



COMMUNITY TRANSPORTATION PLANNING GRANT
SR 53/141 CORRIDOR STUDY

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INTRODUCTION

The Town of Gordonsville and the Tennessee Department of Transportation (TDOT) initiated the SR 53/141 Corridor Study in March 2017 after the Town made a successful application for Tennessee Community Transportation Planning Grant (CTPG) funds. This document identifies the vision and goals for the study and presents the findings of the study team in the form of a data inventory, overview of public involvement, existing conditions review, traffic analysis, future conditions analysis, and recommendations for improvements and policy guidance.

Gordonsville is located in central Tennessee, east of Nashville along I-40. Due to its proximate location to Nashville and the Interstate, Gordonsville supports active industrial uses and moderately priced housing which attracts residents from around the region. Highway capacity and truck maneuverability are recurring issues throughout the SR- 53 corridor. Around the I-40 interchange (Exit 258) and local school campus on SR-141, stakeholders identified concerns with traffic operations and queueing disrupting highway flow with regularity. Lack of turn lanes, abundance and spacing of business driveways, along with insufficient intersection turning radii were noted as having negative impact on travel times and safety along SR-53, south of the I-40 interchange. Long vehicle queues exiting and entering the Interstate off-ramps have been noted and create issues for traffic flow within the area.

Both SR-53 and SR-141 are important arterials in Gordonsville. The two corridors provide connectivity to and from I-40, and serve as a primary north-south route in the region. The corridors provide key connectivity to industrial, institutional and residential areas, as well as, activity areas in the surrounding area.

The corridor study and resultant findings aim to preserve and enhance the operational and safety performance of the corridors in and around Gordonsville. The greatest impact of the study on the state transportation system will be improvements to safety, efficiency of movement and planning for future development.

The Town envisions increased heavy truck and commuter traffic as industrial and residential land served by the corridors expand in the future. Long range goals for the corridor will incorporate these needs.

Tools that can assist communities in the development of safe and attractive transportation are access management plans and a suite of land use planning strategies targeted at improving traffic flow as land is developed. Access management plans impact safety by controlling the placement and access of driveways. By consolidating the number of driveways, it becomes safer for vehicles to enter a property and for cyclists and pedestrians to pass by a property by reducing conflict points with vehicles. Properly implemented access management measures not only enhance safety, but can add to the attractiveness of roadway facilities and supports economic viability of communities.

Land use and zoning planning strategies encourage thorough review of transportation needs during the development process. Zoning approvals are generally tied to transportation improvements especially sidewalks, controlled entrances and turn lanes, which are needed to improve the capacity and safety of the transportation system based upon the additional impacts of new development.



1.1. Project Study Area

The project study area begins along SR-53 (Gordonsville Highway) from the northern Town limits (near Bonnell Road) to SR-141 (East Main Street) at Main Street. The study area extends along SR-141 from SR-53 (Gordonsville Highway) to SR-264 (Trousdale Ferry Pike) / Meadow Drive and continues along SR-264 (Hatton Wauford Parkway) from Town limits (Hickman Highway) to SR-53 (E Main Street). SR-264 (Trousdale Ferry Pike) from SR-141 (East Main Street) to the Caney Fork River is also included in the study area, but review is limited to functional planning and access needs for the Industrial Park and consideration of a potential future Interstate access point. The study area is show in figure 1.1.

1.2. Grant Application Background

The purpose of the grant application was to seek funds for a study to identify strategies to improve transportation operations and accessibility within the study area for vehicular traffic, pedestrians, bicyclists and freight movement. Specifically, the study analyzed the corridors to identify deficiencies and develop improvement strategies for:

- Safety improvements at intersections and identified high crash locations
- Operational improvements at critical areas
- Accommodation of all travel modes as appropriate
- Access management of developed properties
- General roadway capacity improvements

The benefits to the community will take the form of visible, near-term improvements as well as longer- term improvements through the corridor planning process. Immediate benefits will come from operational modifications and minor construction projects for spot improvements. A proposed action plan will provide a systematic approach to implementation and further development of study recommendations. The intent of this corridor study is to address four distinct but related concepts: overall corridor plan, access management issues, spot intersection improvements, and safety-focused considerations.

- Spot intersection considerations include both operational improvements, as well as, slightly more involved projects, which may require right-of-way acquisition and more extensive construction than the access management projects. The study will provide adequate information regarding these projects, including functional schematics and cost estimates where applicable, to allow them to be developed either as locally funded projects, through joint public-private partnership processes, or through traditional TDOT project development channels. Identified existing signalization equipment malfunctions or inefficiencies identified during the course of the project will be reported to the town and TDOT representatives. Repair of equipment will promote optimal intersection performance.

- Safety considerations will play a direct role in the study’s evaluation and suggestions. This includes intersection and segmental factors. Vehicle crash records and field observations will help inform the study’s review and ultimate recommendations.
- Access management strategies will be offered both through support of access management policies for new development along the corridors, as well as, retrofit of existing access as a series of small projects as funding is available or when opportunities present themselves through redevelopment of properties abutting the routes. Business owners along the route should be engaged in the process and provided information on the benefits of access management to the productivity of their businesses.
- The overall corridor plan will be used to guide implementation of the individual study elements to ensure that future improvements are done in a way that is logical for the planned future development of the corridor.

1.3. Vision

The vision of the Gordonsville SR 53/141 Corridor Study is to support quality of life and future growth opportunities within the community by developing a comprehensive transportation plan for the study area that addresses current deficiencies in capacity and safety, provides actionable guidance for improvements, and creates a framework to guide future development and public investment through access management policy and economic development policy for the subject routes.



1.4. Goals

Goal 1: Enhance the functionality of the routes for all users through geometric and operational improvements to address access management issues, safety concerns and capacity deficiencies.

The SR 53/141 corridor suffers from recurring congestion due to lack of turn lanes, driveway spacing and lack of access management. Existing attributes of street intersections in several locations create notable operational and safety concerns. The plan will identify deficiencies and develop both near-term and long-term solutions to address those issues.

Goal 2: Provide for the efficient movement of people and goods between developing industrial and commercial areas and residential areas.

SR 53/ 141 is an integral artery for industrial and mining uses to the north of I-40 and residential and commercial uses south of I-40. Time delays cause loss of revenue and create a problem for emergency services. This plan will identify issues and put forth possible solutions.

Goal 3: Support the quality of life of the residents by enhancing livability characteristics.

There are no existing bike paths and limited sidewalks in the community. As new school campuses and residential areas are constructed and as businesses grow, some consideration should be given to active transportation. The plan will identify possible scenarios for modifications to the existing study corridors in support of community needs and priorities: safe and efficient movement of people and commerce, multimodal accessibility and reliable transportation network

Goal 4: Ensure compatibility of future development with the transportation network through appropriate transportation planning.

The plan will develop transportation and access management guidance for the project corridors to ensure that development occurs in a way that is integrated with the ability of the transportation network to support the increasing travel demand.

1.5. Study Team

Individuals representing TDOT and the Town of Gordonsville comprised the Study Team. Neel-Schaffer, Inc. assisted in the process. Representatives of the organizations include:

James M. Gibbs, Mayor, Town of Gordonsville

Representative Terri Lynn Weaver, State Representative, Tennessee State House of Representatives

Larry Kilzer, Town Recorder, Town of Gordonsville

BH Smith, Smith County Board of Education

Shannon Hunt, Chief, Gordonsville Police Department

Sonny Carter, Smith County EMS/Smith County Emergency Management

Terry Givens, Smith County EMS

Jerry Warren, Warren and Associates Engineering

Jonathan Russell, TDOT

Joren Dunnavant, TDOT

Kwabena Aboagye, TDOT

Mark Dudney, UCDD Dale Hollow RPO

Greg Judy, Neel-Schaffer, Inc

Trey Todd, Neel-Schaffer, Inc

Maria Scheitz, Neel-Schaffer, Inc



CHAPTER 2: DATA COLLECTION AND INVENTORY

The data collection and inventory process included a review of roadway features, planned developments, traffic, crash history and existing plan documents.

2.1 Roadway Features

SR-53/ 141 is classified as a rural major collector road. SR-53/ 141 remains a 3 lane road through the study area with some variations in accompanying right-of-way. The right-of-way is wider near I-40. The speed limit is 35 mph throughout the southern portion of the study area but increases to 45 mph and then to 55 mph in the northern part of the study area. Table 2.1 depicts the roadway features along the corridor.

Table 2.1: Roadway Features

Route	Start Point	End Point	Functional Class	Right of Way (ft)	Access Control	Type of Terrain	Land Use	Number of Lanes	Speed Limit
SR-53	SR-141	I-40 EB Ramp	Rural Major Collector	120/60	None	Rolling	Mixed Residential & Commercial/Comm.	3/3 (TWLTL, but Left Turn Not Allowed)	35
	I-40 EB Ramp	Rogers Rd	Rural Major Collector	250/120	None	Rolling	Commercial	3	35
	Rogers Rd	McKinney Rd.	Rural Major Collector	150	None	Rolling	Mixed Residential & Commercial	3	45
	McKinney Rd.	Bonnell Rd.	Rural Major Collector	150	None	Rolling	Mixed Residential & Commercial	3	55
SR-264	Hickman Hwy	SR-141	Rural Major Collector	200	None	Rolling	Rural/ Commercial	2/2 (Becomes 3 lanes at SR-141)	55/45
SR-141	SR-264/ SR-53	Stanton Ave.	Rural Major Collector	40	None	Rolling	Mixed Residential & Commercial/Residential	2 (3 lanes at SR-264/SR-53)/2	30
	Stanton Ave.	School Zone Limit West of GHS	Rural Major Collector	50/58	None	Rolling	Commercial	2	30
	School Zone Limit West of GHS	Meadow Dr.	Rural Major Collector	40	None	Rolling	Residential	2/2 (3 lanes at GHS Entrance WB)	30 (15 MPH School Zone)

2.2 Planned Development

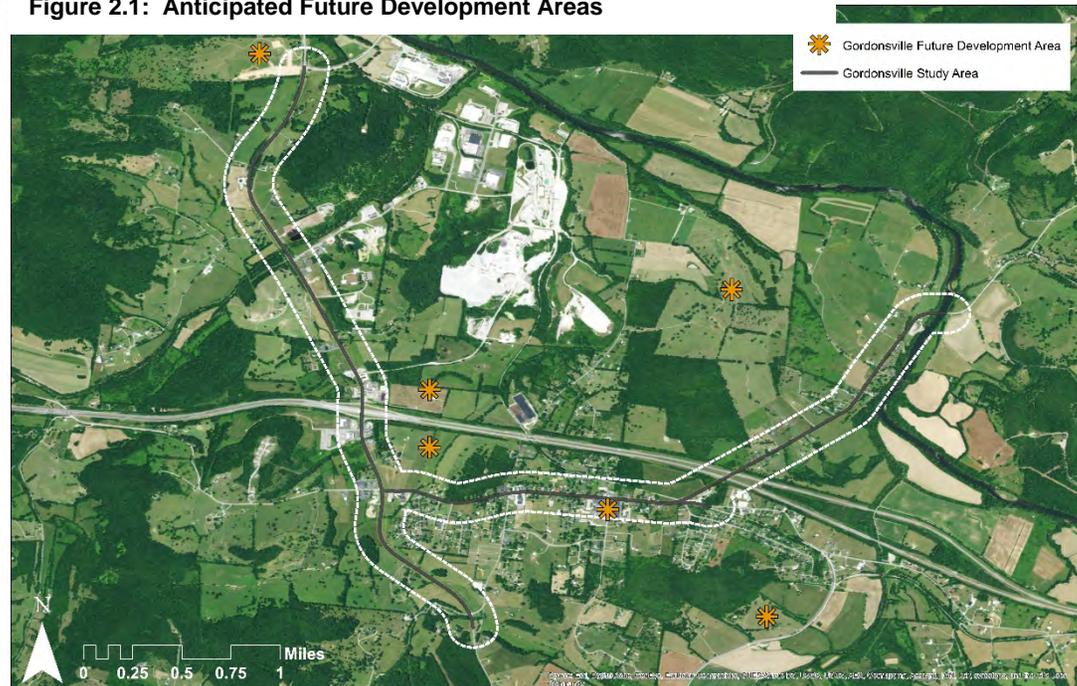
The Town of Gordonsville anticipates an expanded industrial park and changes to the school traffic patterns within the 10-year horizon. Several areas that are expected to develop were identified by the steering committee and are shown in the map below. These new developments will impact traffic flow along SR-53 specifically during peak hours and shift changes at the industrial park.

Institutional - For New Middleton School, which is proposed to be Pre-K through Grade 2 for the coming school year, the projections are for an increase in students for the next year of 100 +/- . The large increase next year is due to relocation of the high school from the Gordonsville school campus to a nearby campus. After next year, the average increase will likely be more like 20-25 students per year for Gordonsville Elementary School (which encompasses Grades 3 - 6). Gordonsville Junior High and Gordonsville High School, the enrollment is projected to increase from 350 students now to approximately 1,000 in 10 - 15 years. The large increase in students in all educational institutions is due in part to the projected industrial and job growth within the town limits, which will bring in more town residents as outlined below.

Residential- Twenty-five new homes are being constructed near Ben Lane and SR-53. Additionally, approximately 229 acres of property has been identified as a site of future residential development along the eastern side of Gordonsville near the intersection of SR-141 and Preston Road. The site is adjacent to a sewer extension project that is currently in progress.

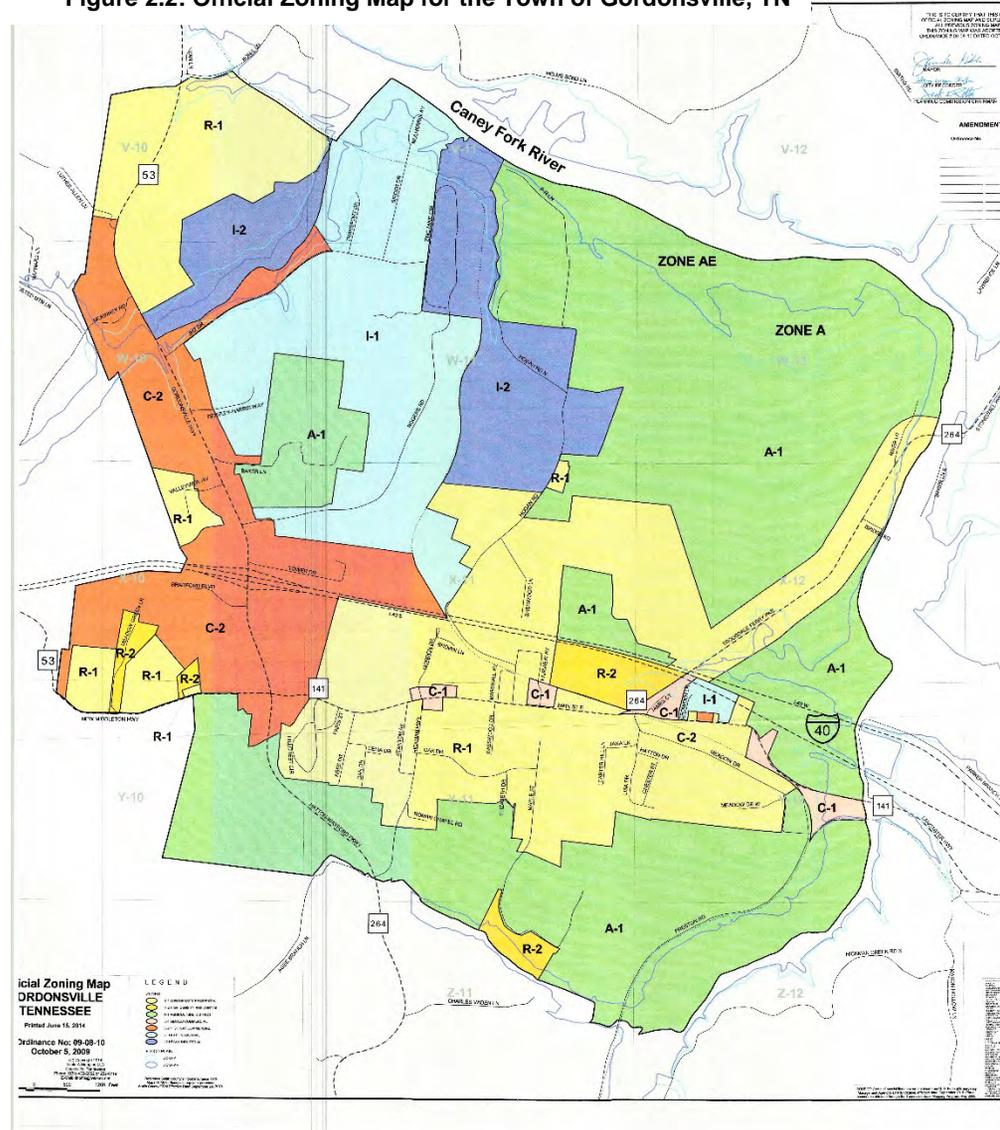
Industrial- Areas immediately adjacent to the existing Industrial Park containing approximately 750 acres have been identified for potential industrial growth, with another 200 acres bordering that area that could also be developed industrially in the future.

Figure 2.1: Anticipated Future Development Areas



The official zoning map for the Town of Gordonsville, TN is shown in Figure 2.2. The zoning map does not show planned future developments, but it illustrates the current use categories approved for each parcel of land within Gordonsville. The zoning map as it exists will permit expansions in commercial growth along SR-53 in the northern portion of the study area and reflects existing land use conditions along SR-141 and SR-264 in the southern portion of the study area. There is no approved comprehensive plan containing a future land use map and transportation plan for the Town of Gordonsville.

Figure 2.2: Official Zoning Map for the Town of Gordonsville, TN



2.3 Traffic Counts

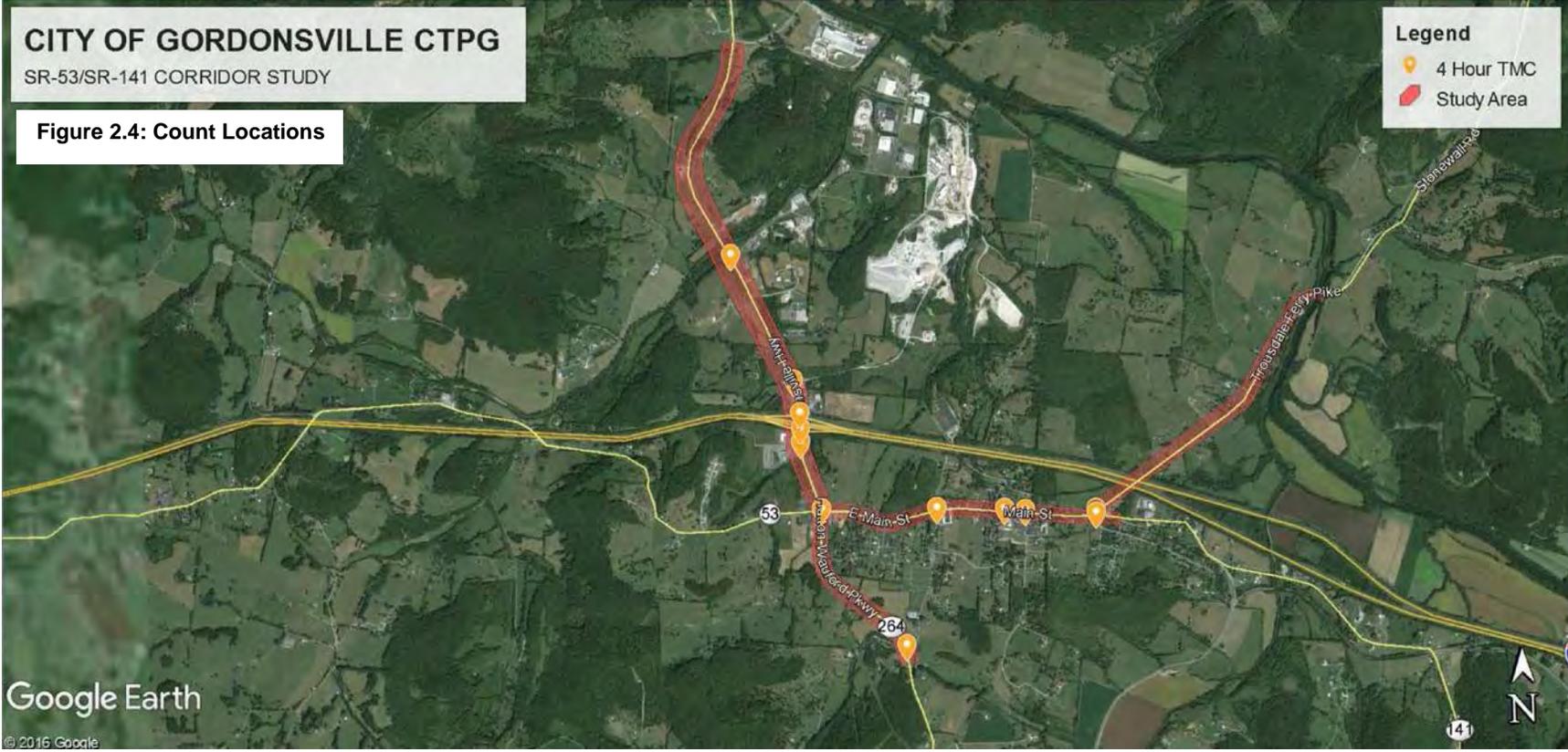
Traffic Counts were conducted on March 22, 2017. These counts made it possible to conduct the capacity analysis on an intersection basis. Counts were taken for 4 hours on March 22, 2017 at 11 intersections, along with a 12 hour count at the unsignalized intersection of SR-53 at I-40 WB Ramp. Count locations are shown in Figure 2.4

Peak hour turning movement count locations include:

1. SR-53 @ Rogers Road
2. SR-53 @ I-40 WB Ramp
3. SR-53 @ I-40 EB Ramp
4. SR-53 @ Bradford Avenue
5. SR-53 @ SR-141 (E Main St)
6. SR-264 @ Hickman Hwy
7. SR-141 @ Hickman Hwy North
8. SR-141 @ Hogan Road
9. SR-141 @ Fairview Circle/School Driveway
10. SR-141 @ SR-264/Meadow Drive/Trousdale Ferry Pike (2 count setups required)

The count data was collected using video cameras on site and processed manually in the office. Counts were conducted between the hours of 7-8 AM, 11 AM-12 PM, and 3-5 PM (SR-53 at JMZ Drive, Rogers Rd, I-40 EB Ramp, and Bradford Ave had a PM count between 2:30-4:30 PM; SR-141 at SR-264 had two setups and a PM count between 4-6 PM). These counts made it possible to conduct the capacity analysis on an intersection basis. Counts were taken for four hours on March 22, 2017 at the locations marked Peak Hour TMC and 12 hours at the locations marked 12 hour TMC. Results of the counts are included in Appendix A.

Along with these traffic counts, a field inventory was collected at all of the intersections to clearly define traffic parameters and existing conditions. These parameters include measuring lane widths, identifying speed limits, and taking pictures of all approaches at each intersection. Sample field inventory data collection sheets are included as Figures 2.5 and 2.6.



Figures 2.5, 2.6: Inventory Example

Existing Intersection Conditions

Mainline: SR-53 Intersection #:
 Side Street: I-40 EB RAMP Proposed Zone:
 Free Operation: Coordinated:
 Master Controller Location: SR-53 @ I-40 EB RAMP
 Local Controller Model: EPAC 300

Timing

Percent of Cycle Seconds

Local Controller Settings								
Phase	1	2	3	4	5	6	7	8
Min. Initial	5	5	5	5	5	5	5	5
Min. Split								
Max. 1 Split	30	30	30	30	30	30	30	30
Max. 2 Split	30	30	30	30	30	30	30	30
Yellow	4	4	4	4	4	4	4	4
All Red	2	2	2	2	2	2	2	2
Veh. Ext.	4	4	4	4	4	4	4	4
Recall Mode								
Walk	0	0	0	0	0	0	0	0
FDW	0	0	0	0	0	0	0	0

AM Peak Plan								
C/O/S	NONE							
Cycle								
Offset								
Seconds	1	2	3	4	5	6	7	8
% Cycle								

MD Peak Plan								
C/O/S	NONE							
Cycle								
Offset								
Seconds	1	2	3	4	5	6	7	8
% Cycle								

PM Peak Plan								
C/O/S	NONE							
Cycle								
Offset								
Seconds	1	2	3	4	5	6	7	8
% Cycle								

Peak Plan								
C/O/S	NONE							
Cycle								
Offset								
Seconds	1	2	3	4	5	6	7	8
% Cycle								

Operating Mode

Phasing

Referenced Phase(s):

<u>Ø2</u>	<u>Ø3</u>	<u>Ø4</u>					
-----------	-----------	-----------	--	--	--	--	--

SR-53 SR-53 I-40 EB

Time of Day Clock

TIME OFF BY 1 HOUR EARLY

00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00
Plan <u>O/O (FREE ALL THE TIME)</u>																								

SIDE STREET
 DETECTION PRESENT, BUT MAX OUT
 (MAX OUT Ø3, Ø2, Ø4)
 (MAX OUT Ø3, Ø2, Ø4)

FIELD SURVEY NOTES

Intersection: SR-53 @ I-40 EB RAMP Date: 4/2/2017
 Intersection Number: Prepared By: TJCT J.
 N/S Street: SR-53 Speed Limit N/S: 30-35 MPH
 E/W Street: I-40 EB RAMP Speed Limit E/W: NOT POSTED

SKETCH OF INTERSECTION

Remember to Include: Pertinent Signing/Marking
 Laneage & Widths Approach Grades
 Storage/Taper Lengths Queue Observations
 Right Turn Treatments Sight Dist Obstructions
 Left Turn Treatments Surrounding Land Uses
 Restricted Movements Mast Arm or Span Wire
 On-Street Parking Loop or Video Detection
 Pedestrian Treatments Signal Heads & Phasing

Signal Controller Type & Operation:
EPAC 300
 Model # / Firmware: (FREE OPERATION)

Phasing Diagram:

NOTES: LWP
DETECTION
PRESENT FOR
Ø3 + Ø4
DESPITE MAX
OUT

Spare Conduit Stubs?
 Excess Shelf Space?
 Detector Assignments: Ø3 Ø4 MAX OUT
ALL PHASES / DETECTION FOR Ø3 Ø4
 Coord Phases:
 Min. Recall Phases:
 Dual Entry Phases:
 Ped Phases / Overlaps:



2.4 Crash History

Crash data was collected within the study area from 2012 to 2016. The crash data was taken from information maintained by TDOT for the corridor. Data was aggregated by intersection for use in the crash analysis discussed in section 3.2 of this document. The data was used to identify high hazard locations and crash patterns in the crash analysis.

2.5 Existing Transportation Studies and Reports

The following documents were consulted during the study process to ensure consistency and efficiency of the plan with other ongoing planning efforts:

1. PLAN Go TDOT Long Range Transportation Plan (2005) Bike and Ped Element
2. 2010 Statewide Bicycle Plan
3. Tennessee Statewide Multimodal Freight Plan (2012)
4. TDOT 25-Year Long Range Transportation Policy Plan (LRTP)
5. I-40/ I-81 Corridor Study (2007)
6. TDOT Manual for Constructing Driveway Entrances on State Highways (2015)

The Tennessee Department of Transportation in conjunction with the Dale Hollow Regional Planning Organization (RPO) is in the process of creating a rural regional transportation plan. Future planning efforts should include a review of the resultant document.

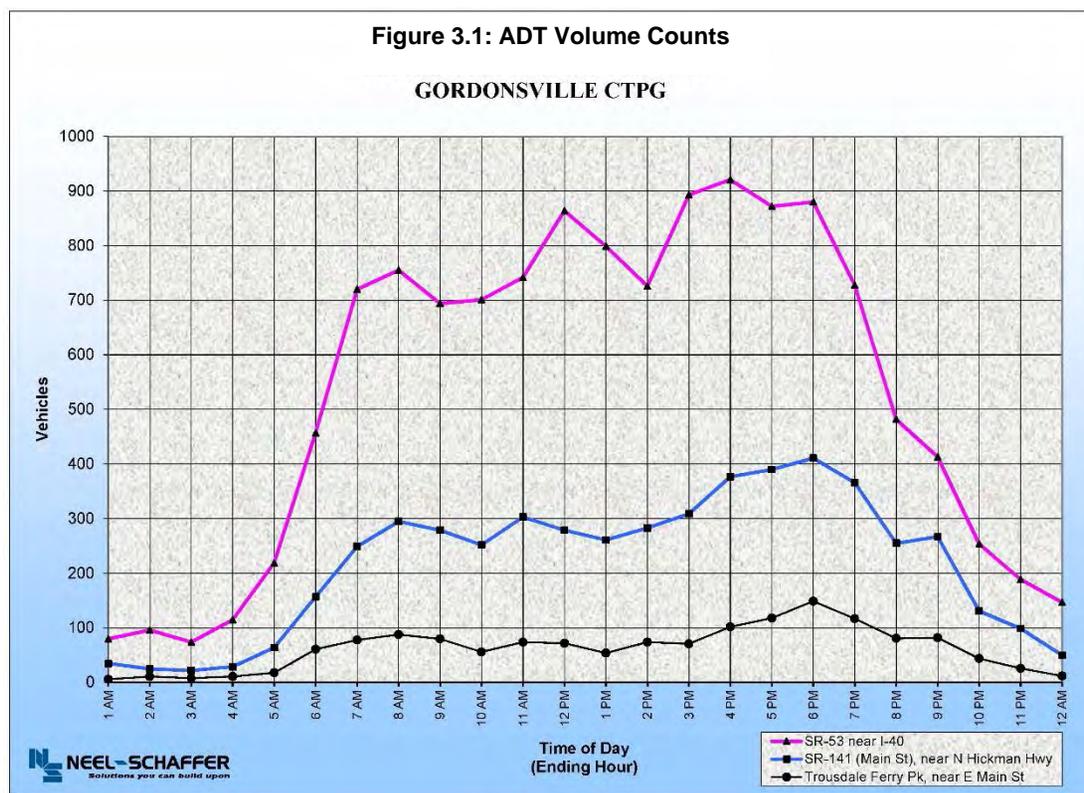
CHAPTER 3: EXISTING CONDITIONS

3.1 Average Daily Traffic (ADT)

The overall magnitude of average daily traffic (ADT) volumes traveling within corridor segments can indicate desired roadway treatments and transportation needs. TDOT gathers this information and produces an average daily estimate for strategic locations along the road network. These numbers are included for SR-53 near I-40, SR-141 near North Hickman Highway and Trousdale Ferry Pike near its intersection with SR-141 within the study area (Figure 3.1) . It is important to note that the counts are bi-directional and some stations experience heavier flow during certain peak periods.

Traffic volumes on SR-53 just north of I-40 peak from 7-9AM, 11-1PM and 3-6PM with the highest number of vehicle passing around 4PM. This area has the highest ADT in the study area. The traffic at SR-141 near North Hickman Highway and Trousdale Ferry near SR-141 peaks follows similar patterns peaking from 7-9AM, 10-12PM, and 4-7PM.

The traffic count data was used to determine the peak AM, mid-day, and PM volume periods at each intersection. The AM peak was determined to be 7:00 AM- 8:00 AM, the mid-day peak lasted from 11:00 AM to 12:00 PM and the PM peak lasted from 3:00 PM to 4:00 PM.



3.2 Capacity Analysis/ Level of Service

Integration of the traffic movement counts and field inventory made it possible to conduct a capacity analysis on all the intersections within the corridor and along the corridor. The analysis was evaluated using the concept of Level of Service (LOS), which incorporated average control delay for individual approaches at unsignalized intersections and overall delay for signalized intersections.

Level of Service is defined as a qualitative measure of traffic flow describing operational conditions within a traffic stream based on road conditions and the perceptions of motorists. A Level of Service (LOS) designation provides characterization of the quality of traffic flow in terms of factors such as speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. The LOS analysis results in an assignment of a letter value to all approaches at an intersection or the intersection as a whole based on traffic control measures at the respective location (signalized, All-Way Stop, Two-Way Stop, etc.).

Signalized Intersections

The LOS criterion for signalized intersections is referred to as control delay. Control delay accounts for interruption of traffic flow in addition to the time actually spent stopped. Control delay involves delay in association with deceleration, queue up-movement, and re-start acceleration. Levels of service for signalized intersections are calculated using the operational analysis methodology of the 2010 *Highway Capacity Manual*. This method assesses the effects of signal type, timing, phasing, and progression; vehicle mix, and geometrics on delay. Level of Service designations are based solely on the criterion of calculated average control-delay per vehicle, since delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time (Table 3.1).

Unsignalized Intersections

The levels of service for unsignalized intersections are determined by application of a separate procedure described in the 2010 *Highway Capacity Manual*. The procedure accounts for lane configurations on both the minor and major approaches, and conflicting traffic stream volumes. First, the theoretical maximum or “potential capacity” of vehicles for each minor approach lane is calculated based on a gap acceptance procedure. The capacities are then compared to the demand at the respective minor approaches to determine the average control

Table 3.1 and 3.2: Level of Service Criteria

**Level of Service Criteria
Signalized Intersections¹**

Level of Service	Control Delay per Vehicle (Seconds)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

¹Source: *Highway Capacity Manual*, 5th Edition, Transportation Research Board; Washington, DC; 2011.

**Level of Service Criteria
Unsignalized Intersections¹**

Level of Service	Average Control Delay (Seconds/Vehicle)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

¹Source: *Highway Capacity Manual*, Special Report 209, Transportation Research Board; Washington, DC; 2000. Page 17-2.

delay for each vehicle. Average control delay is used as the criterion for estimating level of service for minor street traffic. Table 3.2 summarizes the relationship between control delay and level of service for an unsignalized intersection.

Intersection Levels of Service

It was determined that if a LOS designation of D or lower was assigned then the intersection should be considered a candidate for potential improvements and further assessment should be conducted to determine if viable options exist to improve and promote efficient traffic operations. Study assessment determined that a LOS designation of C would be the threshold of acceptable performance. Dense urban areas routinely experience high traffic volumes and lower LOS of D are accepted because of driver expectations and, in some cases, improvements to infrastructure would not mitigate congestion due to volume. In rural areas such as Gordonsville, a LOS C is an indication that improvements to infrastructure could improve service levels and alleviate congestion.

The traffic count data was used to determine the peak AM, mid-day, and PM travel times at each intersection. The AM peak travel time was determined to be 7:00 AM- 8:00 AM, the mid-day peak lasted from 11:00 AM to 12:00 PM and the PM peak lasted from 3:00 PM to 4:00 PM. Table 3.3 documents the existing LOS for each intersection in the study area. For unsignalized intersections, a LOS is assigned to each leg of the intersection, eastbound (EB), westbound (WB), northbound (NB) and southbound (SB). For signalized intersections, LOS represents overall intersection performance for each peak period. The LOS for AM and PM peaks is illustrated in Figures 3.2 and 3.3.

From these evaluation, it was determined that the following intersections should be investigated within the next stage of the Corridor Study:

- SR-53 at I-40 WB Ramp
- SR-53 at I-40 EB Ramp
- SR-53 at Bradford Ave

Some factors influencing the LOS numbers are traffic avoidance by drivers and malfunctioning traffic signal equipment. The steering committee noted that instead of turning left to go south on SR-53 when exiting the I-40 westbound ramp, vehicles turn right off the ramp but then complete a “U-turn” to return south on SR-53.

Field investigation identified that the traffic signal near I-40 is not operating at optimal efficiency due to malfunctioning equipment. Vehicle detection at the traffic signal is not working properly, most notably the southbound left-turn movement onto eastbound I-40. Possibly, heavy truck traffic damaged the pavement and may have broken the vehicle detection loop. There is expectation that reduced traffic delay and improved operations will result with repair.

Table 3.3 Intersection LOS

**INTERSECTION LEVEL OF SERVICE ANALYSIS
Gordonsville CTPG - SR-53/SR-141**

Intersection		Existing (2017)			Horizon Year (2027) ²			Recommended Horizon Year (2027) ²			Comment
		Peak Period ¹									
		AM	MD	PM	AM	MD	PM	AM	MD	PM	
SR-53 @ JMZ Drive	NB	A	A	A							Consider need for NB RT Lane (Speed and AM Volume).
	SB	A	A	A							
	WBL	B	B	C (15s)							
	WBR	B	B	B							
SR-53 @ Rogers Rd	NB	A	A	A							
	SB	A	A	A							
	EBL	B	B	B							
	EBR	B	B	B							
	WBL	B	B	B							
	WBR	B	B	B							
SR-53 @ I-40 WB ³	NB	A	A	A							Evidence of need for SB RT Lane and Exclusive WB LT and RT Turn Lanes. Investigate signalization warrants.
	SB	A	A	A							
	WB	C (17s)	C (17s)	C (19s)							
SR-53 @ I-40 EB ⁴	TOTAL	D (35s)	B	D (35s)							Current malfunction of vehicle detection creates inefficiency. Evidence of benefit from NB RT Turn Lane and Exclusive EB LT and RT Turn Lanes.
SR-53 @ Bradford Ave	NB	A	A	A							Analysis shows intersection operates below capacity limits, but challenges with operations and access control; worsened by heavy truck volumes.
	SB	A	A	A							
	EBL	B	B	C (10s)							
	EBR	B	B	C (10s)							
	WBL	B	B	B							
	WBR	B	B	B							
SR-53 @ SR-141 (All Way Stop Controlled Intersection)	NBL	A	A	A							Officials remark that intersection periodically does not function efficiently. Intersection provides gateway into Town.
	NBT	B	A	B							
	NBR	B	A	B							
	SBL	C (16s)	A	C (17s)							
	SBT	A	A	B							
	SBR	A	A	B							
	EBL	B	A	B							
	EBT	B	A	B							
	EBR	B	A	B							
	WBL	A	A	A							
	WBT	A	A	A							
	WBR	C (15s)	A	B							



Table 3.3 Intersection LOS cont.

SR-264 @ Hickman Hwy	NB	A	A	A						
	SB	A	A	A						
	EBL	B	A	B						
	EBT	B	A	B						
	WBL	A	A	A						
	WBT	A	A	A						
	WBR	A	A	A						
SR-141 @ Hickman Hwy	NB	B	B	B						
	SB	B	A	B						
	EB	A	A	A						
	WB	A	A	A						
SR-141 @ Hogan Rd	NB	C (21s)	B	B						School AM drop-off using informal driveway access to exit campus.
	SB	B	A	B						
	EB	A	A	A						
	WB	A	A	A						
SR-141 @ Fairview Circle	NB	B	B	B						
	SB	B	A	B						
	EB	A	A	A						
	WB	A	A	A						
SR-141 @ Meadow Dr/Trousdale Ferry Rd	NB	A	A	A						Complicated alignment, multiple intersecting streets with RxR crossing. Potential challenge pending future volume growth.
	EB	A	A	A						
	WB	A	A	A						

¹ AM 7:00-8:00am; MD 11:00am-12:00pm; PM 3:00-4:00pm.

² The Horizon Year scenario includes additional traffic demand from TDOT and ___% background annual growth rate.

³ Traffic signal warrant performed for 2017 conditions.

⁴ Intersection is signalized.

Figure 3.2: AM Level of Service

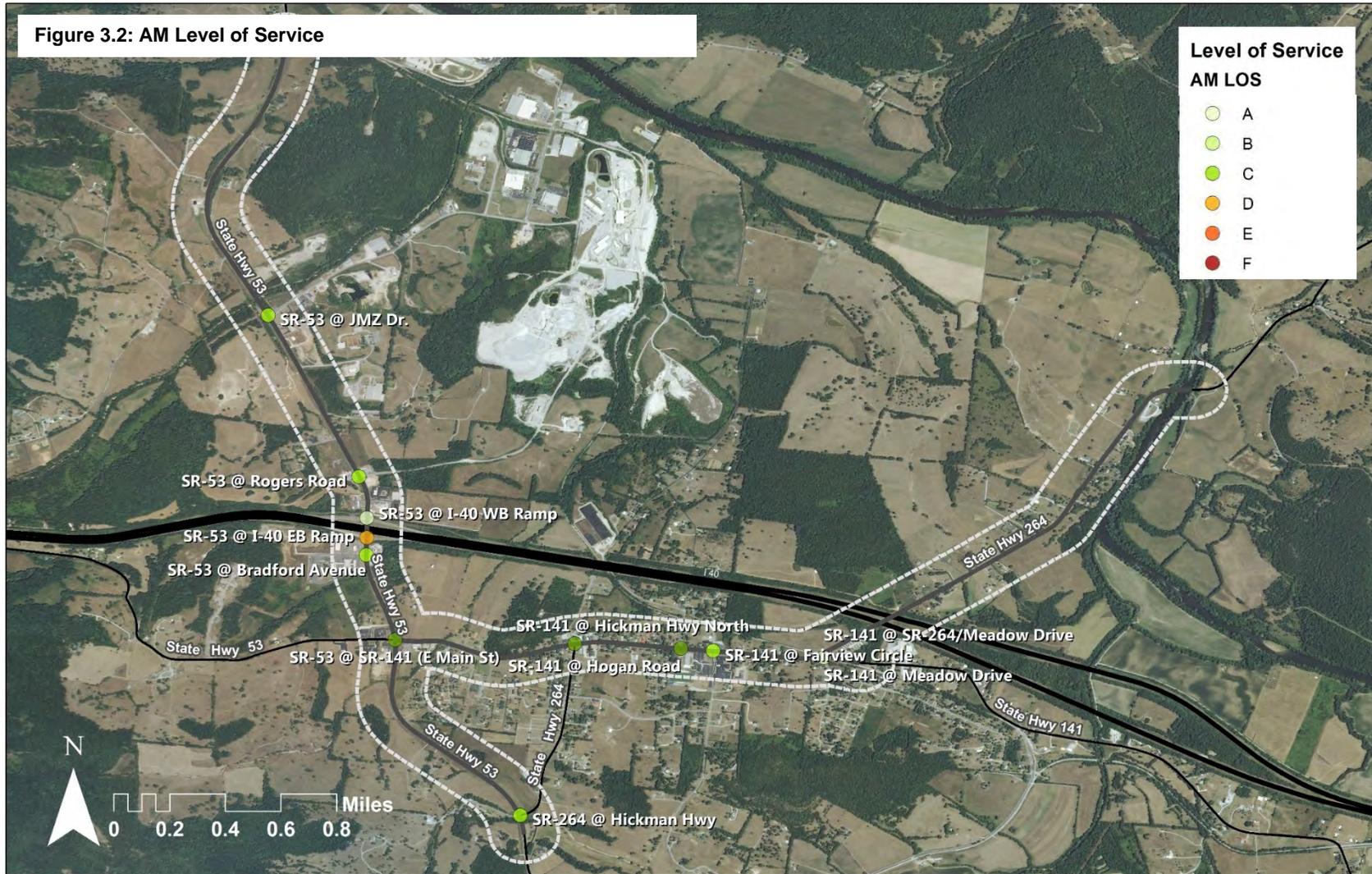
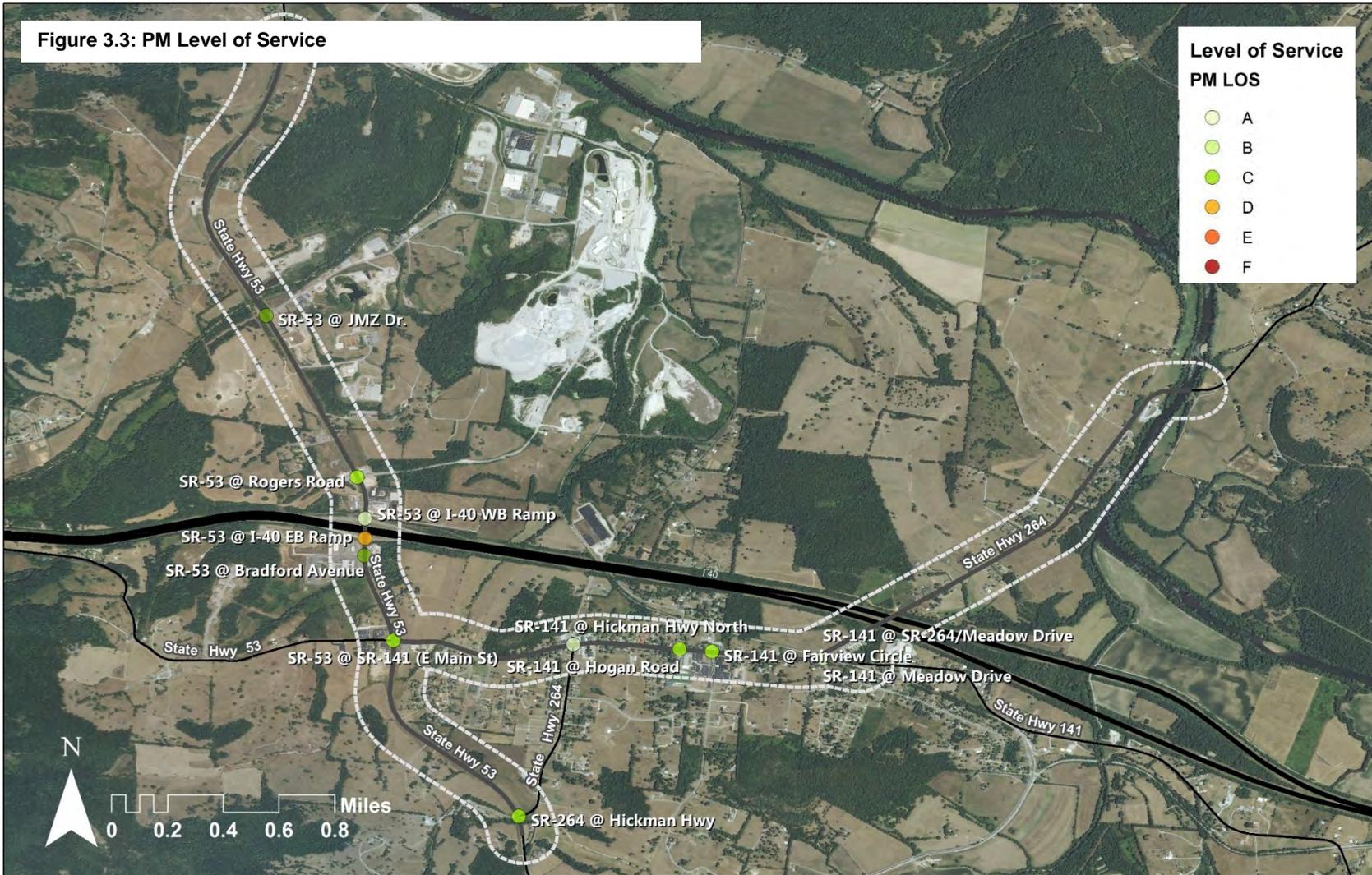


Figure 3.3: PM Level of Service



3.3 Crash Analysis

Crash data between the years of 2012 to 2016, roadway characteristics based on number of lanes and median type, and Average Daily Traffic Volumes were compiled for the study area by intersection and utilized to determine a critical crash rate for each intersection.

The methodology of this analysis is detailed as follows:

1. Crash data was presented to the consultant group from TDOT for all intersections within the corridor
2. The manner of collision attribute made it possible to identify possible trends of safety concerns.
3. The total number of crashes at study intersections and statewide crash rate averages made it possible to develop a critical crash rate for all intersections.
4. Crash rates at each intersection were compared to the Tennessee Statewide Average Crash Rate. Locations moderately above state average are highlighted in yellow while areas only slightly above average are highlighted in green on Table 3.4. These rates are illustrated in Figure 3.4.
5. This comparison identified several intersections above the average crash rate, most notably:
 - SR-53 at Bradford Ave
 - SR-53 at I-40 EB Ramp
 - SR-53 at I-40 WB Ramp

SR-53 at Bradford Ave and I-40 EB and WB Ramps had a trend of crashes that were mainly rear-end crashes. This is due to the fact of congestion within this area of the corridor during peak travel times. For illustrative purposes, the crash type for crashes near I-40 were mapped in Figure 3.5. Sideswipe and angle crashes were also prevalent around the I-40 ramps, which could be contributed to the limited availability of turn lanes and reoccurring congestion within the I-40 interchange area. Federal Highway Administration (FHWA) has noted that “the potential for rear-end and sideswipe crashes on the departure lanes may increase as the vehicles turning onto the crossroad merge with the vehicles already on the road” (<https://safety.fhwa.dot.gov>).

**Table 3.4: SR-53/SR-141 CRASH DATA ANALYSIS (2012-2016)
GORDONSVILLE CTPG**

LOCATION Intersection	CRASH TYPE				MANNER OF COLLISION				VOLUME	STATISTICAL COMPUTATIONS			
	Total Number of Crashes	Property Damage	Injury	Fatal	Rear-End	Angle	HeadOn	Sideswipe	Avg Entering Traffic Volume (vpd)	Crash Rate	Critical Crash Rate	TN Statewide Avg Crash Rate	Equip PDO Rating ¹
SR-141 @ Fairview Circle	1	1	0	0	0	1	0	0	6295	0.087	0.184	0.179	1
SR-141 @ Hickman Hwy N	3	3	0	0	0	0	1	1	5079	0.324	0.185	0.179	3
SR-141 @ Hogan Road	1	1	0	0	0	0	1	0	5865	0.093	0.184	0.179	1
SR-141 @ Meadow Dr	1	1	0	0	0	0	0	1	5235	0.105	0.185	0.179	1
SR-264 @ Hickman Hwy	0	0	0	0	0	0	0	0	6757	0	0	0.179	0
SR-53 @ Bradford Ave	15	13	2	0	8	3	1	1	8153	1.008	0.164	0.16	35
SR-53 @ I-40 EB Ramp	26	24	2	0	10	6	0	7	10013	1.423	0.164	0.16	46
SR-53 @ I-40 WB Ramp	16	14	2	0	7	4	1	4	8503	1.031	0.164	0.16	36
SR-53 @ JMZ Drive	5	5	0	0	1	1	0	1	13130	0.209	0.163	0.16	5
SR-53 @ Rogers Rd	2	2	0	0	1	1	0	0	11390	0.096	0.164	0.16	2
SR-53 @ SR-141 (E Main St)	8	8	0	0	2	2	0	3	6561	0.668	0.859	0.848	8

1) EPDO Weighted Factors have come from HSM and AASHTO (2010). Fatal = 542, Injury = 11, PDO = 1

Figure 3.4: Critical Crash Rates at Intersections

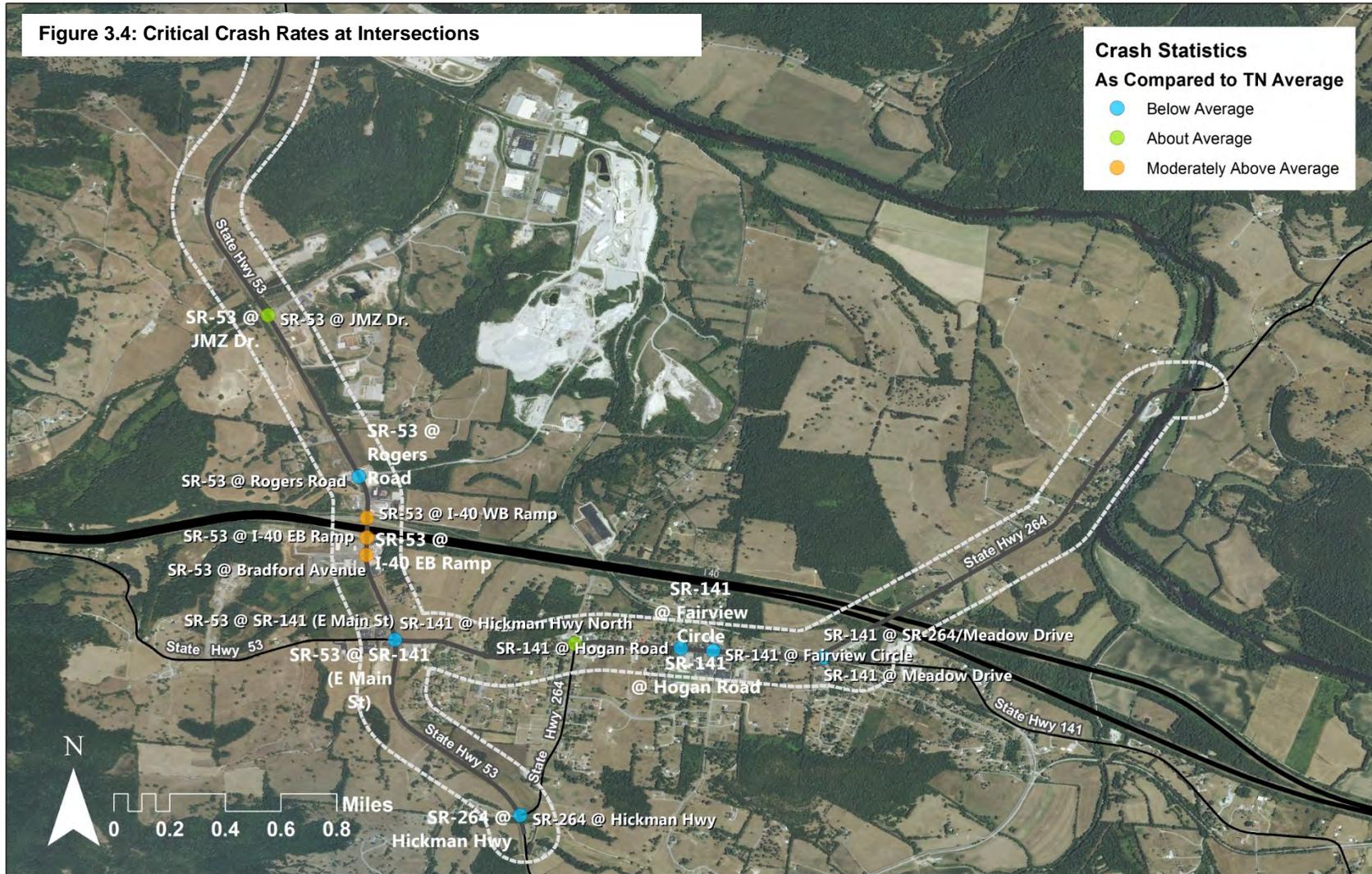
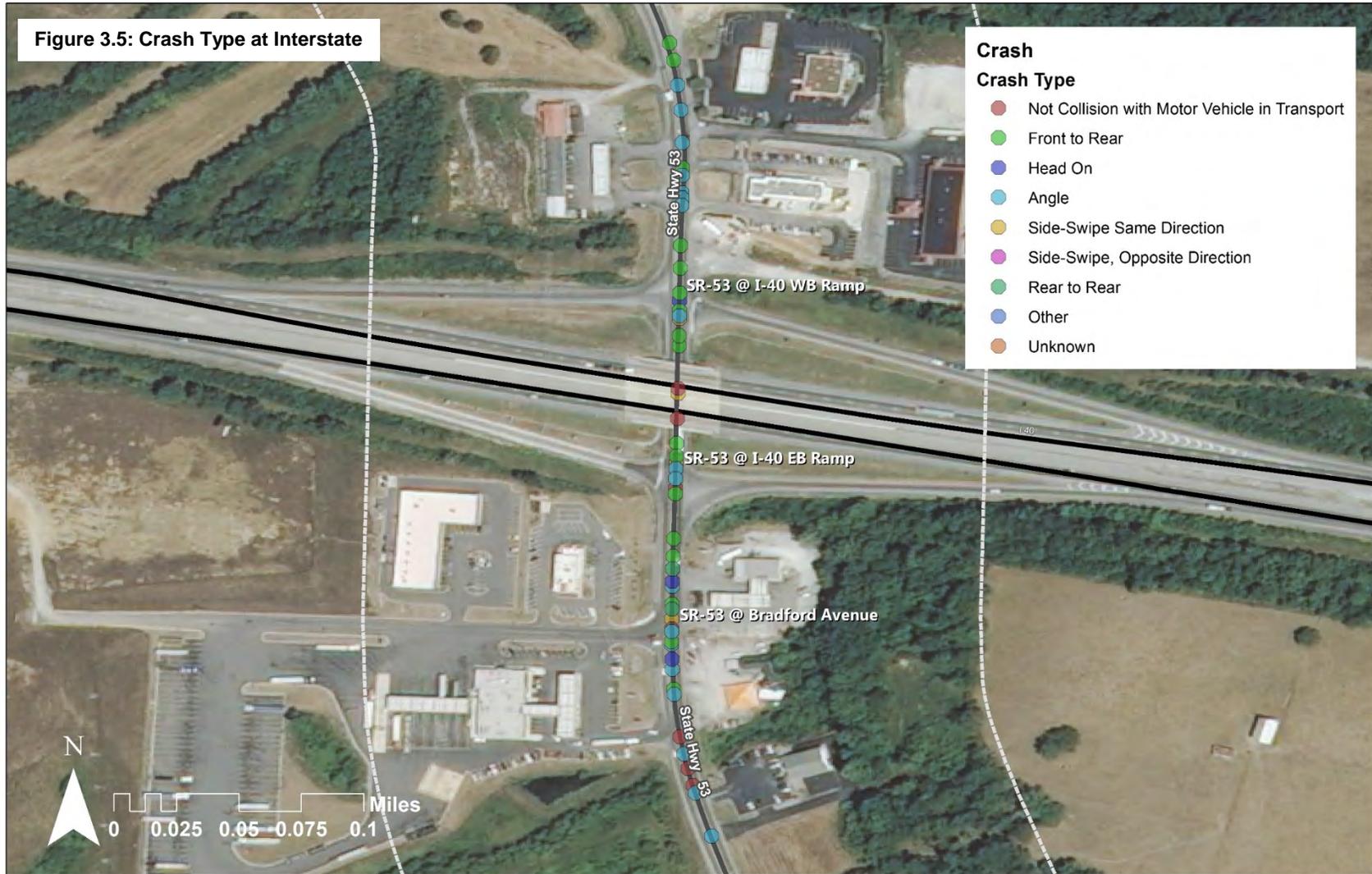


Figure 3.5: Crash Type at Interstate



3.4 Signal Warrant Assessment

One intersection within the study area was analyzed for meeting traffic signalization warrants. This intersection was:

- SR-53 at I-40 WB Ramp

Methodology

Traffic counts were taken for 12 hours of a typical day at the above mentioned intersection. In accordance with the Manual of Uniform Traffic Control Devices (MUTCD), volumes had to meet a minimum of 8 hours for one of two conditions or for 4 hours during peak travel times throughout the day. The two conditions are considered as Condition A and Condition B.

Condition A is defined as the minimum vehicular volume of an intersection, with a higher emphasis on the volume coming from the side street. Condition B is defined as the interruption of continuous traffic, with a higher emphasis on the volume on the major street.

The SR-53 at I-40 WB Ramp met the signal warrants based interruption of continuous traffic flow through the intersection (8-hour Condition B warrant) and the heavy traffic volume during peak travel times (4-hour warrant)(Figures 3.6, 3.7, and 3.8).

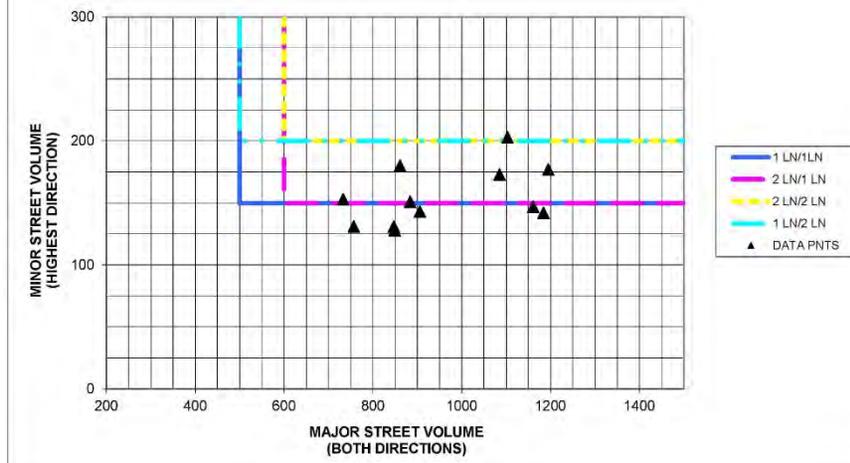
Findings

As stated previously, SR-53 at I-40 WB Ramp did meet the signal warrant assessment. However, it should be noted that further investigation will take place to identify if a traffic signal would actually be beneficial or recommended. Prevailing roadway geometrics, namely the closely spaced nature of the I-40 ramps and limited length of existing turn lanes on SR-53, create conditions which may be unsuitable for signalization of both ramp intersections as they currently exist. Findings are displayed in Figures 3.6, 3.7, and 3.8.

I-40 WB at SR-53
Gordonsville CTPG

Figure 3.6: 8 Hour Signal Warrant

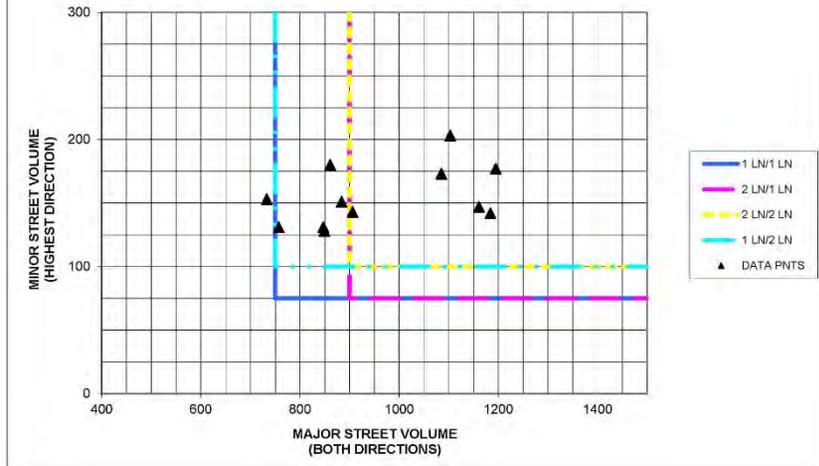
CONDITION A
100%



I-40 WB at SR-53
Gordonsville CTPG

Figure 3.7: 8 Hour Signal Warrant

CONDITION B
100%



I-40 WB at SR-53
Gordonsville CTPG

Figure 3.8: Full 4 Hour Signal Warrant



3.5 Multimodal Review

This review supports the stated guiding principles regarding multimodal transportation in TDOT's 25-Year Long Range Transportation Policy Plan. The statewide plan supports the development of a robust and integrated multimodal system. Specifically the guiding principles are as follows:

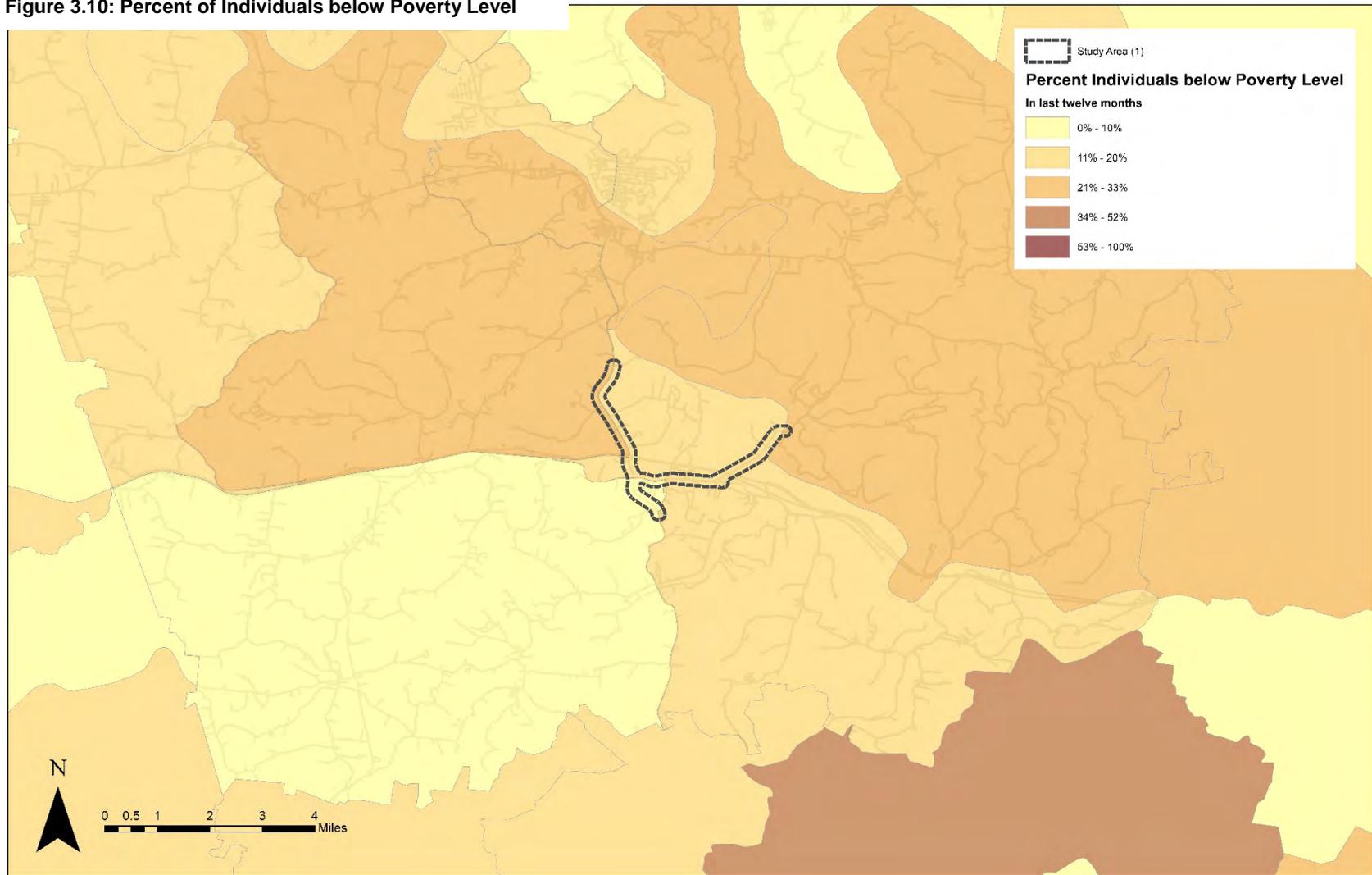
- **Preserve and Manage the Existing System** – Effective public transportation systems, a robust TDM program, and the provision of non-motorized options reduce single occupancy vehicles and helps to preserve roadway capacity. The assets that provide these services are equally important and must be effectively managed and maintained.
- **Provide for the Efficient Movement of People and Freight** – The promotion of mobility options, reliable public transportation systems, and TDM programs has the potential to optimize the movement of people and goods by providing greater access to transportation services for all people and by building better connections among different modes of transportation, thereby increasing the total throughput of persons and goods on the state roadway system.
- **Build Partnerships for Sustainable and Livable Communities** – Broad public input and community involvement from public, private, and non-profit entities are required for the successful development and implementation of mobility options, TDM programs, and nonmotorized, which in turn help communities be more sustainable and livable.
- **Protect Natural, Cultural and Environmental Resources** – Reducing overall VMT (or the at which it is increasing) by reducing the reliance on single occupant vehicles reduces congestion and gas consumption, enhances air quality, and reduces the potential need for additional roadway widening and/or extensions.
- **Emphasize Financial Responsibility** – Effective public transportation services, TDM programs, and the provision of non-motorized accommodations represent low-cost measures that increase transportation system efficiency and reduce potential capital outlays.

The stakeholders indicated that bicycle and pedestrian connections to the schools on SR-141 and connecting the businesses along SR-53 near its intersection with I-40 are a priority for non-motorized multi-modal design. The stakeholders also indicated a desire to accommodate the movement of trucks carrying freight within the study area.

A planning level analysis of method of transportation to work and percent of persons in poverty supports the observation that few persons use non-motorized transportation in the study area (Figure 3.9). Transportation to work data excluding personal motor vehicles and carpooling shows minimal use of non-motorized transportation. No persons reported using public transportation or bicycling to work in the study area. Only one person reporting walking to work. Several respondents indicated "other", but there is no data to indicate explanation.

The percent of individuals experiencing wages below the poverty level was highest for the study area to the northwest. Data was not available at the block level for this area (Figure 3.10).

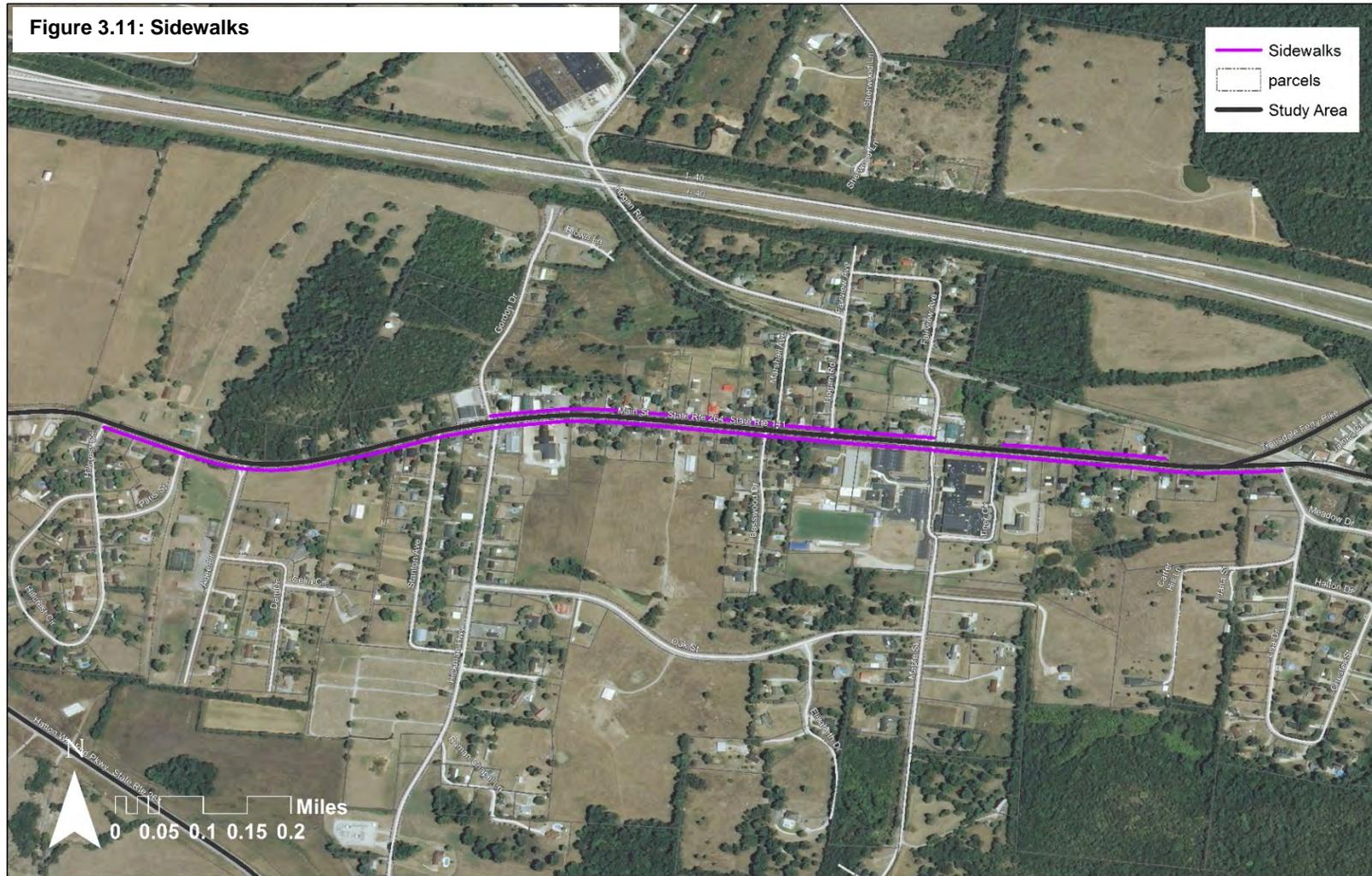
Figure 3.10: Percent of Individuals below Poverty Level



Source: US 2010 Decennial Census

Pedestrian

Sidewalks exist along SR-141 on the south side of the road continuously from Hillcrest Circle to Meadow Drive. Sidewalks are intermittent on the north side of SR-141 in this area as shown in Figure 3.11. The condition of the sidewalk varies and is in need of repair in some locations.



Bicycle

A bicycle suitability analysis was completed as part of the PLAN Go TDOT Long Range Transportation Plan (2005) Bike and Ped Element for SR-53 as it runs north/south in the study area. Due to the combination of wider shoulder width and lower ADT, SR-53 was considered suitable for bicycles (Figure 3.12). This is a high level analysis and results should serve as guidance for planning level analysis. In practice, the high percentage of truck traffic through the area may discourage bicycle traffic. An update to the state bicycle plan shows a current bicycle level of service (BLOS) along SR-53 through Gordonsville at a BLOS F indicating that bicycle traffic moves very slowly along the corridor (Figure 3.13). No state bicycle routes were identified in Gordonsville in the 2010 Statewide Bicycle Plan completed by TDOT (Figure 3.14).

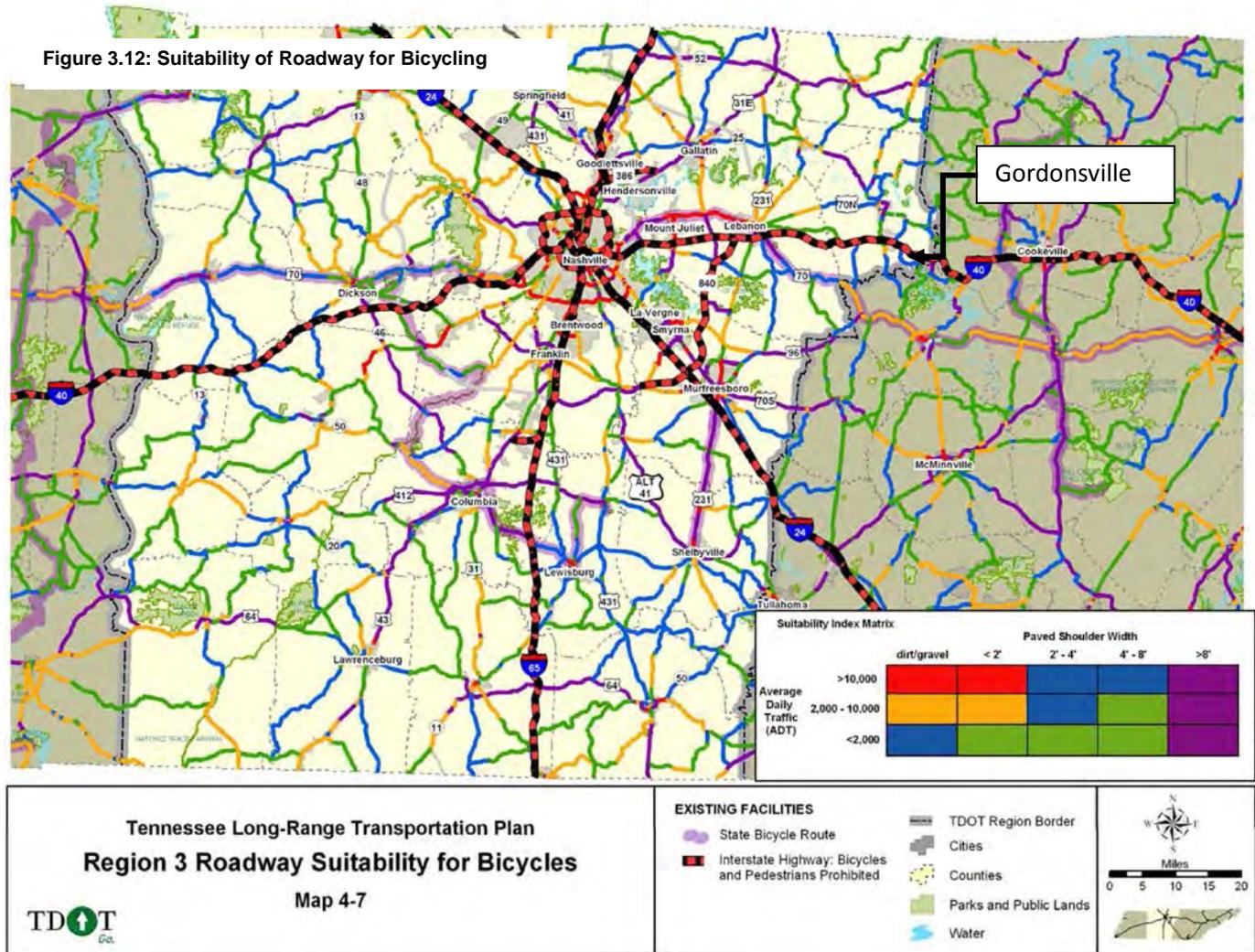


Figure 3.13: TDOT Region 3 Bicycle Level of Service

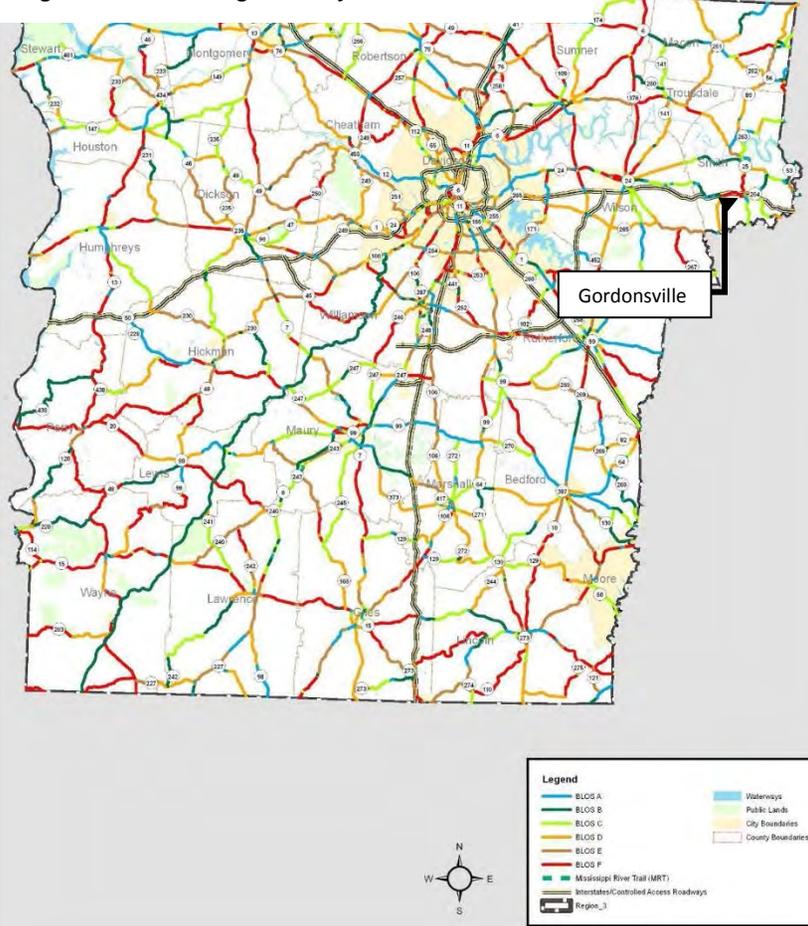
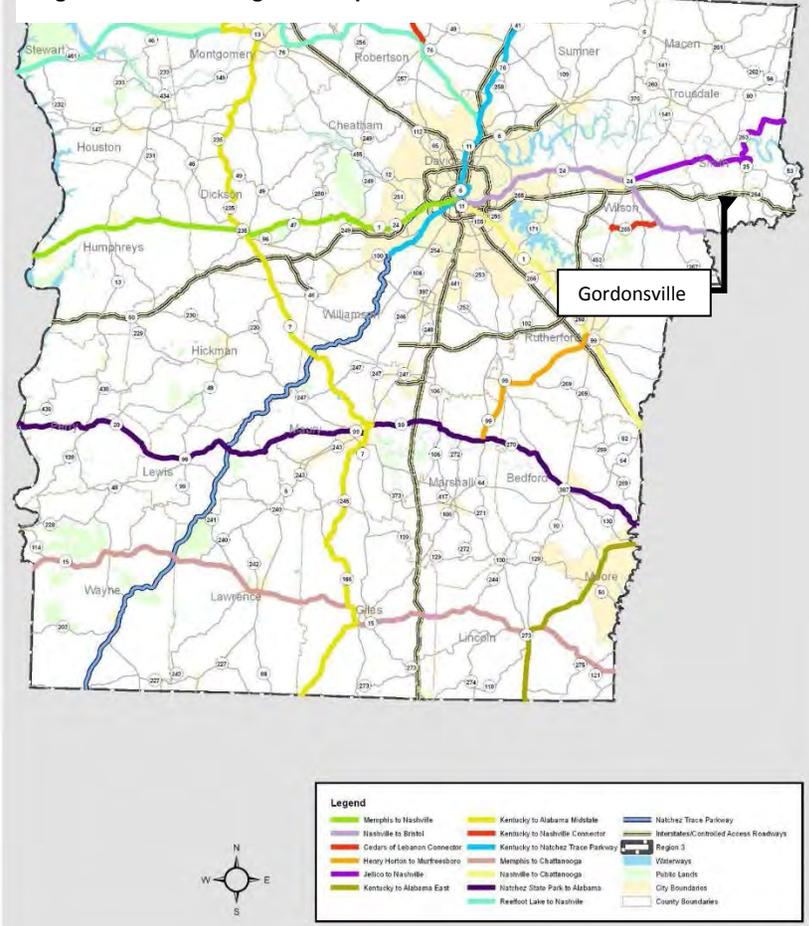


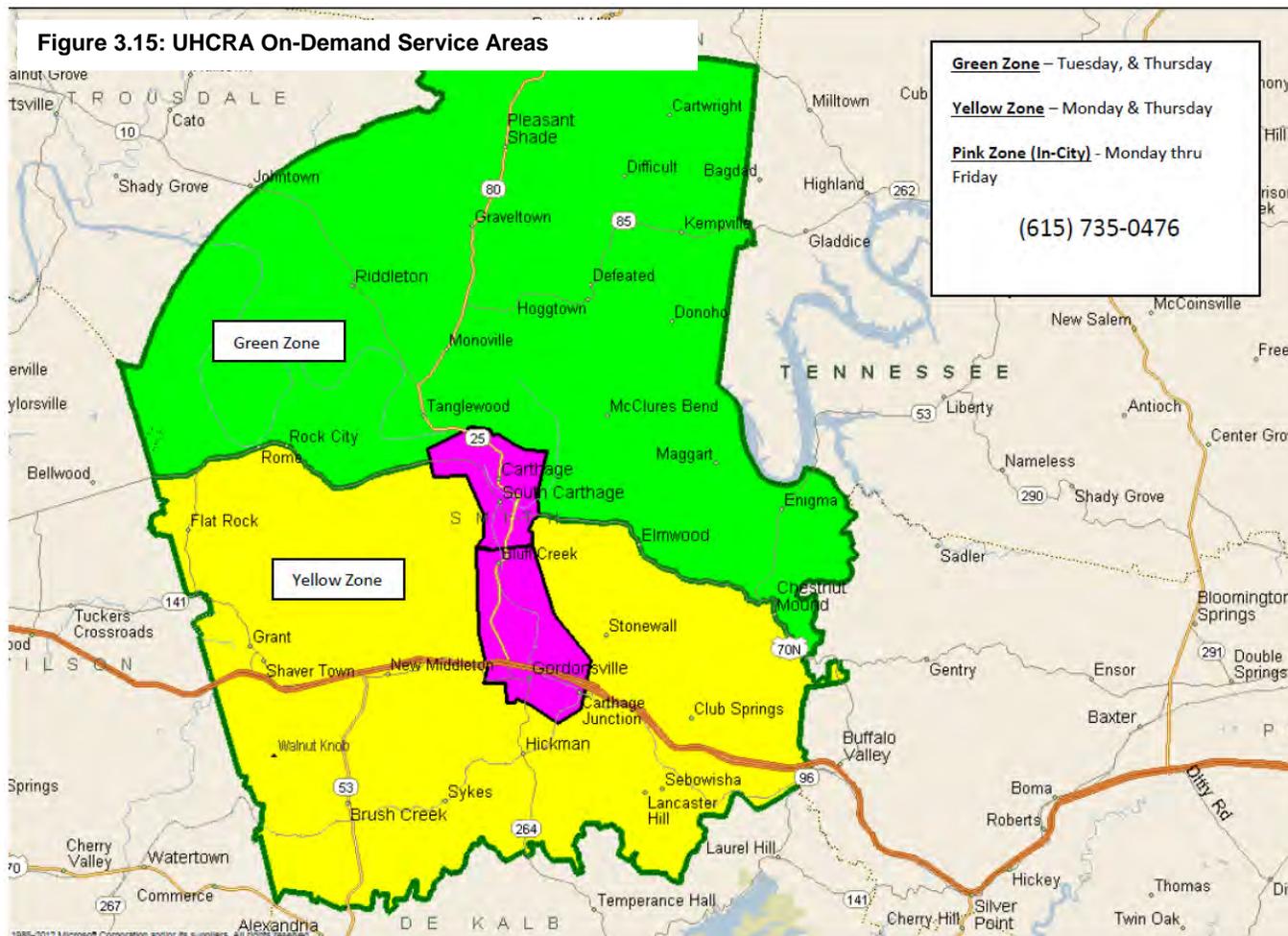
Figure 3.14: TDOT Region 3 Proposed Bike Routes



Source: 2010 Statewide Bicycle Plan Update

Public Transportation

There is no fixed route public transportation system in Gordonsville. The Upper Cumberland Human Resource Agency (UCHRA) provides transportation services to rural residents of all ages, giving first priority to elderly, handicapped and economically disadvantaged with medical needs while providing deviated fixed route and demand-response service. Residents in Gordonsville can schedule a bus pick-up Monday through Friday from 8:00 AM-4:30 PM.



Freight

Mitigating traffic impacts of truck traffic along the corridor, especially near the I-40 interchange, is a high priority. The town's existing industrial park and mine are less than .5 miles from the I-40 interchange. The Interstate 40/ 81 corridor is the only interstate route traveling east to west through the state of Tennessee. Trucks use SR-53, a major north/south route, to access the interstate. Freight traffic is expected to increase along the I-40 corridor and it is anticipated that related increases will be noticeable in the study area.

Few turn lanes coupled with frequent driveways and small turning radii negatively impact travel times and safety. Traffic stacks on the Interstate off-ramps and creates issues when exiting business driveways, specifically the Waffle House and Pilot. SR-141 is a 2-lane road with no shoulders which causes maneuverability difficulties for truck traffic.

The Tennessee Long Range Transportation Plan (LRTP) states that 74% of freight traffic in the state moved along a highway and the FHWA forecasts that shipments by truck are expected to see a 73% increase from 1998-2020. Of the vehicle miles traveled (VMT) on the interstate, 80% is truck traffic. The I-40/I-81 Corridor Feasibility Study notes that truck movements are a likely cause of deficiencies in the corridor and any deficiencies present in the corridor will have a large impact on truck traffic.

The use of "just-in time" manufacturing practices whereby parts are shipped and delivered as needed to warehouses combined with an increase in online shopping leading and resultant home package delivery will continue to add to truck traffic on our roadways (USDOT "Beyond Traffic" 2015). The LRTP anticipates this will affect traffic congestion, safety, the structural integrity and smooth riding surface of highways and bridges and can result in an increase in the need for maintenance.

3.6 Access Review

Access management is an operational tool used to manage roadway mobility and accessibility. Typically, access management defines how and to what extent roadway users gain ingress and egress between intersections and driveways. Generally, a higher degree of access management enhances mobility by preserving the operating efficiencies of the primary roadway. Examples of access management techniques include the following:

- › median treatment and openings
- › turn or movement restrictions
- › minimum intersection and driveway spacing
- › shared driveway access
- › traffic signal spacing

Strategic use of access management benefits many aspects of the transportation system: safe and efficient operation of the road network, preservation of roadway functionality, and reduced frequency of crashes.

The TDOT 2015 Manual for Constructing Driveways on State Highways gives specific guidelines for the construction of access points along State Highways. The Access Design portion within the Manual highlight specific control dimensions that must be followed to insure the safety of the public. For example, driveway spacing must be held at a 40' minimum between adjacent driveways on a state route along with a corner clearance of 100 to 200 feet depending on the classification of intersecting roadway. These guidelines are highlighted within Section 5 of the Manual for Constructing Driveways on State Highways. Local governments may enact additional standards and the more restrictive standard will reply.

Within the study area, crash rates indicate the need for improvements to access management near the I-40 interchange, particularly south of I-40 and adjacent to Bradford Dr. Businesses utilize multiple driveways closely spaced with no traffic signals (Figure 3.16). The steering committee also has identified that the Pilot station has caused issues due to heavy truck traffic, lack of auxiliary turn lanes and driveway spacing being insufficient within this portion of the corridor. Additionally, properties along SR-141 access the roadway from individual wide driveways. In some spots, parking areas abut the roadways causing confusion for motorists (Figure 3.17).

Figure 3.16: Access at Interstate



Figure 3.17: Access along SR-141

3.7 School Access Review

At the time of the review, school traffic was an issue at the existing school campus. The high school, middle school and elementary school shared a site and the pickup line had potential to queue onto the adjacent SR-141 during dismissal time. Dismissal times were staggered. Buses came on campus at 2:30, school let out at 3:00, and the after school program let out from 5pm to 6pm. This conflicted with shift change schedules at the industrial park. The schools utilized a shared driveway. Video of traffic entering and exiting the existing school campus was taken as part of the traffic count data collection. Under existing conditions, traffic movement within the Gordonsville school campus has two entry and one exit locations along SR-141. It should be noted that due to the projected increase for the Junior High and High School, local officials should monitor the traffic flow along SR-141 during school arrival and departure times so the campus is not at a stand still.

These patterns changed in the 2017-2018 school year. A proposed school on the west side of the Town will also accommodate some of the students. The student population at the existing schools is expected to decrease, but more parking areas and queue space could be needed in the future (Figure 3.18). A full assessment is advisable after new traffic patterns are established and if undesirable conditions persist.



3.8 Environmental Screening

The environmental screening included a one mile radius search of facilities with the potential for negative environmental impacts to the corridor. Other sensitive or potentially sensitive areas were evaluated within and adjacent to the ROW. Potential wetlands exist within the 100 year floodplain, floodways, along streams/roadside ditches, and in low-lying areas within and near the project corridor. Current and potential historic architectural structures and districts, were located adjacent to the proposed corridor expansion and critical habitats could potentially be located within or near the proposed project corridor and could be impacted by proposed activities. Prior to development of the proposed corridor area, further environmental review through state and federal agency guidance should be performed to ensure sensitive resources will not be affected by construction activities.

Right-of-Way

The amount of land to be acquired as a result of the proposed action has not yet been determined. The potential for the acquisition of more than one acre of right-of-way and/or the displacement of any commercial or residential occupants is still under review. Once the project have been determined, these criteria along with temporary easement locations should be presented to the Tennessee Department of Transportation (TOOT) point of contact (POC) for further recommendations.

Wetlands

According to the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Digital Wetlands Mapper, one freshwater emergent wetland exists within the proposed project area corridor along State Road 264. However, the potential exists for the presence of wetland indicators along existing creeks, streams, roadside ditches, storm water drainage areas, and in low-lying areas throughout the project corridor that could be impacted by future construction activities. Many of these areas could be jurisdictional wetlands and waters connected to Mulherrin Creek in the north and Caney Fork River and Hickman Creek to the north and west, respectively. Caney Fork River is listed as a traditional navigable waterway located within the Cumberland River Basin. The following areas shown in Figure 3.19 should be evaluated for the presence of potential wetlands and reviewed by the United States Army Corps of Engineers (USACE) Nashville District, especially those areas located within the 100 year floodplain and floodway areas.

State Road 53 (Gordonsville Highway)

- Mulherrin Creek (tributary of Caney Fork)
- Tributaries, intermittent streams, and ditches near and parallel to State Road 53 connecting to Mulherrin Creek



Hickman Highway/Hatton Wauford Parkway

- Stormwater Drainage Area 1 (connected to intermittent stream that connects with Mulherrin Creek)
- Agee Creek and surrounding low-lying areas

State Road-264 (Trousdale Ferry Pike)/Meadow Drive

- Stormwater Drainage Area 3
- Hickman Creek Tributaries and Drainage Areas
- WMS Freshwater Emergent Wetland

The proposed project corridor is located in the Caney Fork River Watershed of the Cumberland River Basin, U.S. Geological Service (USGS) hydrologic unit code HUC 12 (05130108) (Figure 3.20). The Caney Fork River Watershed is approximately 1,771 square miles and drains to the Cumberland River. The following watersheds are located within the project area and can be found in Appendix B:

- Mulherrin Creek Watershed: HUC 12, 051301080907
- Caney Fork River Outlet Watershed: HUC 12, 051301080908
- Hickman Creek Watershed: HUC 12, 051301080906

Floodplains and Floodways

Five areas within the project area were identified as being located within the 100 year flood zone or floodways of waters of the U.S (Appendix B). Portions of State Road 53 (Gordonsville Highway) and State Road 264 (Trousdale Ferry Pike)/Meadow Drive were located in the 100 year floodplain and/or floodways of Mulherrin and Hickman Creeks according to the Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Map (DFIRM). One area (Area 3 on Figure 3.21) near the intersection of Hatton Wauford Parkway and Hickman Highway was adjacent to the Agee Creek/Branch floodplain and could be indirectly impacted by corridor construction activities and stormwater runoff. The USACE Nashville District and TDOT POC should be contacted for direction prior to work being performed within the corridor for additional construction restrictions in these areas.

Figure 3.19: Wetlands locations

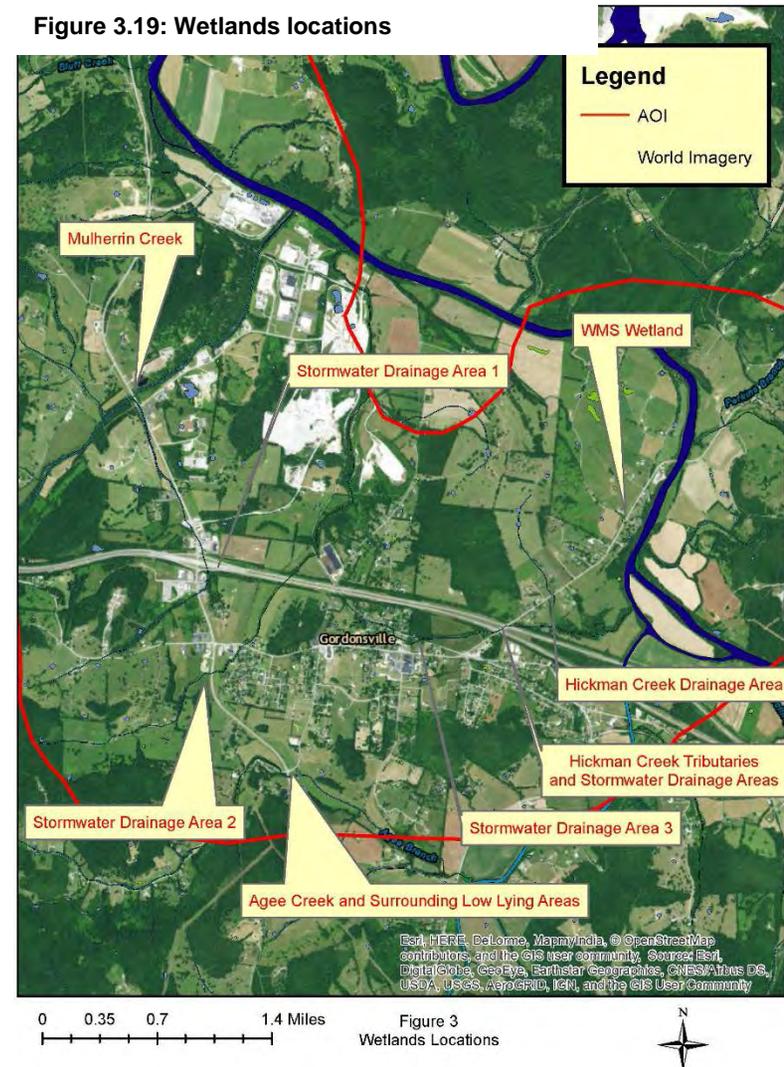


Figure 3.20:

Gordonsville Watersheds

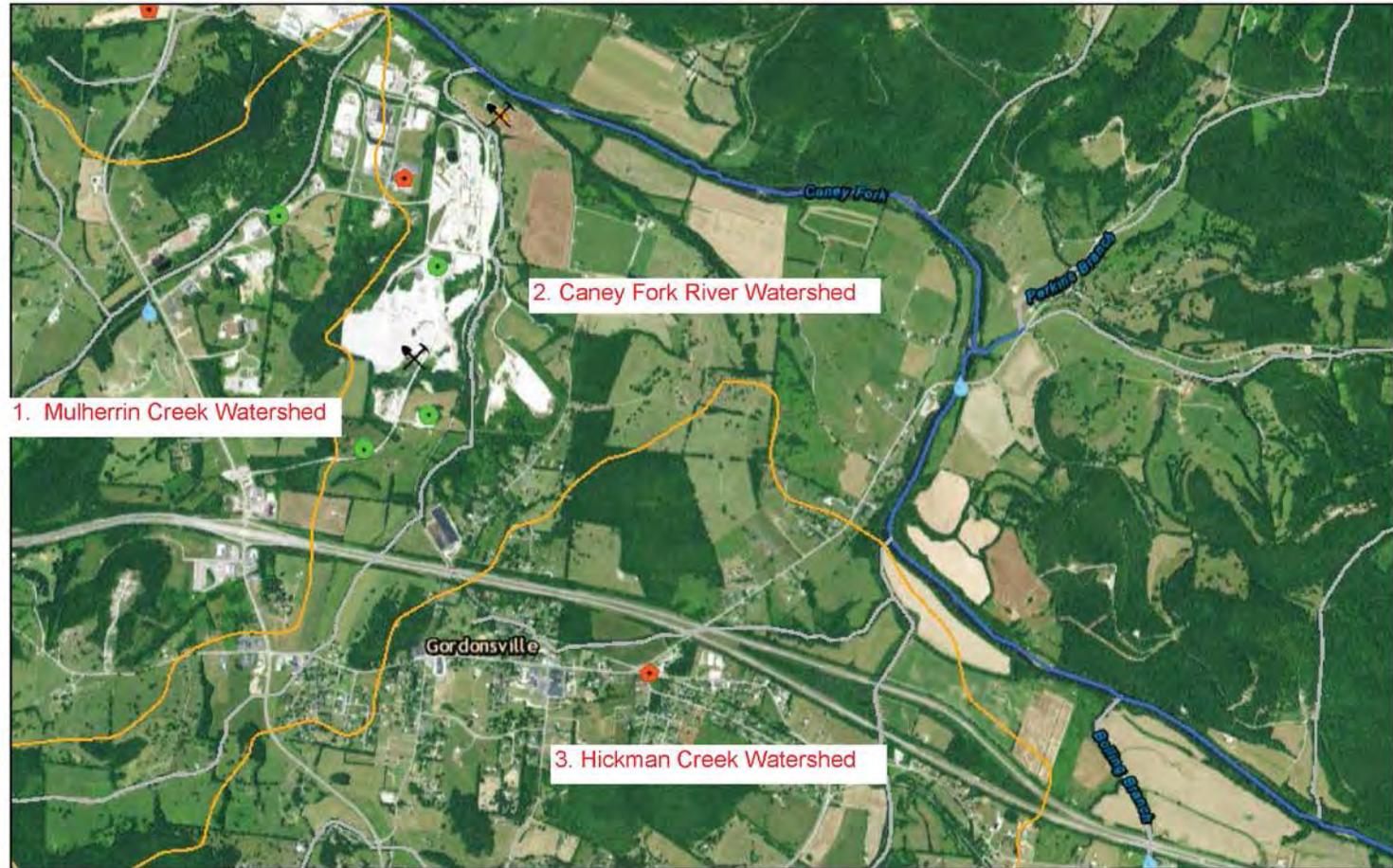
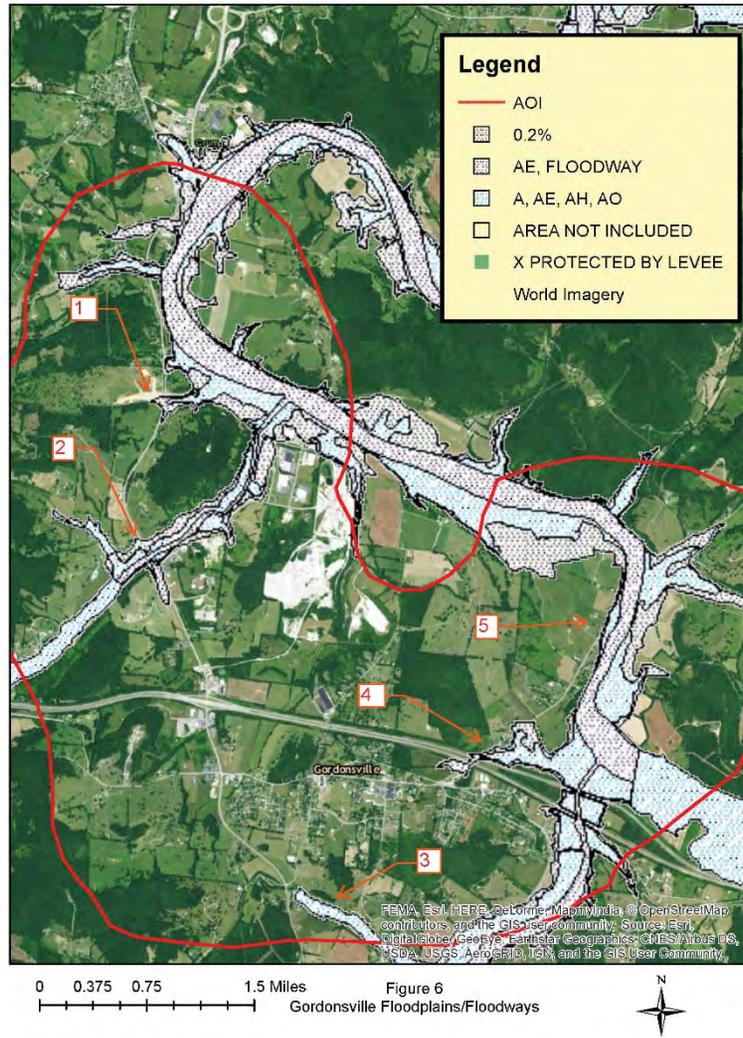


Figure 4
HUC 12
1. Mulherrin Creek Watershed
2. Caney Fork River Watershed
3. Hickman Creek Watershed

1:36,112
0 0.3 0.6 1.2 mi
0 0.35 0.7 1.4 km
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Web AppBuilder for ArcGIS

Figure 3.21: Floodplains/ Floodways

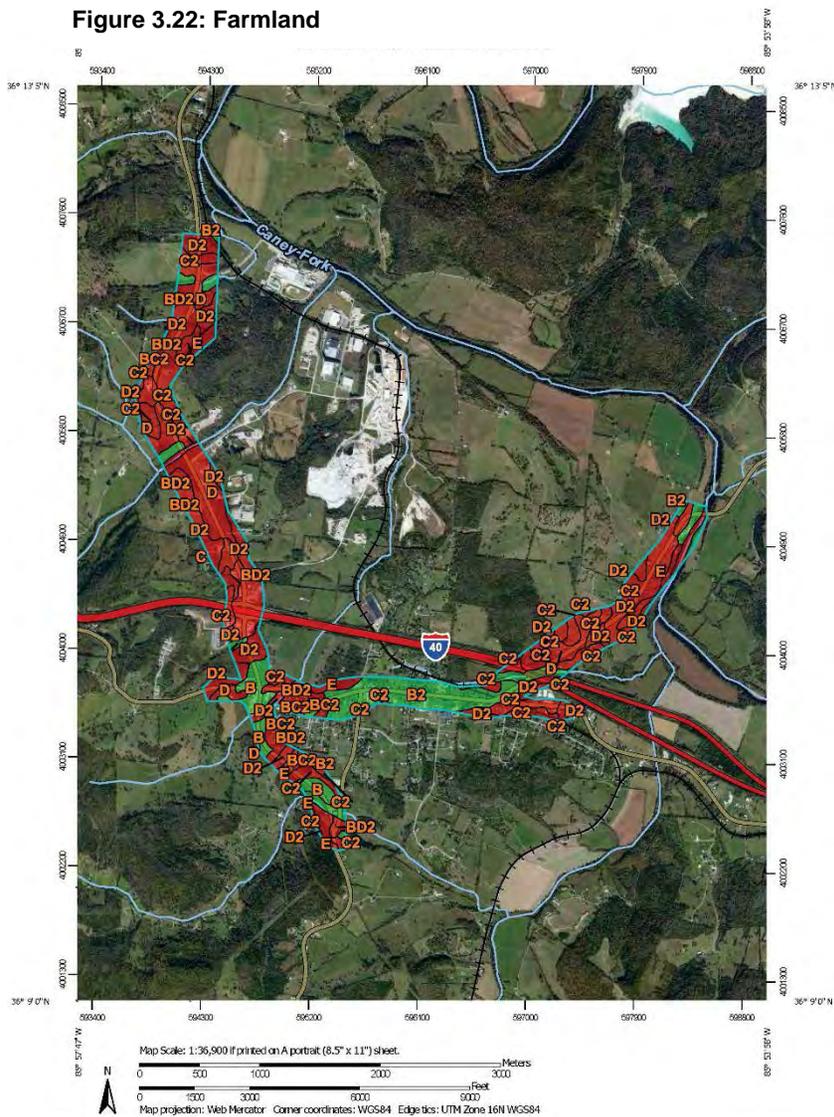


Threatened and Endangered Species

The Tennessee Department of Environment and Conservation (TDEC) maintains an online database of federal and state-listed rare, threatened, and endangered species. The results of the Smith County, Tennessee database search are shown in Table 1. The USFWS and TDEC should be contacted prior to work along the corridor for a determination of the presence of listed species along the corridor and the impact to those species in accordance with the Clean Water Act; the Endangered Species Act; Fish and Wildlife Coordination Act; Executive Order 11988, Floodplain Management; Executive Order 11990; Protection of Wetlands; Tennessee Non-game and Endangered or Threatened Wildlife Species Conservation Act of 1974; Tennessee Rare Plant Protection and Conservation Act of 1985; and the Tennessee Water Quality Control Act of 1977.

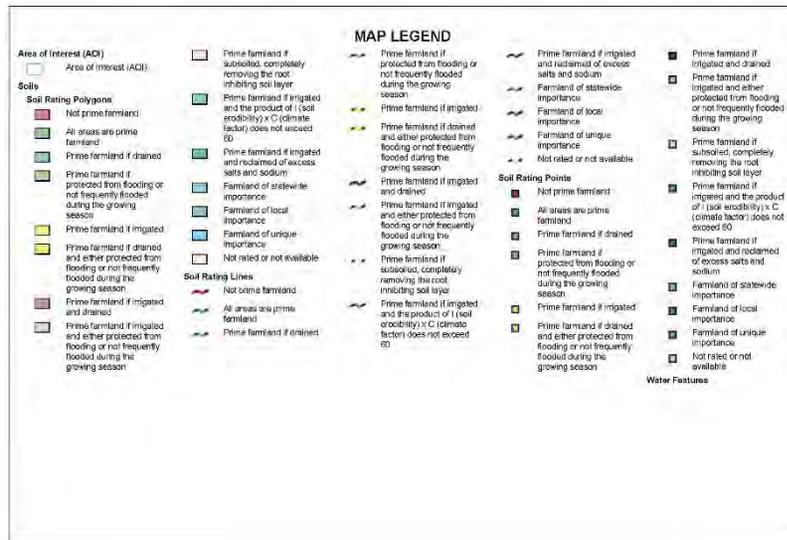
No threatened and endangered species or critical habitats were observed during the site visit or shown on the USFWS map in Appendix B. However, TDEC may require an evaluation of undisturbed, wooded areas along the corridor conducive to critical habitat conditions of bat species found within the county. An evaluation of aquatic species by a licensed biologist/diver in Mulherrin Creek could also be warranted if construction activities are anticipated to impact the creek.

Figure 3.22: Farmland



Farmland

The Natural Resources Conservation Service (NRCS) Web Soil Survey indicated soil units of prime farmland throughout the project corridor. During the site reconnaissance, no areas of cultivated land were identified within the project corridor and adjacent areas. The majority of soil units suitable for prime farm land indicated on Figure 3.22 and within the project area have previously been developed by roadway, residential, commercial, or industrial construction or are rarely cultivated due to flooding. The NRCS Prime Farmland Report is located in Appendix B.



Wild and Scenic Byways

The Tennessee Wildlife Resources Agency (TWRA), USDA, and TDEC maintain a list of state and federal-listed scenic rivers located throughout Tennessee. Wild and Scenic Rivers were not identified within the proposed corridor buffer, and a map indicating these findings can be found in Appendix B.

Air Quality

An air quality analysis may be required as part of future evaluations upon the release of specific improvement plans. The air quality analysis should include transportation conformity and Mobile Source Air Toxics (MSATs) for all projects, and pertinent information provided to the POC.

Noise

A noise study and abatement measures analysis will be conducted upon the release of proposed corridor plans, if required.

Cultural and Historic Resources

The National Park Service (NPS) maintains an online database of registered historic archaeological and architectural resources. There were no historic structures or cultural resources indicated as being located within the project area by the NPS that would be impacted by construction. However, numerous architectural resources with potential for listing on the National Register of Historic Places are located adjacent to the proposed project corridor that could be significantly impacted by proposed construction activities. These resources include residences, barns, businesses, and churches located on East Main Street. Representative photographs of these areas and corresponding map locations can be found in Appendix B. The Town of Gordonsville, the Tennessee Historical Commission (THC), and the NPS should be contacted prior to work activities along the corridor area for assistance with confirmation of any potential or unrecorded historic properties that could be affected by construction and determine any undesired impacts to these resources. An assessment of architectural structures located within and adjacent to the proposed project area will determine the National Register eligibility of these resources and mitigation requirements for updating records at the THC. Parks or Recreational Resources

National Parks

There were no national parks, national preserves, recreation areas, scenic rivers or parkways, historic parks or reserves, or other sensitive areas documented by the NPS within the Town limits of Gordonsville. No wildlife refuges were located within the project area. The TDEC Recreational Educational Services Division, Grants Program Office should be contacted prior to construction activities for a local review and potential impact analysis of the proposed work.



Native American Coordination

Although no state or federal protected Native American lands are located within the proposed corridor, coordination with Native American Tribes will be required if the project involves acquisition new ROW on previously undisturbed land (refer to Appendix B). Native America Tribes will most likely request a complete cultural resources assessment of the undisturbed areas performed by an Archaeologist that meets the Secretary of the Interior's requirements. Consultation with the TDOT POC should be conducted once the proposed project plans are available for determination of any undisturbed ROW areas and potential impacts to Native American Tribes or artifacts.

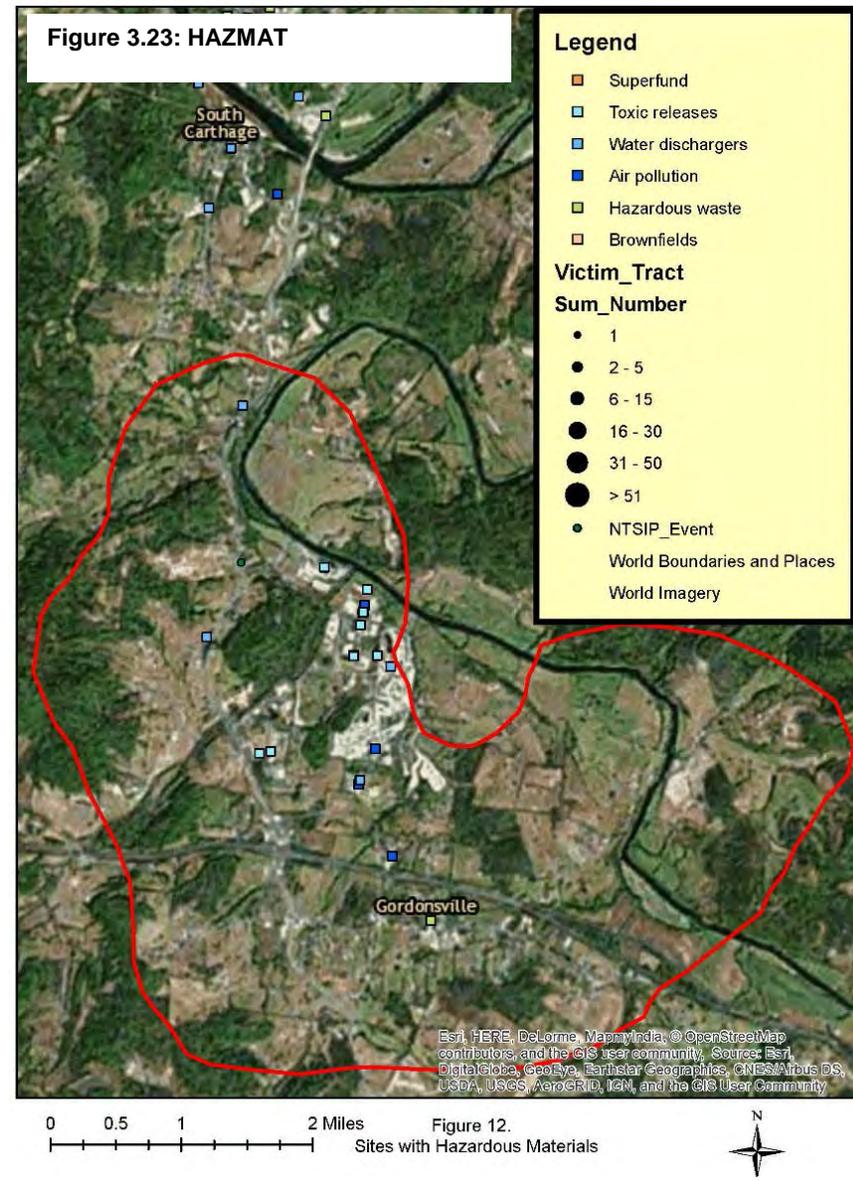
Hazardous Materials

Numerous businesses with underground storage tanks (USTs) and bulk storage, use, and transportation of hazardous materials were located adjacent to the project corridor. These facilities included service stations and industrial manufacturing facilities.

The Environmental Protection Agency's (EPA's) Envirofacts website indicated the following sites and release events as being located within one mile of the proposed project corridor (Figure 3.23):

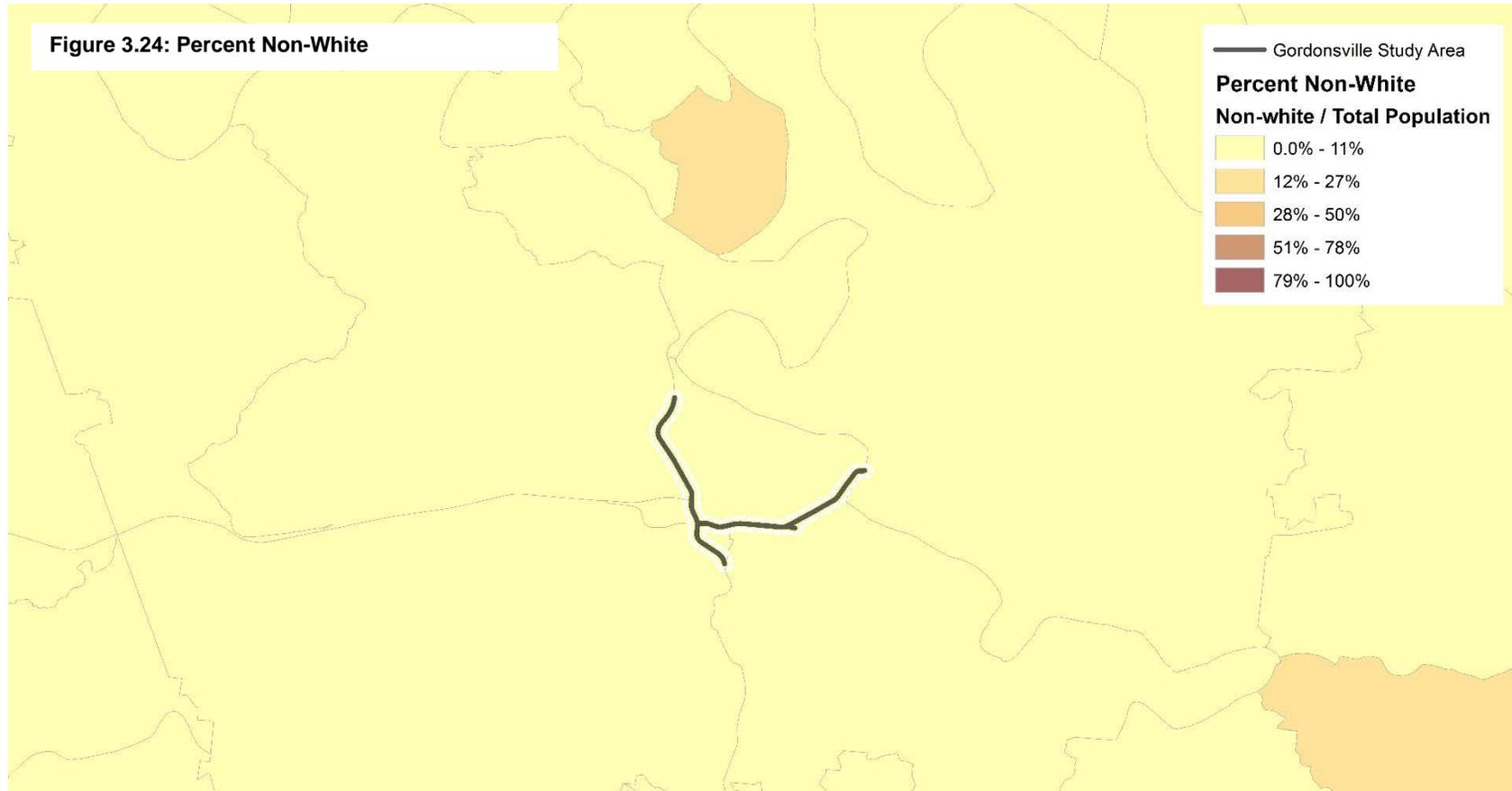
- Toxic Releases (1)
- Water Dischargers (8)
- Air Pollution (10)
- Hazardous Waste (7)
- National Toxic Substance Incident Report (1)

Prior to work within the project area, a thorough Phase I Environmental Site Assessment should be conducted to identify any hazardous sites through documents and avenues not readily available in the preliminary screening process that could potentially impact or have previously impacted the project area.



Environmental Justice

The majority of the corridor is located along business routes and streets with single family residences. According to the 2010 Census, a total of 1,213 residents lived in Gordonsville, TN, up 13.8% from the 2000 census. 95% of the residents were of Caucasian decent. The median household income grew to \$36,842 from 2000 to 2010 with 11% of the population below the poverty line. The median resident age was 38 years. The project will not have significant impacts to minority and low income populations. Figure 3.24 shows the low percentage of non-white persons in the study area.



Source: US 2010 Decennial Census

Environmental Summary

In conclusion, the preliminary environmental screening of the proposed project corridor to identify any sensitive resources that could be impacted by construction activities was performed. Potential wetlands and other waters of the U.S. and historic architectural structures were identified adjacent to or near the proposed project corridor that could be potentially impacted by future development. Numerous sites with hazardous materials utilization and storage as well as previous toxic releases are located within one mile of the proposed project corridor. A threatened and endangered species survey may be required by the US Fish and Wildlife Service prior to construction due to the nature and size of the project and contact with existing streams and drainage areas. Prime farmlands were located close to the existing ROW and could be impacted by proposed activities. Prior to development of the proposed roadway project, thorough studies and updated reviews of sensitive resources in the area and subsequent consultation with corresponding state and federal agencies are recommended to ensure existing and potential resources will not be negatively impacted by proposed construction activities.

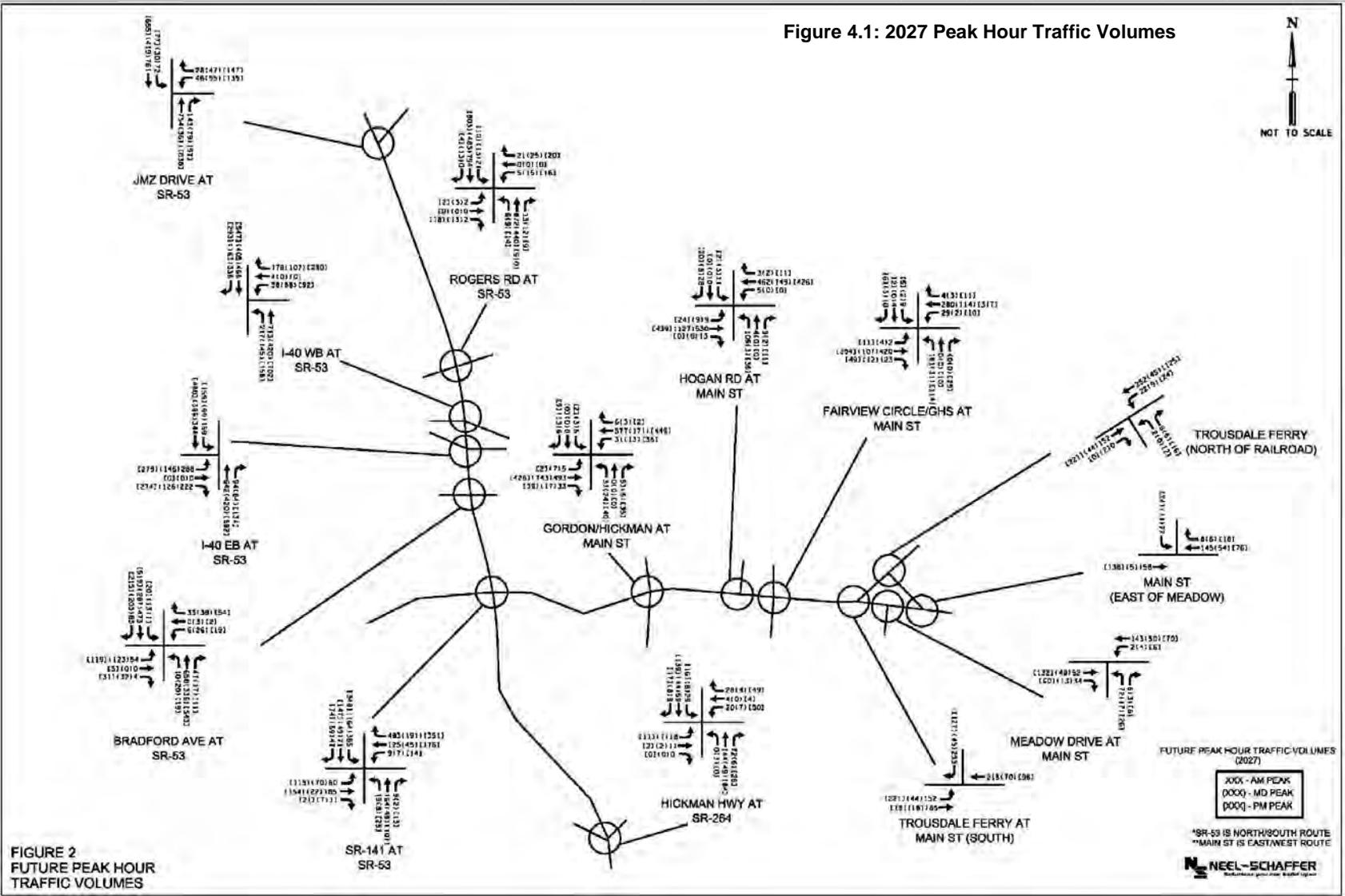
CHAPTER 4: TRAFFIC FORECASTING AND FUTURE CONDITIONS ANALYSIS

4.1 Traffic Projections and Future Traffic Assignment

Information gathered during traffic counts was utilized along with TDOT's traffic model for the region to estimate the rate of growth in Gordonsville for the Horizon Year 2027. The future LOS was projected for the road network to year 2027 with both no changes to the existing network and for a road network that integrates the recommendations of this document.

Turning Movement Counts were taken March 22, 2017. These counts were integrated into Synchro Models to conduct analysis on the Existing Year 2017 and Horizon Year 2027 to allow for recommendations to be made. With assistance from TDOT, the Turning Movement Counts were projected out to the Horizon Year 2027. It was determined that there was a growth rate of 1.0% per year. The projected counts were integrated into all Horizon and Future Recommendations models to witness the impact of volumes on Level of Service and develop various recommended scenarios that could potentially be implemented as future projects. Additional volumes were accounted for which were provided by the town. These volumes account for the future industrial area and residential growth within the area. The total growth rate used was 2.5%, which was compounded over 10 years. The findings of the horizon year traffic forecast for peak hour traffic volumes are depicted in Figure 4.1

Figure 4.1: 2027 Peak Hour Traffic Volumes



4.2 Future Land Use Considerations

The Town of Gordonsville provided future land use plans that were accounted for in addition to TDOT horizon year traffic projections. These land use plans include: expansion of the industrial area within the town, residential area growth surrounding a present-day sewer line extension, and projected educational growth within the town accounting for a new lower level school and school zoning. When accounting for industrial growth, the town identified 750 acres as potential for industrial growth. Traffic Projections accounted for 30% of this area to become industrialized by the horizon year 2027. The trips generated by the industrial area are expected to primarily affect the Main Street and central portion of the town. Utilizing information gathered from the Town, an additional 1.5% of traffic was accounted for which encompasses residential and educational growth. This additional 1.5% was compounded over 10 years to project to the horizon year and is anticipated to affect the entire town.

4.3 Capacity Analysis

Methods

In order to see the effect of the forecasted traffic on the Town of Gordonsville, Level of Service (LOS) was thoroughly analyzed in the Existing Year, Horizon Year Existing Conditions, and Recommended Horizon Year Conditions. Level of Service takes into account the amount of delay and gap acceptance for specific turning movements at a given approach for an unsignalized intersection. Additionally, a signalized intersection has a designated Level of Service for the entire intersection which is dependent on the signal operations, timings, and amount of traffic volume at the intersection. Level of Service has a letter grade that correlates to the amount of delay. This process is described in detail in section 3.2.

As stated above, TDOT traffic projections were incorporated into the Horizon Year and Future Recommended HCS Models. After inputting the projected traffic volumes, LOS and capacity were analyzed on an intersection level. The capacity analysis was broken into three separate studies: Existing Year, Horizon Year Existing Conditions, and Horizon Year Recommended Conditions. Recommended scenarios were developed for the majority of intersections within the study. Tables documenting the capacity analysis for each intersection are included in Appendix C.

Horizon Year on Existing Network Findings

The Horizon Year analysis shows an increase in volumes. The LOS declined as a result of the impact of higher volumes on existing geometrics and traffic control devices. The LOS is depicted on Figures 4.2 and 4.3.

Figure 4.2: AM LOS Horizon Year 2027



Figure 4.3: AM LOS Horizon Year 2027



Analysis results showed that multiple intersections experienced a decrease in LOS based on the Horizon Year analysis. These include:

- JMZ Drive at SR-53
- I-40 WB Ramp at SR-53
- I-40 EB Ramp at SR-53
- Bradford Blvd at SR-53
- SR-53 at Main St (SR-141)

Decreases in LOS were specific to turning movement locations and time of day at each of the locations. **JMZ Drive** at SR-53 minimally maintained a LOS “C” for westbound right turn movement, but the westbound left turn movement showed a measurable increase in vehicle delay because of heavy traffic volumes and lack of acceptable gaps on SR-53. This occurred in the PM peak. The **I-40 WB Ramp** at SR-53 had extremely high delay for the AM and PM peak periods, which was expected since there was a considerable increase in volume. The **I-40 EB Ramp** at SR-53 had extremely high delay for the AM and PM peak periods, which was expected since there was a considerable increase in volumes with limited existing turn lanes. **Bradford Blvd** at SR-53 saw a decrease in LOS due to the proximity of the intersection to the interchange. SR-53 at **Main St (SR-141)** showed horizon year results of the southbound left and westbound right lanes functioning below the acceptable LOS threshold. This indicates that the 4-way stop at this intersection will not be efficient by the horizon year of 2027.

During the study timeframe, adjustments were made to the traffic pattern in the school zone. The staggering of release of students from the Elementary School and Middle/High School has improved traffic flow in the school zone and area surrounding Fairview Circle/GHS at Main St (SR-141). Because improvements were made that would impact the forecast of the impact of future traffic on LOS, it was decided to omit LOS projections from figures 4.2 and 4.3.

4.4 Operations and Safety

Prior to the development of draft recommendations, the crash data analysis, traffic signal warrant and road type were evaluated for the implications on operations and safety.

A crash analysis was completed on the Existing Year data by accounting for different crash types over the course of 5 years (Section 3.3). Upon completion of the crash analysis, it was apparent that changes to lane assignments at specific intersections could reduce crash rates. Most crashes at these intersection were rear-end crashes due to hesitation of movement from the side street turning onto the main line (SR-53). For this reason, recommended schematics for Bradford Avenue and both I-40 ramps show additional turn lanes.

A traffic signal warrant was completed for I-40 Westbound Ramp (Section 3.4). Although the signal warrant passed, it was recommended that the ramp not be signalized unless if the entire interchange was rebuilt to allow for more capacity. Evaluation of installing a traffic signal at the WB ramp without additional improvements found that the area around the interchange would likely experience increased congestion and delay. This would result from the lack of vehicle storage and turn lanes between the ramp intersections. For these reasons, the study does not recommend signalization of the WB ramp alone.

Different cross sections were considered to address operations and safety concerns. Roundabouts were investigated at two separate locations. Roundabouts are proven to have safer operations than just simple turn lane improvements.

4.5 Access Management

Future construction along SR-53 must follow the guidelines *TDOT Manual for Constructing Driveway Entrances on State Highways*. Due to the high volume of truck traffic (6%) around the I-40 Interchange, should consider using a tractor trailer as the required design vehicle when applying the design standards. This requires a greater edge clearance and radius of curvature.

With the projected increase in vehicles per day, crash rates and decreased LOS will continue to negatively impact the functionality of the existing access points. Redesign of existing access points should be considered and is shown in the schematic design in some recommendations.

Access management practices and the *TDOT Manual for Constructing Driveway Entrances on State Highways* are discussed in section 3.6 of this document.

4.6 Feasibility and Functional Review of Interstate 40/ SR-264 Interchange

An Interchange Justification Study (IJS) would have to occur before any recommendations of a new interchange at the SR-264 location are formalized. The IJS would have to follow certain steps that are provided by FHWA guidelines. There are eight (8) policy recommendations for the FHWA IJS:

- 1) Need not satisfied by existing interchanges
- 2) Need not addressed by modifying existing facilities
- 3) No detrimental impact (operations/safety) to freeway facility
- 4) Provides for all movements to/from new access
- 5) Consistent with local & regional transportation plans

- 6) Plans for and avoids overlap with potential future accesses
- 7) Demonstrate coordination with economic development planners and anticipates entire system needs
- 8) Included in NEPA Process

In (2017), the Average Daily Traffic (ADT) is approximately 1,500 vehicles per day. Currently, the traffic needs can be met by modifying existing facilities as shown in this plan. However by 2027, the ADT is expected to grow to 4,000-6,000 vehicles per day. Industrial growth will increase the traffic load on facilities and the need for an IJS should be reevaluated. Any construction of an interchange must have a clearly defined purpose and need. In this case the purpose and need would be primarily for Economic Development by promoting safe and efficient operations, by providing an alternative route to Main Street, and by alleviating traffic volume magnitude and distribution. Pursuit of a future interchange at this location would largely be dictated by specific development potential.

If an IJS shows that an interchange is recommended at this location in horizon year 2027, realignment of Main Street and Trousdale Ferry Road adjacent to the railroad, improvements to SR-264 shoulders, lane widths, and intersection radii, and consideration of heavy vehicles would be recommended.

Any construction of an interchange must have a clearly defined purpose and need. In this case the purpose and need would be primarily for Economic Development by promoting safe and efficient operations, by providing an alternative route to Main Street, and by alleviating traffic volume magnitude and distribution.

If an IJS shows that an interchange is recommended at this location in horizon year 2027, realignment of Main Street and Trousdale Ferry Road adjacent to the railroad would be recommended.

CHAPTER 5: EVALUATION AND STUDY RECOMMENDATIONS

5.1 Final Recommendations

Methods

Functional drawings and draft recommendations were developed for intersections that were not performing to full traffic efficiency. Traffic capacity and operations modeling was used to investigate and confirm that certain improvement concepts would function in an acceptable manner and that the proposed recommendations would provide improvement. The functional drawings and draft recommendations are



intended to facilitate the movement of not only cars, but also freight vehicles. Synchro Models were used to separate recommendations into three separate categories: Immediate, Interim, and Ultimate.

Bradford Blvd: Bradford Blvd at SR-53 has a recommendation of an exclusive southbound right turn lane on SR-53. Town officials have noted previously that trucks that wish to use Bradford Blvd to access the fuel station have damaged the curb radius for the southbound approach. This recommendation would provide improvement in delay for gap acceptance resulting in increased LOS (Table 5.1) and an ultimate improvement in roadway structure.

Bradford Blvd. at SR-53 has an ultimate recommendation of signaling the intersection while providing an exclusive southbound right turn lane. In addition to this, it is also recommended that an exclusive southbound right turn lane be provided at the southern entrance of the fuel station. Nearby driveways should have restricted access to alleviate congestion and travel friction. This recommendation would improve safety measures at this intersection along with restricting access at specific locations.

**INTERSECTION LEVEL OF SERVICE ANALYSIS
Gordonsville CTPG - SR-53/SR-141**

Table 5.1:

		Existing (2017)			Horizon Year (2027) ²			Recommended Horizon Year (2027) ²		
		Peak Period ¹								
SR-53 @ Bradford Ave	NB	A	A	A	A	A	B	A	A	A
	SB	A	A	A	A	A	A	A	A	A
	EBL	B	B	C (16s)	C (20s)	C (17s)	E (37s)	C (20s)	C (16s)	D (31s)
	EBR	B	B	C (16s)	C (20s)	C (17s)	E (37s)	C (20s)	C (16s)	D (31s)
	WBL	B	B	B	C (15s)	B	C (16s)	C (15s)	B	C (16s)
	WBR	B	B	B	C (15s)	B	C (16s)	C (15s)	B	C (16s)

Interchange Modification Recommendations/Suggestions: There were multiple options that were presented for the interchange. The options are categorized as immediate, interim, and ultimate solutions. These include:

- Update and perform maintenance on existing traffic signal equipment at the EB Ramp (Immediate)
- Signalization of the WB Ramp
- Turn Lane Improvements for both WB Ramp and EB Ramp (Interim)
- Turn Lane Improvements at EB Ramp and Roundabout at WB Ramp (Interim)
- Interchange reconstruction: Single-Point Interchange (SPUI) or Tight-Diamond Interchange (TDUI) (Ultimate)



The LOS was projected using the recommended scenarios to provide contrast (Table 5.2).

Conducting regular maintenance on signal equipment would help provide significant improvement to traffic movement and delay within the area. It was noted that instead of using detection loops at this area, video or radar detection would be preferred to account for the heavy truck volume and minimize constant calls for all approaches.

Simulation traffic modeling was shown to convey that signalization of the I-40 WB Ramp under existing geometric conditions would not be recommended. Multiple factors impact this conclusion, which include vehicle queuing between the ramps, lack of adequate turn lane storage, closely-spaced nature of the existing I-40 ramp intersection, heavy amount of truck volume within the area, and a higher potential for crashes to occur due to high amount of delay.

Turn lane improvements at the EB Ramp include separate eastbound and westbound turn lanes and northbound right turn lane. Turn lane improvements at the WB Ramp include channelized right turn lanes for the westbound and southbound approaches. It was noted that this would temporarily relieve some travel delays, but congestion at the interchange would still be present. The existing radius at the EB Ramp does not provide trucks a wide enough turning movement to travel southbound along SR-53, which contributes to delay for passenger vehicles directly behind trucks.

A roundabout at the WB ramp with turn lane improvements at the EB ramp provides another option that would help significantly with LOS delay and safety concerns. The roundabout provides an interim improvement scenario until such time the ultimate recommended improvement (interchange reconstruction) can be implemented. A roundabout would increase the lifespan of the existing interchange. Within this scenario, the gas station on the east side of SR- 53 adjacent to the EB Ramp would have controlled access management with a right-in/right-out at the gas station's northern drive. Right-of-Way is an issue within this scenario due to easements and dedication to provide for roundabout "slip lanes". The roundabout scenario was deemed as an option, not a preferred alternative, due to concern over high truck volumes and local familiarity.

The ultimate scenario at the interchange is to implement a reconfigured design. A single-point interchange would provide simultaneous left turn movement for those vehicles exiting I-40 and a single traffic signal provides less delay.

A tight diamond interchange is the preferred ultimate scenario at the interchange. Town officials have noted that congestion has been an ongoing issue with those vehicles and heavy trucks that wish to make left turn movement onto the eastbound or westbound ramps. The new configuration would provide an exclusive thru and left turn lane in both directions, which would widen the cross-section from 3-lanes to 4-lanes. In order to construct a tight diamond interchange, the bridge structure would be widened to provide the proposed cross-section. Signal coordination between the ramps would also need to take place. This recommendation would improve desired traffic movements and congestion within the area, while also providing safety for those that wish to make left turn movements onto either ramp.

**INTERSECTION LEVEL OF SERVICE ANALYSIS
Gordonsville CTPG - SR-53/SR-141
Recommended Horizon Year (2027)**

Table 5.2:

Intersection		Signalize Both			Scenario 1 - Turn Lane Improvements			Scenario 2 - Roundabout WB Ramp			Scenario 3 - New Interchange				
		AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM		
SR-53 @ I-40 WB	NB	D (36s)	B	D (47s)	B	A	B	D (30s)	C (20s)	B	C (22s)	C (17s)	C (21s)		
	SB				A	A	A	C (17s)		B				A	C (18s)
	WB				D (34s)	C (18s)	D (33s)	C (17s)		A				C (17s)	C (17s)
SR-53 @ I-40 EB	TOTAL	F (96s)	C (22s)	F (86s)	C (31s)	B	C (25s)	C (31s)	B	C (25s)		B	C (22s)		

JMZ Drive: The proposed recommendation for JMZ Drive at SR-53 is to provide an exclusive northbound right turn lane along SR-53. This would server heavy right turn vehicle demand. Throughput along SR-53 and gap acceptance should improve with the installation of a right turn lane as evidenced by an increased LOS compared to the Horizon year projections (Table 5.3). The right turn lane would also provide an improvement from a safety perspective.

Gordonsville CTPG - SR-53/SR-141

Table 5.3:

Intersection		Existing (2017)			Horizon Year (2027) ²			Recommended Horizon Year (2027) ²		
		AM	MD	PM	AM	MD	PM	AM	MD	PM
SR-53 @ JMZ Drive	NB	A	A	A	A	A	A	A	A	A
	SB	A	A	A	A	A	A	A	A	A
	WBL	B	B	C (15s)	C (22s)	B	E (38s)	C (22s)	B	E (36s)
	WBR	B	B	B	C (16s)	B	D (27s)	B	B	C (24s)

SR-53 at Main St (SR-141): The existing 4-way stop is operating satisfactorily in the present day, but the LOS will decline by the horizon year 2027 (Table 5.4).

SR-53 at Main St (SR-141) has two recommended scenarios that would alleviate delay caused by the existing 4-way stop. These include:

- Westbound Channelized Right Turn
- Conversion to a roundabout with possible westbound bypass lane

The volume of the westbound right turn approach is significantly high at this intersection. Channelization of this approach would alleviate delay dependent on northbound throughput and eastbound left turn volumes. From a safety standpoint, rear-end crashes would become more prominent at this intersection due to hesitation in traffic movement.

Table 5.4:

**INTERSECTION LEVEL OF SERVICE ANALYSIS
Gordonsville CTPG - SR-53/SR-141**

Intersection		Scenario 1 - Channelization						Scenario 2 - Roundabout					
		AM		MD		PM		AM		MD		PM	
SR-53 @ SR-141	NB	B	A	B	B	A	B	A	B	A	B	B	
	SB	D (30s)	A	D (34s)	B	A	B	A	C(22s)	A	C(16s)	C(22s)	
	EB	C (18s)	A	C (22s)	B	A	B	A	C(17s)	A	C(17s)	C(16s)	
	WB	B	A	C (17s)	C (15s)	A	B	A	B	B	B	C(16s)	

An alternative and ultimate recommendation for this intersection is to convert the 4-way stop to a roundabout with a westbound bypass lane to account for the heavy westbound right traffic volume. A roundabout at this location would provide a “Gateway Entrance” to the town, along with reductions in delay and potential rear-end crashes.

Pedestrian Improvements: Increases in population by the Horizon Year 2027 will increase pedestrian and bicycle traffic as well as vehicular traffic. Projected increases in vehicular volume to the Horizon Year 2027 will increase the need for safe pathways for pedestrians and bicyclists. Improvements to the sidewalk near the school will encourage students to walk to school with the goal of lessening vehicular traffic. Completing gaps in the existing sidewalk and providing safe access at a crosswalk will facilitate this goal. As the commercial area near I-40 develops and extends toward Main Street, a future sidewalk connection may be necessary to facilitate the safe movement of pedestrians.

LOS for Recommended Scenario

The LOS for all recommended scenarios discussed in this section is depicted Figures 5.1 and 5.2. When compared to the LOS for the Horizon year, results are definitively improved.



Figure 5.1:



Figure 5.2:



Recommendations

Final recommendations are listed in Table 5.5 and shown in Figures 5.2, 5.3, and 5.4. Synchro Models were used to separate recommendations into three separate categories: Immediate, Interim, and Ultimate. Due to the cost of the recommended infrastructure improvements, immediate and interim measures can be taken to improve LOS and crash rates until an ultimate measure becomes feasible. Each project also comes with a recommendation for the time-frame for improvements: short term, mid-term or long term. Project sheets detailing each recommendation are included in Chapter 7.

Immediate recommendations include signal maintenance of the Eastbound Ramp. In addition to using Synchro, SimTraffic was used to better show that signaling both ramps would worsen existing conditions due to insufficient geometrics at the existing interchange.

Interim recommendations include turn lane improvements at the ramps, and channelization of the Westbound right turn lane at SR-53 and Main Street.

Ultimate recommendations include constructing a tight diamond or single point interchange to replace the existing interchange and a roundabout at SR-53 and Main Street. These recommendations reflect the LOS differences between Horizon Year Existing Conditions and Recommended Horizon Year Conditions. With input from TDOT and town officials, it was determined that turn lane improvements were the recommended interim option and the tight diamond interchange is the ultimate recommended option for the I-40 interchange. Additionally, sidewalks along Main Street extending toward SR-53 are recommended.

Table 5.5: Recommended Improvements

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
I1, I2, I3	Multiple	Perform Maintenance on Existing I-40 EB Ramp Vehicle Detection and Implement Maintenance Agreement	Immediate	Short Term	\$21,500
		Consider Alternative Technology for Vehicle Detection at I-40 Signal			
		Modify Flashing Operation at Existing 4-way Stop to Simultaneous Flashing			
S1	SR53 @Bradford	Install SB Right Turn Lane	Interim	Short Term	\$160,000
S2	SR53 @I-40	Install Turn Lanes, Modify EB Ramp Signal at I-40	Interim	Short Term	\$760,000
S3	SR53 @JMZ Drive	Install NB Right Turn Lane	Ultimate	Short Term	\$120,000
M1	SR53 @Bradford	Improve Access Control, Install Traffic Signal, Install Turn Lanes	Ultimate	Mid-Term	\$650,000
M2	SR53 @East Main	Modify WB Right Turn Lane	Interim	Mid-Term	\$280,000
M3	Downtown Gordonsville	Infill Existing Sidewalks and Install Crosswalk	Interim	Mid-Term	\$30,000
L1	SR53 @East Main	Install Roundabout	Ultimate	Long Term	\$1,300,000
L2	SR53 @I-40	Widen and Reconfigure I-40 Interchange	Ultimate	Long Term	\$36,000,000
L3	Downtown Gordonsville	Extend Sidewalk to SR-53	Ultimate	Long Term	\$60,000

Figure 5.3:

Immediate Priority

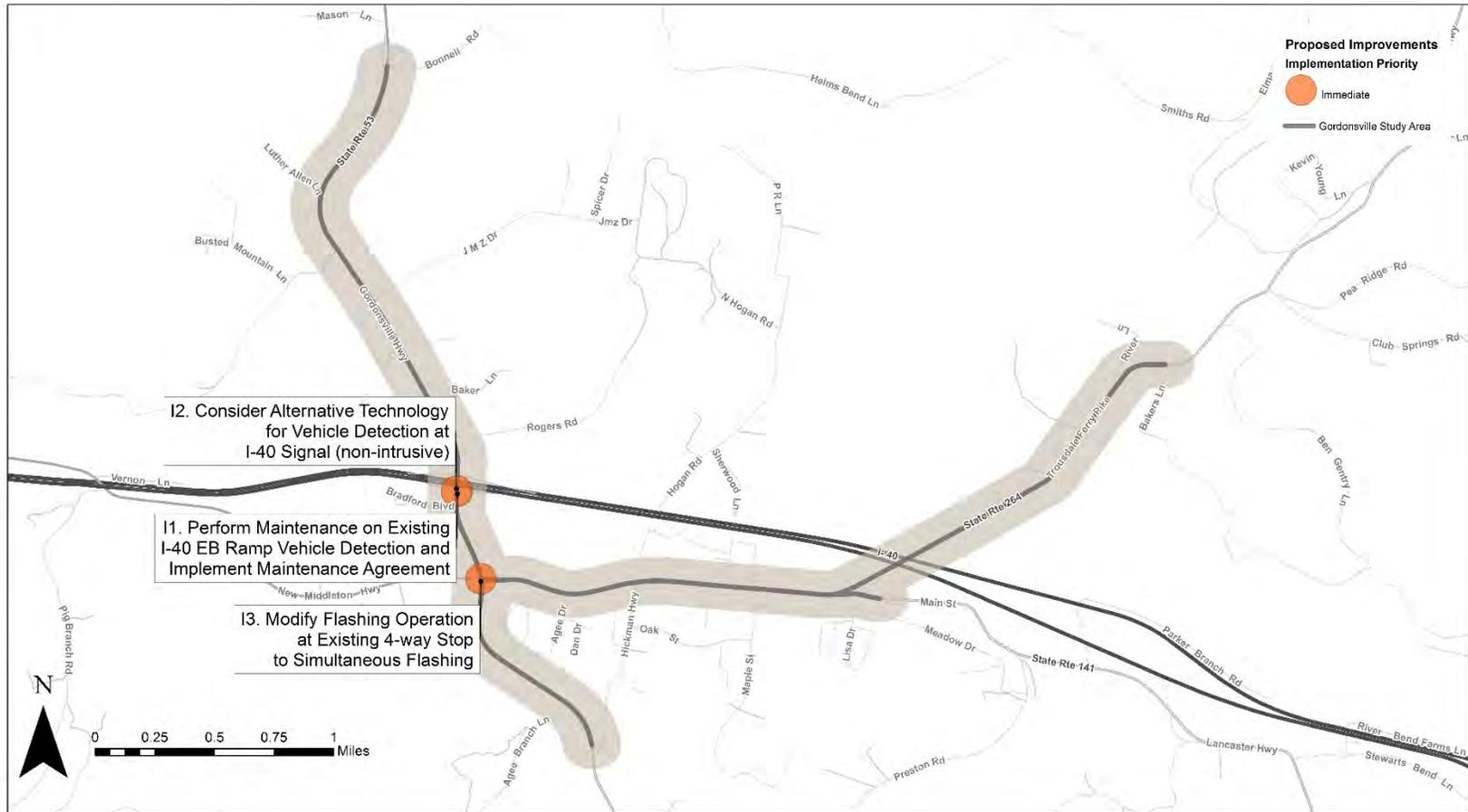


Table 5.4:

Short Term Priority

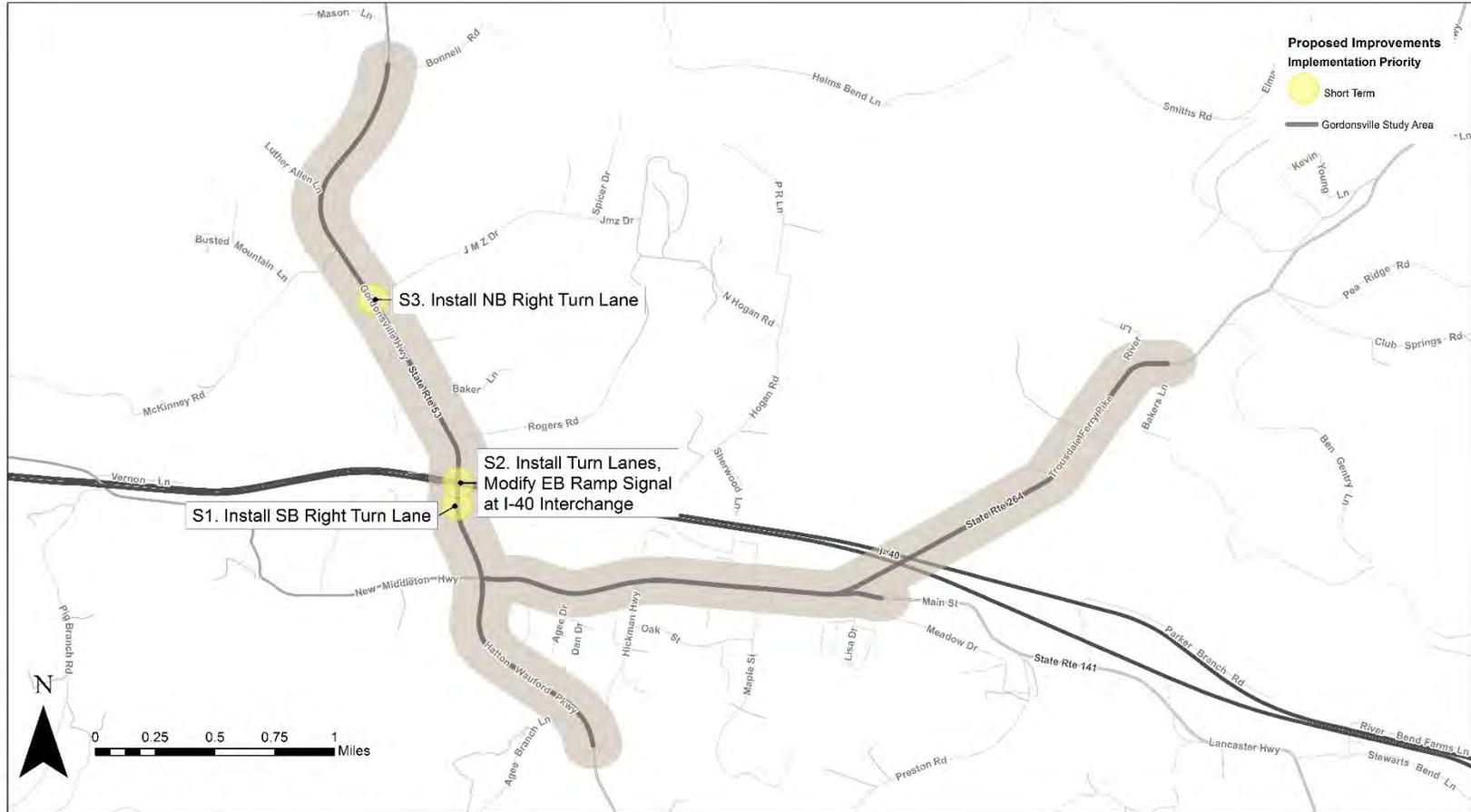
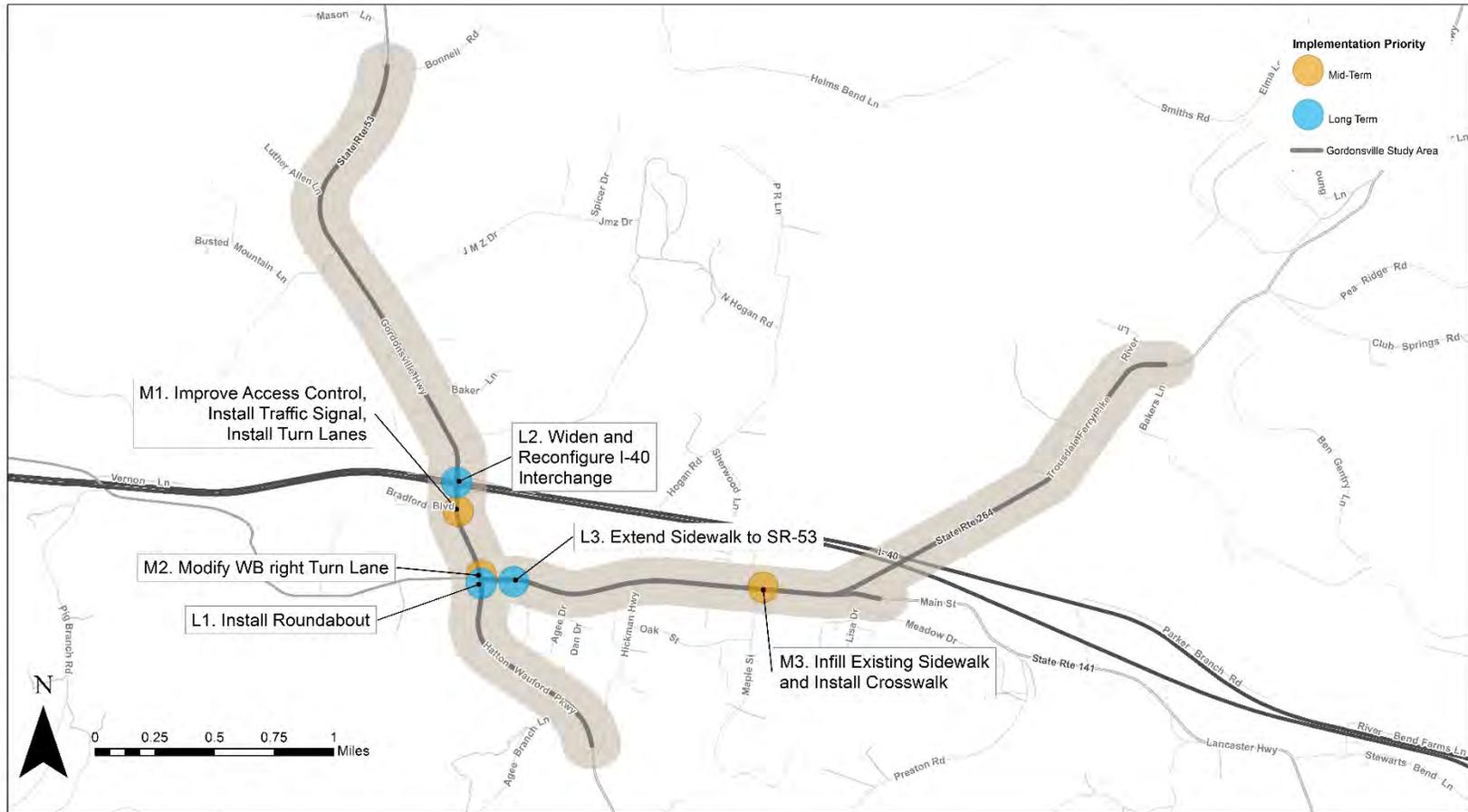


Table 5.5:

Mid and Long Term Priority



5.2 Action Plan

Project Implementation

Immediate needs in the study area should be addressed as soon as possible to achieve short term relief from noted traffic problems. Capital funding management should also be organized with TDOT to alleviate costs of proposed design projects.

Programmatic Actions

Signal maintenance Agreement- It is recommended that the Town enter into a traffic signal maintenance agreement with a vendor to provide routine and emergency traffic signal maintenance in the near term. Multiple communities within the Middle Tennessee area hold a signal maintenance agreement, and this can provide stability for traffic operations within the Town. Following the approval of a signal maintenance agreement, signal maintenance should be performed on the existing vehicle detection at SR-53 and the I-40 EB ramp traffic signal. This will immediately provide noticeable improvements in delay at the intersection by altering the light cycle to allow more vehicles to pass through in times of heavy congestion. Because of the number of heavy vehicles negatively impacting the pavement quality at this intersection, it is further recommended that alternative technology for vehicle detection that does not rely on sensors placed into the pavement (non-intrusive) be considered for the signal at SR-53 and I-40.

Additionally, the flashing operation at the existing 4-way stop at SR-53 and SR-51 should be modified to simultaneous flashing to improve safety and function.

Access Management is currently an issue along SR-53, specifically south of the interchange. Drivers entering and exiting the roadway at multiple closely placed points decreases the speed of traffic flow and increases crashes. TDOT has provided access management guidelines for use along state routes, and it is recommended that the Town of Gordonsville incorporate access management guidelines into any future developments or redevelopments within this area.

Capital Improvement Plan: Projects shown above should be included in future Capital Improvement Plans in order to build consensus around the project and organize match funding where necessary.

Implementation through partnership: Recommended improvements within the short, mid and long term timeframes should be closely coordinated with TDOT to secure funding for design and construction.

5.3 Funding:

Funding of the projects will require a combination of federal, state and local funds. The table below shows some of the funding sources that may be available. It should be noted that federal and state funds require a matching ratio to be provided by the Town or County. Other than the options below and local funds, funding of the recommended improvements would fall to regular TDOT project funding sources for any projects on state routes. The Town may need to leverage private dollars in public-private partnerships as projects are constructed along the roadway. Some project improvements can be considered for inclusion in larger roadway maintenance projects to maximize the impact of limited funds.

National Highway Performance Program	Combines former funding programs for Interstate Maintenance (IM), National Highway System (NHS) and the portion of the Bridge Replacement & Rehabilitation (BRR) used for bridges on the federal-aid system. Provides funding for construction, reconstruction, resurfacing, restoration, rehabilitation, preservation, or operational improvement of segments of the National Highway System. This includes Interstate highways and bridges on the NHS. Projects must support progress toward national goals for the condition and performance of the system.	80% Federal 20% Non-Federal 90 to 95% Federal match available for certain freight projects.
Surface Transportation Block Grant (STBG)	Provides funding for roads functionally classified as rural major collector and above. Funds may be utilized on projects in Rural Areas, Urbanized Areas, Small Urban Areas, Enhancement, Safety and Rail-Highway Crossings. Also funds bridge replacement & rehabilitation on non-federal aid routes (activities previously under the BRR local program).	80% Federal 20% Non-Federal
Transportation Alternatives (set aside of STP)	Combines former funding programs for Enhancements, Safe Routes to Schools, Scenic Byways, and Recreational Trails. Eligible activities include bicycle and pedestrian facilities, sidewalks near elementary and middle schools, main street and boulevard projects, and environmental mitigation to address impacts of the transportation system.	80% Federal 20% Non-Federal
Highway Safety Improvement Program (HSIP)	Provides funds to make improvements to high hazard locations on eligible roadways, including highway-rail grade crossings. Projects are selected based on crash rate and crash frequency.	90% Federal 10% Non-Federal
TDOT Spot Safety Improvement Program	Provides funds for projects on state routes or intersections with state routes. May include funds to install a traffic signal on a state route, fix a sight-distance problem on or near a state route, add a turning lane or lanes with or without signals on a state route, install school flashing signals on a state route, or install a flashing beacon on a state route. Emphasis is placed on cities and towns with a population of less than 5000.	90-100% Federal
TDOT Industrial Access Program	Provides funds to construct a road for a new or newly expanding industry.	50% State, 50% Local



CHAPTER 6: PUBLIC INVOLVEMENT

6.1 Steering Committee

A working Steering Committee selected by the Town of Gordonsville was formed to assist the study effort. Steering Committee Members included:

James M. Gibbs, Mayor, Town of Gordonsville
Terri Lynn Weaver, State Representative, Tennessee State House of Representative
Larry Kilzor, Town Recorder, Town of Gordonsville
Barry H. Smith, Smith County Board of Education
Shannon Hunt, Chief, Gordonsville Police Department
Jeff Crocket, Smith County EMS/911
Terry Givens, Smith County EMS
Sonny Carter, Smith County EMS
Jerry Warren, Warren and Associates Engineering

Three meetings were held to guide and provide input to the study team.

Meeting 1: Objective and Visioning Session - March 17, 2017

Meeting 2: Preliminary Analysis Work Session - June 15, 2017

Meeting 3: Recommendations Work Session - September 14, 2017

All meetings took place at the Town Hall/ Main Library/ Police Station at 65 Main St, Gordonsville, TN 38563

6.2 Public Engagement

Three meetings were held to encourage public engagement.

I. Draft Recommendations Open House and Presentation to Town Council

A public workshop was held October 9, 2017 at 6 PM to present preliminary results of the recommendations analysis and gather feedback from the community and stakeholders.



II. Planning Commission Meeting

A presentation summarizing the study's methodology, analysis results and recommendations was made before the local planning commission at the conclusion of the study on October 26, 2017 at 6 PM.



CHAPTER 7: PROJECT SHEETS

A full description of each recommended project is included in this chapter.

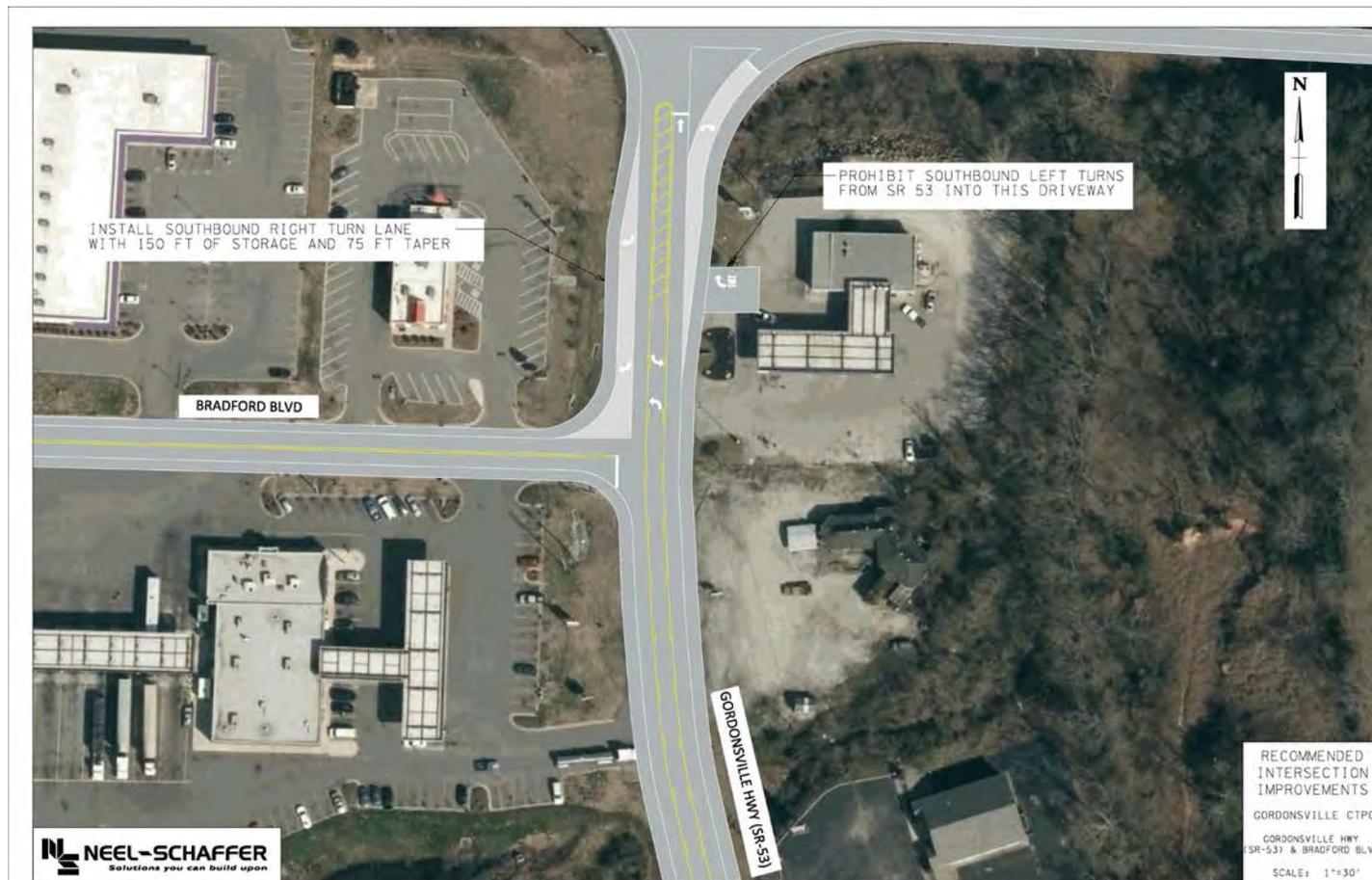


Project Sheet: S1

SR-53 @ Bradford Boulevard

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
S1	SR53 @Bradford	Install SB Right Turn Lane	Interim	Short Term	\$160,000

Bradford Blvd at SR-53 has a recommendation of an exclusive southbound right turn lane on SR-53. Town officials have noted previously that trucks that wish to use Bradford Blvd to access the fuel station have damaged the curb radius for the southbound approach. This recommendation would provide improvement in delay for gap acceptance and an ultimate improvement in roadway structure.



Project Sheet: S2

SR-53 @ I-40

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
S2	SR53 @I-40	Install Turn Lanes, Modify EB Ramp Signal at I-40	Interim	Short Term	\$760,000

Turn lane improvements at the EB Ramp include separate eastbound and westbound turn lanes and northbound right turn lane. Turn lane improvements at the WB Ramp include channelized right turn lanes for the westbound and southbound approaches. It was noted that this would temporarily relieve some travel delays, but congestion at the interchange would still be present. The existing radius at the EB Ramp does not provide trucks a wide enough turning movement to travel southbound along SR-53, which contributes to delay for passenger vehicles directly behind trucks.

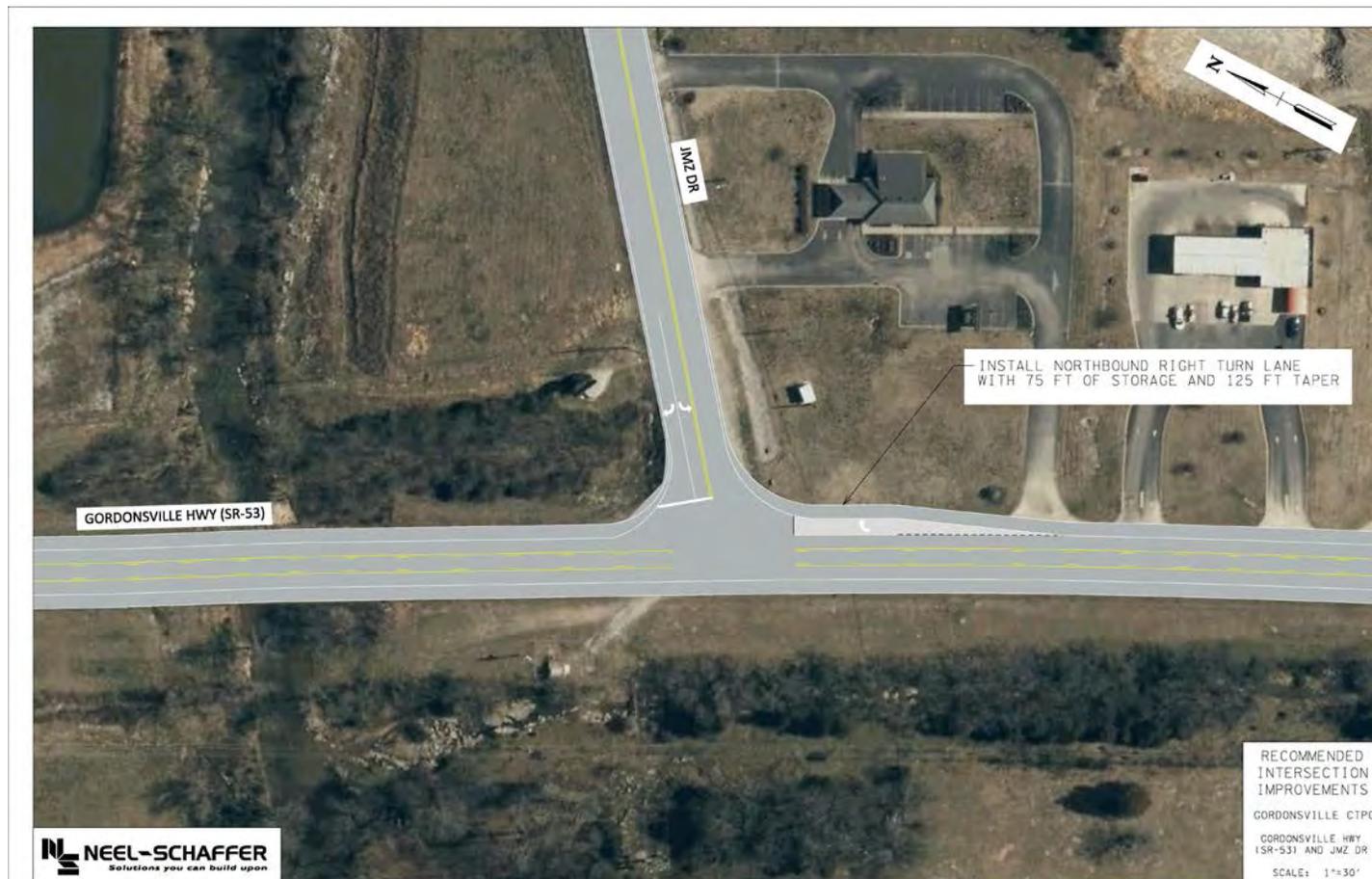


Project Sheet: S3

SR-53 @ JMZ Drive

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
S3	SR53 @JMZ Drive	Install NB Right Turn Lane	Ultimate	Short Term	\$120,000

The proposed recommendation for JMZ Drive at SR-53 is to provide an exclusive northbound right turn lane along SR-53. This would server heavy right turn vehicle demand. Throughput along SR-53 and gap acceptance should improve with the installation of a right turn lane. The right turn lane would also provide an improvement from a safety perspective.



Project Sheet: M2

SR-53 @ Bradford Boulevard

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
M1	SR53 @Bradford	Improve Access Control, Install Traffic Signal, Install Turn Lanes	Ultimate	Mid-Term	\$650,000

In the mid-term, signalization of the intersection and access improvements including the reconfiguration of existing entrances and exits and the construction of shared of a shared access driveway for the properties to the east of Bradford Boulevard should be considered. These improvements will improve safety and alleviate congestion by promoting a smoother traffic flow.



Project Sheet: M2

SR-53 @ East Main

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
M2	SR53 @East Main	Modify WB Right Turn Lane	Interim	Mid-Term	\$280,000

The existing 4-way stop is not operating efficiently in the present day, and the LOS will become much worse in the horizon year 2027. The volume of the westbound right turn approach is significantly high at this intersection. Channelization of this approach would alleviate delay dependent on northbound throughput and eastbound left turn volumes. From a safety standpoint, rear-end crashes would become more prominent at this intersection due to hesitation in traffic movement.



Project Sheet: L1

SR-53 @ East Main

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
L1	SR53 @East Main	Install Roundabout	Ultimate	Long Term	\$1,300,000

The existing 4-way stop is not operating efficiently in the present day, and the LOS will become much worse in the horizon year 2027. The volume of the westbound right turn approach is significantly high at this intersection. An alternative to modification of the westbound right turn lane (M2) and the ultimate recommendation for this intersection is to convert the 4-way stop to a roundabout with a westbound bypass lane to account for the heavy westbound right traffic volume. A roundabout at this location would provide a “Gateway Entrance” to the town, along with reductions in delay and potential rear-end crashes.



Project Sheet: L2 Alternative A

SR-53 @ I-40

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
L2 SR53 @I-40		Widen and Reconfigure I-40 Interchange	Ultimate	Long Term	\$36,000,000

The ultimate solution at the interchange is to implement a reconfigured design. A single-point interchange would provide simultaneous left turn movement for those vehicles exiting I-40 and a single traffic signal provides less delay.



Project Sheet: L2 Alternative B

SR-53 @ I-40

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
L2 SR53 @I-40		Widen and Reconfigure I-40 Interchange	Ultimate	Long Term	\$36,000,000

A tight diamond interchange is an alternative ultimate scenario at the interchange. Town officials have noted that congestion has been an ongoing issue with those vehicles and heavy trucks that wish to make left turn movement onto the eastbound or westbound ramps. The new configuration would provide an exclusive thru and left turn lane in both directions, which would widen the cross-section from 3-lanes to 4-lanes. In order to construct a tight diamond interchange, the bridge structure would be widened to provide the proposed cross-section. Signal coordination between the ramps would also need to take place. This recommendation would improve desired traffic movements and congestion within the area, while also providing safety for those that wish to make left turn movements onto either ramp

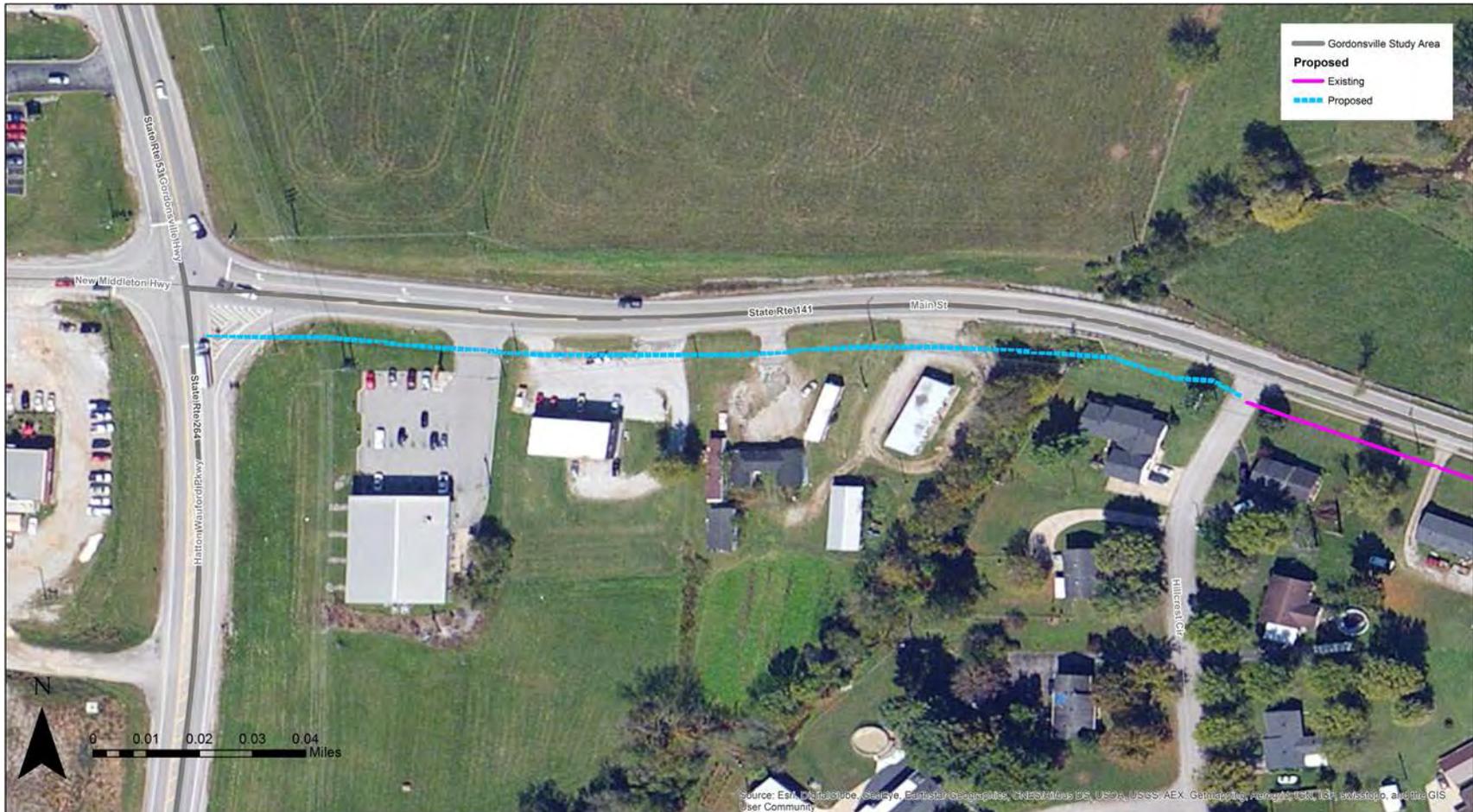


Project Sheet: L3

Downtown Gordonsville

Project ID	Location	Description	Implementation Sequence	Implementation Priority	Planning Level Cost Estimate
L3	Downtown Gordonsville	Extend Sidewalk to SR-53	Ultimate	Long Term	\$60,000

As the commercial area near I-40 develops and extends toward Main Street, a future sidewalk connection may be necessary to facilitate the safe movement of pedestrians.

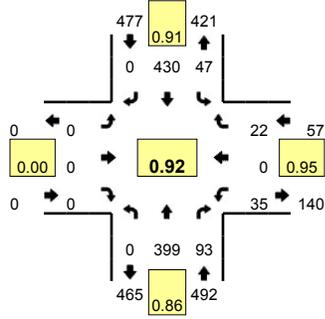


APPENDIX A: TURNING MOVEMENT COUNTS

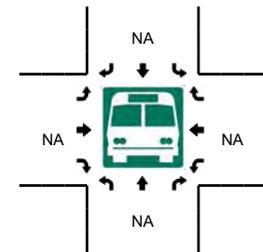
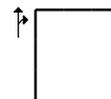
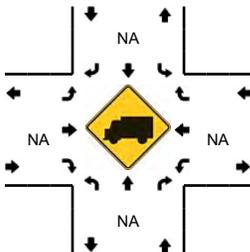
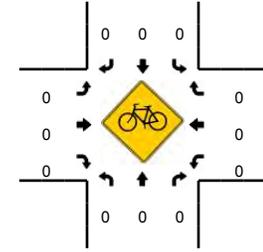
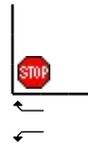
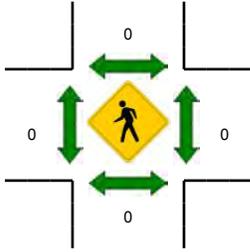
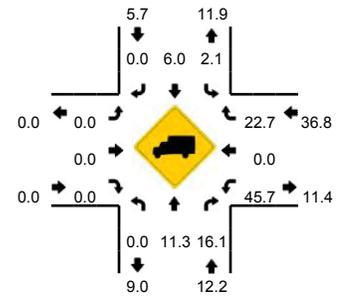


LOCATION: SR-53 -- JMZ Dr.
CITY/STATE: Gordonsville, TN

QC JOB #: 14223801
DATE: Wed, Mar 22 2017



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



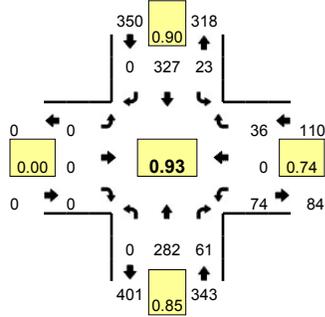
15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				JMZ Dr. (Eastbound)				JMZ Dr. (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	67	22	0	9	88	0	0	0	0	0	0	9	0	6	0	201	
7:15 AM	0	106	19	0	10	121	0	0	0	0	0	0	8	0	5	0	269	
7:30 AM	0	111	24	0	10	120	0	0	0	0	0	0	10	0	4	0	279	
7:45 AM	0	115	28	0	18	101	0	0	0	0	0	0	8	0	7	0	277	1026

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	444	96	0	40	480	0	0	0	0	0	0	40	0	16	0	1116	
Heavy Trucks	0	40	12		4	40	0		0	0	0		16	0	0		112	
Pedestrians		0				0				0				0				0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0			0
Railroad																		
Stopped Buses																		

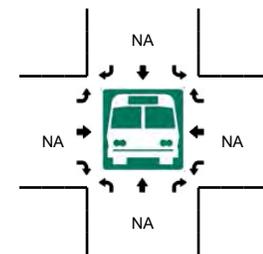
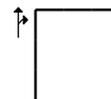
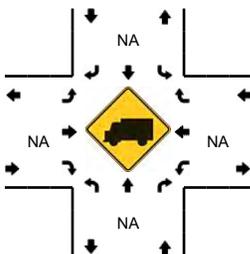
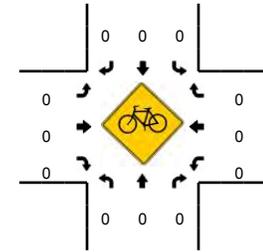
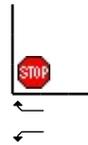
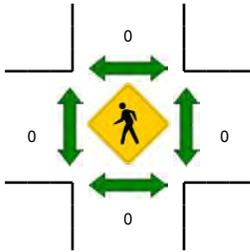
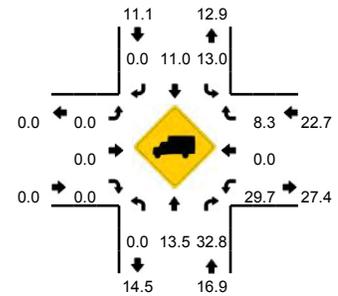
Comments:

LOCATION: SR-53 -- JMZ Dr.
CITY/STATE: Gordonsville, TN

QC JOB #: 14223802
DATE: Wed, Mar 22 2017



Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:45 AM -- 12:00 PM



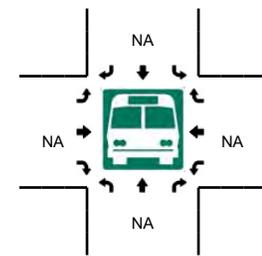
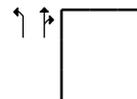
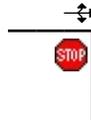
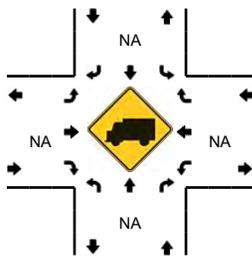
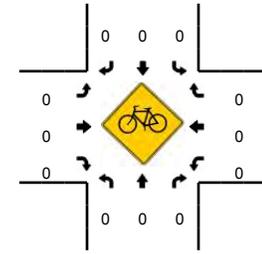
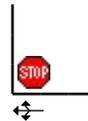
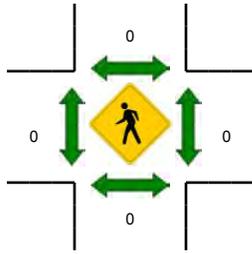
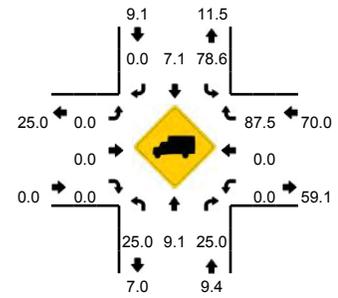
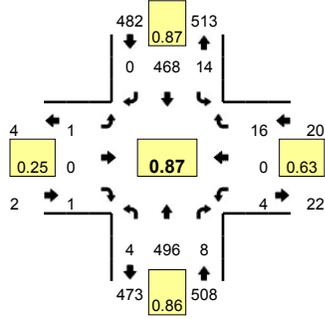
15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				JMZ Dr. (Eastbound)				JMZ Dr. (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	77	12	0	9	69	0	0	0	0	0	0	16	0	9	0	192	
11:15 AM	0	68	17	0	6	78	0	0	0	0	0	0	13	0	11	0	193	
11:30 AM	0	58	10	0	4	93	0	0	0	0	0	0	28	0	9	0	202	
11:45 AM	0	79	22	0	4	87	0	0	0	0	0	0	17	0	7	0	216	803
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	316	88	0	16	348	0	0	0	0	0	0	68	0	28	0	864	
Heavy Trucks	0	60	20		4	40	0		0	0	0		16	0	0		140	
Pedestrians		0				0				0				0				0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		0
Stopped Buses																		0

Comments:

LOCATION: SR-53 -- Rogers Rd
CITY/STATE: Carthage, TN

QC JOB #: 14223804
DATE: Wed, Mar 22 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				Rogers Rd (Eastbound)				Rogers Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	95	1	0	2	102	0	0	0	0	0	0	1	0	1	0	203	
7:15 AM	1	120	4	0	3	132	0	0	0	0	0	0	1	0	7	0	268	
7:30 AM	0	147	1	0	5	134	0	0	0	0	0	0	2	0	1	0	290	
7:45 AM	2	134	2	0	4	100	0	0	1	0	1	0	0	0	7	0	251	1012

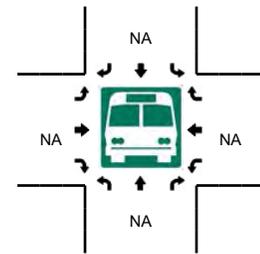
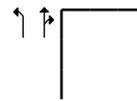
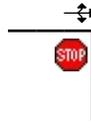
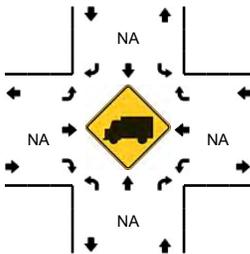
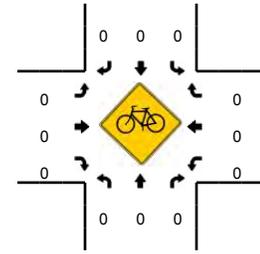
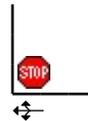
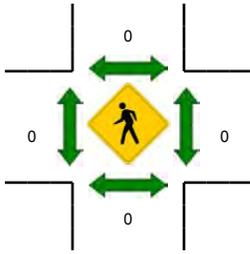
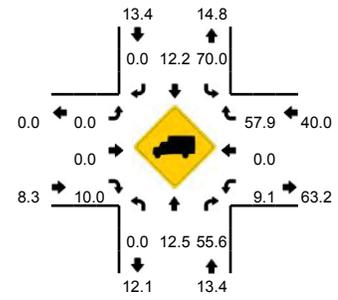
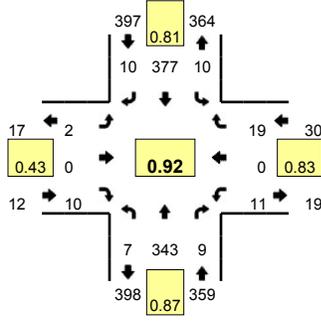
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	588	4	0	20	536	0	0	0	0	0	0	8	0	4	0	1160
Heavy Trucks	0	64	0		20	36	0		0	0	0		0	0	0		120
Pedestrians	0	0			0	0			0	0			0	0			0
Bicycles	0	0			0	0			0	0			0	0			0
Railroad																	
Stopped Buses																	

Comments:

LOCATION: SR-53 -- Rogers Rd
CITY/STATE: Carthage, TN

QC JOB #: 14223805
DATE: Wed, Mar 22 2017

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Peak 15-Min: 11:45 AM -- 12:00 PM

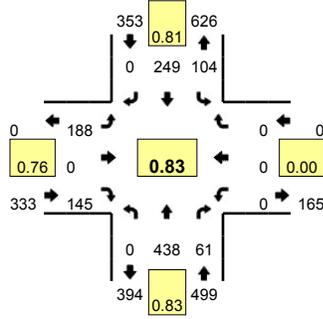


15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				Rogers Rd (Eastbound)				Rogers Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	1	91	5	0	3	77	1	0	1	0	1	0	4	0	5	0	189	
11:15 AM	3	79	1	0	5	83	3	0	0	0	1	0	3	0	6	0	184	
11:30 AM	1	74	1	0	2	117	4	0	0	0	2	0	3	0	4	0	208	
11:45 AM	2	99	2	0	0	100	2	0	1	0	6	0	1	0	4	0	217	798
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	396	8	0	0	400	8	0	4	0	24	0	4	0	16	0	868	
Heavy Trucks	0	52	0	0	0	40	0	0	0	0	0	0	0	0	12	0	104	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

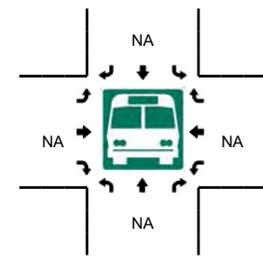
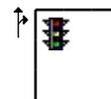
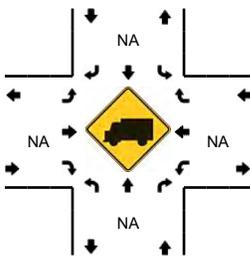
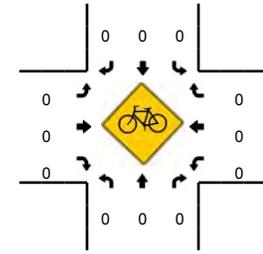
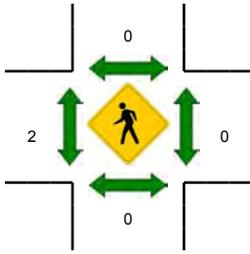
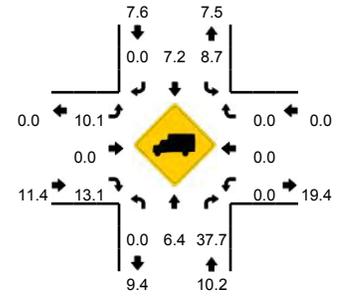
Comments:

LOCATION: SR-53 -- I-40 EB Ramp
CITY/STATE: Gordonsville, TN

QC JOB #: 14223807
DATE: Wed, Mar 22 2017



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Peak 15-Min: 7:30 AM -- 7:45 AM



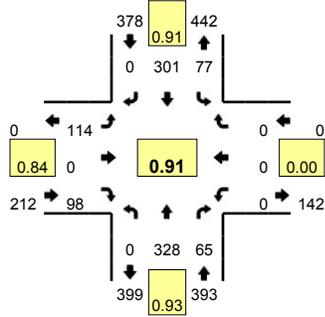
15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				I-40 EB Ramp (Eastbound)				I-40 EB Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	79	15	0	14	44	0	0	53	0	19	0	0	0	0	0	224	
7:15 AM	0	106	15	0	39	70	0	0	50	0	31	0	0	0	0	0	311	
7:30 AM	0	135	16	0	27	71	0	0	50	0	59	0	0	0	0	0	358	
7:45 AM	0	118	15	0	24	64	0	0	35	0	36	0	0	0	0	0	292	1185

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	540	64	0	108	284	0	0	200	0	236	0	0	0	0	0	1432
Heavy Trucks	0	36	20	0	12	16	0	0	32	0	20	0	0	0	0	0	136
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

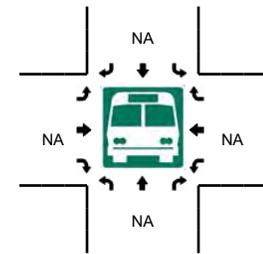
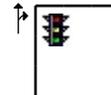
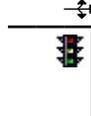
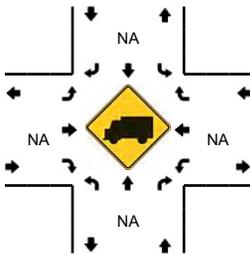
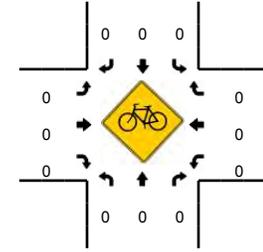
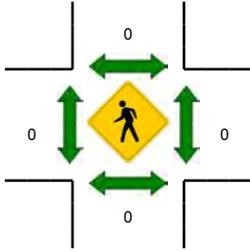
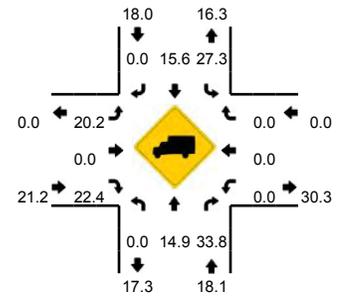
Comments:

LOCATION: SR-53 -- I-40 EB Ramp
CITY/STATE: Gordonsville, TN

QC JOB #: 14223808
DATE: Wed, Mar 22 2017



Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:45 AM -- 12:00 PM



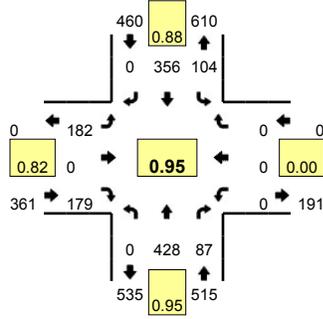
15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				I-40 EB Ramp (Eastbound)				I-40 EB Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	83	14	0	21	62	0	0	29	0	17	0	0	0	0	0	226	
11:15 AM	0	74	17	0	19	71	0	0	32	0	26	0	0	0	0	0	239	
11:30 AM	0	80	19	0	14	90	0	0	20	0	25	0	0	0	0	0	248	
11:45 AM	0	91	15	0	23	78	0	0	33	0	30	0	0	0	0	0	270	983

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	364	60	0	92	312	0	0	132	0	120	0	0	0	0	0	1080
Heavy Trucks	0	64	24		20	40	0		28	0	24		0	0	0		200
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

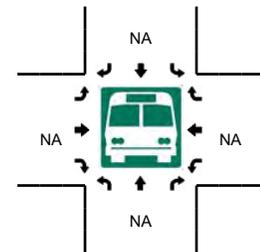
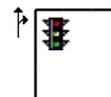
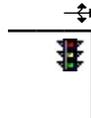
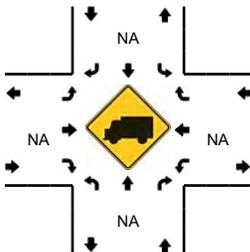
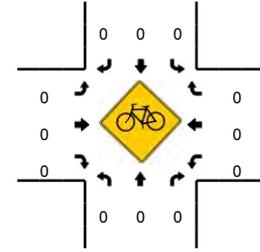
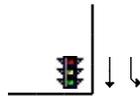
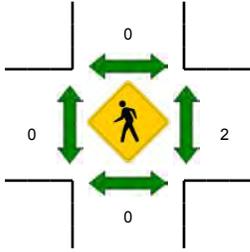
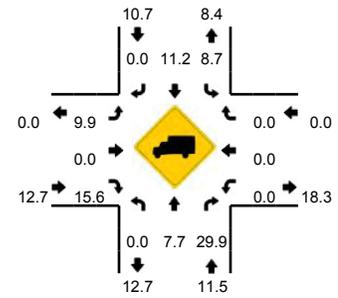
Comments:

LOCATION: SR-53 -- I-40 EB Ramp
CITY/STATE: Gordonsville, TN

QC JOB #: 14223809
DATE: Wed, Mar 22 2017



Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM



15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				I-40 EB Ramp (Eastbound)				I-40 EB Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:30 PM	0	84	16	0	20	92	0	0	38	2	46	0	0	0	0	0	298	
2:45 PM	0	81	23	0	28	110	0	0	34	0	51	0	0	0	0	0	327	
3:00 PM	0	109	26	0	31	99	0	0	36	0	52	0	0	0	0	0	353	
3:15 PM	0	115	21	0	23	85	0	0	53	0	35	0	0	0	0	0	332	1310
3:30 PM	0	105	18	0	18	88	0	0	40	0	51	0	0	0	0	0	320	1332
3:45 PM	0	99	22	0	32	84	0	0	53	0	41	0	0	0	0	0	331	1336
4:00 PM	0	79	21	0	36	110	0	0	35	0	52	0	0	0	0	0	333	1316
4:15 PM	0	85	32	0	26	86	0	0	64	0	56	0	0	0	0	0	349	1333

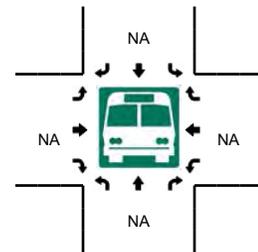
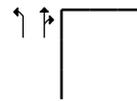
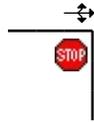
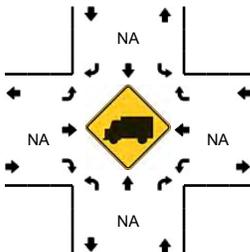
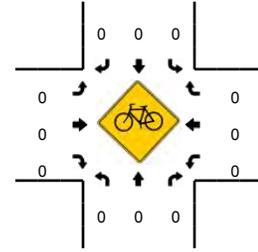
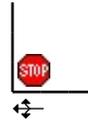
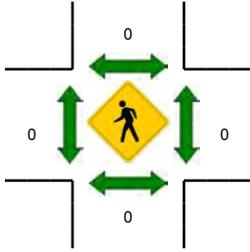
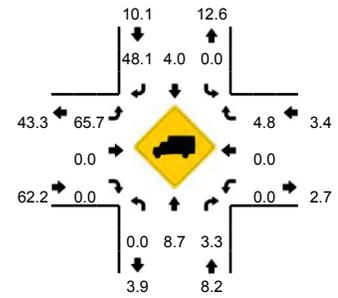
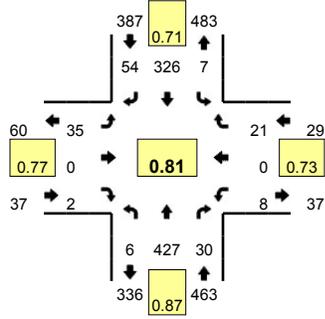
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	436	104	0	124	396	0	0	144	0	208	0	0	0	0	0	1412
Heavy Trucks	0	24	36	0	8	36	0	0	24	0	16	0	0	0	0	0	144
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

LOCATION: SR-53 -- Bradford Ave
CITY/STATE: Gordonsville, TN

QC JOB #: 14223810
DATE: Wed, Mar 22 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				Bradford Ave (Eastbound)				Bradford Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	76	4	0	2	45	10	0	11	0	1	0	1	0	6	0	158	
7:15 AM	0	113	15	0	2	81	14	0	7	0	0	0	4	0	6	0	242	
7:30 AM	2	126	5	0	3	115	19	0	7	0	0	0	3	0	4	0	284	
7:45 AM	2	112	6	0	0	85	11	0	10	0	1	0	0	0	5	0	232	916

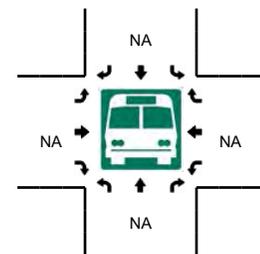
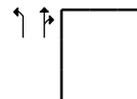
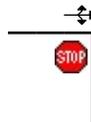
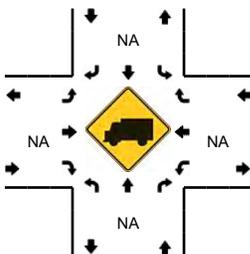
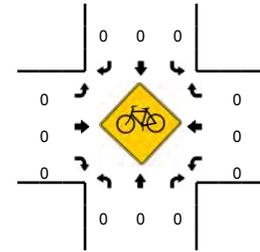
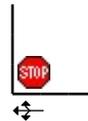
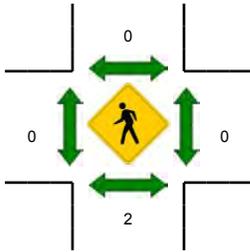
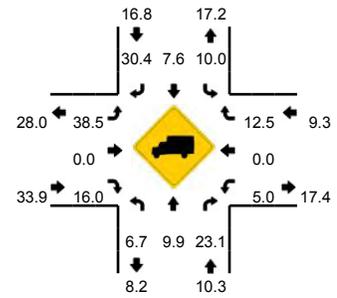
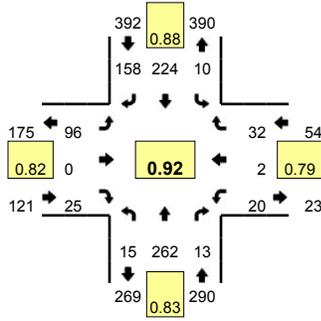
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	504	20	0	12	460	76	0	28	0	0	0	12	0	16	0	1136
Heavy Trucks	0	36	0	0	0	4	32	0	28	0	0	0	0	0	0	0	100
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

LOCATION: SR-53 -- Bradford Ave
CITY/STATE: Gordonsville, TN

QC JOB #: 14223811
DATE: Wed, Mar 22 2017

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:45 AM -- 12:00 PM

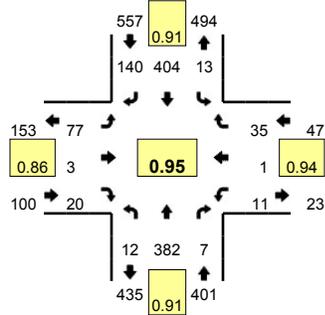


15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				Bradford Ave (Eastbound)				Bradford Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	6	75	6	0	2	35	38	0	15	0	8	0	7	1	9	0	202	
11:15 AM	4	56	4	0	1	56	40	0	22	0	3	0	1	0	9	0	196	
11:30 AM	2	64	1	0	5	70	36	0	28	0	8	0	4	1	7	0	226	
11:45 AM	3	67	2	0	2	63	44	0	31	0	6	0	8	0	7	0	233	857
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	12	268	8	0	8	252	176	0	124	0	24	0	32	0	28	0	932	
Heavy Trucks	0	32	0		0	24	40		44	0	4		0	0	0		144	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

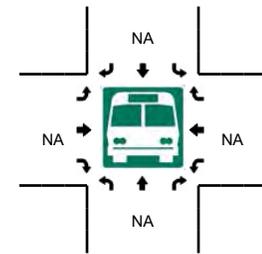
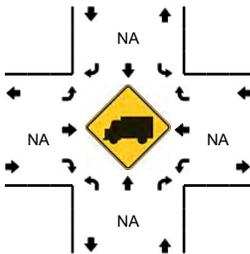
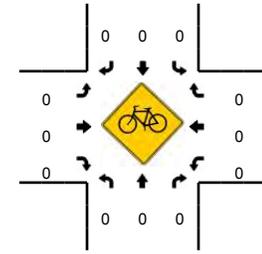
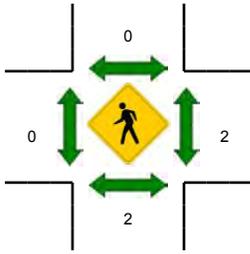
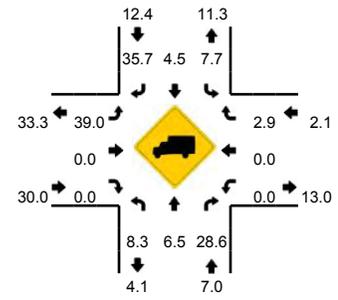
Comments:

LOCATION: SR-53 -- Bradford Ave
CITY/STATE: Gordonsville, TN

QC JOB #: 14223812
DATE: Wed, Mar 22 2017



Peak-Hour: 2:45 PM -- 3:45 PM
Peak 15-Min: 2:45 PM -- 3:00 PM



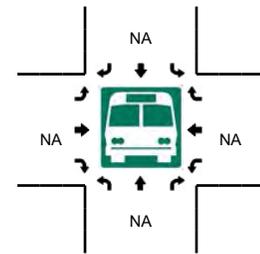
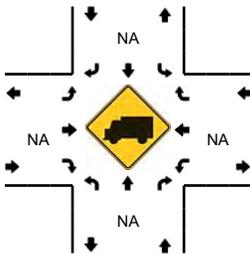
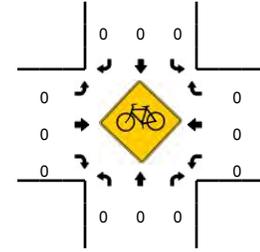
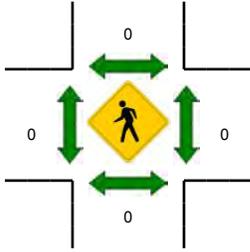
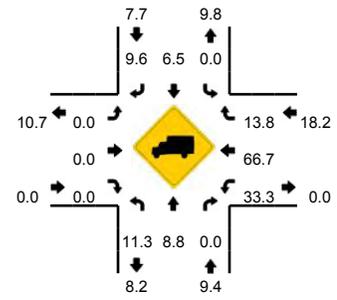
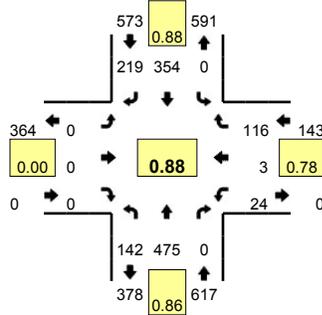
15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				Bradford Ave (Eastbound)				Bradford Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:30 PM	3	71	2	0	4	91	40	0	19	1	4	0	2	1	8	0	246	
2:45 PM	4	82	1	0	7	112	41	0	22	1	7	0	5	0	8	0	290	
3:00 PM	4	102	3	0	1	112	34	0	17	1	1	0	3	1	9	0	288	
3:15 PM	1	110	3	0	1	88	25	0	16	1	10	0	1	0	11	0	267	1091
3:30 PM	3	88	0	0	4	92	40	0	22	0	2	0	2	0	7	0	260	1105
3:45 PM	6	89	6	0	2	88	39	0	26	0	6	0	4	0	6	0	272	1087
4:00 PM	5	76	1	0	4	115	37	0	19	0	5	0	5	0	9	0	276	1075
4:15 PM	3	76	0	0	3	112	33	0	24	0	6	0	2	0	11	0	270	1078
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	328	4	0	28	448	164	0	88	4	28	0	20	0	32	0	1160	
Heavy Trucks	4	28	0		4	20	56		24	0	0		0	0	0		136	
Pedestrians		0				0				0				0			0	
Bicycles		0				0				0				0			0	
Railroad																	0	
Stopped Buses																		

Comments:

LOCATION: SR-53 -- I-40 WB Ramp
CITY/STATE: Gordonsville, TN

QC JOB #: 14223813
DATE: Wed, Mar 22 2017

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



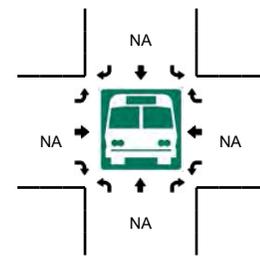
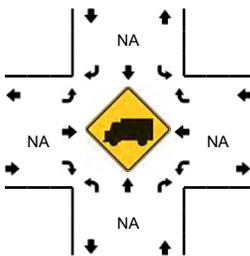
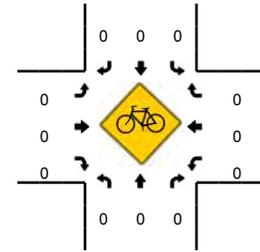
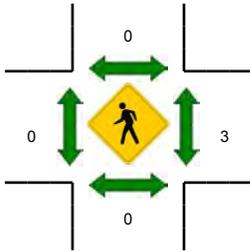
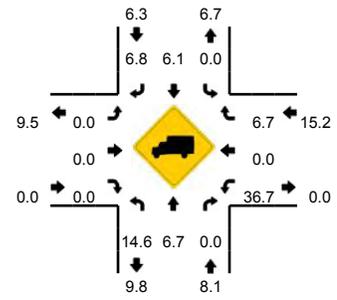
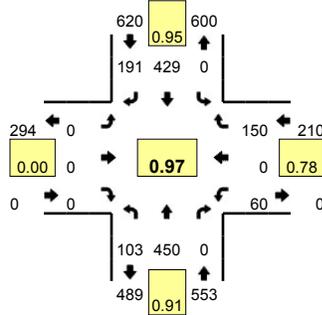
15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				I-40 WB Ramp (Eastbound)				I-40 WB Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	32	55	0	0	0	38	67	0	0	0	0	0	9	0	19	0	220	
6:15 AM	44	62	0	0	0	46	48	0	0	0	0	0	5	0	22	0	227	
6:30 AM	41	79	0	0	0	46	55	0	0	0	0	0	4	0	35	0	260	
6:45 AM	35	88	0	0	0	55	58	0	0	0	0	0	5	0	29	0	270	977
7:00 AM	33	95	0	0	0	51	60	0	0	0	0	0	7	0	29	0	275	1032
7:15 AM	32	126	0	0	0	104	58	0	0	0	0	0	7	2	26	0	355	1160
7:30 AM	44	138	0	0	0	93	69	0	0	0	0	0	6	0	30	0	380	1280
7:45 AM	34	123	0	0	0	82	42	0	0	0	0	0	5	0	30	0	316	1326
8:00 AM	32	88	0	0	0	75	50	0	0	0	0	0	6	1	30	0	282	1333
8:15 AM	43	89	0	0	0	78	46	0	0	0	0	0	13	0	20	0	289	1267
8:30 AM	21	55	0	0	0	61	30	0	0	0	0	0	9	1	16	0	193	1080
8:45 AM	17	65	0	0	0	61	36	0	0	0	0	0	9	0	26	0	214	978
9:00 AM	18	69	0	0	0	67	33	0	0	0	0	0	8	1	34	0	230	926
9:15 AM	21	72	0	0	0	72	35	0	0	0	0	0	10	2	23	0	235	872
9:30 AM	18	70	0	0	0	52	33	0	0	0	0	0	13	0	26	0	212	891
9:45 AM	20	73	0	0	0	42	38	0	0	0	0	0	7	2	27	0	209	886
10:00 AM	30	62	0	0	0	65	25	0	0	0	0	0	8	0	22	0	212	868
10:15 AM	20	67	0	0	0	70	41	0	0	0	0	0	4	0	30	0	232	865
10:30 AM	17	81	0	0	0	67	31	0	0	0	0	0	3	0	28	0	227	880
10:45 AM	14	71	0	0	0	61	35	0	0	0	0	0	6	0	30	0	217	888
11:00 AM	25	87	0	0	0	61	27	0	0	0	0	0	25	0	25	0	250	926
11:15 AM	28	81	0	0	0	75	29	0	0	0	0	0	15	0	24	0	252	946
11:30 AM	30	69	0	0	0	95	34	0	0	0	0	0	9	0	14	0	251	970
11:45 AM	30	91	0	0	0	85	37	0	0	0	0	0	19	0	20	0	282	1035
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	176	552	0	0	0	372	276	0	0	0	0	0	24	0	120	0	1520	
Heavy Trucks	16	48	0	0	0	20	28	0	0	0	0	0	4	0	24	0	140	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: SR-53 -- I-40 WB Ramp
CITY/STATE: Gordonsville, TN

QC JOB #: 14223838
DATE: Wed, Mar 22 2017

Peak-Hour: 2:30 PM -- 3:30 PM
Peak 15-Min: 3:00 PM -- 3:15 PM

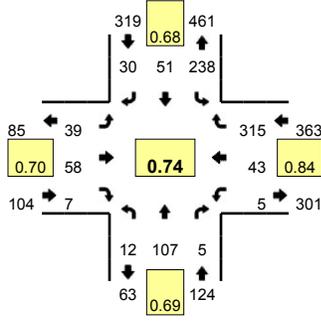


15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				I-40 WB Ramp (Eastbound)				I-40 WB Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	31	88	0	0	0	93	35	0	0	0	0	0	12	0	20	0	279	
12:15 PM	28	73	0	0	0	80	31	0	0	0	0	0	13	0	21	0	246	
12:30 PM	28	94	0	0	0	82	32	0	0	0	0	0	14	0	22	0	272	
12:45 PM	30	76	0	0	0	71	34	0	0	0	0	0	15	1	25	0	252	1049
1:00 PM	24	86	0	0	0	66	46	0	0	0	0	0	17	0	31	0	270	1040
1:15 PM	25	75	0	0	0	65	41	0	0	0	0	0	12	0	37	0	255	1049
1:30 PM	26	86	0	0	0	59	34	0	0	0	0	0	14	0	27	0	246	1023
1:45 PM	30	100	0	0	0	62	36	0	0	0	0	0	15	0	27	0	270	1041
2:00 PM	26	88	0	0	0	95	48	0	0	0	0	0	12	1	34	0	304	1075
2:15 PM	28	98	0	0	0	92	63	0	0	0	0	0	10	0	31	0	322	1142
2:30 PM	26	98	0	0	0	98	55	0	0	0	0	0	15	0	52	0	344	1240
2:45 PM	33	85	0	0	0	120	50	0	0	0	0	0	16	0	36	0	340	1310
3:00 PM	24	120	0	0	0	119	49	0	0	0	0	0	14	0	32	0	358	1364
3:15 PM	20	147	0	0	0	92	37	0	0	0	0	0	15	0	30	0	341	1383
3:30 PM	33	115	0	0	0	100	51	0	0	0	0	0	11	0	29	0	339	1378
3:45 PM	23	123	0	0	0	97	45	0	0	0	0	0	14	0	32	0	334	1372
4:00 PM	32	82	0	0	0	137	46	0	0	0	0	0	11	0	20	0	328	1342
4:15 PM	31	115	0	0	0	104	44	0	0	0	0	0	10	0	30	0	334	1335
4:30 PM	21	112	0	0	0	118	46	0	0	0	0	0	14	0	26	0	337	1333
4:45 PM	25	106	0	0	0	87	55	0	0	0	0	0	9	0	27	0	309	1308
5:00 PM	15	122	0	0	0	113	39	0	0	0	0	0	7	0	33	0	329	1309
5:15 PM	25	127	0	0	0	118	38	0	0	0	0	0	14	0	32	0	354	1329
5:30 PM	26	103	0	0	0	81	41	0	0	0	0	0	12	0	32	0	295	1287
5:45 PM	14	102	0	0	0	84	37	0	0	0	0	0	21	0	22	0	280	1258
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	96	480	0	0	0	476	196	0	0	0	0	0	56	0	128	0	1432	
Heavy Trucks	16	24	0	0	0	20	8	0	0	0	0	0	20	0	4	0	92	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

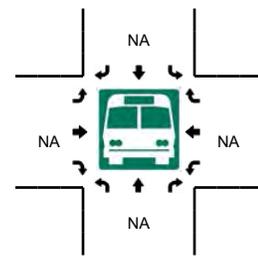
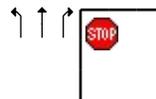
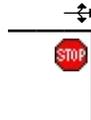
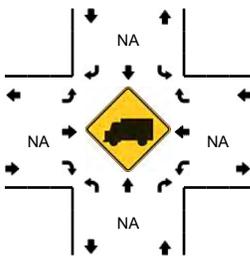
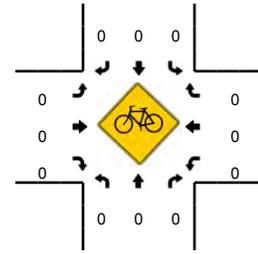
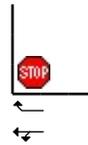
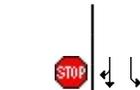
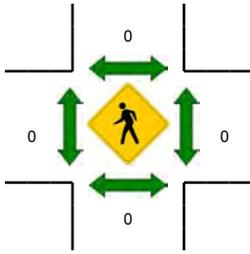
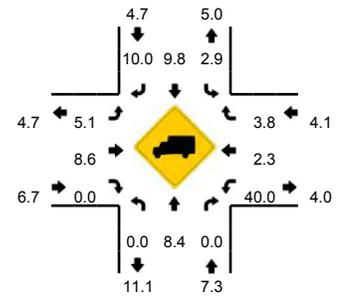
Comments:

LOCATION: SR-53 -- SR-141/E Main St
CITY/STATE: Gordonsville, TN

QC JOB #: 14223814
DATE: Wed, Mar 22 2017



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

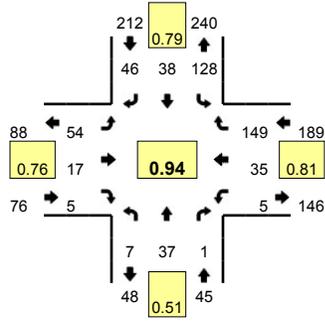


15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	27	0	0	28	7	5	0	5	11	0	0	0	7	44	0	136	
7:15 AM	6	27	2	0	63	14	7	0	9	14	2	0	2	10	93	0	249	
7:30 AM	4	38	3	0	91	18	8	0	15	18	4	0	0	13	95	0	307	
7:45 AM	0	15	0	0	56	12	10	0	10	15	1	0	3	13	83	0	218	910
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	152	12	0	364	72	32	0	60	72	16	0	0	52	380	0	1228	
Heavy Trucks	0	20	0	0	8	0	0	0	4	4	0	0	0	4	28	0	68	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

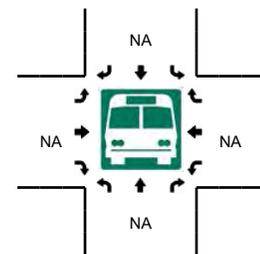
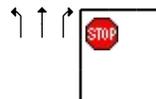
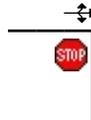
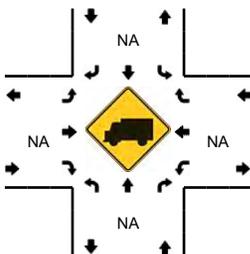
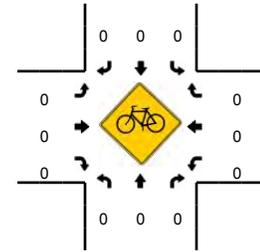
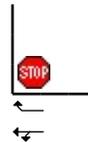
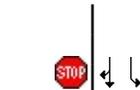
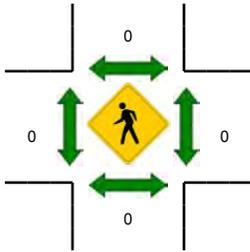
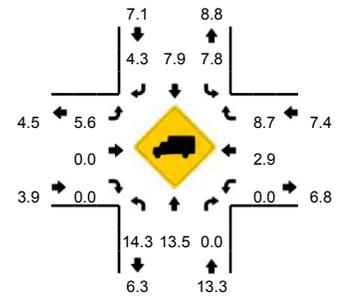
Comments:

LOCATION: SR-53 -- SR-141/E Main St
CITY/STATE: Gordonsville, TN

QC JOB #: 14223815
DATE: Wed, Mar 22 2017



Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:30 AM -- 11:45 AM



15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	1	5	0	0	25	8	8	0	12	2	2	0	2	12	44	0	121	
11:15 AM	3	2	0	0	28	5	10	0	18	7	0	0	1	9	41	0	124	
11:30 AM	2	20	0	0	34	17	16	0	15	3	3	0	0	4	25	0	139	
11:45 AM	1	10	1	0	41	8	12	0	9	5	0	0	2	10	39	0	138	522

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	80	0	0	136	68	64	0	60	12	12	0	0	16	100	0	556
Heavy Trucks	0	12	0	0	20	8	4	0	0	0	0	0	0	0	16	0	60
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad																	
Stopped Buses																	

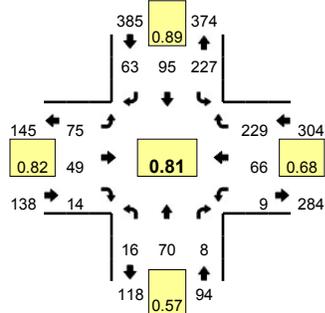
Comments:

Type of peak hour being reported: Intersection Peak

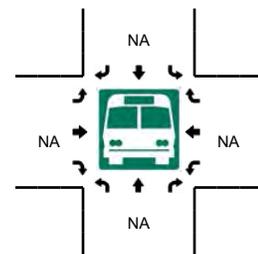
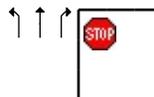
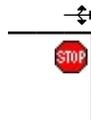
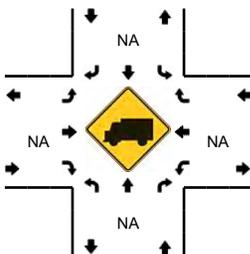
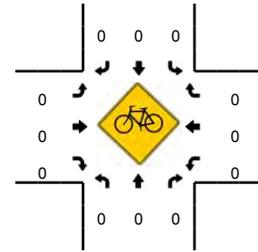
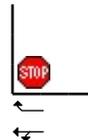
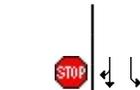
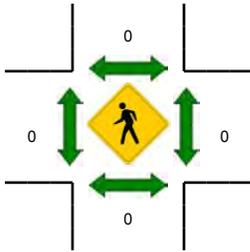
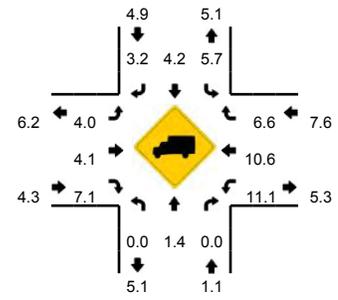
Method for determining peak hour: Total Entering Volume

LOCATION: SR-53 -- SR-141/E Main St
CITY/STATE: Gordonsville, TN

QC JOB #: 14223816
DATE: Wed, Mar 22 2017



Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM



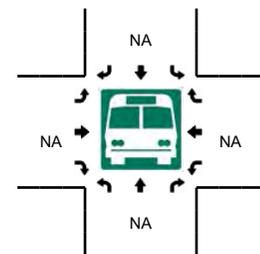
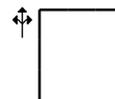
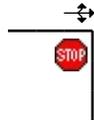
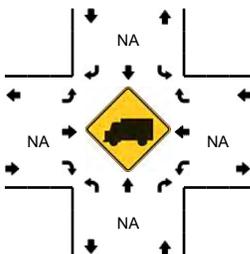
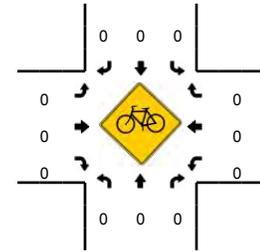
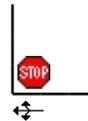
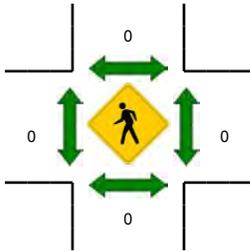
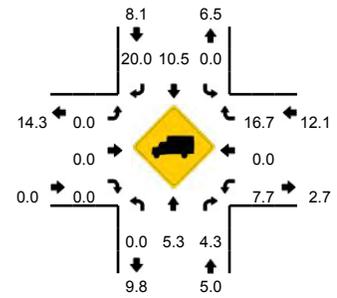
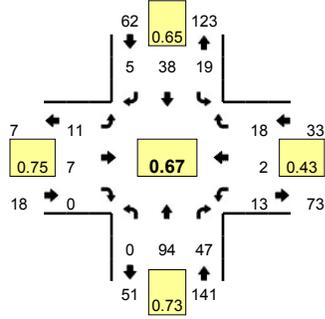
15-Min Count Period Beginning At	SR-53 (Northbound)				SR-53 (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	10	28	3	0	63	23	15	0	16	10	4	0	3	32	76	0	283	
3:15 PM	3	14	1	0	47	25	23	0	22	12	2	0	1	14	75	0	239	
3:30 PM	2	8	3	0	54	21	19	0	19	17	6	0	3	10	36	0	198	
3:45 PM	1	20	1	0	63	26	6	0	18	10	2	0	2	10	42	0	201	921
4:00 PM	1	10	4	0	69	34	18	0	8	13	0	0	3	11	44	0	215	853
4:15 PM	1	10	0	0	69	29	15	0	7	9	5	0	3	10	39	0	197	811
4:30 PM	2	21	1	0	64	26	7	0	10	15	1	0	2	4	54	0	207	820
4:45 PM	2	17	3	0	65	22	11	0	9	9	2	0	1	9	31	0	181	800
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	40	112	12	0	252	92	60	0	64	40	16	0	12	128	304	0	1132	
Heavy Trucks	0	0	0		4	4	0		4	0	0		0	28	12		52	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: SR-264/Hatton Wauford Pkwy -- Agee Branch Ln/Hickman Hwy
CITY/STATE: Smith, TN

QC JOB #: 14223817
DATE: Wed, Mar 22 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



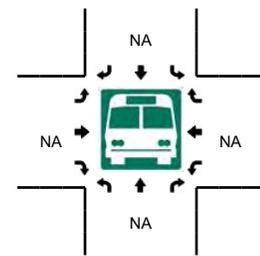
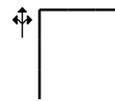
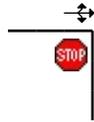
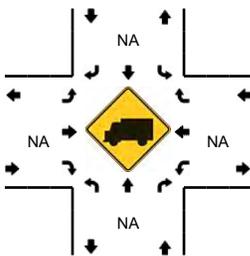
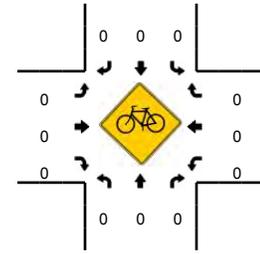
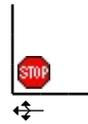
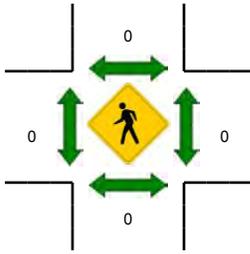
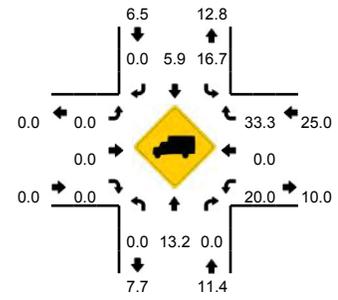
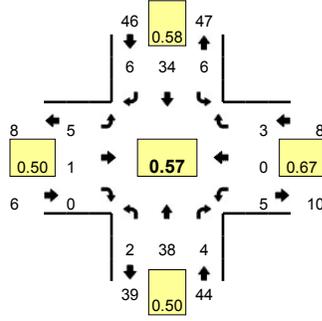
15-Min Count Period Beginning At	SR-264/Hatton Wauford Pkwy (Northbound)				SR-264/Hatton Wauford Pkwy (Southbound)				Agee Branch Ln/Hickman Hwy (Eastbound)				Agee Branch Ln/Hickman Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	24	2	0	1	5	1	0	5	1	0	0	1	0	1	0	41	
7:15 AM	0	32	16	0	5	10	3	0	1	3	0	0	3	0	4	0	77	
7:30 AM	0	29	17	0	13	10	1	0	3	3	0	0	6	1	12	0	95	
7:45 AM	0	9	12	0	0	13	0	0	2	0	0	0	3	1	1	0	41	254
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	116	68	0	52	40	4	0	12	12	0	0	24	4	48	0	380	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	8		8	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: SR-264/Hatton Wauford Pkwy -- Agee Branch Ln/Hickman Hwy
CITY/STATE: Smith, TN

QC JOB #: 14223818
DATE: Wed, Mar 22 2017

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:30 AM -- 11:45 AM



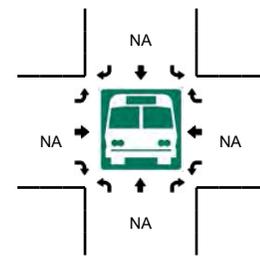
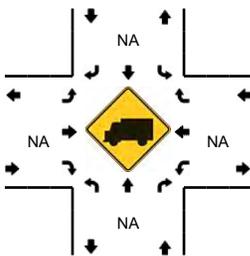
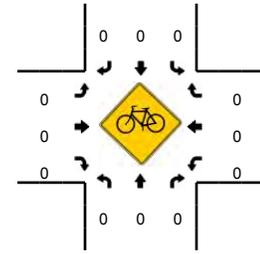
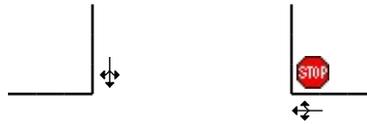
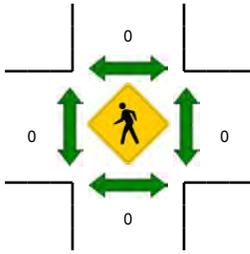
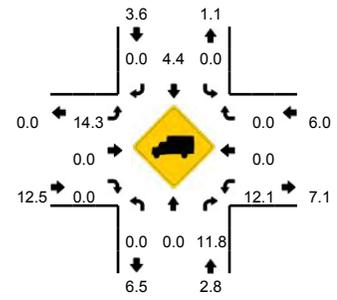
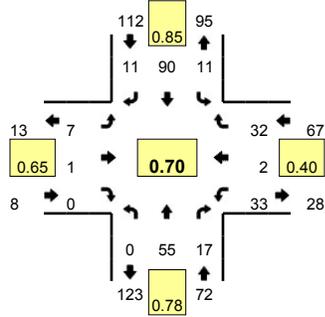
15-Min Count Period Beginning At	SR-264/Hatton Wauford Pkwy (Northbound)				SR-264/Hatton Wauford Pkwy (Southbound)				Agee Branch Ln/Hickman Hwy (Eastbound)				Agee Branch Ln/Hickman Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	4	2	0	0	10	1	0	2	1	0	0	1	0	0	0	21	
11:15 AM	0	4	1	0	0	6	0	0	1	0	0	0	1	0	1	0	14	
11:30 AM	2	19	1	0	4	13	3	0	1	0	0	0	2	0	1	0	46	
11:45 AM	0	11	0	0	1	5	2	1	1	0	0	0	1	0	1	0	23	104
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	76	4	0	16	52	12	0	4	0	0	0	8	0	4	0	184	
Heavy Trucks	0	12	0	0	4	4	0	0	0	0	0	0	0	0	0	0	20	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: SR-264/Hatton Wauford Pkwy -- Agee Branch Ln/Hickman Hwy
CITY/STATE: Smith, TN

QC JOB #: 14223819
DATE: Wed, Mar 22 2017

Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM



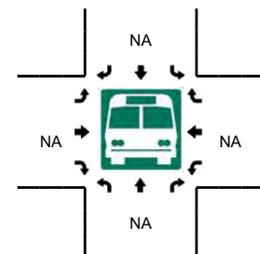
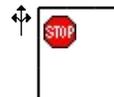
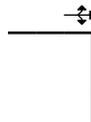
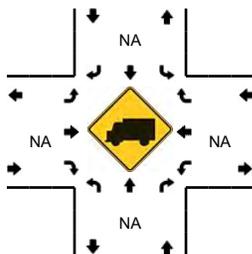
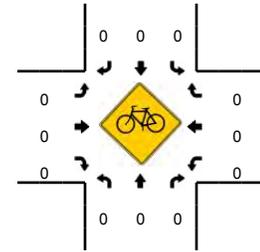
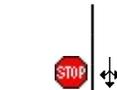
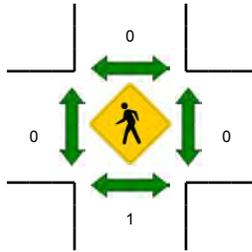
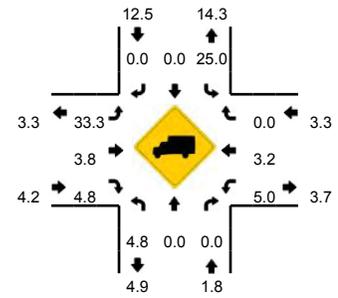
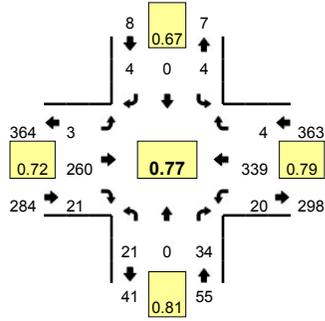
15-Min Count Period Beginning At	SR-264/Hatton Wauford Pkwy (Northbound)				SR-264/Hatton Wauford Pkwy (Southbound)				Agee Branch Ln/Hickman Hwy (Eastbound)				Agee Branch Ln/Hickman Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	17	6	0	3	21	3	0	0	0	0	0	16	0	26	0	92	
3:15 PM	0	13	2	0	3	20	4	0	1	1	0	0	6	0	2	0	52	
3:30 PM	0	13	5	0	4	23	0	1	1	0	0	0	4	0	0	0	51	
3:45 PM	0	12	4	0	0	26	4	0	5	0	0	0	7	2	4	0	64	259
4:00 PM	0	7	0	0	3	31	0	0	5	0	0	0	6	0	2	0	54	221
4:15 PM	0	12	4	0	2	35	2	0	1	0	0	0	6	2	2	0	66	235
4:30 PM	0	18	1	0	0	26	3	0	1	0	0	0	4	2	2	0	57	241
4:45 PM	0	23	2	0	2	18	2	0	0	0	0	0	5	0	3	0	55	232
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	68	24	0	12	84	12	0	0	0	0	0	64	0	104	0	368	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Hickman Hwy N/Gordon Dr -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223820
DATE: Wed, Mar 22 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



15-Min Count Period Beginning At	Hickman Hwy N/Gordon Dr (Northbound)				Hickman Hwy N/Gordon Dr (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	0	1	0	1	0	0	0	0	34	2	0	1	40	0	0	87	
7:15 AM	3	0	14	0	2	0	0	0	2	71	6	0	5	97	0	0	200	
7:30 AM	3	0	11	0	1	0	2	0	1	90	7	0	8	106	1	0	230	
7:45 AM	7	0	8	0	0	0	2	0	0	65	6	0	6	96	3	0	193	710

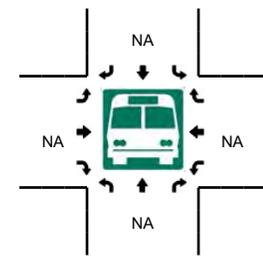
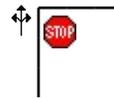
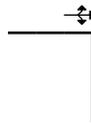
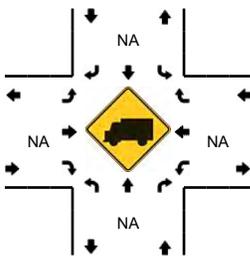
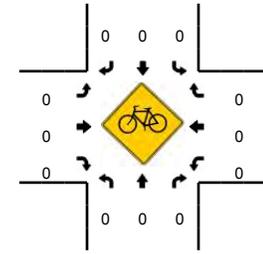
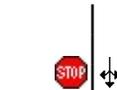
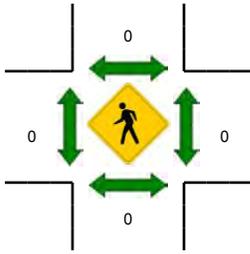
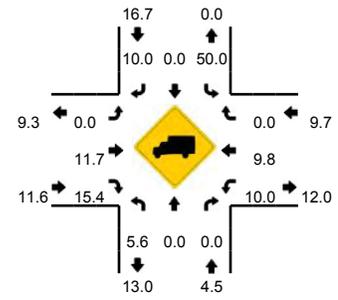
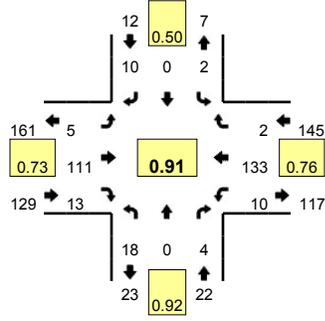
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	0	44	0	4	0	8	0	4	360	28	0	32	424	4	0	920
Heavy Trucks	4	0	0		0	0	0		0	8	0		0	20	0		32
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

LOCATION: Hickman Hwy N/Gordon Dr -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223821
DATE: Wed, Mar 22 2017

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:45 AM -- 12:00 PM



15-Min Count Period Beginning At	Hickman Hwy N/Gordon Dr (Northbound)				Hickman Hwy N/Gordon Dr (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	5	0	1	0	0	0	2	0	1	20	3	0	3	43	2	0	80	
11:15 AM	2	0	2	0	1	0	1	0	1	26	2	0	2	39	0	0	76	
11:30 AM	5	0	1	0	0	0	2	0	1	27	4	0	4	23	0	0	67	
11:45 AM	6	0	0	0	1	0	5	0	2	38	4	0	1	28	0	0	85	308

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	0	0	4	0	20	0	8	152	16	0	4	112	0	0	340
Heavy Trucks	0	0	0	0	4	0	4	0	0	16	4	0	4	24	0	0	56
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad																	
Stopped Buses																	

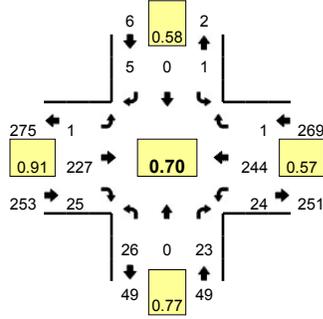
Comments:

Type of peak hour being reported: Intersection Peak

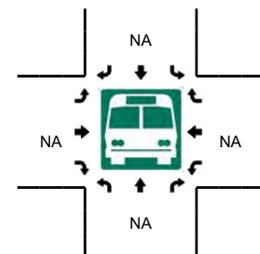
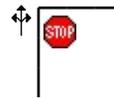
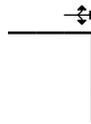
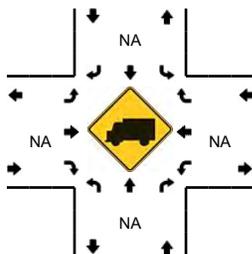
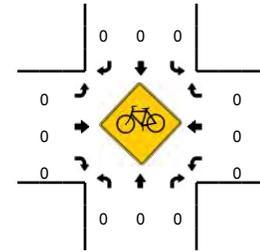
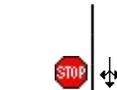
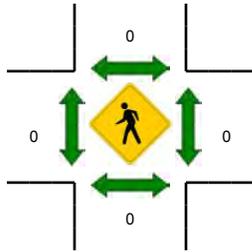
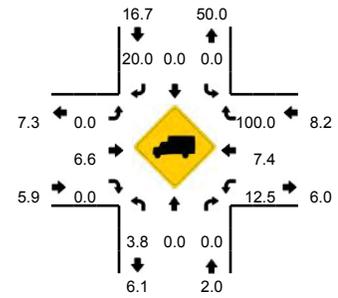
Method for determining peak hour: Total Entering Volume

LOCATION: Hickman Hwy N/Gordon Dr -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223822
DATE: Wed, Mar 22 2017



Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM



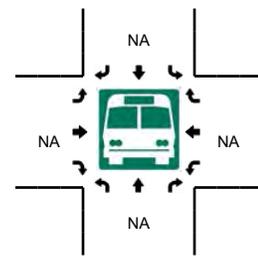
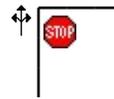
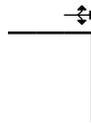
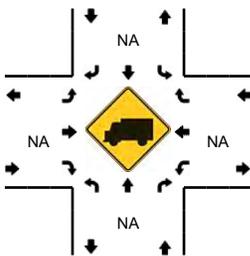
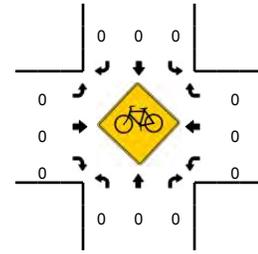
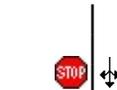
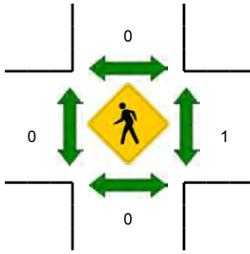
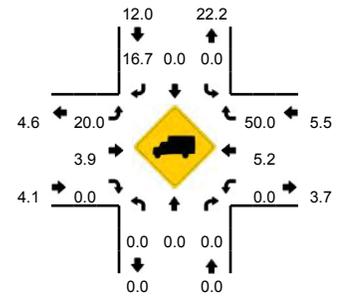
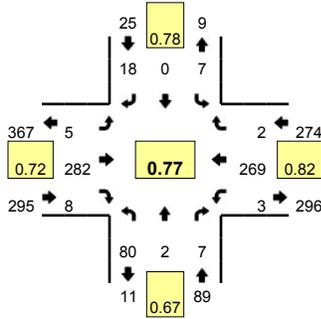
15-Min Count Period Beginning At	Hickman Hwy N/Gordon Dr (Northbound)				Hickman Hwy N/Gordon Dr (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	8	0	8	0	0	0	3	0	0	62	7	0	13	104	1	0	206	
3:15 PM	7	0	5	0	1	0	1	0	1	46	5	0	3	73	0	0	142	
3:30 PM	4	0	5	0	0	0	1	0	0	62	4	0	4	36	0	0	116	
3:45 PM	7	0	5	0	0	0	0	0	0	57	9	0	4	31	0	0	113	577
4:00 PM	8	0	4	0	0	0	0	0	1	72	3	0	4	44	1	0	137	508
4:15 PM	9	1	1	0	1	1	0	0	0	70	1	0	7	40	0	0	131	497
4:30 PM	4	0	2	0	0	0	2	0	1	73	9	0	2	51	1	0	145	526
4:45 PM	5	0	2	0	1	0	2	0	2	63	7	0	7	31	0	0	120	533
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	32	0	32	0	0	0	12	0	0	248	28	0	52	416	4	0	824	
Heavy Trucks	0	0	0	0	0	0	4	0	0	4	0	0	4	36	4	0	52	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Hogan Rd -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223823
DATE: Wed, Mar 22 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



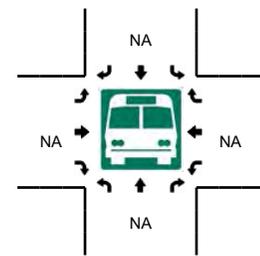
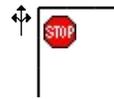
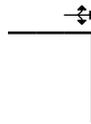
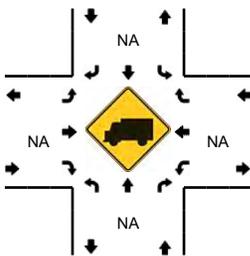
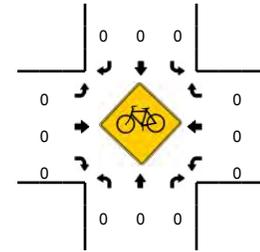
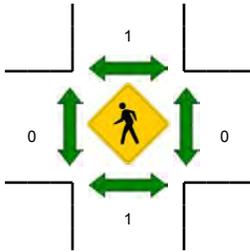
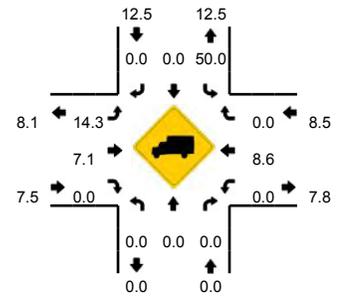
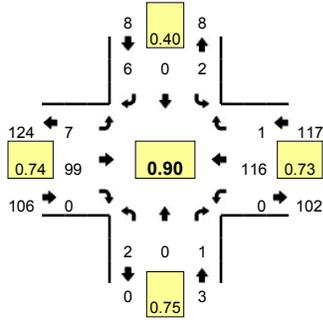
15-Min Count Period Beginning At	Hogan Rd (Northbound)				Hogan Rd (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	5	0	2	32	0	0	0	35	1	0	76	
7:15 AM	25	2	2	0	2	0	3	0	1	73	3	0	1	74	0	0	186	
7:30 AM	30	0	3	0	1	0	7	0	1	99	2	0	2	77	0	0	222	
7:45 AM	25	0	2	0	3	0	3	0	1	78	3	0	0	83	1	0	199	683
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	120	0	12	0	4	0	28	0	4	396	8	0	8	308	0	0	888	
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	20	0		32	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Hogan Rd -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223824
DATE: Wed, Mar 22 2017

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:00 AM -- 11:15 AM

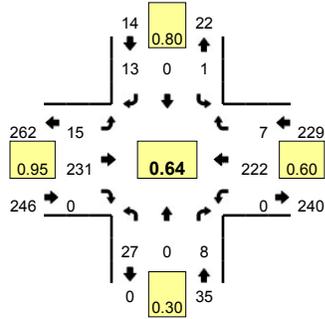


15-Min Count Period Beginning At	Hogan Rd (Northbound)				Hogan Rd (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	1	0	0	0	2	0	3	0	1	18	0	0	0	40	0	0	65	
11:15 AM	1	0	0	0	0	0	2	0	3	24	0	0	0	31	1	0	62	
11:30 AM	0	0	1	0	0	0	0	0	0	24	0	0	0	23	0	0	48	
11:45 AM	0	0	0	0	0	0	1	0	3	33	0	0	0	22	0	0	59	234
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	4	0	0	0	8	0	12	0	4	72	0	0	0	160	0	0	260	
Heavy Trucks	0	0	0	0	4	0	0	0	0	4	0	0	0	4	0	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

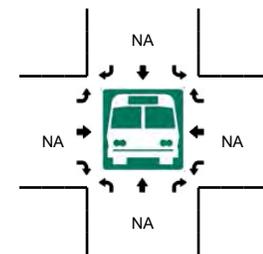
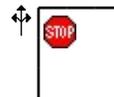
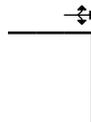
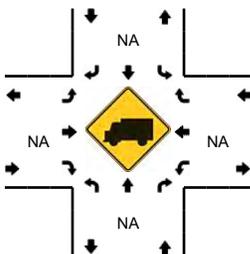
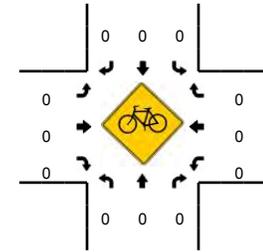
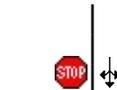
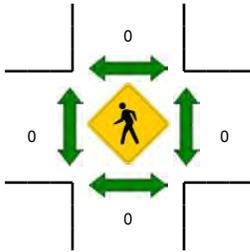
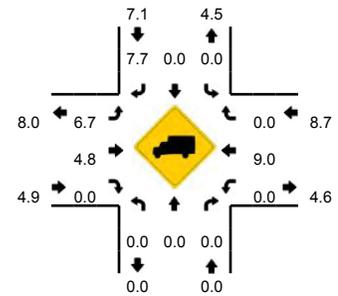
Comments:

LOCATION: Hogan Rd -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223825
DATE: Wed, Mar 22 2017



Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM



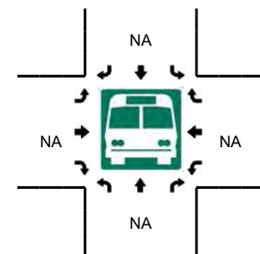
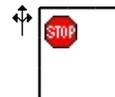
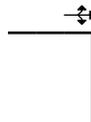
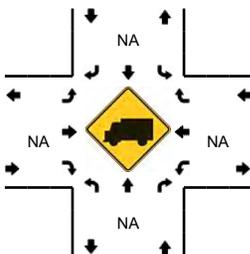
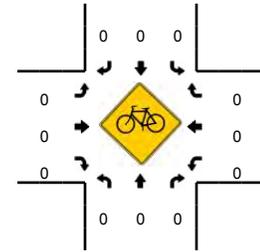
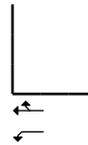
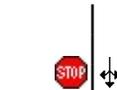
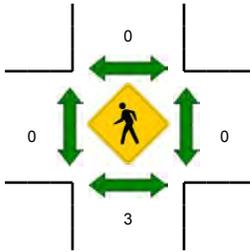
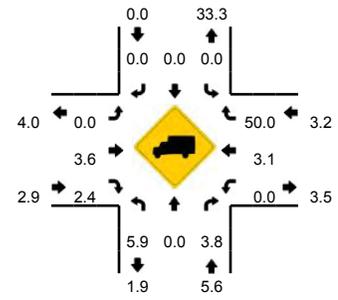
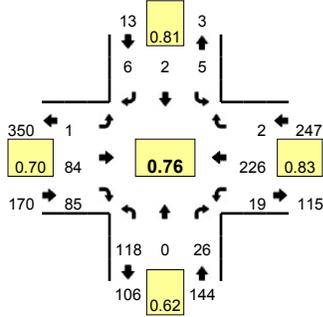
15-Min Count Period Beginning At	Hogan Rd (Northbound)				Hogan Rd (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	23	0	6	0	0	0	4	0	4	73	0	0	0	92	3	0	205	
3:15 PM	2	0	2	0	0	0	6	0	4	45	0	0	0	58	1	0	118	
3:30 PM	0	0	0	0	1	0	1	0	2	63	0	0	0	38	2	0	107	
3:45 PM	2	0	0	0	0	0	2	0	5	50	0	0	0	34	1	0	94	524
4:00 PM	5	0	0	0	0	0	5	0	2	65	0	0	0	33	0	0	110	429
4:15 PM	1	0	0	0	0	0	4	0	6	62	0	0	0	39	0	0	112	423
4:30 PM	3	0	0	0	3	0	1	0	6	55	0	0	0	54	2	0	124	440
4:45 PM	1	0	1	0	2	0	1	0	6	57	0	0	0	31	0	0	99	445
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	92	0	24	0	0	0	16	0	16	292	0	0	0	368	12	0	820	
Heavy Trucks	0	0	0	0	0	0	4	0	0	0	0	0	0	28	0	0	32	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Fairview Circle/GHS Drive -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223826
DATE: Wed, Mar 22 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



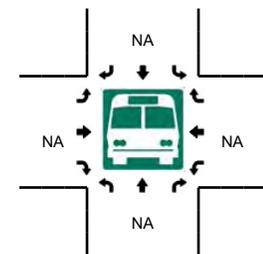
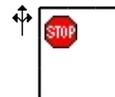
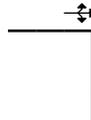
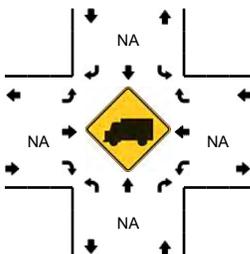
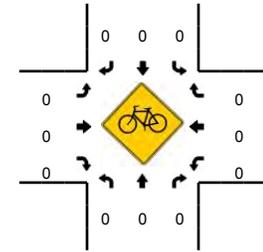
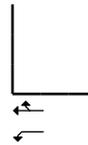
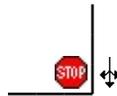
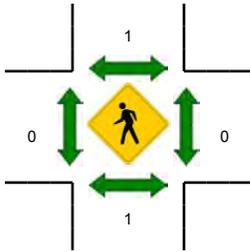
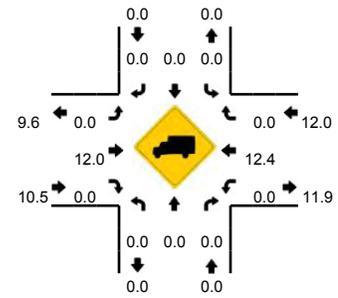
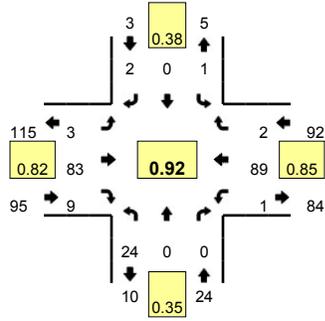
15-Min Count Period Beginning At	Fairview Circle/GHS Drive (Northbound)				Fairview Circle/GHS Drive (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	0	0	0	2	0	1	0	0	14	12	0	3	36	2	0	75	
7:15 AM	24	0	5	0	0	1	2	0	0	17	16	0	6	68	0	0	139	
7:30 AM	45	0	13	0	1	1	1	0	0	27	34	0	5	62	0	0	189	
7:45 AM	44	0	8	0	2	0	2	0	1	26	23	0	5	60	0	0	171	574
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	180	0	52	0	4	4	4	0	0	108	136	0	20	248	0	0	756	
Heavy Trucks	12	0	0		0	0	0		0	0	4		0	4	0		20	
Pedestrians	0				0				0				0	0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Fairview Circle/GHS Drive -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223827
DATE: Wed, Mar 22 2017

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:00 AM -- 11:15 AM



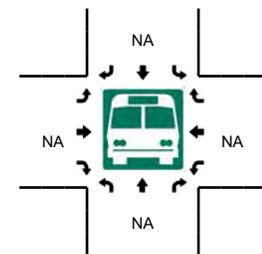
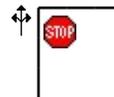
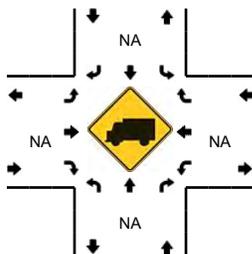
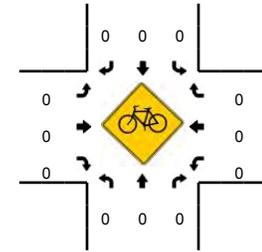
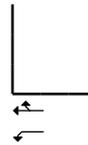
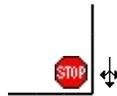
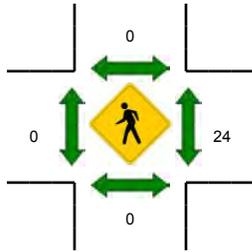
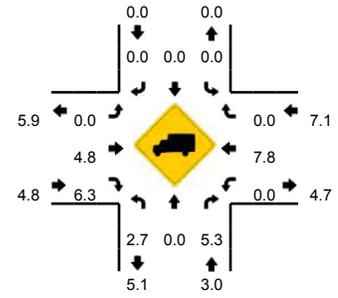
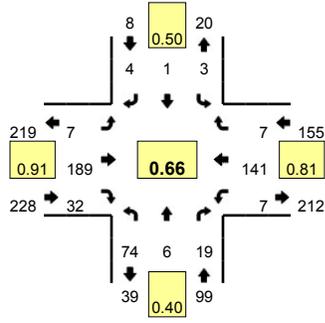
15-Min Count Period Beginning At	Fairview Circle/GHS Drive (Northbound)				Fairview Circle/GHS Drive (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	17	0	0	0	0	0	1	0	0	15	4	0	0	21	0	0	58	
11:15 AM	5	0	0	0	0	0	0	0	0	22	0	0	0	26	1	0	54	
11:30 AM	1	0	0	0	1	0	1	0	3	22	0	0	0	21	1	0	50	
11:45 AM	1	0	0	0	0	0	0	0	0	24	5	0	1	21	0	0	52	214
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	68	0	0	0	0	0	4	0	0	60	16	0	0	84	0	0	232	
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Fairview Circle/GHS Drive -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223828
DATE: Wed, Mar 22 2017

Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM

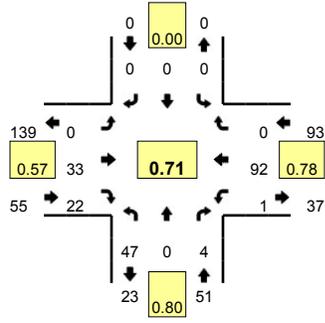


15-Min Count Period Beginning At	Fairview Circle/GHS Drive (Northbound)				Fairview Circle/GHS Drive (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	45	3	14	0	1	1	2	0	2	57	14	0	0	45	3	0	187	
3:15 PM	16	2	3	0	0	0	1	0	2	41	3	0	0	34	1	1	104	
3:30 PM	7	0	1	0	1	0	1	0	1	55	6	0	1	33	2	0	108	
3:45 PM	6	1	1	0	1	0	0	0	2	36	9	0	5	29	1	0	91	490
4:00 PM	8	0	2	0	2	0	0	0	3	55	5	0	1	21	0	0	97	400
4:15 PM	8	0	1	0	0	0	1	0	1	60	4	0	1	35	0	0	111	407
4:30 PM	11	0	2	0	0	0	4	0	2	40	6	0	1	37	1	0	104	403
4:45 PM	7	0	2	0	0	0	1	0	0	53	6	0	0	22	0	0	91	403
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	180	12	56	0	4	4	8	0	8	228	56	0	0	180	12	0	748	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	16	0		16	
Pedestrians		0				0				0				40			40	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

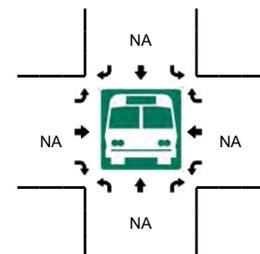
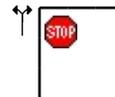
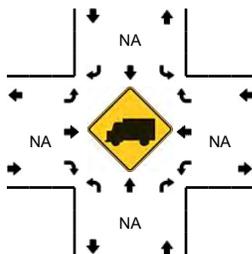
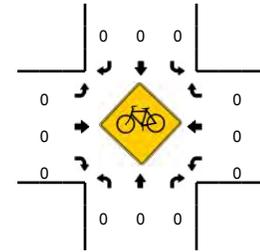
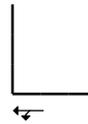
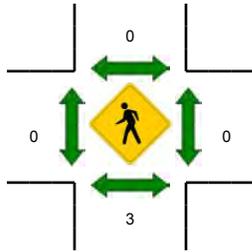
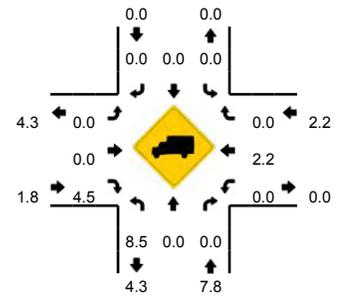
Comments:

LOCATION: Meadow Dr -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223829
DATE: Wed, Mar 22 2017



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



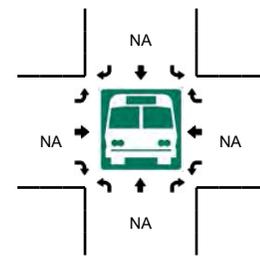
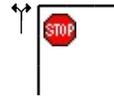
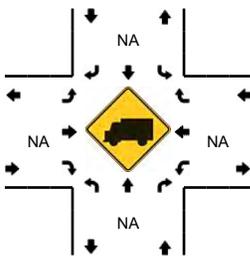
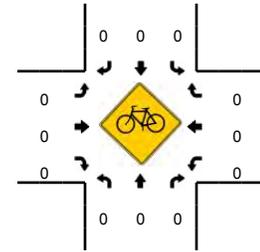
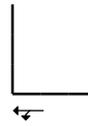
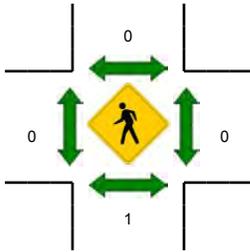
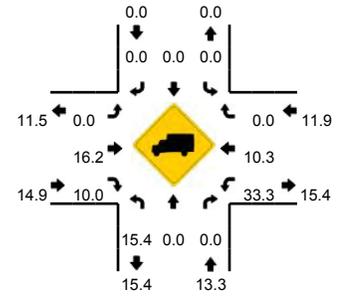
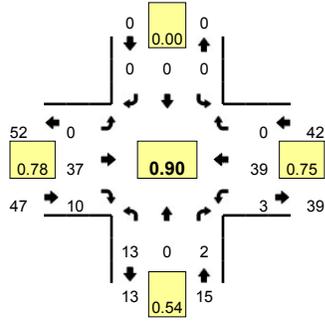
15-Min Count Period Beginning At	Meadow Dr (Northbound)				Meadow Dr (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	13	0	2	0	0	0	0	0	0	6	3	0	1	14	0	0	39	
7:15 AM	10	0	0	0	0	0	0	0	0	5	6	0	0	28	0	0	49	
7:30 AM	15	0	1	0	0	0	0	0	0	16	8	0	0	30	0	0	70	
7:45 AM	9	0	1	0	0	0	0	0	0	6	5	0	0	20	0	0	41	199
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	60	0	4	0	0	0	0	0	0	64	32	0	0	120	0	0	280	
Heavy Trucks	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
Pedestrians	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Meadow Dr -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223830
DATE: Wed, Mar 22 2017

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:15 AM -- 11:30 AM

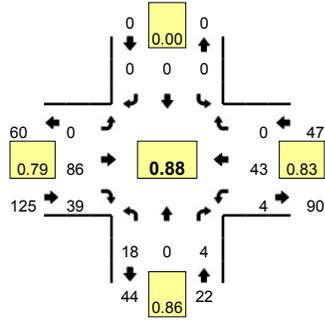


15-Min Count Period Beginning At	Meadow Dr (Northbound)				Meadow Dr (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	3	0	0	0	0	0	0	0	0	6	2	0	0	9	0	0	20	
11:15 AM	5	0	2	0	0	0	0	0	0	8	4	0	0	10	0	0	29	
11:30 AM	4	0	0	0	0	0	0	0	0	12	3	0	1	8	0	0	28	
11:45 AM	1	0	0	0	0	0	0	0	0	11	1	0	2	12	0	0	27	104
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	20	0	8	0	0	0	0	0	0	32	16	0	0	40	0	0	116	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	8	
Pedestrians	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

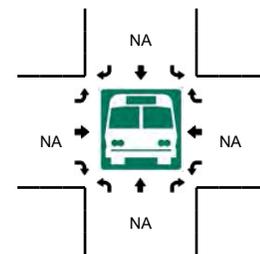
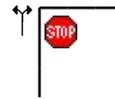
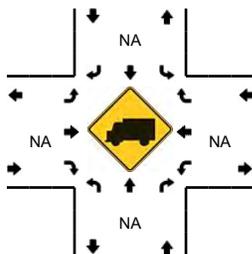
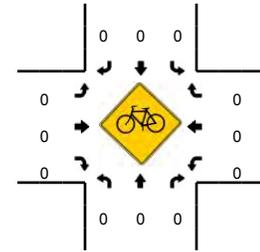
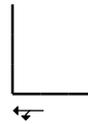
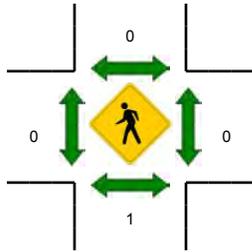
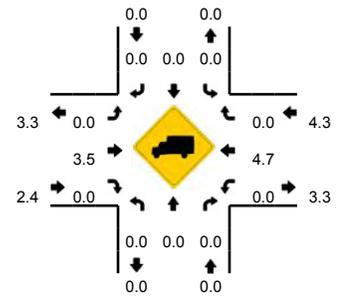
Comments:

LOCATION: Meadow Dr -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223831
DATE: Wed, Mar 22 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM



15-Min Count Period Beginning At	Meadow Dr (Northbound)				Meadow Dr (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	0	2	0	0	0	0	0	0	17	7	0	1	9	0	0	41	
4:15 PM	5	0	1	0	0	0	0	0	0	24	10	0	0	7	0	0	47	
4:30 PM	6	0	0	0	0	0	0	0	0	12	10	0	0	13	0	0	41	
4:45 PM	4	0	1	0	0	0	0	0	0	30	10	0	1	8	0	0	54	183
5:00 PM	4	0	1	0	0	0	0	0	0	16	5	0	1	14	0	0	41	183
5:15 PM	3	0	0	1	0	0	0	0	0	19	8	0	3	13	0	0	47	183
5:30 PM	7	0	0	0	0	0	0	0	0	26	13	0	0	5	0	0	51	193
5:45 PM	3	0	3	0	0	0	0	0	0	25	13	0	0	11	0	0	55	194

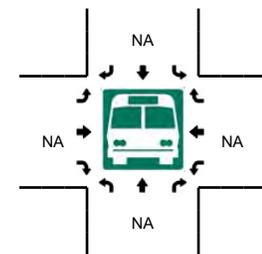
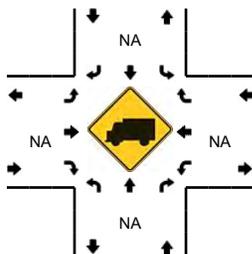
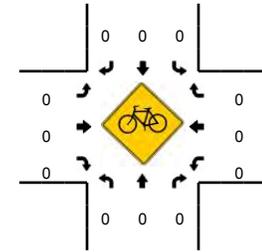
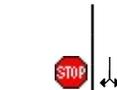
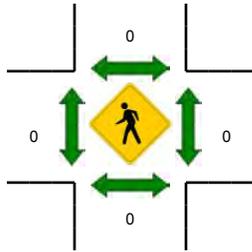
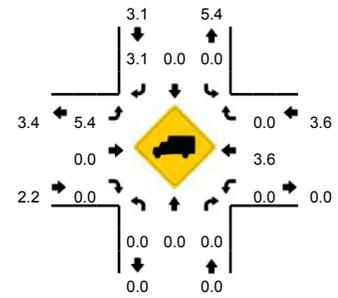
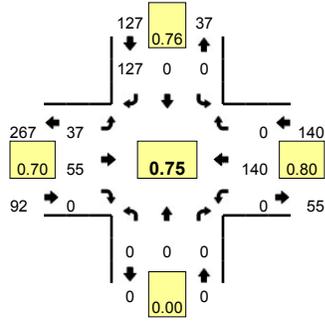
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	0	12	0	0	0	0	0	0	100	52	0	0	44	0	0	220
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	0	12
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad																	
Stopped Buses																	

Comments:

LOCATION: Trousdale Ferry Pk/SR-264 -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223832
DATE: Wed, Mar 22 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



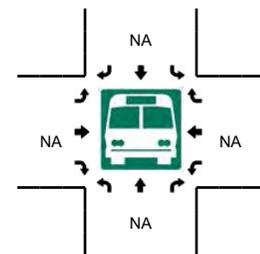
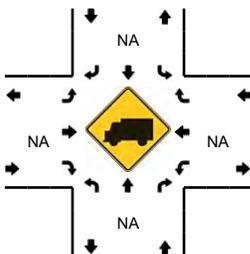
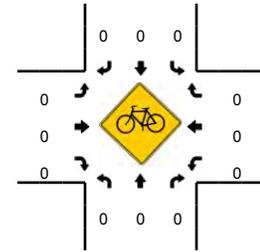
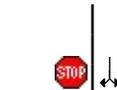
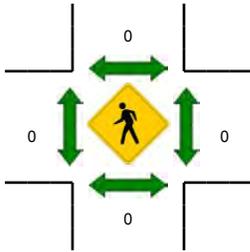
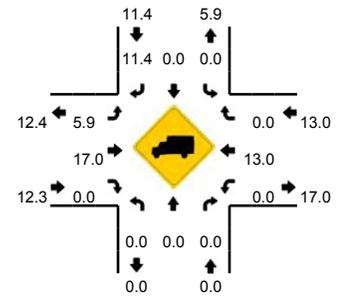
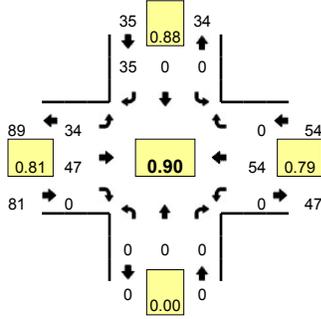
15-Min Count Period Beginning At	Trousdale Ferry Pk/SR-264 (Northbound)				Trousdale Ferry Pk/SR-264 (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	16	0	3	10	0	0	0	28	0	0	57	
7:15 AM	0	0	0	0	0	0	34	0	7	10	0	0	0	38	0	0	89	
7:30 AM	0	0	0	0	0	0	42	0	9	24	0	0	0	44	0	0	119	
7:45 AM	0	0	0	0	0	0	35	0	18	11	0	0	0	30	0	0	94	359
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	168	0	36	96	0	0	0	176	0	0	476	
Heavy Trucks	0	0	0	0	0	0	4	0	0	0	0	0	0	4	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Trousdale Ferry Pk/SR-264 -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223833
DATE: Wed, Mar 22 2017

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:15 AM -- 11:30 AM



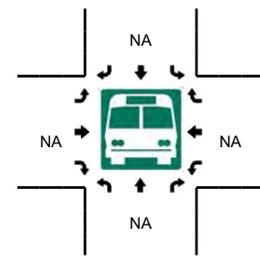
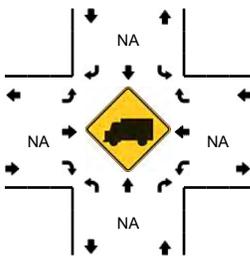
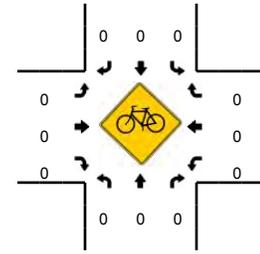
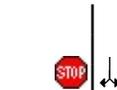
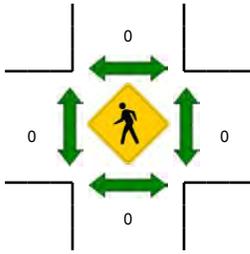
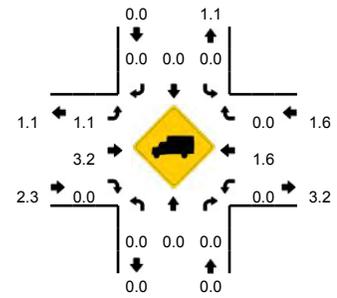
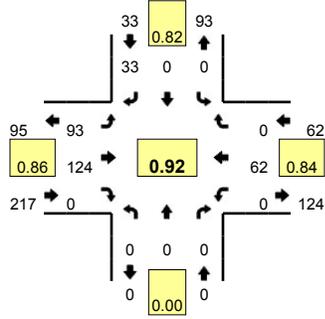
15-Min Count Period Beginning At	Trousdale Ferry Pk/SR-264 (Northbound)				Trousdale Ferry Pk/SR-264 (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	0	0	7	0	7	8	0	0	0	12	0	0	34	
11:15 AM	0	0	0	0	0	0	10	0	8	12	0	0	0	17	0	0	47	
11:30 AM	0	0	0	0	0	0	9	0	10	15	0	0	0	12	0	0	46	
11:45 AM	0	0	0	0	0	0	9	0	9	12	0	0	0	13	0	0	43	170
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	40	0	32	48	0	0	0	68	0	0	188	
Heavy Trucks	0	0	0	0	0	0	4	0	0	4	0	0	0	4	0	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Trousdale Ferry Pk/SR-264 -- SR-141/E Main St
CITY/STATE: Smith, TN

QC JOB #: 14223834
DATE: Wed, Mar 22 2017

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



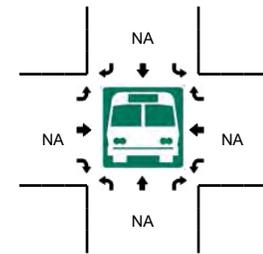
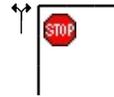
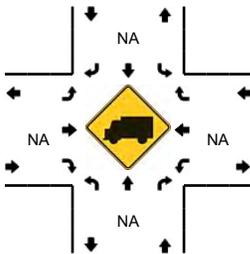
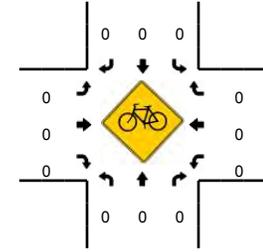
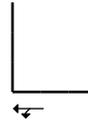
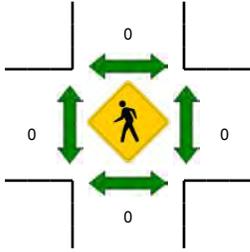
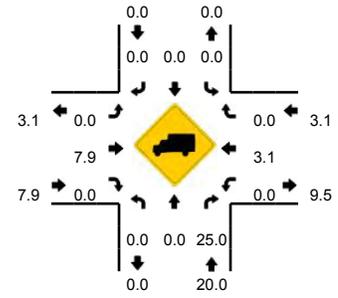
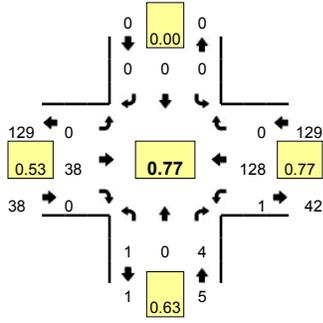
15-Min Count Period Beginning At	Trousdale Ferry Pk/SR-264 (Northbound)				Trousdale Ferry Pk/SR-264 (Southbound)				SR-141/E Main St (Eastbound)				SR-141/E Main St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	9	0	31	24	0	0	0	14	0	0	78	
4:15 PM	0	0	0	0	0	0	15	0	23	35	0	0	0	12	0	0	85	
4:30 PM	0	0	0	0	0	0	14	0	13	22	0	0	0	19	0	0	68	
4:45 PM	0	0	0	0	0	0	9	0	13	40	0	0	0	12	0	0	74	305
5:00 PM	0	0	0	0	0	0	11	0	15	21	0	0	0	20	0	0	67	294
5:15 PM	0	0	0	0	0	0	9	0	34	26	0	0	0	16	0	0	85	294
5:30 PM	0	0	0	0	0	0	5	0	24	39	0	0	0	12	0	0	80	306
5:45 PM	0	0	0	0	0	0	8	0	20	38	0	0	0	14	0	0	80	312
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	0	0	0	0	0	36	0	136	104	0	0	0	64	0	0	340	
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Trousdale Ferry Pk/SR-141/E Main Access -- SR-264/Trousdale Ferry Pk
CITY/STATE: Smith, TN

QC JOB #: 14223835
DATE: Wed, Mar 22 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



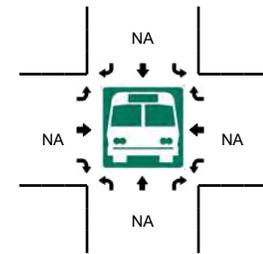
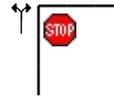
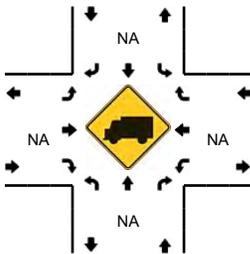
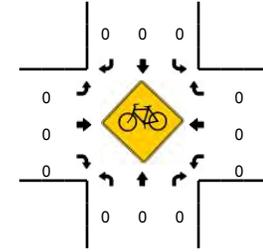
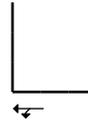
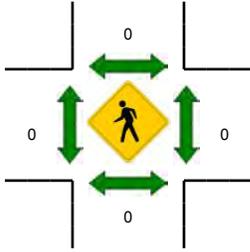
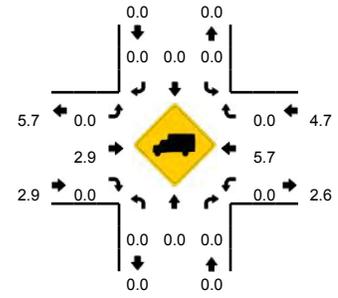
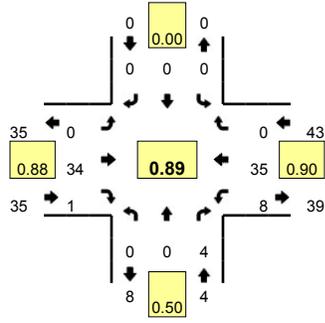
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	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	2	0	0	0	0	0	0	3	0	0	1	16	0	0	22	
7:15 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	34	0	0	41	
7:30 AM	0	0	1	0	0	0	0	0	0	10	0	0	0	42	0	0	53	
7:45 AM	1	0	1	0	0	0	0	0	0	18	0	0	0	36	0	0	56	172
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	4	0	4	0	0	0	0	0	0	72	0	0	0	144	0	0	224	
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Trousdale Ferry Pk/SR-141/E Main Access -- SR-264/Trousdale Ferry Pk
CITY/STATE: Smith, TN

QC JOB #: 14223836
DATE: Wed, Mar 22 2017

Peak-Hour: 11:00 AM -- 12:00 PM
Peak 15-Min: 11:45 AM -- 12:00 PM



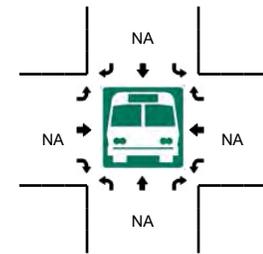
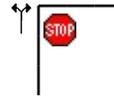
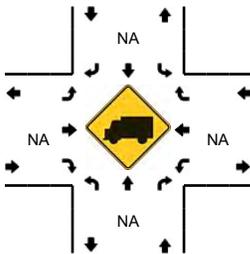
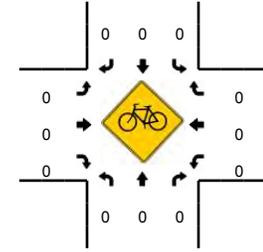
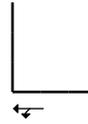
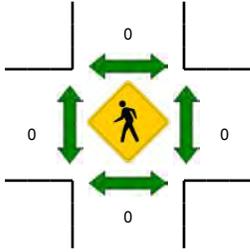
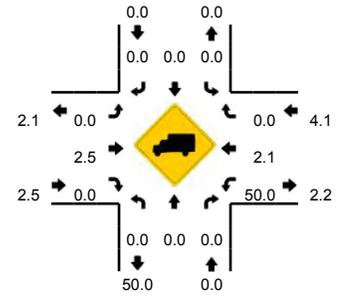
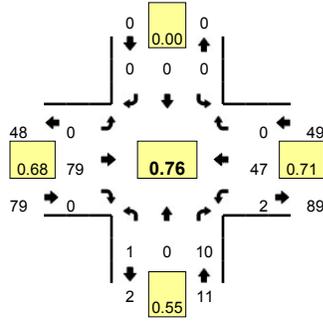
15-Min Counting Period Beginning At	SR-141/E Main (Northbound)				SR-141/E Main (Southbound)				SR-264/Trousdale Ferry Pk (Eastbound)				SR-264/Trousdale Ferry Pk (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	1	0	0	0	0	0	0	8	0	0	1	7	0	0	17	
11:15 AM	0	0	2	0	0	0	0	0	0	7	0	0	0	11	0	1	21	
11:30 AM	0	0	0	0	0	0	0	0	0	10	0	0	2	9	0	0	21	
11:45 AM	0	0	1	0	0	0	0	0	0	9	1	0	4	8	0	0	23	82
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	0	4	0	0	0	0	0	0	36	4	0	16	32	0	0	92	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Trousdale Ferry Pk/SR-141/E Main Access -- SR-264/Trousdale Ferry Pk
CITY/STATE: Smith, TN

QC JOB #: 14223837
DATE: Wed, Mar 22 2017

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:15 PM -- 4:30 PM



15-Min Counting Period Beginning At	Trousdale Ferry Pk/SR-141/E Main Access (Northbound)				Trousdale Ferry Pk/SR-141/E Main Access (Southbound)				SR-264/Trousdale Ferry Pk (Eastbound)				SR-264/Trousdale Ferry Pk (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	0	0	0	0	0	30	0	0	0	8	0	0	39	
4:15 PM	0	0	5	0	0	0	0	0	0	23	0	0	0	18	0	0	46	
4:30 PM	1	0	2	0	0	0	0	0	0	13	0	0	0	13	0	0	29	
4:45 PM	0	0	2	0	0	0	0	0	0	13	0	0	2	8	0	0	25	139
5:00 PM	0	0	0	0	0	0	0	0	0	17	0	0	1	9	0	0	27	127
5:15 PM	0	0	1	0	0	0	0	0	0	34	0	0	3	9	0	0	47	128
5:30 PM	0	0	3	0	0	0	0	0	0	20	1	0	0	5	0	0	29	128
5:45 PM	0	0	2	0	0	0	0	0	0	20	0	0	3	8	0	0	33	136
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	0	20	0	0	0	0	0	0	92	0	0	0	72	0	0	184	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

APPENDIX B: ENVIRONMENTAL SCREENING



Preliminary Environmental Screening for Proposed Corridor Study

Gordonsville, Smith County, Tennessee

Project Number: 13176.003

For:
City of Gordonsville

Community Transportation Planning Grant
Gordonsville, Smith County, Tennessee



Prepared By:
Neel-Schaffer, Inc.
1022 Highland Colony Parkway, Suite 202
Ridgeland, Mississippi 39157

Report Date: July 17, 2017

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 Appendix C: Threatened and Endangered Species
 Appendix D: Floodplain/Floodway
 Appendix E: Prime Farmland
 Appendix F: Wild and Scenic Rivers
 Appendix G: Historic and Cultural Resources
 Appendix H: Parks and Recreational Resources
 Appendix I: Native American Coordination
 Appendix J: Hazardous Sites

i. ACRONYMS/ABBREVIATIONS

AFS	Air Facility System
AST	Aboveground Storage Tank
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCUS	Comprehensive Environmental Response, Compensation and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
CORRACTS	Corrective Action Sites
ERNS	Emergency Response Notification System
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
HUC	Hydrologic Unit Code
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
MSAT	Mobile Source Air Toxics
NFRAP	No Further Remedial Action Planned
NPL	National Priorities List
NPS	National Park Service
NRCS	National Resources Conservation Service
NSI	Neel-Schaffer, Inc.
NWI	National Wetland Inventory
POC	Point of Contact
RCRA	Resource Conservation and Recovery Act
SHWS	State Hazardous Waste Sites
SQG	Small Quantity Generator
SWF/LF	Solid Waste Landfills
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TRI	Toxic Release Inventory
TWRA	Tennessee Wildlife Resources Agency
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank

i. **EXECUTIVE SUMMARY**

Neel-Schaffer, Inc. (NSI) has performed a preliminary environmental screening for areas of land along existing roadways in Gordonsville, Smith County, Tennessee. It is our understanding that the City of Gordonsville will be conducting work under a Transportation Planning Grant for a potential roadway widening project within the City of Gordonsville, Smith County, Tennessee. The preliminary environmental screening has been conducted on a planning level to identify potential environmental constraints within the approximate 6.2 mile project area.

The environmental screening included a one mile radius search of facilities with the potential for negative environmental impacts to the corridor. Other sensitive or potentially sensitive areas were evaluated within and adjacent to the ROW. Potential wetlands exist within the 100 year floodplain, floodways, along streams/roadside ditches, and in low-lying areas within and near the proposed project corridor. Current and potential historic architectural structures and districts, were located adjacent to the proposed corridor expansion and critical habitats could potentially be located within or near the proposed project corridor and could be impacted by proposed activities. Prior to development of the proposed corridor area, further environmental review through state and federal agency guidance should be performed to ensure sensitive resources will not be affected by construction activities.

1.0 INTRODUCTION

The proposed action will include the widening and/or modifications to three existing roadways located within the City of Gordonsville in Smith County, Tennessee. The preliminary environmental screening was completed through online desktop applications and a windshield survey on April 27, 2017. Topographic maps and aerial photographs were compiled utilizing GIS software and are attached in Appendix A (Maps 1 and 2, respectively).

The approximate study limits begin at the northern city limits on State Road-53 (Gordonsville Highway) and extend south to State Road -141 (East Main Street). From near the intersection of State Road-53 and State Road-141, the corridor extends south on Hickman Highway/Hatton Wauford Parkway to the city limits and east to SR-264 (Trousdale Ferry Pike)/Meadow Drive. From SR-264 (Trousdale Ferry Pike) and SR-141 (East Main Street) to the Caney Fork River. The total project length is approximately 6.2 miles.

2.0 RIGHT-OF-WAY

The amount of land to be acquired as a result of the proposed action has not yet been determined. The potential for the acquisition of more than one acre of right-of-way and/or the displacement of any commercial or residential occupants is still under review. Once the project limits have been determined, these criteria along with temporary easement locations should be presented to the Tennessee Department of Transportation (TOOT) point of contact (POC) for further recommendations.

3.0 ACCESS CONTROL

Proposed access control information will be available upon the release of proposed corridor plans.

4.0 STREAMS/WETLANDS

According to the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Digital Wetlands Mapper, one freshwater emergent wetland exists within the proposed project area corridor along State Road 264. However, the potential exists for the presence of wetland indicators along existing creeks, streams, roadside ditches, stormwater drainageways, and in low-lying areas throughout the project corridor that could be impacted by future construction activities. Many of these areas could be jurisdictional wetlands and waters connected to Mulherrin Creek in the north and Caney Fork River and Hickman Creek to the north and west, respectively. Caney Fork River is listed as a traditional navigable waterway located within

the Cumberland River Basin. The following areas shown in Figure 4 (Appendix B) should be evaluated for the presence of potential wetlands and reviewed by the United States Army Corps of Engineers (USACE) Nashville District, especially those areas located within the 100 year floodplain and floodway areas (refer to section 6.0):

State Road 53 (Gordonsville Highway)

- Mulherrin Creek (tributary of Caney Fork)
- Tributaries, intermittent streams, and ditches near and parallel to State Road 53 connecting to Mulherrin Creek

Hickman Highway/Hatton Wauford Parkway

- Stormwater Drainage Area 1 (connected to intermittent stream that connects with Mulherrin Creek)
- Agee Creek and surrounding low-lying areas

State Road-264 (Trousdale Ferry Pike)/Meadow Drive

- Stormwater Drainage Area 3
- Hickman Creek Tributaries and Drainage Areas
- WMS Freshwater Emergent Wetland

The proposed project corridor is located in the Caney Fork River Watershed of the Cumberland River Basin, U.S. Geological Service (USGS) hydrologic unit code HUC 12 (05130108). The Caney Fork River Watershed is approximately 1,771 square miles and drains to the Cumberland River. The following watersheds are located within the project area and can be found in Appendix B:

- Mulherrin Creek Watershed: HUC 12, 051301080907
- Caney Fork River Outlet Watershed: HUC 12, 051301080908
- Hickman Creek Watershed: HUC 12, 051301080906

5.0 ENDANGERED SPECIES

The Tennessee Department of Environment and Conservation (TDEC) maintains an online database of federal and state-listed rare, threatened, and endangered species. The results of the Smith County, Tennessee database search are show in Table 1. The USFWS and TDEC should be contacted prior to work along the corridor for a determination of the presence of listed species along the corridor and the impact to those species in accordance with the Clean Water Act; the Endangered Species Act; Fish and Wildlife coordination Act; Executive Order 11988, Floodplain Management; Executive Order 11990; Protection of Wetlands; Tennessee Non-game and Endangered or Threatened Wildlife Species Conservation Act of 1974; Tennessee Rare Plant

Protection and Conservation Act of 1985; and the Tennessee Water Quality Control Act of 1977.

No threatened and endangered species or critical habitats were observed during the site visit or shown on the USFWS map in Appendix C. However, TDEC may require an evaluation of undisturbed, wooded areas along the corridor conducive to critical habitat conditions of bat species found within the county. An evaluation of aquatic species by a licensed biologist/diver in Mulherrin Creek could also be warranted if construction activities are anticipated to impact the creek.

Table 1. State and Federally Listed Rare, Threatened, or Endangered Species in Smith County

Scientific Name	Common Name	Status	Group
<i>Villosa trabalis</i>	Cumberland bean (pearlymussel)	Endangered	Clams
<i>Epioblasma torulosa torulosa</i>	Tubercled blossom (pearlymussel)	Endangered	Clams
<i>Epioblasma florentina florentina</i>	Yellow blossom (pearlymussel)	Endangered	Clams
<i>Quadrula sparsa</i>	Appalachian monkeyface (pearlymussel)	Endangered	Clams
<i>Lampsilis abrupta</i>	Pink mucket (pearlymussel)	Endangered	Clams
<i>Dromus dromas</i>	Dromedary pearlymussel	Endangered	Clams
<i>Plethobasus cicatricosus</i>	White wartyback (pearlymussel)	Endangered	Clams
<i>Pleurobema plenum</i>	Rough pigtoe	Endangered	Clams
<i>Plethobasus cooperianus</i>	Orangefoot pimpleback (pearlymussel)	Endangered	Clams
<i>Obovaria retusa</i>	Ring pink (mussel)	Endangered	Clams
<i>Cumberlandia monodonta</i>	Spectaclecase (mussel)	Endangered	Clams
<i>Pleurobema clava</i>	Clubshell	Endangered	Clams
<i>Epioblasma brevidens</i>	Cumberlandian combshell	Endangered	Clams
<i>Epioblasma capsaeformis</i>	Oyster mussel	Endangered	Clams
<i>Pleuonaia dolabelloides</i>	Slabside Pearlymussel	Endangered	Clams
<i>Cyprogenia stegaria</i>	Fanshell	Endangered	Clams
<i>Epioblasma triquetra</i>	Snuffbox mussel	Endangered	Clams
<i>Quadrula cylindrica cylindrica</i>	Rabbitsfoot	Threatened	Clams
<i>Plethobasus cyphus</i>	Sheepnose Mussel	Endangered	Clams
<i>Physaria globosa</i>	Short's bladderpod	Endangered	Flowering Plants
<i>Myotis sodalis</i>	Indiana bat	Endangered	Mammals
<i>Myotis grisescens</i>	Gray bat	Endangered	Mammals
<i>Myotis septentrionalis</i>	Northern Long-Eared Bat	Threatened	Mammals

6.0 FLOODPLAIN/FLOODWAY

Five areas within the project area were identified as being located within the 100 year flood zone or floodways of waters of the U.S (Appendix D). Portions of State Road 53 (Gordonsville Highway) and State Road 264 (Trousdale Ferry Pike)/Meadow Drive were located in the 100 year floodplain and/or floodways of Mulherrin and Hickman Creeks according to the Federal Emergency Management Agency (FEMA) Digital Flood Insurance Rate Map (DFIRM). One area (Area 3 on Figure 6) near the intersection of Hatton Wauford Parkway and Hickman Highway was adjacent to the Agee Creek/Branch floodplain and could be indirectly impacted by corridor construction activities and stormwater runoff. The USACE Nashville District and TDOT POC should be contacted for direction prior to work being performed within the corridor for additional construction restrictions in these areas.

7.0 FARMLAND

The Natural Resources Conservation Service (NRCS) Web Soil Survey indicated soil units of prime farmland throughout the project corridor. During the site reconnaissance, no areas of cultivated land were identified within the project corridor and adjacent areas. The majority of soil units suitable for prime farm land indicated on Figure 7 and within the project area have previously been developed by roadway, residential, commercial, or industrial construction or are rarely cultivated due to flooding. The NRCS Prime Farmland Report is located in Appendix E.

8.0 WILD AND SCENIC RIVERS

The Tennessee Wildlife Resources Agency (TWRA), USDA, and TDEC maintain a list of state and federal-listed scenic rivers located throughout Tennessee. Wild and Scenic Rivers were not identified within the proposed corridor buffer, and a map indicating these findings can be found in Appendix F.

9.0 AIR QUALITY

An air quality analysis will be conducted upon the release of proposed corridor plans. The air quality analysis should include transportation conformity and Mobile Source Air Toxics (MSATs) for all projects, and pertinent information provided to the POC.

10.0 NOISE

A noise study and abatement measures analysis will be conducted upon the release of proposed corridor plans, if required.

11.0 CULTURAL AND HISTORIC RESOURCES

The National Park Service (NPS) maintains an online database of registered historic archaeological and architectural resources. There were no historic structures or cultural resources indicated as being located within the project area by the NPS that would be impacted by construction. However, numerous architectural resources with potential for listing on the National Register of Historic Places are located adjacent to the proposed project corridor that could be significantly impacted by proposed construction activities. These resources include residences, barns, businesses, and churches located on East Main Street. Representative photographs of these areas and corresponding map locations can be found in Appendix G. The City of Gordonsville, the Tennessee Historical Commission (THC), and the NPS should be contacted prior to work activities along the corridor area for assistance with confirmation of any potential or unrecorded historic properties that could be affected by construction and determine any undesired impacts to these resources. An assessment of architectural structures located within and adjacent to the proposed project area will determine the National Register eligibility of these resources and mitigation requirements for updating records at the THC.

12.0 PARKS AND RECREATIONAL RESOURCES

On the attached Figure 10 (Appendix H) provided by the National Park Service (NPS), there were no national parks, national preserves, recreation areas, scenic rivers or parkways, historic parks or reserves, or other sensitive areas documented by the NPS within the city limits of Gordonsville. No wildlife refuges were located within the project area. The TDEC Recreational Educational Services Division, Grants Program Office should be contacted prior to construction activities for a local review and potential impact analysis of the proposed work.

13.0 NATIVE AMERICAN COORDINATION

Although no state or federal protected Native American lands are located within the proposed corridor, coordination with Native American Tribes will be required if the project involves acquisition of new ROW on previously undisturbed land (refer to Appendix I). Native American Tribes will most likely request a complete cultural resources assessment of the undisturbed areas performed

by an Archaeologist that meets the Secretary of the Interior's requirements. Consultation with the TDOT POC should be conducted once the proposed project plans are available for determination of any undisturbed ROW areas and potential impacts to Native American Tribes or artifacts.

14.0 HAZARDOUS MATERIALS

Numerous businesses with underground storage tanks (USTs) and bulk storage, use, and transportation of hazardous materials were located adjacent to the project corridor. These facilities included service stations and industrial manufacturing facilities.

The Environmental Protection Agency's (EPA's) Envirofacts website indicated the following sites and release events as being located within one mile of the proposed project corridor (refer to Appendix J):

- Toxic Releases (1)
- Water Dischargers (8)
- Air Pollution (10)
- Hazardous Waste (7)
- National Toxic Substance Incident Report (1)

Prior to work within the project area, a thorough Phase I Environmental Site Assessment should be conducted to identify any hazardous sites through documents and avenues not readily available in the preliminary screening process that could potentially impact or have previously impacted the project area.

15.0 ENVIRONMENTAL JUSTICE

The majority of the corridor is located along business routes and streets with single family residences. According to the 2010 Census, a total of 1,213 residents lived in Gordonsville, TN, up 13.8% from the 2000 census. 95% of the residents were of caucasian decent. The median household income grew to \$36,842 from 2000 to 2010 with 11% of the population below the poverty line. The median resident age was 38 years. The project will not have significant impacts to minority and low-income populations.

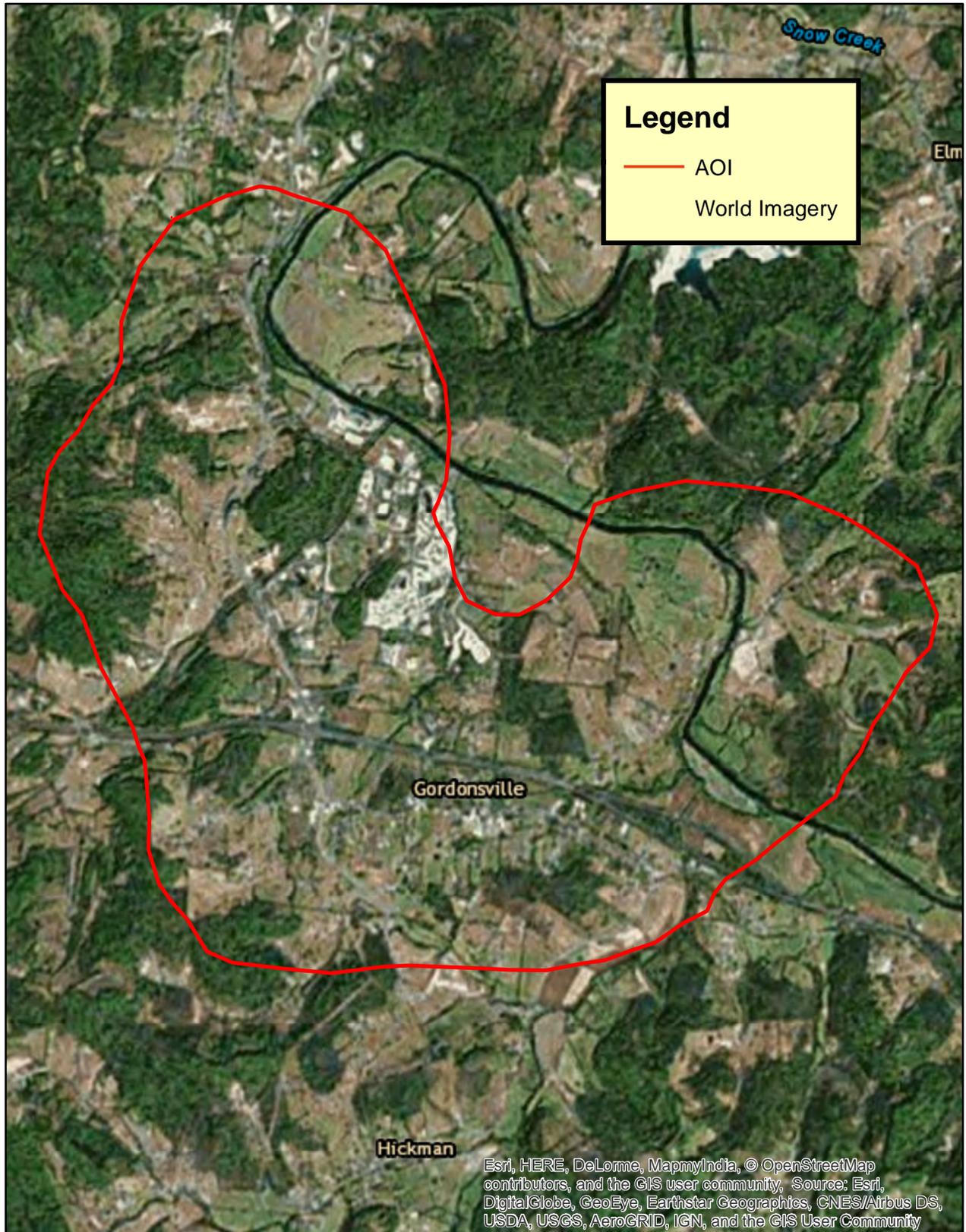
16.0 CONCLUSION

In conclusion, NSI has performed this preliminary environmental screening of the proposed

project corridor to identify any sensitive resources that could be impacted by construction activities. Potential wetlands and other waters of the U.S. and historic architectural structures were identified adjacent to or near the proposed project corridor that could be potentially impacted by future development. Numerous sites with hazardous materials utilization and storage as well as previous toxic releases are located within one mile of the proposed project corridor. A threatened and endangered species survey may be required by the US Fish and Wildlife Service prior to construction due to the nature and size of the project and contact with existing streams and drainage areas. Prime farmlands were located close to the existing ROW and could be impacted by proposed activities. Prior to development of the proposed roadway project, thorough studies and updated reviews of sensitive resources in the area and subsequent consultation with corresponding state and federal agencies are recommended to ensure existing and potential resources will not be negatively impacted by proposed construction activities.

APPENDIX A

SR 53/141 Corridor Study - Gordonsville/Smith County, TN

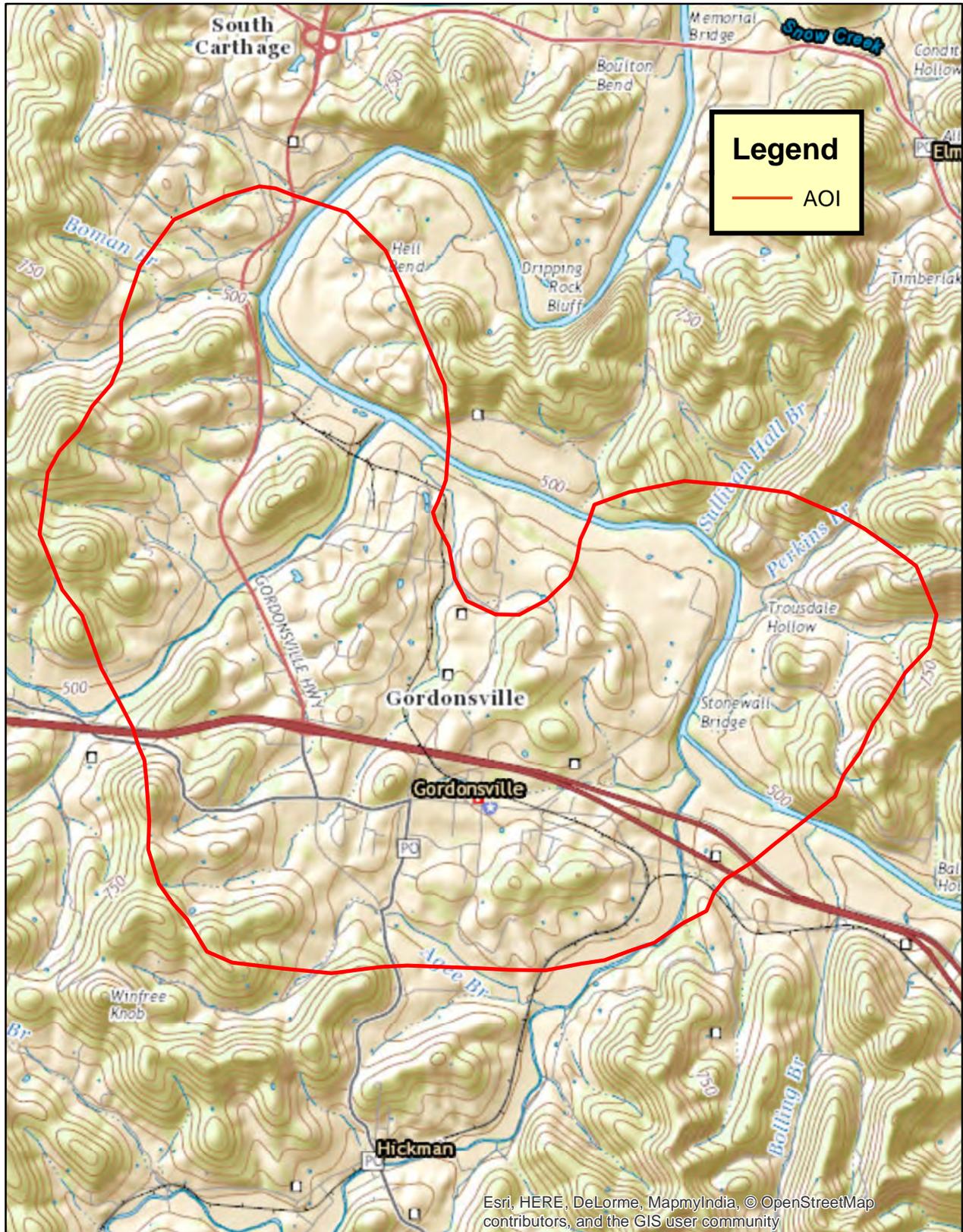


0 0.5 1 2 Miles

Figure 1
Smith County Aerial Photograph



SR 53/141 Corridor Study - Gordonsville/Smith County, TN



0 0.5 1 2 Miles

Figure 2
Smith County Topographic Map





Photo 1. View looking south along State Road 53 (Gordonsville Highway) from near the city limits.



Photo 2. View south towards the Interstate 40 exist from Gordonsville Highway.



Photo 3. View looking north toward the Interstate 40 exit from Gordonsville Highway.



Photo 4. View looking east toward potential historic area along East Main Street.



Photo 5. View looking east along East Main Street near Gordonsville High School.



Photo 6. View facing west toward the intersection of East Main Street and State Road 264 (Trousdale Ferry Pike).



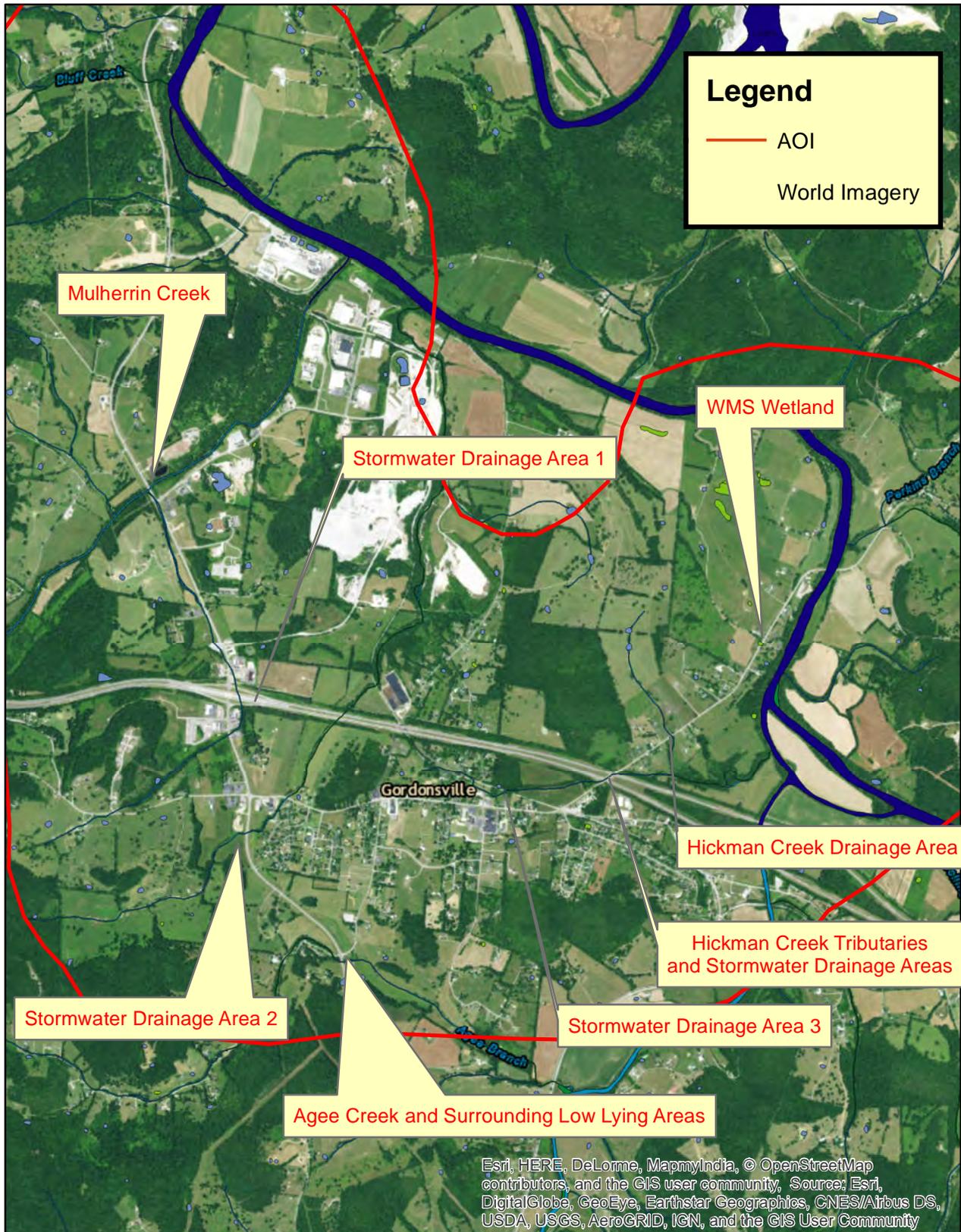
Photo 7. View facing north on State Road 264 near the Interstate 40 overpass.



Photo 8. View facing southeast toward Caney Fork River from Trousdale Ferry Pike bridge.

APPENDIX B

SR 53/141 Corridor Study - Gordonsville/Smith County, TN



Gordonsville Watersheds

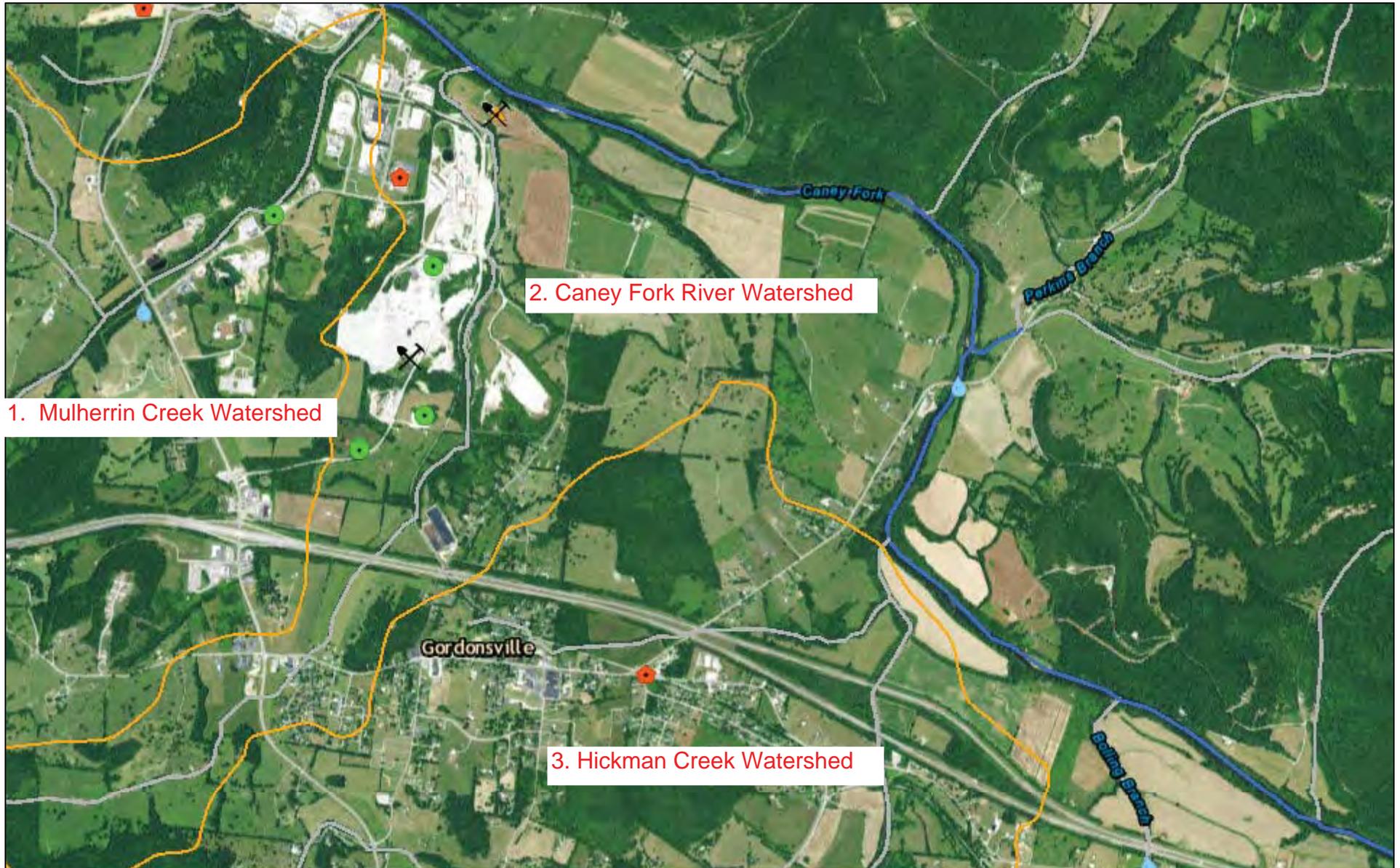
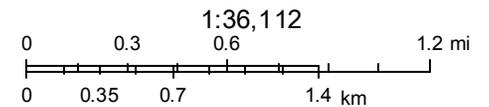


Figure 4
HUC 12

- 1. Mulherrin Creek Watershed
- 2. Caney Fork River Watershed
- 3. Hickman Creek Watershed



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community



Photo 1. View looking south toward Mulherrin Creek from State Road 53.

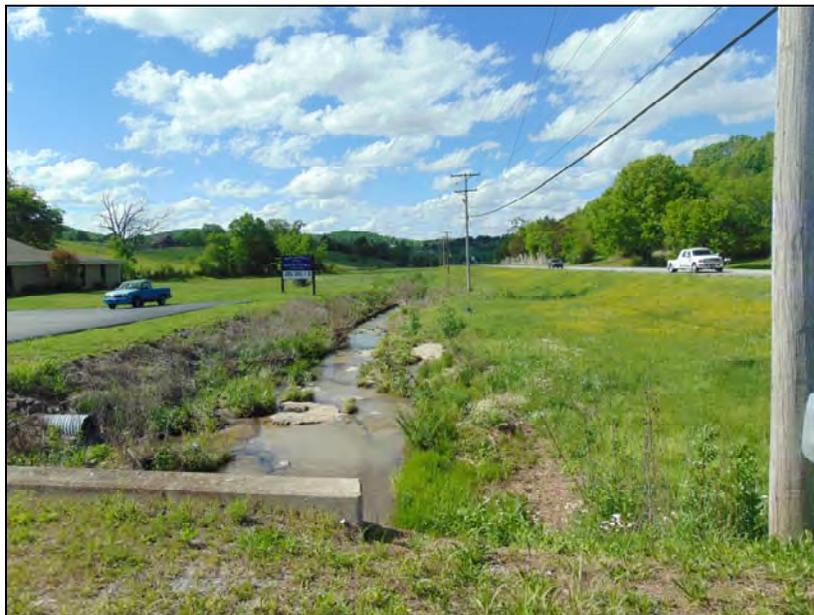


Photo 2. View facing the intermittent stream that is a tributary to Mulherrin Creek along the west side of State Road 53 .



Photo 3. View looking north toward the drainage area/intermittent stream where it crosses over State Road 53 near the Interstate 40 intersection.



Photo 4. View looking east toward the drainage area/intermittent stream where it crosses over State Road 53 near the Interstate 40 intersection.

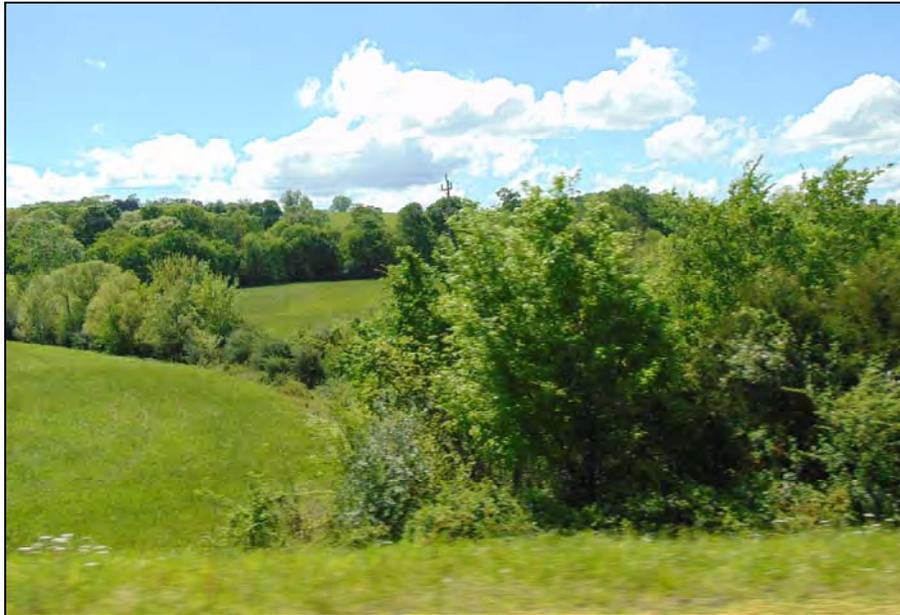


Photo 5. View looking southwest toward the drainage area/tributary of Caney Fork River from Hatton Wauford Pkwy (Stormwater Drainage Area 2 on Figure 3).

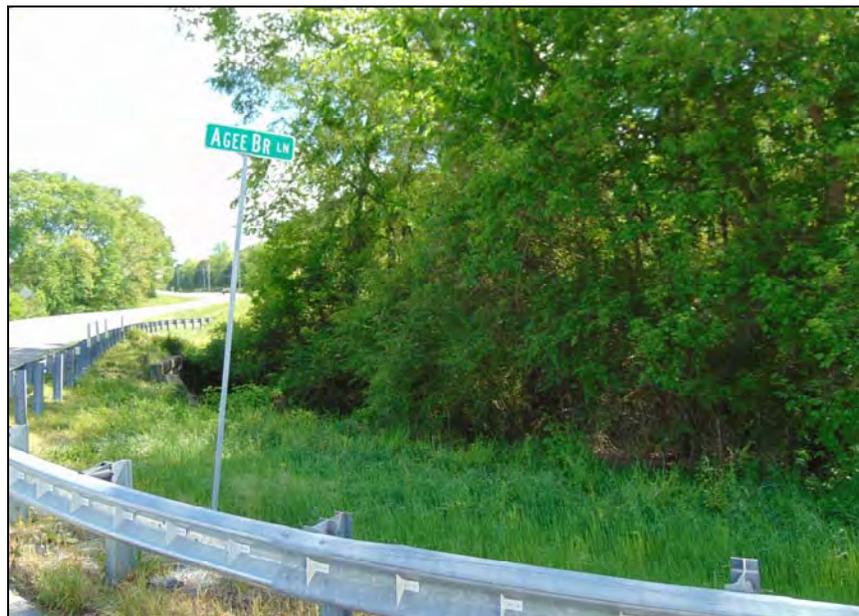


Photo 6. View looking south toward Agee Creek near the intersection of Hatton Wauford Pkwy and Hickman Hwy.



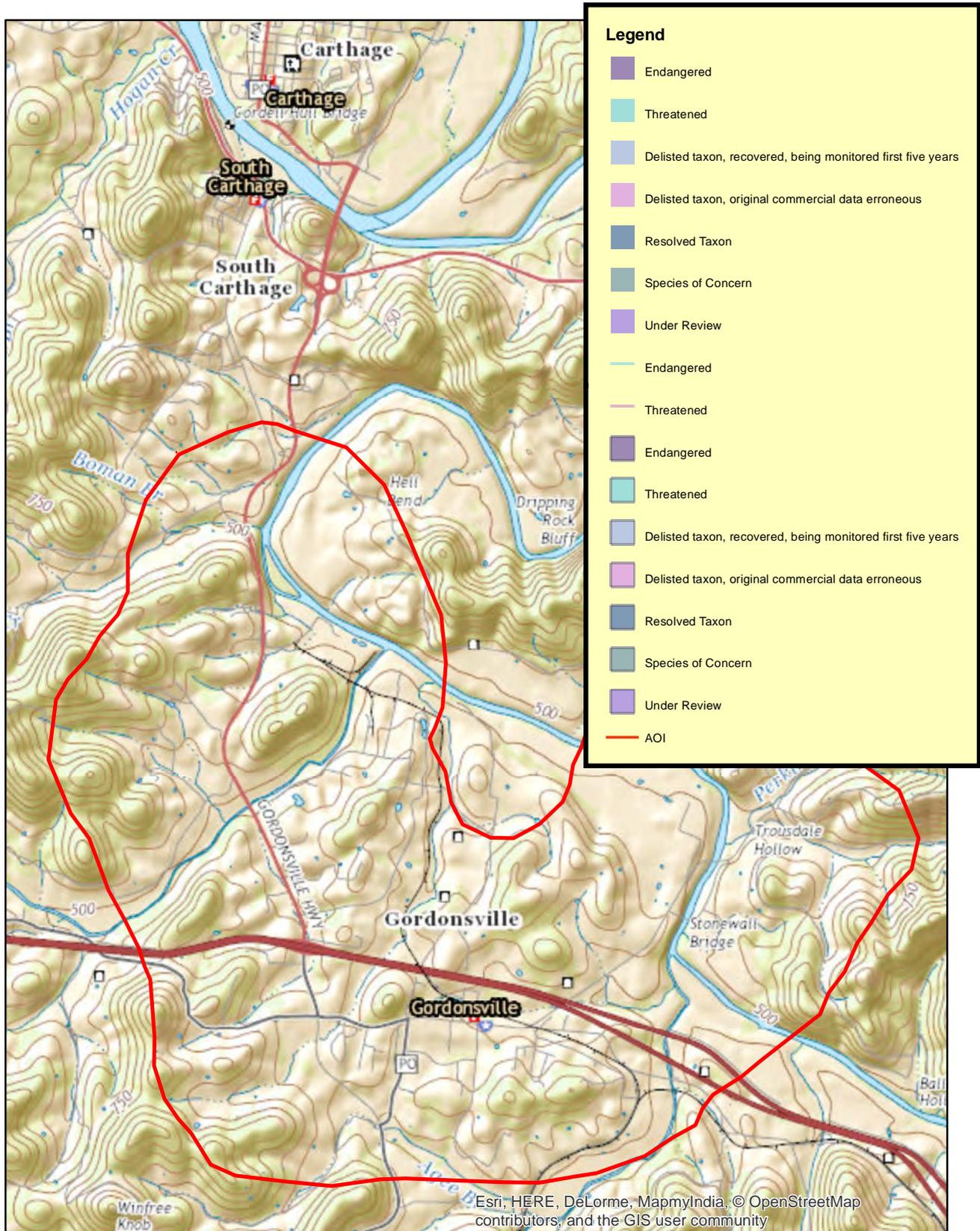
Photo 7. View looking south toward Interstate 40 overpass from Truesdale Ferry Pike.



Photo 8. View facing north toward WMS wetland area on Trousdale Ferry Pike.

Appendix C

SR 53/141 Corridor Study - Gordonsville/Smith County, TN



0 0.5 1 2 Miles

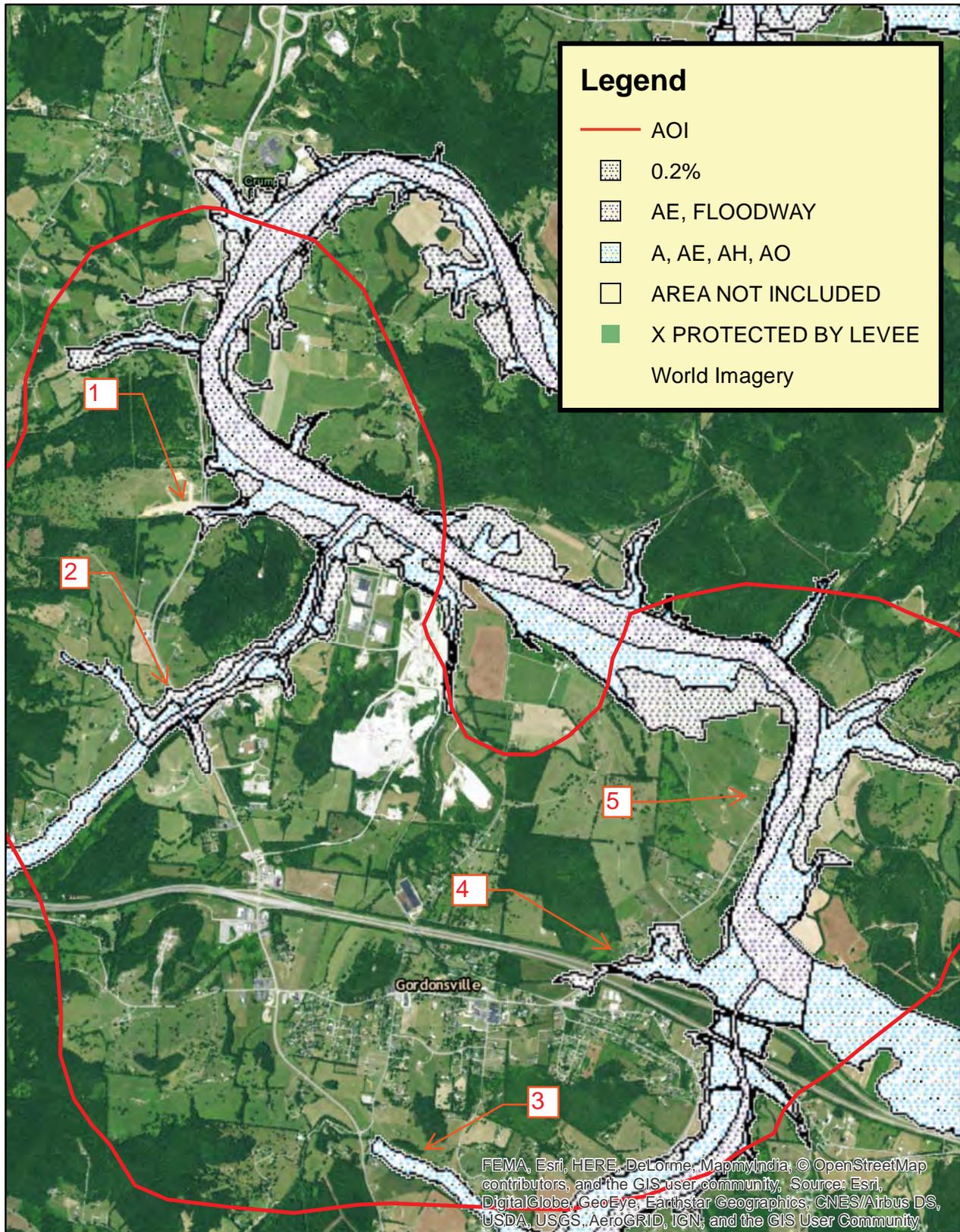
Figure 5
Threatened and Endangered Species
and Critical Habitat



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

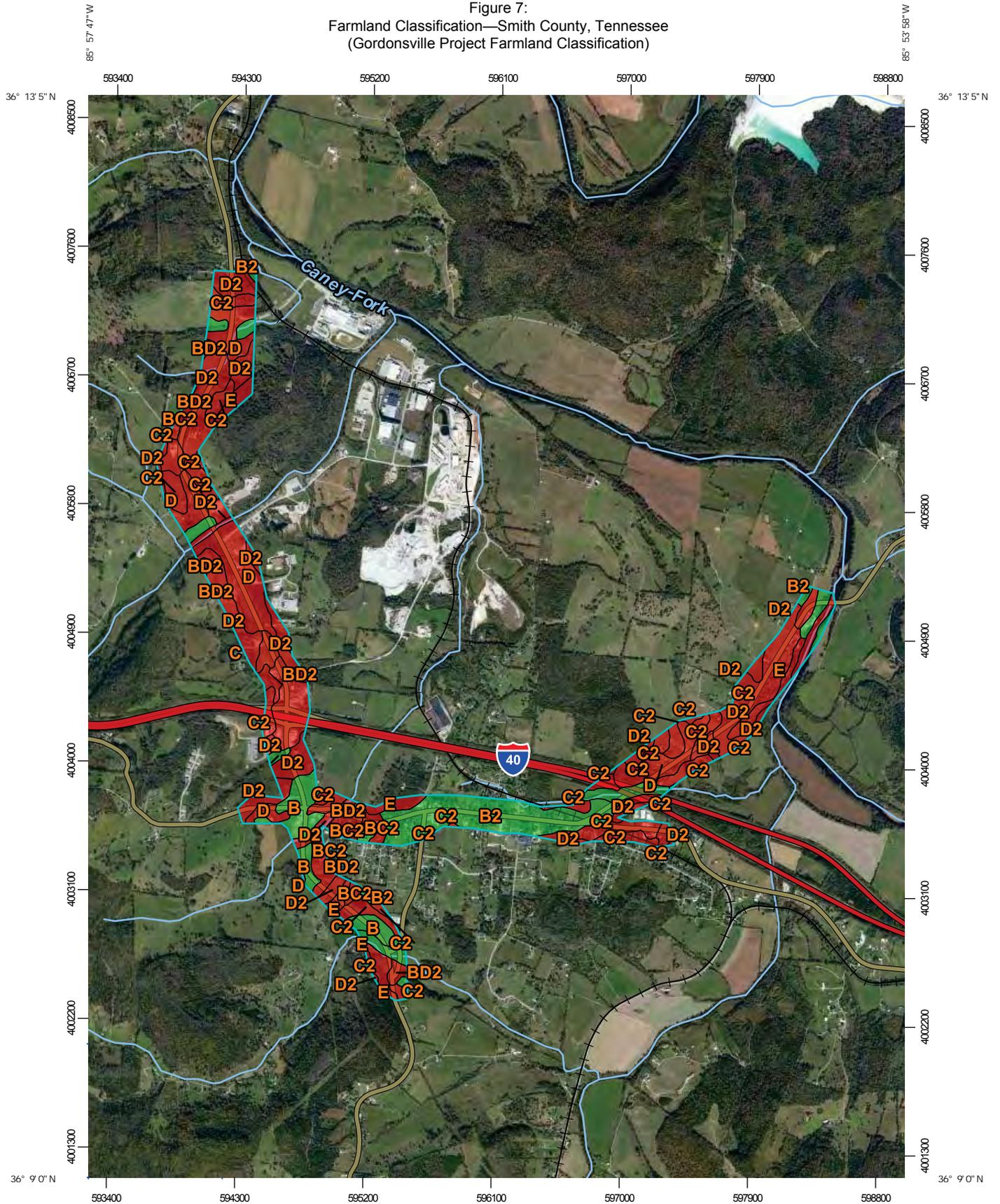
Appendix D

SR 53/141 Corridor Study - Gordonsville/Smith County, TN



Appendix E

Figure 7:
Farmland Classification—Smith County, Tennessee
(Gordonsville Project Farmland Classification)



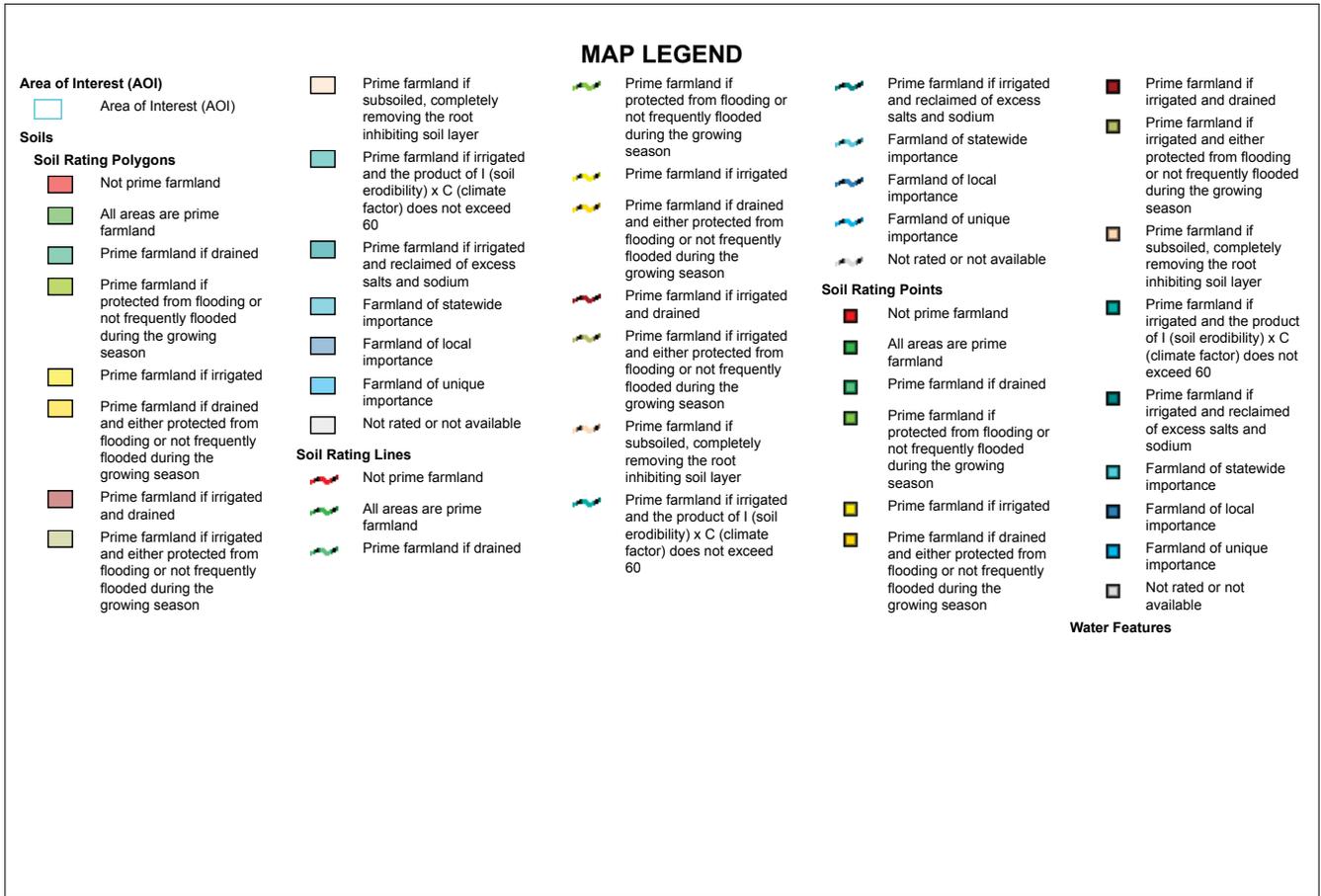
Map Scale: 1:36,900 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84



Farmland Classification—Smith County, Tennessee
(Gordonsville Project Farmland Classification)



Farmland Classification—Smith County, Tennessee
(Gordonsville Project Farmland Classification)

MAP INFORMATION

-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Smith County, Tennessee
Survey Area Data: Version 10, Sep 16, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 8, 2011—Oct 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — Smith County, Tennessee (TN159)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ae	Arents	Not prime farmland	32.9	4.5%
AmB2	Armour silt loam, 2 to 5 percent slopes	All areas are prime farmland	87.9	12.0%
AmC2	Armour silt loam, 5 to 12 percent slopes	Not prime farmland	28.7	3.9%
AmD2	Armour silt loam, 12 to 20 percent slopes	Not prime farmland	8.6	1.2%
At	Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	All areas are prime farmland	20.4	2.8%
AwE	Ashwood-Mimosa-Rock outcrop complex, 15 to 45 percent slopes	Not prime farmland	26.3	3.6%
BxC2	Braxton gravelly silt loam, 5 to 12 percent slopes, eroded	Not prime farmland	10.1	1.4%
BxD2	Braxton gravelly silt loam, 12 to 20 percent slopes, eroded	Not prime farmland	30.6	4.2%
HkC2	Hicks silt loam, 5 to 12 percent slopes, eroded	Not prime farmland	39.2	5.3%
InD2	Inman flaggy silty clay loam, 12 to 20 percent slopes, eroded	Not prime farmland	7.4	1.0%
IsD2	Inman-Sandhill complex, 10 to 20 percent slopes, eroded	Not prime farmland	85.4	11.6%
Ln	Lindell silt loam, 0 to 2 percent slopes, occasionally flooded	All areas are prime farmland	20.2	2.7%
MmC2	Mimosa-Ashwood complex, 5 to 12 percent slopes, eroded	Not prime farmland	65.2	8.9%
MrC	Mimosa-Ashwood complex, 5 to 12 percent slopes, rocky	Not prime farmland	7.0	0.9%
MrD2	Mimosa-Ashwood complex, 12 to 30 percent slopes, rocky	Not prime farmland	21.8	3.0%
SaD2	Sandhill channery silt loam, 12 to 20 percent slopes, eroded	Not prime farmland	66.0	9.0%

Farmland Classification— Summary by Map Unit — Smith County, Tennessee (TN159)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
SyB	Sykes silt loam, 2 to 5 percent slopes	All areas are prime farmland	43.9	6.0%
SyC2	Sykes silt loam, 5 to 12 percent slopes, eroded	Not prime farmland	15.3	2.1%
TaC2	Talbot silt loam, 5 to 12 percent slopes, eroded	Not prime farmland	13.1	1.8%
TxD	Talbot-Rock outcrop complex, 5 to 20 percent slopes	Not prime farmland	95.3	13.0%
W	Water	Not prime farmland	10.2	1.4%
Totals for Area of Interest			735.7	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

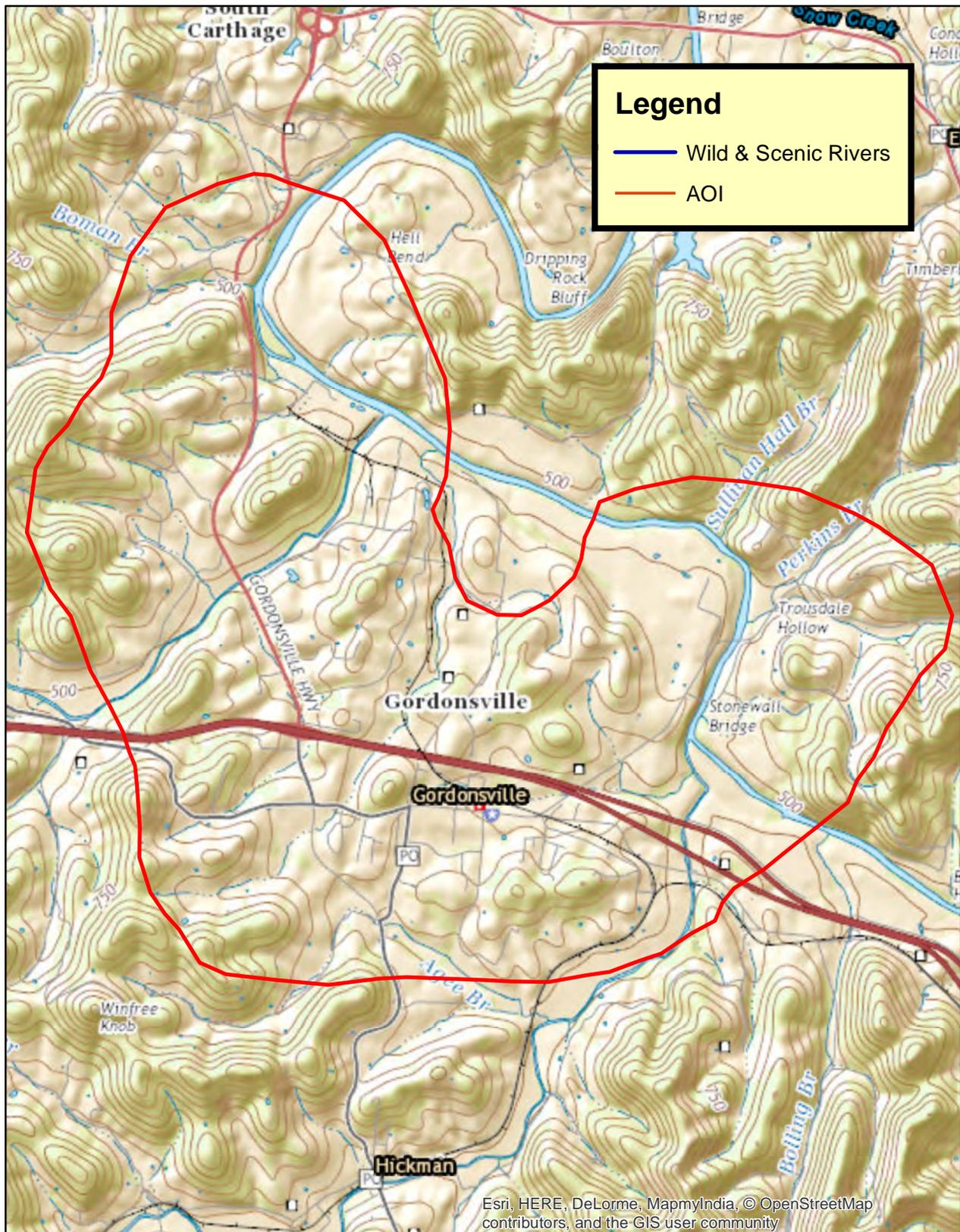
Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix F

SR 53/141 Corridor Study - Gordonsville/Smith County, TN



0 0.5 1 2 Miles

Figure 8

Wild and Scenic River Locations



Appendix G

SR 53/141 Corridor Study - Gordonsville/Smith County, TN

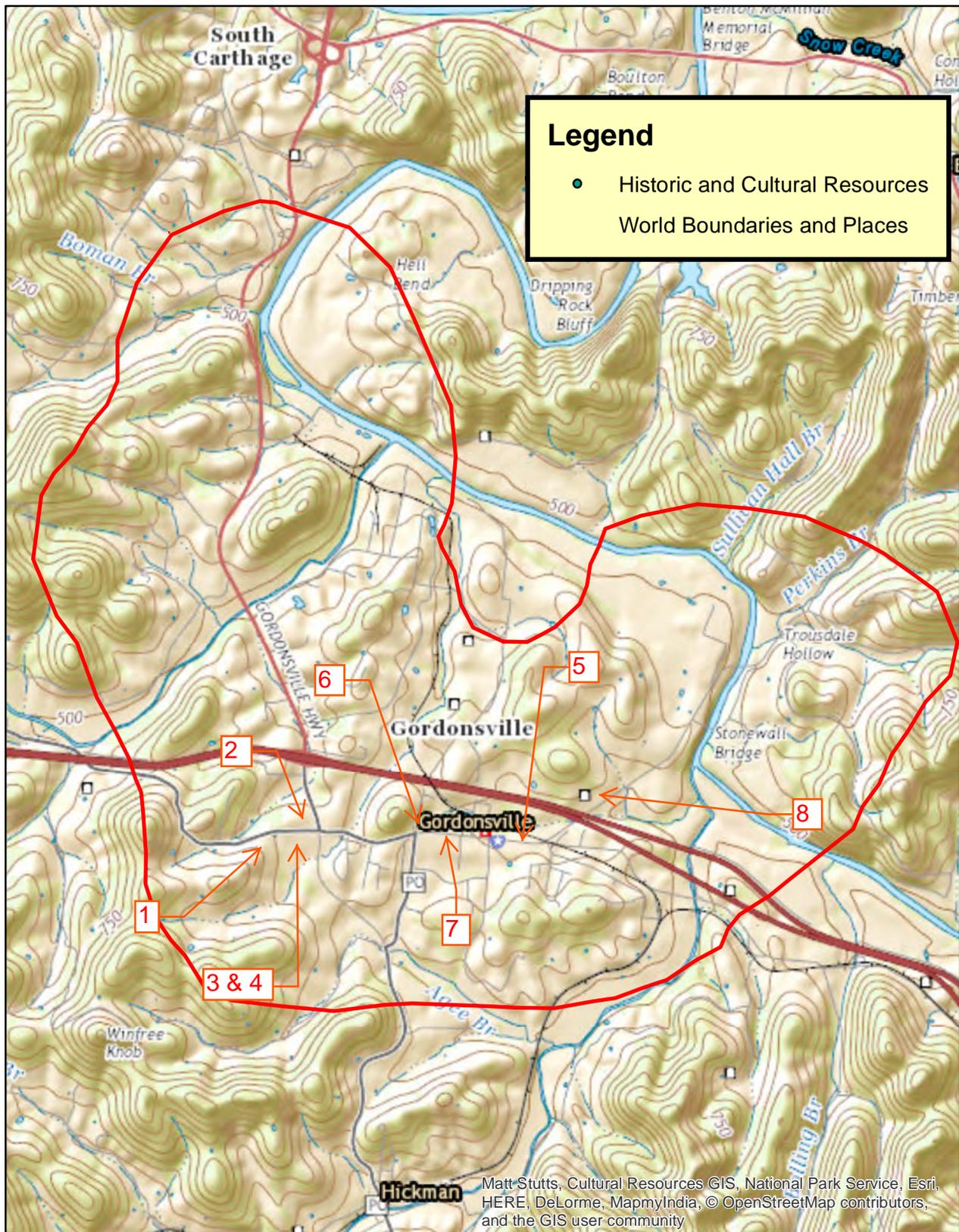


Figure 9
Historic and Cultural Resource
Locations





Photo 1. View looking north at residence and barn from intersection of East Main Street and Paris Street.



Photo 2. View looking northwest at residence from East Main Street.



Photo 3. View looking south toward residence from East Main Street.



Photo 4. View looking southwest toward residence from East Main Street.



Photo 5. View looking north toward home from East Main Street.



Photo 6. View looking north toward business from East Main Street.

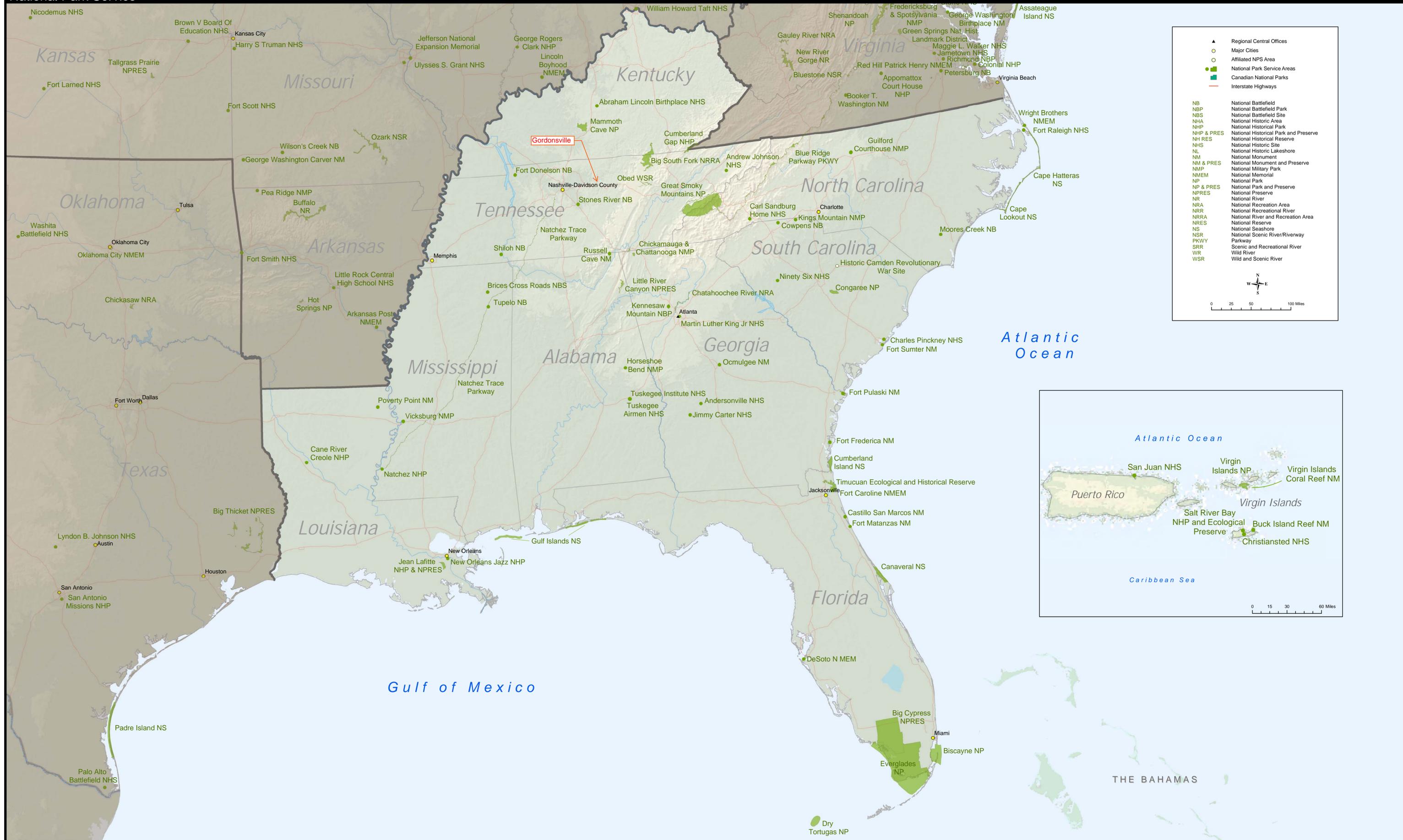


Photo 7. View looking south toward residence from East Main Street.



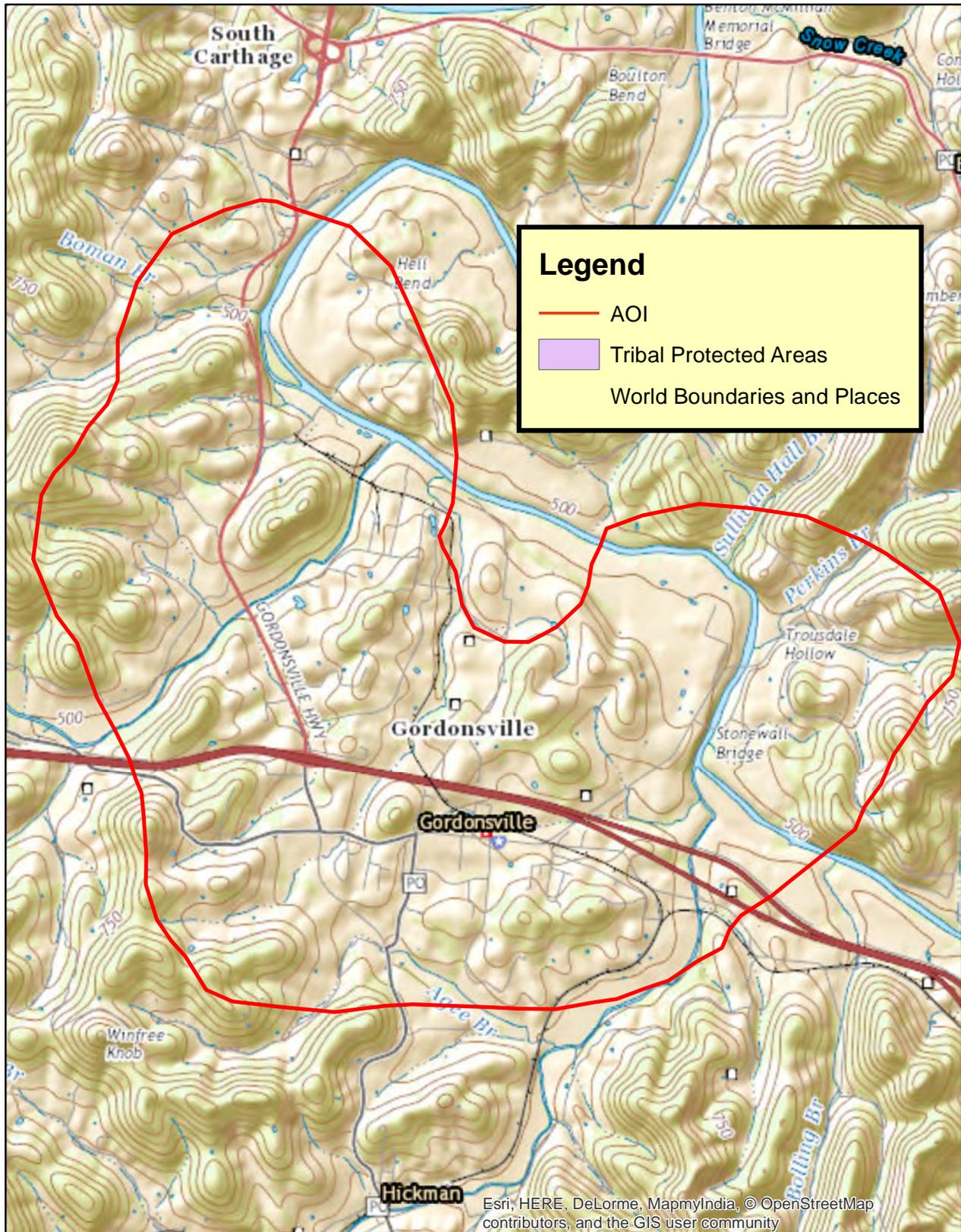
Photo 8. View facing west toward stone building from Trousdale Ferry Pike.

Appendix H



Appendix I

SR 53/141 Corridor Study - Gordonsville/Smith County, TN



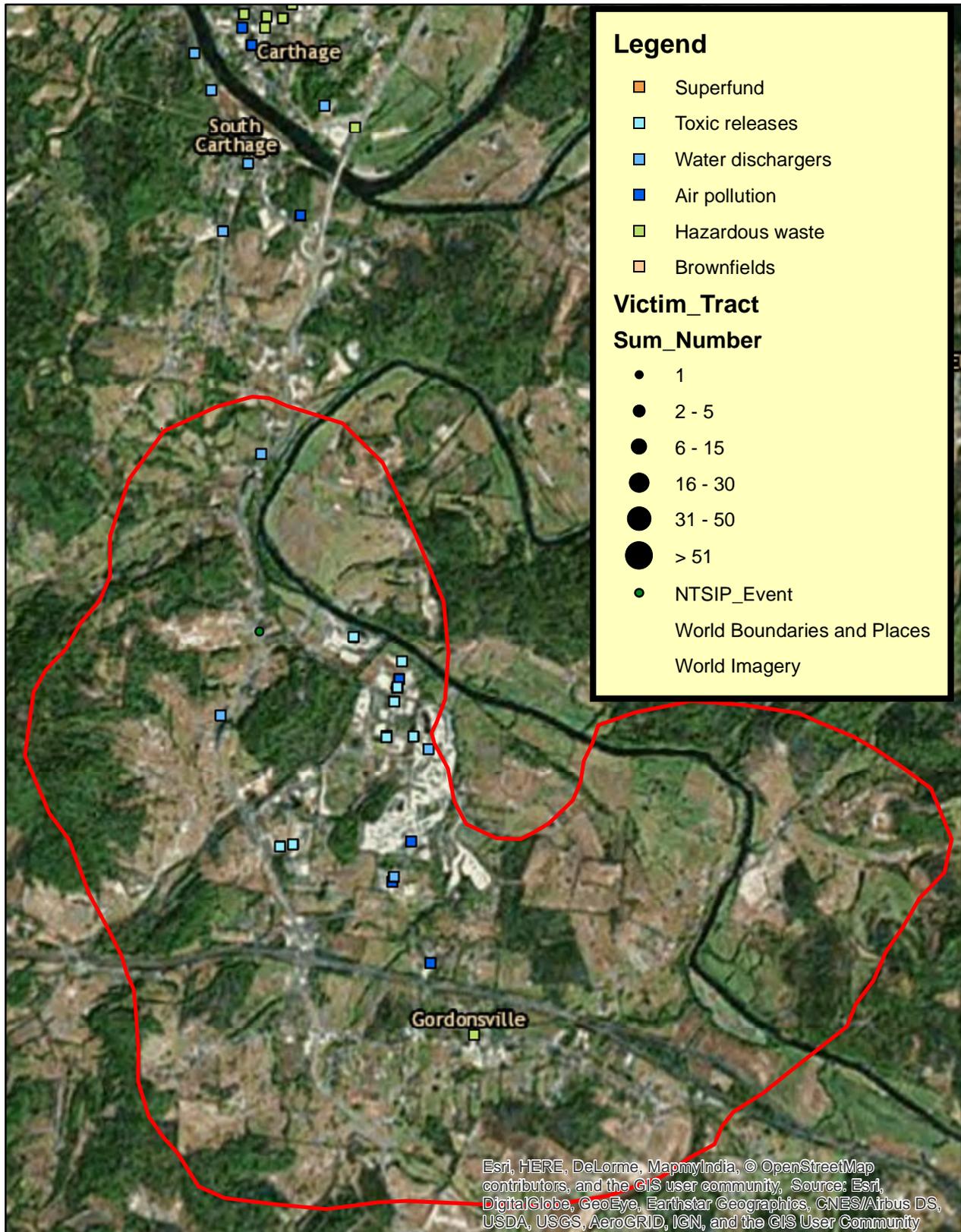
0 0.5 1 2 Miles

Figure 11
State and Federal Tribal
Protected Areas



Appendix J

SR 53/141 Corridor Study - Gordonsville/Smith County, TN



0 0.5 1 2 Miles

Figure 12.
Sites with Hazardous Materials



APPENDIX C: CAPACITY ANALYSIS



INTERSECTION LEVEL OF SERVICE ANALYSIS
Gordonsville CTPG - SR-53/SR-141

Intersection		Existing (2017)			Horizon (2027) ²			Recommended (2027) ²			Comment
		Peak Period ¹									
		AM	MD	PM	AM	MD	PM	AM	MD	PM	
SR-53 @ JMZ Drive	NB	A	A	A	A	A	A	A	A	A	Elevated side street LOS is typical and expected for low-volume approaches of two-way stop control intersections. Consider need for NB RT Lane (Speed and AM Volume). Continue to monitor Industrial growth; possible signalization.
	SB	A	A	A	A	A	A	A	A	A	
	WBL	B	B	C (15s)	C (22s)	B	E (38s)	C (22s)	B	E (36s)	
	WBR	B	B	B	C (16s)	B	D (27s)	B	B	C (24s)	
SR-53 @ Rogers Rd	NB	A	A	A	A	A	A	A	A	A	No Improvements Recommended
	SB	A	A	A	A	A	A	A	A	B	
	EBL	B	B	B	C (23s)	B	C (17s)	C (23s)	B	C (17s)	
	EBR	B	B	B	C (23s)	B	C (17s)	C (23s)	B	C (17s)	
	WBL	B	B	B	C (23s)	B	C (24s)	C (23s)	B	C (22s)	
	WBR	B	B	B	C (23s)	B	C (24s)	C (23s)	B	C (22s)	
SR-53 @ I-40 WB ³	NB	A	A	A	B	A	B	A	A	D (27s)	Evidence of need for SB RT Lane and Exclusive WB LT and RT Turn Lanes . Consider interim/long-term solutions - address operational and collision issues.
	SB	A	A	A	A	B	A	A	A		
	WB	C (17s)	C (17s)	C (19s)	E (44s)	C (24s)	F (100s)				
SR-53 @ I-40 EB ⁴	TOTAL	D (37s)	B	D (38s)	F (96s)	C (22s)	F (86s)	C (29s)	B	C (23s)	Current malfunction of vehicle detection creates inefficiency. Evidence of benefit from NB RT Turn Lane and Exclusive EB LT and RT Turn Lanes .
SR-53 @ Bradford Ave	NB	A	A	A	A	A	B	A	A	A	Analysis shows intersection operates within capacity limits, but challenges with operations and access control: heightened by high truck volumes. Recommend SB RT Turn lane at Bradford Ave.
	SB	A	A	A	A	A	A	A	A	A	
	EBL	B	B	C (16s)	C (20s)	C (17s)	E (37s)	C (20s)	C (16s)	D (31s)	
	EBR	B	B	C (16s)	C (20s)	C (17s)	E (37s)	C (20s)	C (16s)	D (31s)	
	WBL	B	B	B	C (15s)	B	C (16s)	C (15s)	B	C (16s)	
	WBR	B	B	B	C (15s)	B	C (16s)	C (15s)	B	C (16s)	
SR-53 @ SR-141	NB	B	A	B	C (21s - NB)	A	C (16s - NB)	B	A	B	Officials remark that intersection periodically does not function efficiently. Intersection provides gateway into Town.
	SB	C (16s - SB LT)	A	C (17s - SB LT)	F (62s - SB LT)	B	F (54s - SB LT)	B	A	C (22s)	
	EB	B	A	B	D (33s)	B	E (35s)	B	A	C (17s)	
	WB	C (15s - WB RT)	A	B	F (95s - WB RT)	A	D (33s - WB RT)	C (15s)	A	B	
SR-264 @ Hickman Hwy	NB	A	A	A	A	A	A	A	A	A	No Improvements Recommended
	SB	A	A	A	A	A	A	A	A	A	
	EBL	B	A	B	B	A	B	B	A	B	
	EBT	B	A	B	B	A	B	B	A	B	
	WBL	A	A	A	B	A	B	B	A	B	
	WBT	A	A	A	B	A	B	B	A	B	
SR-141 @ Hickman Hwy	NB	B	B	B	D (27s)	B	C (25s)	D (27s)	B	C (25s)	No Improvements Recommended
	SB	B	A	B	C (25s)	B	B (15s)	C (25s)	B	B (15s)	
	EB	A	A	A	A	A	A	A	A	A	
	WB	A	A	A	A	A	A	A	A	A	
SR-141 @ Hogan Rd	NB	C (21s)	B	B	F (116s)	B	D (26s)	F (112s)	B	D (26s)	School AM drop-off using informal driveway access to exit campus. No Improvements Recommended.
	SB	B	A	B	C (20s)	A	B	C (20s)	A	B	
	EB	A	A	A	A	A	A	A	A	A	
	WB	A	A	A	A	A	A	A	A	A	
SR-141 @ Fairview Circle	NB	B	B	B	F (113s)	B	D (32s)	F (105s)	B	D (32s)	Moderate traffic growth can be expected on Main St. If so, school arrival/dismissal circulation should be formalized. Officer control should be considered. No geometric improvements Recommended.
	SB	B	A	B	C (20s)	A	C (16s)	C (20s)	A	C (16s)	
	EB	A	A	A	A	A	A	A	A	A	
	WB	A	A	A	A	A	A	A	A	A	
SR-141 @ Meadow Dr/Trousdale Ferry Rd	NB	A	A	A	B	A	B	B	A	B	Complicated alignment, multiple intersecting streets with RxR crossing. Potential challenge pending future growth.
	EB	A	A	A	A	A	A	A	A	A	
	WB	A	A	A	A	A	A	A	A	A	

¹ AM 7:00-8:00am; MD 11:00am-12:00pm; PM 3:00-4:00pm.

² The Horizon Year scenario includes forecast traffic growth as described by Town of Gordonsville and TDOT background annual growth rate.

³ Traffic signal warrant performed for 2017 conditions.

⁴ Signalized Intersection