin Mill Pike	B	11.7	A	6.3
6	Chapman Highway at Taliwa Court	A	2.8	A	2.5
7	Chapman Highway at Moody Avenue	B	17.5	C	35.0
8	Chapman Highway at Young High Pike	B	12.2	C	29.3
9	Chapman Highway at Woodlawn Pike South	A	9.3	B	16.0
10	Chapman Highway at Overbrook Drive / Fronda Lane	A	8.5	A	5.6
11	Chapman Highway at Stone Road	B	16.1	A	7.0
12	Chapman Highway at Colonial Drive	B	11.5	B	10.7
13	Chapman Highway at Private Drive / Chapman Ford Crossing	A	7.3	B	17.4
14	Chapman Highway at Chapman Plaza	A	2.3	B	15.8
15	Chapman Highway at Green Road	B	12.9	C	25.0
16	Chapman Highway at Majestic Grove Boulevard / Gov. John Sevier Hwy	B	19.5	C	25.1
17	Chapman Highway at Mountain Grove Drive	A	9.8	C	24.2

Table 14: Chapman Highway – Unsignalized Intersection Level of Service

Intersection ID	Unsignalized Intersection	Approach	AM		PM	
			Level of Service	Control Delay	Level of Service	Control Delay
18	Chapman Highway at East Martin Mill Pike (north)	Eastbound STOP	C	19.0	E	44.7
		Westbound STOP	C	18.4	B	14.2
19	Chapman Highway at Red Bud Road	Eastbound STOP	F	282.5	F	1747.9
		Westbound STOP	C	19.5	D	26.9
20	Chapman Highway at Lake Forest Drive	Eastbound STOP	E	44.7	F	133.2
		Westbound STOP	D	26.5	E	37.8
21	Chapman Highway at Linford Road / Lindy Drive	Eastbound STOP	F	51.2	F	275.6
		Westbound STOP	F	56.4	F	91.9
22	Chapman Highway at Ford Valley Road	Eastbound STOP	C	15.8	D	26.9
		Westbound STOP	D	25.8	F	93.5
23	Chapman Highway at West Dick Ford Lane	Eastbound STOP	F	65.4	F	337.6



## CHAPMAN HIGHWAY RIGHT OF WAYS

Chapman Highway begins south / east of the Henley Street Bridge as a five-lane road with a center left-turn lane. The road transitions between four and seven lanes along the corridor with widths averaging between 50 and 85 feet between the existing curbs. Throughout the corridor, the right of way (ROW) extends well beyond the roadway ranging between 67 and 289 feet. The following table measures ROW for each section along the corridor. It is important to note that the ROW, taken from the KGIS - Knoxville Knox County KUB GIS website, was measured from the average parcel lines north and south of the intersections and not from areas where the ROW increases at corners. Major constraints are listed in the notes section of the table.

		Intersecting Roadway	North ROW (Ft.)	South ROW (Ft.)	Notes
Commercial-Neighborhood	1A	Blount Avenue	120	76	
		Mimosa Avenue	72	67	
		Hawthorne Avenue	70	70	
		Fort Avenue	93	93	
		E. Martin Mill Pike	93	89	
		Lippencott Street	96	100	Rock outcropping between Lippencott St. and West Martin Mill Pike
		W. Martin Mill Pike	103	95	Heavy vegetation on east side of highway after W. Martin
	1B	Woodland Pike (North)	102	106	Cul-de-sac directly adjacent to slip-lane on southeast side
		Maryville Pike	105	101	Tight right turning radius from Maryville Pike onto Chapman
		W. Martin Mill Pike	120	118	
		Druid Drive	110	110	
		Taliwa Court	93	88	
	1C	Childress Street	88	94	
		Moody Avenue	100	108	
		Young High Pike	108	111	
		Woodlawn Pike (South)	122	123	
		Frona Lane (North)	125	123	
Residential		Gwinfield Drive (North)	127	138	Sharp right turn from highway. Heavy vegetation on east side
		Gwinfield Drive (South)	166	200	
		Frona Lane (South)	198	157	
		Stonewall Drive	152	120	Several driveways entering Stonewall Drive at intersection
		Stone Road	120	119	
		Judith Drive	176	136	Topographic and physical constraints at intersection
		Larry Drive	138	186	
		Locust Hill Lane	171	175	
		East Red Bug Road	140	120	Significal topography change from Stone Road to East Red Bud Road
		Lake Forest Drive (North)	133	119	ROW restricted by topography to north
		Brandau Drive	118	118	Multiple residential driveways in this section
		Lake Shore Drive	123	119	
		Mayflower Drive	118	130	
		Lakeview Drive	131	128	
Commercial		East Lake Forest Drive (South)	129	130	
		Colonial Drive	130	131	
		Eastwood Drive	125	122	
		Lindy Drive	120	122	
		Ford Valley Road/Brown Mountain Loop	141	152	
		Meridian Road	146	158	
Rural		Ellis Road	124	128	Steep slope on North side of Chapman restricts south ROW
		Longvale Drive	130	124	
		Deva Drive	133	202	
		Anderson Drive	219	207	
		East Dick Ford Lane	218	218	
		West Dick Ford Lane	197	289	
		Nixon Road	135	149	
Commercial-Big Box		Green Road	138	136	
		Norton Road	121	122	Topographical restraints on both sides of Chapman
		John Sevier Highway	123	129	
		Majestic Grove Boulevard	130	138	
		Michaels Lane	145	126	
		Mountain Grove Drive	116	115	