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EXECUTIVE SUMMARY

In a joint cooperative effort with the City of Mebane, Norfolk Southern (NS), the North Carolina Department of Transportation (NCDOT), and North Carolina Railroad (NCRR), have completed the Mebane Traffic Separation Study (TSS), which focuses on eight (8) existing at-grade roadway-railroad crossings along a 5-mile span.

A TSS is part of a comprehensive evaluation of vehicular, train, and pedestrian patterns and interactions along a defined local or regional rail corridor. The purpose of the TSS is to determine the need for improvements and/or elimination of public at-grade crossings to improve safety and mobility for motorists, pedestrians, rail passengers, and train crews. The TSS evaluated the rail line in Mebane that crosses various streets, as well as any planned or programmed railroad and roadway improvements within the study area. Figure 1 defines the study area of the project.

While the study focused only on eight crossings, it also supports the larger goals of the NCDOT Rail Division's focus on improved freight and passenger rail operations and quality of life impacts (crossing safety, noise, air quality) for rail-adjacent communities. With the projected increase in freight and passenger rail traffic, there is a need to focus attention to the safety of this corridor and the mobility of all forms of traffic.

The process involved components relating to Crash Data, Traffic Data, Capacity Analysis, Safety and Mobility Issues, and Public Involvement.

Crash and Traffic Data
Crash data from NCDOT and the Federal Railroad
Administration (FRA) was analyzed from 1978 to 2016.

Twenty-seven crashes involving train/vehicle or train/pedestrian collisions were reported at crossings in the study area, as summarized in Table ES-1. Of these, 7 involved fatalities, and a majority of the collisions revolved around automobile drivers maneuvering around down gates at the crossings and not stopping prior to the crossing when a train was approaching. It will be important for the City of Mebane and NCRR work together in installing fencing along the rail corridor through the downtown. This would direct pedestrians to the appropriate sidewalks at at-grade crossings as a safe crossing movement.

Table ES-1: Crash Summary

	N:	S Crossing	S		
Crossing No.	Street Name	Total # of Crashes	# of Fatalities	# of Injuries	PDO
735 464L	SR 1940 – Gibson Road	3	0	3	0
735 465T	SR 1976 – Lake Latham Road	4	0	1	3
735 468N	SR 1965 – Moore Road	2	0	1	1
735 496V	SR 1962 – S 3 rd Street	0	0	0	0
735 471W	4 th Street	2	0	1	1
735 472D	NC 119 - 5 th Street	8	2	1	5
735 474S	SR 1402 - Mattress Factory	4	0	3	1
735 141R	SR 1114 - Buckhorn Road	3	1	0	2
Pedestrian C	rossing Tracks	3	4	0	0





NCDOT Division 7 Highways recently conducted an intersection diagnostics analysis pertaining to the signalized intersection of NC 119 (5th Street) and Washington Street and US 70. The analysis identified short terms improvements for the signal operations and vehicle queueing along 5th Street. Recently, NCDOT Division removed the advanced stop lines And re-stripped the intersection of 5th Street and Washington Street with a "Do not block intersection" marking (along with signage). Prior to the TSS study, results showed minimal improvements due to the continuous left turn ability.

Further crash analysis was conducted at the intersections to identify the types of accidents and the locations. As shown in Figure 18, there is a high volume of accidents at the intersection of 5th Street and Washington Street, relating to left turn traffic crossing 5th Street or vehicles trying to cross 5th Street.

Capacity Analysis

The level of service (LOS) for each crossing was determined based on computed values and the Highway Capacity Manual procedures to determine the capacity of a crossing and identify the type of improvement that would be needed. A traffic analysis was performed to determine the operating characteristics of the adjacent road network at NC 119 (5th Street and US 70) due to the existing geometry.

Safety and Mobility Issues

Safety and mobility issues were considered at each crossing based on roadway geometry, existing warning devices, and behavior of users across the tracks. The following conditions were observed:

 Vehicles were observed queuing over the tracks at 5th Street

- New signage and pavement markings were installed at 5th Street to warn and deter vehicles from stopping on the tracks
- All crossings have signals and gates
- There is a need for improved pedestrian connectivity between US 70 and Washington Street

Public Involvement

Public input involved establishing a Stakeholder Committee and conducting a series of public meetings to gather information and receive public comments on existing conditions and feedback on proposed recommendations. These recommendations include safety improvements, pedestrian crossing enhancements, and possible closures at existing street/rail grade crossings in the City of Mebane.

Stakeholder Committee

A Stakeholder Committee was established in order to provide critical input in reaching consensus on grade crossing recommendations. The Stakeholders involved:

City of Mebane	NCDOT Rail Division
NCDOT Division of Highway 5 & 7	NC Railroad
Burlington-Graham MPO	Alamance EMS
Durham-Chapel Hill – Carrboro	Alamance Chamber of
MPO	Commerce
Alamance County School District	Orange County School District
Norfolk Southern	Orange County EMS

The Stakeholder Committee met during the course of this study. The first meeting was held on August 4th, 2016 with various city departments, emergency response providers, and school district representatives to get their initial input for each crossing.

A second Stakeholder Committee meeting was held on February 16th, 2017 to present the various design concepts for





improving the safety at the at-grade crossings and receive feedback on preliminary concepts. The preliminary concepts would be carried forward to a second Public Information Workshop.

The third Stakeholder Committee meeting was held on June 14, 2017. The final recommendations were presented to the committee for their approval to include in the report and present to City Council. Discussions revolved around options for 735 472D (NC 119/5th St). The committee recommended moving forward the option that is found in Section G. Further studies relating to the 735 141R (Buckhorn Rd) at-grade crossing should coordinate with Orange County Planning Department and the Interchange Analysis & Corridor Study for Mattress Factory Road and any modifications to Buckhorn Road related to that study.

Citizens Informational Workshops

The Public Involvement program included two Citizen Informational Workshops (CIWs). These meetings are summarized below.

The first CIW was held on November 15th, 2016. Study team members were available to introduce the Mebane Traffic Separation Study, to answer questions related to the study, and to receive comments to aid in developing recommendations for improving the eight rail crossings.

Primary concerns were with increased traffic along Holt Street and reduced access to US 70 through the closing of Lake Latham Road at-grade crossing. However, the closing of the crossing is not part of the Traffic Separation Study, it is part of the NC 119 Bypass (U-3109A). Additional concern revolved around the traffic along the 5th Street at-grade crossing, as well as the lack of pedestrian connectivity between Washington Street and US 70.

Citizens Informational Workshop #2

The second CIW was held on April 18th, 2017 at Mebane City Hall. The workshop presented the various improvement options for each crossing, provided explanation of how/why the concepts were developed, and answered questions related to the concept recommendations for improving six of the eight rail crossings.

The study team presented improvements for six of the eight rail crossings, with two rail crossings identifying multiple options for improvements. Two crossings recommended median barriers and widening of crossing shoulders, one crossing identified three different types of grade separation options, one crossing with multiple intersection improvements, and a crossing closure option, and two pedestrian grade separated crossing options.

Comments included utilization of elevators rather than ramps at the pedestrian crossing options to reduce the footprint of the improvements.

City Council Presentation and Public Hearing

The TSS was presented to the City Council on September 11, 2017. The intent was to provide the council with a synopsis of the study process, findings, and recommendations.

Council members were in full support of majority of the recommendations. Though council members did convey their concern about approving the closure of 4th Street at-grade crossing and the design configuration of 5th Street at-grade crossing. Council members believed that 4th Street should remain open.

As for 5th Street, council members agreed that combining the through and right turn movements into a single lane, thus





providing opportunity for constructing a sidewalk and reducing the radius at the intersection with US 70 would be beneficial. However, council members were concerned that the mountable median barrier along 5th Street would impact travel movements across Washington Street. Council members believed that there was a significant movement across Washington Street and by requiring drives to turn right on 5th Street would impact their ability to cross through town.

Their motion was to adopt the TSS recommendations except for not closing 4th Street at-grade crossing. In addition, the motion included approving, in concept, the 5th Street recommendation but that further study and design coordination with an on-going signal improvement project at 5th Street evaluate a solution where the Washington Street/5th Street intersection remains a full access intersection.





Final Recommendations

Table ES-2 summarizes the recommended improvements for each of the crossings evaluated. The cost estimates presented below are order-of-magnitude costs that do not include right of way acquisition (except for 735 141R), utility relocation, or construction where railroad construction is required. It is further recommended that the City of Mebane and NCRR continue to work together to install fencing along the railroad corridor through Mebane to direct pedestrians to the appropriate sidewalks at the at-grade crossings.

Table ES-2: Recommended Improvements

Crossing		Cost F	Range
Crossing Number	Street Name	Low	High
735 464L	SR 1940 – Gibson Road: Install median barriers and widen crossing shoulders	\$43,000	\$55,000
735 465T	SR 1976 – Lake Latham Road: No improvements recommended	NA	NA
735 468N	SR 1965 – Moore Road: Install median barriers and widen crossing shoulders	\$49,000	\$62,000
735 496V	SR 1962 – S 3 rd Street: Widen the existing at-grade crossing shoulder six (6) feet on each side to provide a safer pedestrian connection across the railroad corridor	\$31,000	\$39,000
735 471W	4 th Street: Recommendations are tied to 5 th Street Crossing improvements	NA	NA
735 472D	NC 119 - 5 th Street/4 th Street: Improve the geometry at the crossing and intersection with US 70. Eliminate northbound dedicated right turn lane onto US 70 and improve the curve radii for vehicle turning movements. Install mountable median along 5 th Street with a pedestrian refuge and an asphalt path to connect sidewalks on the eastern side of crossing to improve pedestrian connectivity. Install cross walks on the south and east segments of Washington St/5th Street intersection. During final design, further analysis will be conducted to determine if sidewalks could be installed on the western side of 5 th Street.	\$74,000	\$94,000
735 474S	SR 1402 - Mattress Factory: No improvements recommended	NA	NA
735 141R*	SR 1114 - Buckhorn Road: Construct a grade separation over the railroad corridor	\$5,900,000	\$7,500,000
Pedestrian Crossing	Near First Street – underpass	\$2,700,000	\$3,400,000
Pedestrian Crossing	Near Second Street - overpass	\$3,700,000	\$4,700,000
Fencing	Within Downtown Mebane	\$60,000	\$120,000





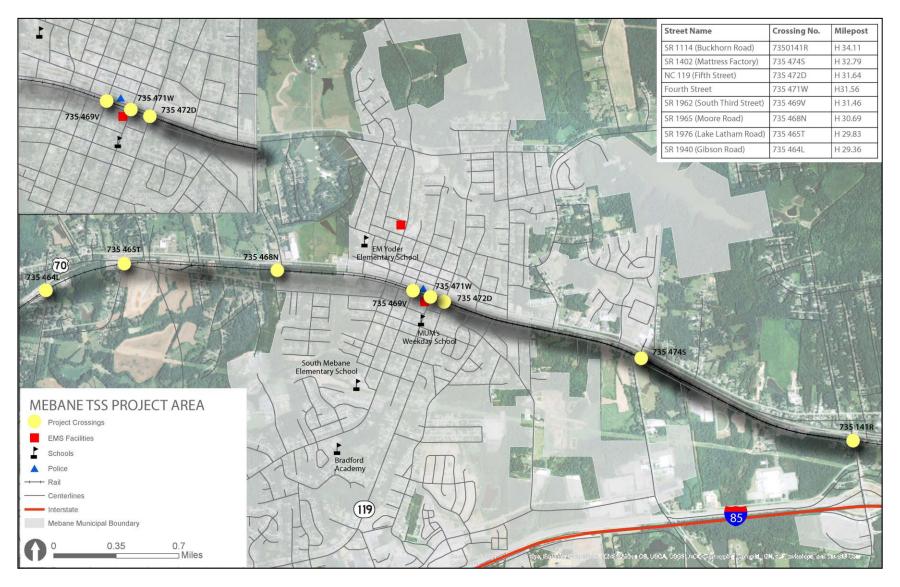


Figure 1 – Mebane TSS Project Limits





A. INTRODUCTION

Every year more than 450 persons are killed and nearly 500 injured nationwide as a result of crashes between vehicles and trains. According to statistics from North Carolina Department of Transportation, there are 4,025 public crossings in North Carolina. The Federal Railroad Administration (FRA) reports that in 2015, over 2,000 incidents were reported at railroad crossings nationwide, and over 230 rail crossing fatalities occurred.

Traditionally, the North Carolina Department of Transportation (NCDOT) uses a Traffic Separation Study (TSS) to systematically review crossing safety. Traffic Separation Studies comprehensively evaluate traffic patterns and road usage for an entire municipality or region, determining the need for improving and/or eliminating public at-grade crossings. They have completed these types of studies in both small and large communities throughout the state. The purpose of the TSS is to determine the need for improvements and/or elimination of public at-grade crossings to improve safety and mobility for motorists, rail passengers, and train crews. These studies are one of the comprehensive programs to improve rail-crossing safety administered by NCDOT, the Federal Highway Administration (FHWA), and the Federal Railroad Administration (FRA).

NCDOT entered into a Municipal Agreement with the City of Mebane and Norfolk Southern Railway (NS) to prepare this TSS, focusing on eight existing at-grade roadway-railroad crossings along a 5-mile span: Buckhorn Road, Mattress Factory, 5th Street, 4th Street, 3rd Street, Moore Road, Lake Latham Road, and Gibson Road. The study evaluated the Norfolk Southern rail line crossing these eight streets, as well

as any planned or programmed railroad and roadway improvements within the study area.

A Traffic Separation Study typically includes:

- Identifying existing safety concerns
- Enhancing railroad and vehicular safety
- Maintaining citizen mobility

This study also evaluated a pedestrian underpass within the vicinity of downtown Mebane in order to improve the pedestrian connectivity between US 70 and Washington Street.

The Traffic Separation Study process has three phases:

1. Preliminary Phase

The NCDOT, Norfolk Southern and the City of Mebane contractually agreed to make a "best" effort to approve and implement improvements identified by the study. An engineering consultant was then selected.

2. Study Phase

The engineering consultant evaluated the existing crossing conditions, average daily traffic (both trains and vehicles) and socio-economic impact of potential closings for all public crossings within the study area, and prepared recommendations for NCDOT and local officials to review.

Through the evaluation process, the study identified needs for improvements. Those recommendations are typically broken into three categories, Short-term, mid-term, and long-term based on order-of-magnitude costs, complexity and available





funding. The possible recommended improvements and timeframes are described below.

<u>Short-term recommendations</u> (within two to five years) include improvements that range from:

- Installation of flashing lights and gates
- Enhanced devices such as four-quadrant gates and longer gate arms
- Installation of concrete or rubber crossings
- Implement at-grade crossing closures
- Installation of median barriers
- Improved pavement markings
- Installation of roadway approach modifications and crossings realignments
- Relocations of existing crossings to safer locations

<u>Mid-term recommendations</u> (five to eight years) include improvements ranging from:

- Installation of grade separations
- Implement new connector roads
- Construct roadway realignments
- Implement at-grade crossing closures

<u>Long-term recommendations</u> (more than 8 years) include improvements that require longer-term planning/funding ranging from:

- Installation of grade separations
- Implement new connector roads
- Construct roadway realignments

3. Implementation Process

If applicable, funding sources for improvements are identified, project agreements are developed between funding partners, which identify responsibilities for project design, crossing closure coordination with railroad and state highway and local

officials, and oversight of project implementation. City staff typically assists with project development, utility relocation and right of way acquisition, if needed. City staff and associated MPO's make recommendations for the projects to be included in the STI.





B. DATA COLLECTION

The information included in Table B-1 was gathered for each grade crossing in order to evaluate the crossing conditions in terms of traffic and safety.

The data summary sheets for each crossing are located in the following pages, along with photographs for each crossing.

Average Daily Traffic data was collected in the Fall of 2016 in order to gauge the level of traffic on 3rd Street, 4th Street and 5th Street. The traffic data was broken down into the number of trips heading northbound and southbound, as well as percentage of dual axle vehicles and Truck Tractor Semi-Trailer (TTST).

For 5th Street, the Average Daily Traffic (ADT) for 2016 was just over 12,000 vehicles per day (vpd). There is a high volume of through movements on 5th Street crossing the tracks. SR 1114 (Buckhorn Road) has the second highest ADT at just over 8,000 vpd.

The following pages depict the current US DOT Crossing Inventory and photos of each crossing from all angles.

TABLE B-1

IADLE D-I	
Data Item	Source
Crossing Number	NCDOT Rail
Street or Route	NCDOT Rail
Railroad Company	NCDOT Rail
Railroad Milepost	NCDOT Rail
Existing Warning Devices	Site Inspection
Vehicle Traffic	WSP Parsons Brinckerhoff /NCDOT
24 hour train volumes	FRA Inventory Forms
Accident History	Accident Reports (NCDOT & FRA)
Truck Route	NA
Transit Route	NA
School Bus Route (Yes/No)	Alamance County Schools
Crossing Surface and Condition	Site Inspection
Land Use	Site Inspection
Redundant Crossing (Yes/No)	Site Inspection
Humped Crossing	Site Inspection
Crossing Geometry	Site Inspection
Need for Enhanced Warning devices	Site Inspection and accident history
Feasibility of Roadway	Site Inspection and
Improvements	engineering judgment





Figure 2 - SR 1940 Gibson Road (735 464L), Crossing Inventory

CROSSING 735464L

U. S. DOT CROSSING INVENTORY FORM

FEDERAL RAILROAD ADMIN		····oii							OMB No. 2130-0017
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edestrian station grade cr									
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, and the Submission Infor updated data fields. Note: F									ection, in addition to t lenotes an optional field
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∃ln ⊠Near MEBANE			oad Name)	-	1 * /0/-	ck Number)	SR 1940		
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17. Crossing Type 18. C	rossing Purpose	19. Crossin	Position	20. Publi	c Access	21. Type of Train	1		22. Average Passenger
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	thway, Ped.	RR Unde	r	☐ Yes		☐ Intercity Passen			Less Than One Per Da
	ation, Ped.	☐ RR Over		□ No		☐ Commuter	☐ Touris	t/Other	Number Per Day 0
23. Type of Land Use	П в	idential [K Commerc	m	Industrial	☐ Institutional	☐ Recreation	onal □ RR	W
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30.D. Railroad Use *					31.D.	State Use *			
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☐ Constant Warning Tir		Detection	AFO D PT	c 🗆 pc	Other ii	None			
5. Is Track Signaled?			7.	A. Event Rec	order			7.B. Remote I	Health Monitoring
☐ Yes ☑ No				☐ Yes ☐				☐ Yes □	
ORM FRA F 6180.7	1 (Rev. 3/15)		OM	Bapprova	expires 3/31/2	018		Page 1 OF

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (# 03/08/2016	MM/DD/YYYY)				PAGE 2		73	Crossing Inve 5464L	entory Number	(7 cha	r.)	
		Part	III: Highway	or Pathwa	y Traffic	Control D	evice Info	rmation				
1. Are there	2. Types of Pa	ssive Traffic (ontrol Devices a	ssociated with t	the Crossing							
Signs or Signals? ☑ Yes □ No	2.A. Crossbuck Assemblies (cc 0		STOP Signs (R1-1 int)	2.C. YIELD (count)	Signs (R1-2)	2.D. Advar W10-1 W10-2	2	Signs (Check al W W10-3		lude co W W10	-11 0	
2.E. Low Ground C (W10-5) ☑ Yes (count_2 ☐ No	learance Sign	2.F. Pavemo		ynamic Envelope	Devices	mnelization /Medians oproaches	☐ Median	2.H. EXEMPT Sign (R15-3) Median Yes			2.I. ENS Sign (I-13) Displayed Yes No	
2 J. Other MUTCD: Specify Type R8- Specify Type Specify Type	2500	Count 2 Count 2 Count 2	□ No		2.K. Priv	rate Crossing private)		nhanced Signs	(List types)			
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3.J. Non-Train Action		perated Signa	I No Is □ Watchman	n □ Floodlightin	g ☑ None		3.K. Other		ts or Warning D	levices		
4.A. Does nearby H Intersection have Traffic Signals? ☐ Yes ☑ No	ection have Interconnection Signals? Mot Interconnected For Traffic Signals Simultaneous				mption	5. Highway T Yes M Storage Dist. Stop Line Dis	ance *	nals				
				Part IV: Phy	sical Cha	racteristic	cs					
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7. Annual Average Year 2014 A	Daily Traffic (AA			ed by School B O Average Nu	luses?		10. Eme	ergency	Services Route			
	ission Inforr	nation - T	his informatio							blic we	ebsite.	
Submitted by			Organ	ization		The state of the s		Phone		Date		
Public reporting bu sources, gathering agency may not co displays a currently other aspect of this Washington, DC 20	and maintaining induct or sponsor valid OMB cont s collection, inclu	the data need r, and a perso rol number.	ded and complet n is not required The valid OMB co	ing and reviewin to, nor shall a pe introl number fo	g the collect erson be sub r informatio	tion of informa eject to a pena n collection is	ation. Accord ilty for failure 2130-0017.	ling to the Pap to comply wit Send commen	erwork Reduct h, a collection of ts regarding the	ion Act of infor is burde	of 1995, a feder mation unless it an estimate or an E, MS-25	
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Figure 3 – SR 1940 Gibson Road (735 464L), Photos of Directional Views



Looking North



Looking East



Looking South



Looking West





Figure 4 – SR 1976 Lake Latham Road (735 465T), Crossing Inventory

CROSSING 735465T

DEPARTMENT	OF TRAN	SPORTA		S. DOT	CROSSI	NG INV	ENTORY FO	RM				
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										section, in addition to t		
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A. Revision Date		Reporting A				a (Seilent only-		2 have	10000	D. DOT Crossing		
MM(00/1111) 00 / 08 / 2016	- 10	Kallroad	☐ Trans				Cloned	C) No Train Traffic	C Quiet	Inventory Number		
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1			- 1	Part I: Loc			tion Informatio	in		-		
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3 in			LAKE	LATHAM IS	DAD			300000000000000000000000000000000000000				
William MEBAN				Rood Name)			d Number)	SR 1976				
f Yes, Specify RR	is Operate a	Separate Tr	rack at Cross	ing? Little:	DE 790	R. De Other If fax, Spe	Railroads Operate C	tvet Your Track	at Crossing! In	Yes [] No		
in rest, aspectry risk						0 Tel, 394	ATK.					
9. Railroad Division	er Region	\neg	10. Railroad	Subdivision	or Division	11. Bra	mch or Line Name		12. RR Milepot	et .		
Disone EASTERN Disone NC						- 1	MAIN		H 1002			
None EASTERN None N					Th. Record	III Non		The Count	ing Owner (f opp	mann) 1 (nglid		
*		Station		-	ALC: FRENCH	an 10 ellipse			of cause it also	occupacy.		
		MEBAN			DINA			DNA				
12. Grossing Type	pe 28 Crossing Perpose 29 Crossing Po 32 Highway 32 At Grade				20. Pubb		21. Type of Train	□ Trans		22. Average Passanger		
Withda					Cites	Crossing	☐ freight ☐ intercity Pessen			Train Count Per Day Less Than One Per D		
☐ Private	□ buter,		DRI Ove		E 166		[] Commyter	☐ Touri		□ Number Fer Cay 0		
23. Type of Land Use												
Open Space	□ fèrm	☐ fierois		₩ Commen		Industrial	☐ Institutional	☐ Recreati	onel 0.65	Yard		
24. In there an Adjac	ent Crossing	milit a John	or also beginned	***	25.4	DISSE 2004 111	M possisses					
Diver Silve #		Crossing No	umber		IN No	□24W	DPwtist D Chica	go Evoyand	Date Extende	hed		
26. HSR Corridor ID		27. Lette	ode in decim	al degrees		28. Longitus	Se in decimal degree		29.ta	tylang Source		
	CINA	- courses	46	M 26	67251	COURSE AND	-maranana 47	9.2985827	914	between Distincted		
10.A. Rallroad Use	- Children	L (modde)	Mg. ANAMS	money		NA S	State Use "		1.00,000	Will I I Stormacond		
	ži.					0.000						
10.9. Rafroad Use						31.8. 5	State the *					
10.C. Refroad the						SLC State the *						
10.0. Relivant the	Ş					11.0.	itane the "					
12.A. Narrative (No	ishand Uter)					32.8. /	Samutine (Stone Glar)	*				
13. Emergency Retif	Bradies Tales	obses No. 1	-	M. Below	of Contact C	Telephone No.		NS. State Co.	what Chirpton	- No. 1		
800-453-2530			powers.	800-946		suprocos or.		919-715-68	200	- Company		
		_		-	_	leaned to for	amarian	212-113-00				
Estimated Number	e of Code T	in Manager	-		art II: Kai	iroad Info	mation					
L. Estimated founds L.A. Total Day Thry 1			otal Night The	n Trains 1 i	C. Total Soit	tching Trains	1.0. Total Transit	Trains	1.E. Check If Le	ep Than		
SAM IN SPANS			WEAR!				0.0000000000000000000000000000000000000	11000	One Movemen	et Per Day		
. Year of Train Coun	t Data (1999)	-	1.0	Speed of Tre	and the second				How many tre	or per cent.		
	200		3	A. Maximum	Timetable Sc	mend (mpit) S						
. Type and Count of	Ffracio		- 3	B. Typical Sp.	eed Range O	ver Crowing (n	rysh) From 5	to 49	_			
	Siding	Ya.	of _	Transt		industry						
5. Train Detection (N				Team 17		-	Carrier C					
Constant War L. to Track Signaled?		Motion I	peraction		A. Event has		Norte		T 7.8 Sec. 15	Health Montoring		
☐ Yes Of No				100	C Yes C				7.5. Hampta			
										and the same of th		

U. S. DOT CROSSING INVENTORY FORM

			Part III:	Highway o	or Pathway	Traffic C	ontrol De	evice Info	rmation				
1. Are there	2. Types of Po	pointer Tr	wiffic Courts	of Devices ass	ciated with the	Crossing							
Signs or Signals?	2.A. Crossbur Assemblier ()		2.8.170 (mont)	P Signs (#2-1)	2.C. YIELD SI (Vount)	pns (#1-2)	2.0. Advan		Warning Signs (Check of that opply: include count) (X No (X W10-3: 2 (X W10-13: 0				
	0		0		0		06 wiso-2 0			4.0		0-12 0	
1 E. Low Ground C (W20-5) IK Yes (count ²	learence Sign	18 St	evernant h	DDyn	amic Envelope	Devices/I	prooches	Median	(R15-0) (R16-0)	PT Sign	Displayer (X Yes	lign (1-23) d	
□ No	. 30		King Symb		*	□ One A		Id None	□No-		□ No		
2.0 Other MUTCO: Specify Type R5- Specify Type Specify Type		Co.	Test II No.	=		Signa (F)		2L ube	nhanted Sign	Guet Aygeen			
3. Types of Train A									0.00	0.000		nnesse race	
3.A. Gate Arms (count) Roadway 4 Pedestrian 0	m (Morrier) mos dan Gates	Structure: Over Traff		_ Otto	randecent.	(sourt of 16 Incards		Duto	Lights	3.E. Total Count of Flanking Light Pain			
S.F. Installation De Active Warning De	views: (MM//YYY	O Not Rec		3.G. Wayuda F Ves Inst IX No.	tone tailed on (955/)		Cross		fic Signals Controlling		3.1. Sells (count) 1		
S.J. Non-Train Activ Trapping/Flagme		perated	Signals C	1000	Roodlytting	(il None		S.K. Other Flashing Lights or Warning Devices Count 0 Specify type					
4.A. Does nearby to Intersection have Traffic Signals?	A. Does nearby Hary A. B. Hary Traffic Signal Interconnection W. Not Interconnection G. For Traffic Signals				c Signal Preemy		5. Highway 7 Ves (9) Storage Distriction Distriction	No anse*	o (Check of Vec - Pi			ring Devices (d) eo Recording esence Detection	
		-	-	Advance Pa	ert IV: Phys		NAME AND ADDRESS OF	or and the last of		-			
L. Traffic Lenes Cro	-	DE: Two	r-way Truff	1	la Roadinay/7 laved?	Settiney	3. Does T	rack Run Down a Street? 4. is Cros lights wit			sing Wumineted? (Street his approx. 50 feet from		
Number of Lanes 5. Crossing Surface 1 Timber 1 E Unconsolidat	e fon Minin Trock 2 Aughalt - 18	2 Aspt	alt and Tir	need) Install	etion Date * (No				dth."	100000	Length *	Sk No.	
6. Intersecting For St Yes. No				. 76			et Crossing A	100	S. in Co	I. In Commercial Power Available 18 Yes			
A 146 Lt 160	es, reprises	200	a con greet		V: Public F					-	. 30 140		
L Highway System	state Highway S	otem		unctional Clero	Reation of Res	d at Crossin	4		ing on State	Mgheey	45	ghway Speed Limit SAfre Inted D Statutory	
[] (02) 0 the	Net Hwy System rul AID, Net Net	m (NHS)	D:	2) Other Free	rays and Expres gal Amerial C	mays.			Referencing 1	System (LP)			
3 (00) Non-				(4) Minor Arter		(7) Local	Committee.	6. LRS M	Report *	0,1904		COVERNO -	
7. Annual Average Year 2014 A	Only Traffic (A LOT 1381	ADT	E bitmi	rted Percent T	N Ste		I by School B Average No	vires? imber per De	0.	_ 16.		y Services Route No	
Subm	ission Infor	matio	n - This i	nformation	is used for a	dministra	tive purpo	ses and is	not avallab	le on the	public w	rebolte.	
Submitted by				Organia					Phone		Dw		
Public reporting by sources, gathering agency may not co	and maintaining	the det	a needed a	and completing	and reviewing	the collection	on of informa	rtion. Accord	ing to the Pay	peroork file	duction Ac	t of 1995, a federa	





Figure 5 – SR 1976 Lake Latham Road (735 465T), Photos of Directional Views



Looking North



Looking East



Looking South



Looking West



FORM FRA F 6180.71 (Rev. 3/15)



Figure 6 - SR 1965 Moore Road (735 468N), Crossing Inventory

CROSSING 735468N

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF FEDERAL RAILROAD A			ON							OMB No. 2130-0017
Form. For private his pedestrian station gr Parts I and II, and the I, and the Submission	ghway-rail gradi ade crossings), Submission Info Information s	e crossing complete ormation s ection. Fo	s, complete t the Header, section. For gi or changes to	he Heade Parts I and ade-separ existing d	r, Parts I and II, and the rated highwa lata, comple	d II, and the Submission II y-rail or path te the Heade	Submission Information of formation section. For way crossings (including r, Part I Items 1-3, ar	on section. For or Private pathy ng pedestrian st nd the Submissi	public pathway g vay grade crossin, ation crossings), c on Information se	elete the entire inventory trade crossings (including gs, complete the Header, omplete the Header, Part ection, in addition to the
							ired unless otherwise	noted.	An asterisk * d	enotes an optional field.
A. Revision Date (MM/DD/YYYY) 03 / 08 / 2016	B. Rep □ Raili ■ Stat		□ Transit	C. Reas Char Data Re-C	orge in Cro	te (Select onl) New ossing Date	☐ Closed☐ Change in Primary	☐ No Train Traffic ☐ Admin.	☐ Quiet Zone Update	D. DOT Crossing Inventory Number 735468N
	0					ange Only	Operating RR	Correction		
			Pa	rt I: Loc			ation Informatio			
Primary Operating Norfolk Southern R	ailway Compa	iny [NS]		_		H CAROLIN	Α	3. County ALAMANCE		
4. City / Municipality ☐ In M Near MEBANI			5. Street/R MOORE (Street/Ro	ROAD	& Block Nu		ock Number)	6. Highway To SR 1965	ype & No.	
7. Do Other Railroad		arate Trac					r Railroads Operate C		at Crossing? 🖼 Y	es 🗆 No
If Yes, Specify RR						If Yes, Sp				
9. Railroad Division o	10100). Railroad Su	// Annone ()	or District		anch or Line Name		H 0030	.69
□ None EASTE				CLINE		□ No		T	(prefix) (nnni	
13. Line Segment •	S	14. Neares Station MEBANE	t RR Timetab	e	15. Parent □ N/A	RR (if applica	able)	□ N/A	ng Owner (if appli	cable)
17. Crossing Type	18. Crossing P ☑ Highway		19. Crossing ☑ At Grade	Position	20. Publ (if Privat	ic Access e Crossing)	21. Type of Train	□Transi	t 1	2. Average Passenger Train Count Per Day
Public Private	☐ Pathway, Pa ☐ Station, Pec		RR Under		☐ Yes ☐ No	0.00	☐ Intercity Passen ☐ Commuter	ger Share		Less Than One Per Day Number Per Day 0
23. Type of Land Use ☐ Open Space	□ Farm	☐ Reside	ntial [v	Commerc	rial [Industrial	☐ Institutional	Recreation	onal □ RR	Vard
24. Is there an Adjace				Commen			FRA provided)	L. Necleati	one: Dan	1000
	Yes, Provide Cro	ssing Nun	ber		(% N		☐ Partial ☐ Chica		Date Establish	ed
26. HSR Corridor ID			e in decimal		82338		ide in decimal degree			/Long Source
30.A. Railroad Use	_□ N/A _ {	WGS84 st	d: nn.nnnnn	n) 36.03	102330	(WGS84 st	d: -nnn.nnnnnnn) -07 State Use *	9.2033079	I Actu	ial 🗆 Estimated
30.B. Railroad Use						31.8.	State Use *			
30.C. Railroad Use						31.C.	State Use *			
30.D. Railroad Use	•					31.D.	State Use *			
32.A. Narrative (Roi	road Use) *					32.B.	Narrative (State Use)	•		
33. Emergency Notifi 800-453-2530	cation Telepho	ne No. (po	sted)	34. Railro		Telephone No	2.)	35. State Cor 919-715-88	ntact (Telephone	No.)
000-455-2550		_			30.30			313-713-00	03	
				P	art II: Rai	ilroad Info	rmation			
Estimated Number A. Total Day Thru T			s I Night Thru T	raine 1	C Total Sur	itching Trains	1.D. Total Transit	Tenine	1.E. Check if Le	re Than
(6 AM to 6 PM) 12		(6 PM to	6 AM)		0	1/3	1.D. Total Transit	. Irains	One Movement How many train	Per Day
2. Year of Train Count	t Data (YYYY)		3.A.	Maximum	ain at Crossin Timetable S	peed (mph)	60 (mph) From 5	to 49		
4. Type and Count of	Tracks		3.5.	, ypicai Sp	eed nange U	ver Crossing	mping FIOIII 9	10		
Main 1	Siding	Yard		Transit		Industry				
5. Train Detection (M		Mation C-	tastias 🖂	EO [] ***	rc 🗆 pc	□ Other	⊠ None			
Is Track Signaled?	mg time (2)	modon De	cection LP		A. Event Rec		a none		7.B. Remote	lealth Monitoring

OMB approval expires 3/31/2018

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (A 03/08/2016	(איייי/פס/אייי					Р	AGE 2			D. 73	Crossing Inve	entory Nur	nber (7 ch	ar.)		
		Pai	t III: F	lighway o	or Pat	hway	Traffic (Control D	evice							
1. Are there	2. Types of Pa	ssive Traffic	Contro	Devices ass	ociated	with the	Crossing									
Signs or Signals?	2.A. Crossbuck Assemblies (co 0		s. STOP:	Signs (R1-1)	2.C. (cour		gns (R1-2)	₩ W10-1 2 ₩ W10-2 0			₩ W10-	3 0 4 0	ER WI	₩ W10-11 0		
2.E. Low Ground Cl (W10-5) ☑ Yes (count 2 □ No	earance Sign	2.F. Paver	nes	□Dynamic Envelope				hannelization as/Medians Approaches In Median		2.H. EXEMPT (R15-3) Aedian Yes		T Sign	T Sign 2.1. ENS Sign (i-i Displayed ⊠ Yes ☐ No			
2.J. Other MUTCDS Specify Type Specify Type R8-1 Specify Type		Count Count Count	2				2.K. Priva Signs (if)	70000780 8 7	2.L.I	LED E	nhanced Signs	(List types)			
3. Types of Train A	ctivated Warnin	g Devices a	the Gra	ade Crossing	(specify	count o	f each devi	ce for all th	at apply)						
3.A. Gate Arms (count) Roadway 2 Pedestrian 0	3.B. Gate Conf 2 Quad 3 Quad 4 Quad	Full (Bar Resistance		3.C. Canti Structure Over Trafi Not Over	s (count fic Lane	0	ged) Flashir □ In	candescent	(cou	nt of r	Mounted Flas nasts) 2 escent thts included	□ LED	Lights	3.E. Total Count o Flashing Light Pair		
3.F. Installation Dat Active Warning Dev		d [.G. Wayside I		n (<i>MM/</i>)	m)		-	Cross	Highway Traff iing s ⊠No	ic Signals C	ontrolling	3.l. Bells (count)			
3 J. Non-Train Activ		Inerated Sie	ale 🗆	Watchman I	Flood	liahtina	₩ None		3.K.		Flashing Light	ts or Warn		s		
4.A. Does nearby H Intersection have Traffic Signals? □ Yes □ You	section have Interconnection ic Signals? Not Interconnected For Traffic Signals			4.C. Hwy Traffic Signal Preemption S. Highway Tr Yes Simultaneous Advance Stop Line Dist Stop Line Dist					No tance *	No (Check all ☐ Yes - P ince * ☐ Yes - \				y Monitoring Devices that apply) hoto/Video Recording /ehicle Presence Detection		
				Pa	art IV:	Phys	ical Chai	racteristi								
1. Traffic Lanes Cro Number of Lanes 5. Crossing Surface 1 Timber 8 Unconsolidate	2 (on Main Track, 2 Asphalt	☑ Two-wa ☐ Divided , multiple ty 3 Asphalt a	y Traffic Traffic Des allow and Timb	wed) Instal	2. Is Ros Paved? De V	adway/P Yes ate * (M	athway	3. Does 1	Track Rui	₩.	n a Street? No dth * ar	lights wi nearest				
6. Intersecting Roal			e (feet)				□ 0° - 25		°-59°	Ex	60° - 90°	8. Is Co	mmercial	Power Available?		
				Par	t V: Pi	ublic H	lighway	Informa	tion							
☐ (02) Other	tate Highway Sy Nat Hwy Systen	n (NHS)	□ (1 □ (2) Interstate) Other Free	(0) Rur	ral 🗆 (d Expres	1) Urban 3 (5) Major sways	Collector	Sys	tem? Yes	sing on State ☐ No Referencing S		45 ⊠ Pe	ghway Speed Limit MPH osted Statutor		
	al AID, Not NHS) Other Princ) Minor Arter			(6) Minor (7) Local	Collector	6. L	RS Mi	lepost *					
				ed Percent T			gularly Use	d by School I Average N		er Day	3	_ 10.	Emergency Services Route ∕es ☑ No			
Subm	ission Infor	mation -	This in	formation	is used	d for a	dministra	tive purpo	oses an	d is r	not availab	le on the	public v	vebsite.		
Submitted by				Organiza	tion						Phone		Da	**		
Public reporting bu sources, gathering agency may not co- displays a currently other aspect of this	and maintaining nduct or sponsor valid OMB cont collection, inclu	the data ne r, and a pers rol number.	eded an on is no The val	is estimated to d completing t required to lid OMB cont	o avera and re nor sha rol num	viewing all a pers ber for i	the collecti ion be subj nformation	on of inform ect to a pena collection is	ation. A alty for fa s 2130-0	ccord ailure 017. S	ne for reviewing to the Pap to comply with Send commen	erwork Re th, a collect its regardin	ions, searc duction Ac tion of info	hing existing data it of 1995, a federa ermation unless it den estimate or an		
Washington, DC 20		2/15)				OMB		al evnires	2/21/	/201	0			Page 2 OF		

15





Figure 7 – SR 1965 Moore Road (735 468N), Photos of Directional Views



Looking North



Looking East



Looking South



Looking West





Figure 8 – SR 1962 3rd Street (735 469V), Crossing Inventory

CROSSING 735469V

U. S. DOT CROSSING INVENTORY FORM

Instructions for the initia	reporting of the	following ty	pes of new	or previ	ously unr	eported cro	ssings: For public h	ighway-rail grade	crossings, com	- Direct	No. 2130-001
Form. For private highwa pedestrian station grade Parts I and II, and the Sub I, and the Submission Inf	y-rail grade cros crossings), comp mission Informat ormation section	sings, comple lete the Head ion section. For n. For change:	te the Head er, Parts I a or grade-sep s to existing	der, Part and II, and arated h	s I and II of the Sul sighway-r omplete 1	, and the S bmission In all or pathw the Header	ubmission Informati formation section. F ay crossings (includi Part I Items 1-3, a	ion section. For or Private pathy ng pedestrian sta nd the Submissi	public pathway ; ray grade crossing stion crossings), on on Information s	grade cro gs, comp complete ection, in	essings (includ elete the Head the Header, P addition to
updated data fields. Note A. Revision Date								noted.	An asterisk *		T Crossing
(MM/DD/YYYY) 03 / 08 / 2016	B. Reporting Railroad	☐ Tran		ange in	□ Ner Crossi		Closed	☐ No Train	☐ Quiet Zone Update		tory Number
	☑ State	□ Othe		-Open	☐ Dat	e (Change in Primary Operating RR			73546	9V
			Part I: Lo	cation	and C	lassifica	tion Information	on			
 Primary Operating Rail Norfolk Southern Railw 	road	101		2	State	CAROLINA		3. County ALAMANCE			
4. City / Municipality	ay Company [N	5. Stree	t/Road Nan	ne & Blo				6. Highway Ty			
Near MEBANE			/Road Nam				k Number)	SR 1962			
 Do Other Railroads Op If Yes, Specify RR 	erate a Separate	Track at Cros	sing? □ Ye	s De No	,	B. Do Other If Yes, Spe	Railroads Operate (scify RR	Over Your Track	at Crossing?	Yes Mil	4o
9. Railroad Division or Re		CHARLES CONTRACTOR	d Subdivisio	n or Dist	rict	2277.0275.0	nch or Line Name		12. RR Milepos 003	.46	1
□ None PIEDMONT		□ None	NC LINE	Tor.		☐ Non		T and a second	(prefix) (nnn		(suffix)
13. Line Segment *	14. Ne Station MEB	arest RR Time	table	15. F		(if applica	ole)	16. Crossir	ng Owner (if app	icable)	
I Public □	Crossing Purpos Highway Pathway, Ped. Station, Ped.	e 19. Cross ☑ At Gra ☐ RR Un	der	1 20 (if	Private C Yes		21. Type of Train Freight Intercity Passer Commuter	□ Transi	t I Use Transit	Train Co	ige Passenger int Per Day han One Per D er Per Day ⁰
23. Type of Land Use	station, reu.	LIMKO	eı	10	NO	A SECOND S	□ Commuter				er rer bay
		sidential	☐ Comm	ercial		dustrial	☐ Institutional	☐ Recreation	onal 🗆 RR	Yard	
24. Is there an Adjacent (rossing with a Si	eparate Numb	er?		25. Qui	et Zone (F.	RA provided)				
☐ Yes Ix No If Yes,	Provide Crossing	Number			™ No	□ 24 Hr	□ Partial □ Chic	ago Excused	Date Establish	ned	- //
26. HSR Corridor ID	27. Lat	itude in decin	al degrees		1	28. Longitu	de in decimal degree	15	29. Lat	t/Long So	ource
D.	VA (WGSS	4 std: nn.nni	nnnn) 36.	096622	0	WGS84 std	-nnn.nnnnnnn) -07	79.2697540	IM Act	ual E	Estimated
30.A. Railroad Use *			7.			31.A.	State Use *		-		
30.B. Railroad Use *						31.B.	State Use *				
30.C. Railroad Use *						31,C. 5	itate Use *				
30.D. Railroad Use *						31.D.	State Use *				
32.A. Narrative (Railroad	2020					1220000	Narrative (State Use				
33. Emergency Notification 800-453-2530	on Telephone No	. (posted)		road Cor 16-4744	itact (Te)	ephone No.)	35. State Cor 919-715-88	itact (Telephone)3	No.)	
				Part I	l: Railr	oad Info	rmation	100	77.	*	0):
 Estimated Number of D A. Total Day Thru Train: 		nents Total Night Th	ru Trains	1 C To	tal Switch	ing Trains	1.D. Total Trans	it Trains	1.E. Check if Le	ee Than	
(6 AM to 6 PM) 12		1 to 6 AM)		0		ing round			One Movemen How many trai	t Per Day	
2. Year of Train Count Dat	a (?????)		3. Speed of 1 3.A. Maximu 3.B. Typical 3	ım Timet	table Sper	ed (mph) 6	0 nph) From 5	to 25			
4. Type and Count of Trac	ks		10.000	, 111	3				5		
Main 1 Sidin		Yard	Transi	it		ndustry					
5. Train Detection (Main) Constant Warning 6. Is Track Signaled?		n Detection			DC [None		7.B. Remote		

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (103/08/2016	MM/DD/YYYY)					Р	AGE 2			D. 73	Crossing Inve	entory Nun	nber (7 c	har.)	N
			Part II	: Highway	or Pat	hway	Traffic (Control D	evice	Info	rmation				
1. Are there	2. Types of Pa	ssive T	affic Con	trol Devices ass	ociated	with the	Crossing							_	
Signs or Signals? ☑ Yes □ No	2.A. Crossbuci Assemblies (co		2.B. STI (count)	OP Signs (R1-1)	2.C. (cou		gns (R1-2)	2.D. Adva W10-1 W10-2	2	rning S	igns (Check a	3 0	y; include ⊮ W ⊮ W	10-1	1 0
2.E. Low Ground C (W10-5) ■ Yes (count 2		IM Str	175		amic En	welope	2.G. Cha Devices/ All Ap	nnelization Medians proaches	□ Me		2.H. EXEMP (R15-3) Yes		2.1. ENS Displaye	Sign	
2 J. Other MUTCD	Signs		Yes 🗆 f					te Crossing	-		hanced Signs	Hist tynes	SAVEOUS A	_	
Specify Type R8-i	8	Co Co	unt 1 unt 2 unt				Signs (if	orivate) □ No			THE TOTAL OF THE T	(Lost types	,		
3. Types of Train A															
3.A. Gate Arms (count) Roadway 4 Pedestrian 0	3.B. Gate Con 2 Quad 3 Quad 4 Quad	☐ Full	(Barrier)	Structure Over Traf	s <i>(count</i> fic Lane	0	ged) Flashii Ir II LI	candescent	(co	ncande	Mounted Flas masts) 4 iscent thts included	LED Side	Lights		. Total Count of shing Light Pairs
3.F. Installation Da Active Warning De	vices: (MM/YYY	7) Not Rec	quired	3.G. Wayside ☐ Yes Ins ☑ No		n (<i>MM/</i>)	m)	<i>J</i>	_	Cross □ Ye	s M No				3.I. Bells (count)
3.J. Non-Train Acti		perated	Signals	☐ Watchman	Flood	llighting	M None			nt 0	Flashing Light S	ts or Warni pecify type		es	
4.A. Does nearby H Intersection have Traffic Signals? ■ Yes □ No	Hwy 4.B. Hwy Intercon	nection ntercon raffic Sig	nected gnals	4.C. Hwy Traff		l Preemp	otion	5. Highway Ves Storage Dist Stop Line Di	No ance •		nals	(Check a	Il that app Photo/Vir Vehicle F	oly) deo l	g Devices Recording ance Detection
				P.	art IV	: Phys	ical Cha	racteristi	cs						
Traffic Lanes Cro Number of Lanes	2	☑ Two	o-way Tra ided Traff	ffic ic	Paved?		□ No		rack Ri	Del	n a Street? No	lights wi nearest	thin appr rail) 🗷 Ye	ox 5 es	ited? (Street i0 feet from No
5. Crossing Surface 1 Timber 8 Unconsolidat	2 Asphalt	3 Aspl	halt and T	imber 🗆 4 (M/YYYY) _ Concrete		□ 6		dth * er □ 7 Me		Length *	_	
6. Intersecting Ros ☑ Yes ☐ No			tance (fe	nt) 75			7. Smalle	st Crossing A		DS (60° - 90°	8. Is Co	mmercial		ver Available? *
				Par	t V: P	ublic H	lighway	Informa	tion						
☐ (02) Othe	state Highway Sy r Nat Hwy Syster ral AID, Not NHS	n (NHS)		Functional Class (1) Interstate (2) Other Free (3) Other Princ	(0) Ru	ral 🗆 (d Expres	1) Urban I (5) Majo sways	Collector	Sy DM	stem? Yes Linear	ing on State No Referencing S		_35 □ F	Poste	vay Speed Limit MPH ed IN Statutory
☑ (08) Non-	Federal Aid			(4) Minor Arte	rial	3	(7) Local			LRS M	lepost *				
7. Annual Average Year 2014 A	Daily Traffic (A)	ADT)	8. Estir	nated Percent T	rucks %	9. Rep	gularly Use	d by School I Average N	Buses? umber	per Day	12	_ 10.		No	ervices Route
Subm	ission Infor	matio	n - This	information	is use	d for a	dministro	tive purpo	ses a	nd is r	ot availab	le on the	public	wet	isite.
Submitted by				Organiza	ition						Phone		D	ate	
Public reporting bu sources, gathering agency may not co displays a currently other aspect of this Washington, DC 20	and maintaining nduct or sponso valid OMB cont s collection, incli	the dat r, and a rol num ading fo	a needed person is ber. The r reducin	on is estimated and completing not required to valid OMB cont	o avera and re nor sh rol num	viewing all a per ber for i nation Co	the collecti ion be subj information ollection Of	on of inform ect to a pena collection is	ation. Ity for 2130- I Railro	Accord failure 3017. S ad Adn	e for reviewing to the Pap to comply with send commen ninistration, 1	erwork Re h, a collect ts regardin	ions, sear duction A tion of inf ng this bur	chin, ct of orm	f 1995, a federal ation unless it estimate or any





Figure 9 – SR 1962 3rd Street (735 496V), Photos of Directional Views



Looking North



Looking East



Looking South



Looking West





Figure 10 – 4th Street (735 471W), Crossing Inventory

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial r									
Form. For private highway- pedestrian station grade on									
Parts I and II, and the Subm	ission Information	on section. Fo	or grade-sepa	arated highwa	y-rail or pathw	ay crossings (including	ng pedestrian st	ation crossings), c	omplete the Header, Part
I, and the Submission Infor									ection, in addition to the enotes an optional field.
updated data fields. Note: F A. Revision Date	B. Reporting			ason for Upda			noted.	An asterisk - d	D. DOT Crossing
(MM/DD/YYYY)	Railroad	☐ Tran				☐ Closed	☐ No Train	☐ Quiet	Inventory Number
03 / 08 / 2016			Data	Cro	essing		Traffic	Zone Update	
	☑ State	☐ Othe	er Re-			Change in Primary	☐ Admin.		735471W
		9	Double La			Operating RR	Correction		
1. Primary Operating Railro			Part I: Lo	2. State		tion Informatio	3. County		
Norfolk Southern Railway	y Company [No			NORT	H CAROLINA	<u> </u>	ALAMANCE		
4. City / Municipality			t/Road Nam	e & Block Nur	mber .		6. Highway T	ype & No.	
⊠ In □ Near MEBANE			/Road Name		1 * (Blo	ck Number)	LS		0.00
7. Do Other Railroads Oper	ate a Separate					Railroads Operate O	ver Your Track	at Crossing?	es 🗷 No
If Yes, Specify RR					If Yes, Spe	ecify RR			20
9. Railroad Division or Regi	on	10. Railroad	d Subdivision	or District	11. Bra	anch or Line Name		12. RR Milepost	
□ None PIEDMONT		□ None	sou		□ Non	a MAIN		1 0031	
None PIEDMONT 13. Line Segment	14 No.	rest RR Time	_	15 Parent	RR (if applica		16 Crossi	(prefix) (nnnr ng Owner (if appli	
*	Station	•	Labore	100000000000000000000000000000000000000	rat (ly oppinion	5,07	0.000	ing o since (y uppi	concy
	MEBA			□ N/A			□ N/A		
	rossing Purpose ghway	M At Gra	sing Position		c Access e Crossing)	21. Type of Train Freight	□Trans		2. Average Passenger Train Count Per Day
	thway, Ped.	□ RR Un		☐ Yes	e crossing)	Intercity Passen			Less Than One Per Day
	ation, Ped.	☐ RR Ov	er	□ No		☐ Commuter	☐ Touri	st/Other [Number Per Day 0
23. Type of Land Use			m.		Industrial	T to an artist			
24. Is there an Adjacent Cro		idential	☑ Comme		Quiet Zone (F	☐ Institutional	Recreati	onal RR	Yard
24. Is there all Aujacent Cr	asing with a se	on ace recimi	HET I	25.	quiet zone (r.	on provided)			
	ovide Crossing I			I N		☐ Partial ☐ Chica		Date Establish	
26. HSR Corridor ID	27. Lati	tude in decin	nal degrees		28. Longitue	de in decimal degree:	5	29. Lat	/Long Source
□ N/	A INVGSR	std: nn.nnr	36.0	961270	(IN/GSR4 etd	-nnn.nnnnnnnn) -07	9.2680140	I⊠ Actu	al 🗆 Estimated
30.A. Railroad Use *	1 (1/000)	ora. IIII.	iming		31.A.	State Use *		La Acto	L. L
					_				
30.B. Railroad Use *					31.B.	State Use *			
30.C. Railroad Use *					31.C. S	State Use *			
30.D. Railroad Use *					31.D.	State Use *			
32.A. Narrative (Railroad U	(en) •				22 B	Narrative (State Use)			
32.A. Halladve (Hollrood C) sej				52.6.	marradve (Store Ose)			
33. Emergency Notification	Telephone No.	(posted)	34. Railr	oad Contact (Telephone No.)	35. State Co	ntact (Telephone	No.)
800-453-2530			800-946	6-4744			919-715-88	03	
	- do			Part II: Rai	Iroad Info	rmation	100	-	
1. Estimated Number of Dai	ly Train Movem	ents				V2			
1.A. Total Day Thru Trains		otal Night Th	ru Trains	1.C. Total Swi	tching Trains	1.D. Total Transit	Trains	1.E. Check if Les	
(6 AM to 6 PM) 12	(6 PM	to 6 AM)		0				One Movement How many train	
2. Year of Train Count Data	(YYYY)			rain at Crossin					
				m Timetable S			to 25		
4. Type and Count of Tracks	ii e		o.b. Typical S	peed Range O	ver Crossing (r	npnj From <u>v</u>	to 45		
Main 1 Siding 1	1 v	ard	Transit		Industry				
5. Train Detection (Main Tra	ock only)								
☑ Constant Warning Tir 6. Is Track Signaled?	ne 🗆 Motion	Detection		7.A. Event Rec		None		7.9. Pom-t-1	lealth Monitoring
Yes No			3	✓ Yes □				7.8. Remote F	
FORM FRA F 6180.72	1 (Rev. 3/15)				expires 3/31/2	018		Page 1 OF 2

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date 03/08/2016	MM/DD/YYYY)				P	AGE 2		D 73	Crossing Inve	entory Numb	er (7 ch	ar.)	_
		Pa	rt III: High	way o	r Pathway	Traffic C	Control De	evice Info	rmation				
1. Are there	2. Types of Pa	ssive Traffic	Control Dev	ices asso	ciated with the	Crossing							\neg
Signs or Signals? ☑ Yes □ No	2.A. Crossbuc Assemblies (c. 0		3. STOP Signs ount)	(R1-1)	2.C. YIELD Sig (count)	gns (R1-2)	2.D. Advan	2	Signs (Check a W W10- W W10-	3 0	₩W1	(0-11 0 10-12 0	ne -
2.E. Low Ground ((W10-5) ■ Yes (count 2	learance Sign	☑ Stop Li		□Dyna	amic Envelope	Devices/I ☐ All Ap	proaches	☐ Median	2.H. EXEMP (R15-3)		Displaye ■ Yes	Sign (<i>I-13)</i> d	
☐ No 2.J. Other MUTCD	Clane	I RR Xin		□ Non	ie	One A	pproach ite Crossing	M None	☐ No nhanced Signs		No		\dashv
Specify Type R8- Specify Type Specify Type		Count Count Count	1			Signs (if p	orivate)	2.6. 160 6	manced signs	(Lot types)			
3. Types of Train											-		
3.A. Gate Arms (count) Roadway 2 Pedestrian 0	3.B. Gate Con 2 Quad 3 Quad 4 Quad	Full (Ba: Resistance	rier) St	tructures ver Traff			candescent	(count of		LED	ights ,	3.E. Total Count Flashing Light Pa	
3.F. Installation Do	evices: (MM/YYY)) Not Require	Пи		lorn alled on (MM/)	m,		Cros	Highway Traff sing es ⊠ No	ic Signals Co	ntrolling	3.I. Bells (count)	٦
3.J. Non-Train Act		perated Sig	*		Floodlighting	☑ None		3.K. Other Count 0	Flashing Ligh	ts or Warnin Specify type	g Device	s	
4.A. Does nearby Intersection have Traffic Signals?	Interconi ☐ Not in ■ For To	Traffic Signs nection nterconnect raffic Signals /arning Signs	ed 🗆 Sim	nultaneo	c Signal Preem; us		5. Highway T Yes Storage Dista	No	nals	(Check all	that app noto/Vid	oring Devices (y) leo Recording resence Detectio	n
	- 0			Pa	rt IV: Phys	ical Chai	racteristic	s					
Traffic Lanes Cr Number of Lanes	2	▼ Two-wa □ Divided	y Traffic Traffic	Р		□ No			No	lights with nearest ra	in appro il) k Ye		
5. Crossing Surface 1 Timber 8 Unconsolida	2 Asphalt	3 Asphalt	ind Timber	□ 4 C					idth*_ er □ 7 Me		ength *		-
6. Intersecting Ro ☑ Yes □ No			e (feet) 75				est Crossing A	(5)	€ 60° - 90°	8. Is Com	mercial Yes	Power Available?	*
				Part	V: Public I					-			
	state Highway Sy		☐ (1) Inte	rstate		1) Urban (5) Major		System?	IN No		35	ighway Speed Lim MPH osted 🖼 Statuto	200
☐ (03) Fede ☑ (08) Non			☐ (3) Oth ☐ (4) Min	er Princi or Arter		(6) Minor (7) Local	11/00/10/00/00/00	6. LRS M	Referencing S				\exists
7. Annual Averag Year 2014 A	ADT 856	_ 0	Estimated Pe		% IN Yes	□ No	d by School Bi Average Nu	mber per Da		_	S 🔀		
Subn	nission Infor	mation -	This inforn	nation	is used for a	iministra	tive purpo:	ses and is	not availab	le on the p	ublic v	vebsite.	
Submitted by			(Organiza	tion				Phone		Da	ite	
Public reporting b sources, gathering agency may not or displays a current other aspect of th Washington, DC 2	and maintaining onduct or sponso y valid OMB cont is collection, inclu 0590.	the data ne r, and a pers rol number, uding for rec	lection is esti eded and cor on is not req The valid Of	imated to impleting uired to, MB contr	o average 30 m and reviewing nor shall a per- rol number for i Information Co	the collection be subjection formation officerion of the collection of the collectio	on of informa ect to a penal collection is ficer, Federal	ation. Accord Ity for failure 2130-0017. Railroad Adr	ling to the Pap to comply wit Send commen ninistration, 1	erwork Redu th, a collection ts regarding	ns, searce ection Ac on of info this bure	thing existing dat at of 1995, a fede ormation unless it den estimate or a SE, MS-25	eral it any
FORM FRA F	180.71 (Rev	. 3/15)			OMB	approva	al expires	3/31/201	8			Page 2 Ol	F 2

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Figure 11 – 4th Street (735 471W), Photos of Directional Views



Looking North



Looking East



Looking South



Looking West



DEPARTMENT OF TRANSPORTATION

FORM FRA F 6180.71 (Rev. 3/15)



Figure 12 – NC 119 5th Street (735 472D), Crossing Inventory

CROSSING 735472D

U. S. DOT CROSSING INVENTORY FORM

FEDERAL RAILROAD ADMINISTRATION	OMB No. 2130-0017
Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail g	rade crossings, complete the entire inventory
Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section.	or public pathway grade crossings (including
pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pa	thway grade crossings, complete the Header,
Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian	station crossings), complete the Header, Part
I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Subm	ission Information section, in addition to the
updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted.	An asterisk * denotes an optional field.

Form. For private h pedestrian station g Parts I and II, and the	rade crossi e Submissio	ings), comple on Informatio	ete the Header, on section. For g	Parts I ar grade-sepa	nd II, and t arated high	the Submission way-rail or path	Information way crossin	n section. For ngs (including	r Private pathw g pedestrian sta	vay grade cross ation crossings)	sings, comp , complete	lete the Heade the Header, Pa
 and the Submission updated data fields. 												n addition to the n optional field
A. Revision Date (MM/DD/YYYY) 03 / 08 / 2016	B	Reporting		C. Rea	ason for Up ange in Open	odate (Select on ☐ New Crossing ☐ Date	ly one) ☐ Closed ☐ Change	in Primary	☐ No Train Traffic ☐ Admin.	☐ Quiet Zone Updat	D. DO Invent	T Crossing tory Number
			D-	et li Lo		Change Only	Operating		Correction		_	
1. Primary Operatin	g Railroad		Fe	II C I. LO	2. St		auon m	IOIIIIatio	3. County			
Norfolk Southern I	Railway Co	ompany [NS			-	RTH CAROLIN	IA.		ALAMANCE			
4. City / Municipalit in	У		5. Street/I		e & Block	Number			6. Highway Ty	ype & No.		
□ Near MEBAN	ΙE		(Street/R)] * (B.	lock Numbe	er)	NC 119			
7. Do Other Railroad If Yes, Specify RR	ls Operate	a Separate 1	Frack at Crossin	g? □Yes	M No		er Railroad: pecify RR	s Operate O	er Your Track	at Crossing?	∐Yes Min	lo
9. Railroad Division	or Region		10. Railroad S	ubdivision	or Distric	t 11. B	ranch or Li	ne Name		12. RR Milep	ost	
□ None PIEDN	ONT		п., с	SOU			ne MA	NIN			31.64	1
None PIEDN 13. Line Segment	IOIVI	14. Nea	□ None S		15. Par	ent RR (if applic	JIFE	NIIV.	16. Crossin	(prefix) (nr		(suffix)
		Station MEBA	NE .		□ N/A				□ N/A			
17. Crossing Type IN Public □ Private	18. Cross Highw Pathw	ray, Ped.	19. Crossing				☐ Freig	rcity Passeng	☐ Transi	d Use Transit	Train Cou	age Passenger int Per Day han One Per Da er Per Day 0
23. Type of Land Use		markey-	Marie 2000 Marie Car	NORCO C			DATES STATE		1200000		AND CO. 100	
Open Space 24. Is there an Adjac	☐ Farm			☑ Comme		☐ Industrial 5. Quiet Zone		titutional	Recreation	onal 🗆	RR Yard	
24. Is there an Atijac	.ent crossii	ilg with a sel	parate Number			.s. Quiet zone	rna provio	euj				
☐ Yes ☑ No If		de Crossing N			0			I ☐ Chicag		Date Establ		
26. HSR Corridor ID			tude in decimal					imal degrees		29.1	Lat/Long So	urce
	_ N/A	(WGS84	std: nn.nnnnn	nn) 36.0	957270	(WGS84 s	td: -nnn.nr	nnnnn) -079	.2666150	DR A	ctual 🗆	Estimated
30.A. Railroad Use	•					31.A	State Use	•				
30.B. Railroad Use	•					31.8	State Use	•				
30.C. Railroad Use	*					31.C.	State Use	•				
30.D. Railroad Use	•					31.D	. State Use	•				
32.A. Narrative (Ro	ilroad Use)	•				32.B.	Narrative	(State Use)	•			
33. Emergency Notif 800-453-2530	fication Tel	ephone No.	(posted)	34. Railri 800-94		ct (Telephone N	0.)		35. State Cor 919-715-88	ntact (Telephoi	ne No.)	
000 100 2000		_			S 400 400	Railroad Inf	ormatio		010 710 00			
1. Estimated Numbe	r of Daily T	rain Movem	ents		rart III I	Namodu III	ormado					
1.A. Total Day Thru (6 AM to 6 PM)		1.B. T	otal Night Thru to 6 AM)	Trains	1.C. Total	Switching Train:	1.D. 1	Total Transit	Trains	1.E. Check if One Movement How many tr	ent Per Day	
2. Year of Train Cour	t Data (YY)	m	3.5	peed of T	rain at Cro	ssing				now many tr	ants per We	ient,
		2000	3.A	. Maximu	m Timetab	le Speed (mph)		- 5	. 25			
4. Type and Count of	Tracks] 3.B	. Typical S	peed Rang	e Over Crossing	(mph) Fro	m 3	to 35	_		
		92										
Main 1 5. Train Detection (A	Siding 1		ard	Transit		Industry						
☐ Constant War	ning Time		Detection				☑ None					
6. Is Track Signaled? ☐ Yes ☑ No				1	7.A. Event					7.B. Remot		onitoring

OMB approval expires 3/31/2018

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (1 03/08/2016	MM/DD/YYYY)			P	AGE 2		D. 73	Crossing Inv 5472D	entory Number	(7 cha	r.)
		Part	II: Highwa	y or Pathway	Traffic (Control De					
1. Are there	2. Types of Pa	ssive Traffic Co	ntrol Devices	associated with th	e Crossing						
Signs or Signals? ☑ Yes □ No	2.A. Crossbuck Assemblies (co 0		TOP Signs (R1	2.C. YIELD Si (count) 0	igns (R1-2)	2.D. Advan	2	igns (Check o W W10- W W10-	4 0	₩ W10	-11 0 -12 0
2.E. Low Ground C (W10-5)	learance Sign	2.F. Pavement Stop Lines RR Xing Sy		lynamic Envelope None	Devices/ ☐ All Ap		□ Median ☑ None	2.H. EXEMI (R15-3) Yes	Di:	. ENS Si splayed Yes No	gn (i-13)
2 J. Other MUTCD: Specify Type Specify Type Specify Type		Count 2 Count 0 Count	No		2.K. Priv Signs (if		2.L. LED E	nhanced Sign	s (List types)		
3. Types of Train A										- 2	
3.A. Gate Arms (count) Roadway 4 Pedestrian 0	3.B. Gate Conf	Full (Barrie Resistance Median Ga	Structu Over T	ntilevered (or Brid ures (count) raffic Lane 2 rer Traffic Lane 0	Bir	ncandescent	(count of		□ LED	F	i.E. Total Cou lashing Light
3.F. Installation Da Active Warning De	vices: (MM/YYY)	7) Not Required	3.G. Waysid	de Horn Installed on (<i>MM/</i>	YYYY)		Cross		fic Signals Conti	rolling	3.I. Bells (count) 1
3.J. Non-Train Action			=				3.K. Other Count 0		ts or Warning (Specify type		
4.A. Does nearby H Intersection have Traffic Signals?	Interconr □ Not in ■ For Tr	Traffic Signal nection sterconnected affic Signals arning Signs	□ Simultar	,		5. Highway Tr Yes	nce *	nais	6. Highway N (Check all the ☑ Yes - Pho ☐ Yes - Veh ☐ None	at apply to∕Vide	o Recording
				Part IV: Phys					10.		
Traffic Lanes Cro Number of Lanes	5	▼ Two-way T □ Divided Tra	raffic ffic		□ No			No	4. Is Crossin lights within nearest rail)	approx □ Yes	. 50 feet from
5. Crossing Surface 1 Timber S Unconsolidat	2 Asphalt	3 Asphalt and	Timber -	4 Concrete	MM/YYYY) _ 5 Concrete	and Rubber		idth*_ er □ 7 M	etal Len	gth * _	
6. Intersecting Ros			75		1000770020000	est Crossing An	157.553.	i 60° - 90°	1000,0000000000000000000000000000000000	ercial P	ower Availat
DE TES LINO	ii res, Approxiii	rate distance ()		art V: Public I				1 00 - 90		u res	11110
1. Highway System	state Highway Sy		2. Functional C	lassification of Roa	d at Crossii (1) Urban			sing on State	Highway	35	hway Speed MP
	r Nat Hwy System			eeways and Expre			5. Linear	Referencing :	System (LRS Ro	ite ID)	
☐ (03) Feder	ral AID, Not NHS Federal Aid			incipal Arterial [rterial [☐ (6) Mino ☐ (7) Local		6. LRS M	ilepost *			
7. Annual Average Year 2014 AA	Daily Traffic (AA		imated Percen		gularly Use	d by School Bu Average Nur		y <u>11</u>	10. Em	ergency	Services Ro lo
Subm	ission Infor	mation - Th	is informatio	on is used for a	dministro	tive purpos	es and is i	not availab	le on the pu	blic w	ebsite.
Submitted by				nization				Phone		Dat	
Public reporting bu sources, gathering agency may not co displays a currenth other aspect of this Washington, DC 20	and maintaining induct or sponsor y valid OMB cont s collection, inclu 3590.	the data needs r, and a person rol number. The ding for reduci	ed and complet is not required se valid OMB co	ting and reviewing to, nor shall a per ontrol number for to: Information C	the collect son be sub- information ollection Of	ion of informat lect to a penalt collection is 2 fficer, Federal I	tion. Accord ty for failure 2130-0017. : Railroad Adn	ing to the Paj to comply wi Send commer ninistration, 1	perwork Reduct th, a collection nts regarding th	tion Act of infor is burd	of 1995, a femation unle en estimate E, MS-25
ORM FRA F 6	180.71 (Rev.	3/15)		OME	approv	al expires 3	3/31/201	8			Page 2

Page 1 OF 2





Figure 13 – NC 119 5th Street (735 472D), Photos of Directional Views



Looking North



Looking East



Looking South



Looking West





Figure 14 - SR 1402 Mattress Factory Road (735 474S), Crossing Inventory

CROSSING 735474S

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION	
FEDERAL RAILROAD ADMINISTRATION	

OMB No. 2130-0017

Private												
Part Location and Classification Information section. For Private pathway grade crossing, complete the Header, Parts and I. and the Submission Information section. For private parted lightness (submission information section. For private parted lightness (submission information section. For changes to existing data, complete the Header, Part Items 1-3, and the Submission Information section. For changes to existing data, complete the Header, Part Items 1-3, and the Submission Information section. For changes to existing data, complete the Header, Part Items 1-3, and the Submission Information section. For changes to existing data, complete the Header, Part Items 1-3, and the Submission Information section. For change only and the part Items 1-3, and the Submission Information section. For change only and the submission Information section. For change only and the submission Information Informati												
Part and and the Submission Information section, For grade-separated highway-rall or pathway crossings (including podestrian station crossings), complete the Neader, Part I, and the Submission Information section, For changes to seizing date, complete the Neader, Part I, and the Submission Information section, For changes to seizing date, complete the Neader, Part I, and the Submission Information section in dediction to the updated data fields. Biotic For private crossing only, Part I Near 20 and Part II Item 23. are required unless otherwise noted. A Revision Date Revision												
, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 13, and the Submission Information section, in addition to the updated data facility. Sure required undersotherwise noted. An atterials* described an atterials* described an atterials* described an atterials* described and provided an												
All Part												
A. Revision Date A. Reporting Agency C. Reason for Update (Solet only only Month (MADD/YYY) Closed Traffic Consulty Change in Primary Consulty Change in Primary Correction Traffic Consulty Traffic Consult												
MAMDDP/YYY										noted.	An asterisk - C	
Data										□ No Train	□ Quiet	
State			Kambau	L 1100		ange in			Closed			inventory number
Part : Location and Classification Information		- R	State	□ Oth		-Onen			Change in Primary		Lone opuate	7354748
Part : Location and Classification Information		-	Diate	- Sale		o pen						7554740
1.					Dart I. Lo	cation				n		
1. Street/Road Name & Block Humber S. Street/Road Name & Block Humber S. Street/Road Name S. Street/	1. Primary Operating	Railroad	ma anu faic		i us c ii Lo	2.	State		aoir imormatio	3. County		
Name MEBANE (Greet/Road Name) * (Block Number) SR 1402			inpully [ive		t/Road Nam						me & No	
7. Do Other Raliroads Operate a Separate Track at Crossing? Ves No R Ves, Specify RR				MAT	TRESS FAC	CTORY	ROAD	1		or regiment :	The or the	
P.Raliroad Division or Region	IN Near MEBANI	E		(Street	/Road Name	9)		* (Bloc	k Number)	SR 1402		927
9. Rallroad Division or Region 10. Rallroad Subdivision or District 11. Branch or Une Hame 12. RR Milepost 14. Mone 15. Parent RR (7. Do Other Railroad	s Operate a	Separate T	rack at Cros	sing? □ Ye	M No	8.	Do Other	Railroads Operate O	ver Your Track	at Crossing?	/es □ No
9. Raliroad Division or Region								If Yes, Spe				2009 (1000)
None PIEDMONT	0.0.1 10:1:			10.0.1	16.1.0.1.	DI.		T			12 00 141	
None PIEDMONT	9. Kallroad Division o	r Region		10. Railroa	a subdivisio	n or Dist	rict	11. Brai	ncn or Une Name		H 1 0033	79 1
33. Line Segment	None PIFDM	ONT		None	SOU			□ None	MAIN			
	LI WOTE		14 Near		-	1 15 0	arent DD			16 Crossis		
13. Crossing Type	*			*	Ludie		a. eme na	'y uppricub		20. 0.05511	e - winer (1) uppi	,
13. Crossing Type 18. Crossing Purpose 19. Crossing Position 19. Crossing Position 19. Crossing Purpose			0.000	370	47	□ N	/A			□ N/A		v
	17. Crossing Type	18. Crossi	ng Purpose	19. Cross	sing Position			cess	21. Type of Train	-		22. Average Passenger
Private		⊠ Highwa	iy	At Gr	ide	(if	Private Cro	ossing)	☐ Freight	☐ Transi	t i	Train Count Per Day
123. Type of Land Use	M Public											
Open Space			, Ped.	☐ RR Ov	er		No		☐ Commuter	☐ Touris	t/Other	Number Per Day 0
24. biter ean Adjacent Cossing Number 7 354757 25. 0ulet Zone (FRA provided)			-		-	-						20110
						ercial				☐ Recreati	onal LRR	Yard
28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 29. Lat/Long Sourc	24. Is there an Adjace	ent Crossing	g with a Sep	parate Numb	er?		25. Quiet	t Zone (FR	(A provided)			
28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 28. Long trude in decimal degrees 29. Lat/Long Source 29. Lat/Long Sourc	THE VAN TIME MY	Van Dansida	Consider M		475Y		DE No. 1	Tanu.	Dential Dickies	an Francisco	Date Fetablish	
N/A (WGSS4 std: nn.nnnnnnn) 36.0912350 (WGSS8 std: nn.nnnnnnnn) -079 2469780 Dit Actual Estimated		res, rrovide				-						
33.A. State Use *	Zo. Harconidor ib		27. Lauc	uue iii ueciii				_	_		25.140	/ Long Source
33.A. State Use *		□ N/A	/WG\$84	std- nn nne	36.0	912350) //	VGS84 std	-one anneann) -075	9.2469780	TRI Acts	ial Estimated
31.C. State Use * 31.D. State Use * 32.A. Narrative (Railroad Use) * 32.B. Narrative (State Use) * 32.B. Narrative (State Use) * 33.Emergency Notification Telephone No. (posted) 34. Railroad Contact (Telephone No.) 35. State Contact (Telephone No.) 919-715-8803 Part II: Railroad Information 1.E. Total Day Thru Trains 1.E. Total Night Thru Trains 1.C. Total Switching Trains 1.D. Total Transit Trains 1.E. Check if Less Than One Movement Per Day 1.C. Total Trains 1.C. Total Trains Trains 1.C. Total Trai	30.A. Railroad Use	•	1 (11 - 12 - 1				1.35	31.A. S	tate Use *		10000000	
31.C. State Use * 31.D. State Use * 32.A. Narrative (Railroad Use) * 32.B. Narrative (State Use) * 32.B. Narrative (State Use) * 33.Emergency Notification Telephone No. (posted) 34. Railroad Contact (Telephone No.) 35. State Contact (Telephone No.) 919-715-8803 Part II: Railroad Information 1.E. Total Day Thru Trains 1.E. Total Night Thru Trains 1.C. Total Switching Trains 1.D. Total Transit Trains 1.E. Check if Less Than One Movement Per Day 1.C. Total Trains 1.C. Total Trains Trains 1.C. Total Trai												
31.D. State Use * 32.A. Narrative (Railroad Use) * 32.B. Narrative (State Use) * 33.B. Narrative (State Use) * 33.B. Narrative (State Use) * 33.Emergency Notification Telephone No. (posted)	30.B. Railroad Use	•						31.B. S	tate Use *			
31.D. State Use * 32.A. Narrative (Railroad Use) * 32.B. Narrative (State Use) * 33.B. Narrative (State Use) * 33.B. Narrative (State Use) * 33.Emergency Notification Telephone No. (posted)												
32.B. Narrative (Railroad Use) *	30.C. Railroad Use	•						31.C. S	tate Use *			
32.B. Narrative (Railroad Use) *	20 D. D. H							21.0				
33. Emergency Notification Telephone No. (posted) 34. Railroad Contact (Telephone No.) 35. State Contact (Telephone No.) 39. State	30.D. Railroad Use	-						31.D. S	tate Use *			
33. Emergency Notification Telephone No. (posted) 34. Railroad Contact (Telephone No.) 35. State Contact (Telephone No.) 39. State	22 A. Marrathur (n	leand He-1						22 P *	Inventina (State (1)			
800-946-4744 800-946-4744 919-715-8803	SZ.A. Marrative (NOI	iroda Use)	300					52.B. N	iarrauve (state Use)	7		I
800-946-4744 800-946-4744 919-715-8803	33. Emergency Notifi	cation Tele	phone No	(posted)	34, Railr	oad Con	tact (Tele	phone No 3		35. State Con	ntact /Telephone	No.1
L. Estimated Number of Daily Train Movements L. E. Total Night Thru Trains L. E. Total Oay Thru Trains L. E. Total Night Thru Trains L. E. Check if Less Than One Movement Per Day L. Cortal Train Count Data (PYYY) S. Speed of Train at Crossing S. A. Maximum Timesable Speed (mph) 50 S. B. Typical Speed Range Over Crossing (mph) From 5 to 49			,						2			
1. Estimated Number of Daily Train Movements	800-946-4744				800-94	6-4744				919-715-88	03	
1.8. Total Night Thru Trains 1.8. Total Night Trains 1.8. Total Trains t Trains 1.8. Trains t Trains	311				102	Part II	: Railro	ad Infor	mation			
1.8. Total Night Thru Trains 1.8. Total Night Trains 1.8. Total Trains t Trains 1.8. Trains t Trains	1. Estimated Number	of Daily Tra	in Moveme	ents								
(6 AM to 6 PM)					ru Trains	1.C. To	tal Switchin	ng Trains	1.D. Total Transit	Trains	1.E. Check if Le	ss Than
12	(6 AM to 6 PM)							123				
3. Speed of Train at Crossing 3. Speed 3.	12		4			0						
3.8. Typical Speed Range Over Crossing (mph) From 5 to 49	2. Year of Train Count	t Data (YYY)	0		3. Speed of T	rain at C	rossing		200			
4. Type and Count of Tracks										40		I
Main 1 Siding Yard Transit Industry					B.B. Typical S	peed Ra	nge Over (Crossing (m	ph) From 5	to 49	_	
5. Train Detection (Main Track only) Constant Warning Time Motion Detection AFO PTC DC Other None 6. Is Track Signaled? 7.A. Event Recorder 7.B. Remote Health Monitoring Yes Yes No Yes No	4. Type and Count of	Tracks										
5. Train Detection (Main Track only) Constant Warning Time Motion Detection AFO PTC DC Other None 6. Is Track Signaled? 7.A. Event Recorder 7.B. Remote Health Monitoring Yes Yes No Yes No	Main 1	Siding	V	and	Transi		Inc	duetry				
Constant Warning Time					1,14/15/		- III					
6. Is Track Signaled? 7.A. Event Recorder 7.8. Remote Health Monitoring ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No				Detection	□AFO □ I	ртс 🗆	DC 🗆	Other	None			
□ Yes □ No □ Yes □ No											7.B. Remote	Health Monitoring
					- 1							
		80 71 /R	ev 3/15	1			OMB 3	nnroval	evnires 3/31/2	018	70	Page 1 OF 2

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date () 03/08/2016	MM/DD/YYYY)			1	PAGE 2		73	Crossing Investigation	entory Numb	per (7 cha	r.)	
		Part I	II: Highway	or Pathway	Traffic (Control D						
1. Are there	2. Types of Pa	ssive Traffic Co	ntrol Devices ass	ociated with th	e Crossing							
Signs or Signals?	2.A. Crossbuci	k 2,8.5	TOP Signs (R1-1)	2.C. YIELD S	igns (R1-2)	2.D. Adva	nce Warning	Signs (Check a	If that apply:	include c	ount)	M None
☑ Yes □ No	Assemblies (co	ount) (count		(count)		₩ W10-1	2	₩ W10-	3 4	₩ W10		
	0	0		0		₩ W10-2	0	₩ w10-		₩ w10		
2.E. Low Ground C	learance Sign	2.F. Pavemer	t Markings			nnelization		2.H. EXEMP		2.I. ENS S)
(W10-5)		4.0	in-			Medians		(R15-3)		Displayed		
Yes (count 2		Stop Lines RR Xing Sy		namic Envelope		proaches	☐ Median M None	☐ Yes ☐ No		⊠ Yes □ No		
	01	✓ Yes		ne			200			□ NO		
2.J. Other MUTCD	Signs		No		Signs (if	ate Crossing	Z.L. LED E	nhanced Signs	(List types)			
Specify Type		Count 2			SiBira (i)	prisoner						
Specify Type R8-1	10	Count 2			□Yes	□ No						
Specify Type		Count										
3. Types of Train A												
3.A. Gate Arms	3.B. Gate Conf	figuration		ilevered (or Brid	dged) Flashi	ng Light		Mounted Flas	thing Lights			Count of
(count)	I 2 Quad	☐ Full (Barrier		es (count) Hic Lane 0	Пи	ncandescent	(count of		□ LED		lasning	Light Pain
Roadway 2	☐ 3 Quad	Resistance	, Jones IIIa	- Laure				ghts Included	☐ Side L	ights 4		
Pedestrian 0	☐ 4 Quad	☐ Median Gat	es Not Over	Traffic Lane 0	□	ED			Included			
3.F. Installation Da	to of Current		2 G Wesside	Hara	-		1 2 11	Ulahoon, T	io Cianalo C	at colling	3.I. B	alle
Active Warning De		n	3.G. Wayside				S.H. Cros	Highway Traff	ic algnais Coi	ntrolling	(cour	
/_		Not Required		stalled on (MM)	mm)			es 🖟 No			1	,
3.J. Non-Train Activ			I No				1 2 × 0:1	r Flashing Ligh	t W '	- Devie	250	
☐ Flagging/Flagma		nerated Signals	□ Watchman	Floodlighting	None		Count 0		ts or warnin; Specify type			
4.A. Does nearby F		Traffic Signal		fic Signal Preem		E. Hiskoryan	Traffic Pre-Sig		6. Highway		la a David	
Intersection have	Intercon		4.C. Hwy Iran	nc signal Freen	iption	☐ Yes ☑		nais	(Check all			ces
Traffic Signals?		nterconnected					11000		☐ Yes - Pl			ding
		raffic Signals	☐ Simultane	ous		Storage Dist			☐ Yes – V	ehicle Pre	sence D	etection
☐ Yes ☑ No	☐ For W	arning Signs	☐ Advance	3100-0		Stop Line Di	istance *		None			
			P	art IV: Phy:	sical Cha	racteristi	cs					
1. Traffic Lanes Cro				2. Is Roadway/	Pathway	3. Does	Track Run Dov	vn a Street?	4. Is Cross			
		☑ Two-way Tr		Paved?	mv		m., m		lights with			
Number of Lanes 5. Crossing Surface		☐ Divided Tra		I Yes	□ No			No idth *	nearest ra	ength *	1	NO
1 Timber						and Rubber				engui _		
☐ 8 Unconsolidat	ted 🗆 9 Com	posite 🗆 10	Other (specify)	100000 E00000 E00000	-00.814/1509k010		7.0000000000000000000000000000000000000	CONTRACTOR OF THE PERSON OF TH	_			
6. Intersecting Roa	adway within 500) feet?		131	7. Small	est Crossing	Angle		8. Is Com	mercial P	ower Av	ailable? *
							-					
☑ Yes □ No	If Yes, Approxim	nate Distance (f			□ 0°-2			60° - 90°		X Yes	□ No	<u> </u>
			Par	t V: Public	Highway	Informa	tion					
1. Highway System	r:	12	. Functional Clas	sification of Ro	ad at Crossii	ng	3. Is Cro	ssing on State	Highway	4. Hig	hway Sp	eed Limit
				(0) Rural 🗆			System?			55		MPH
	state Highway Sy		(1) Interstate		☐ (5) Majo	r Collector	⊠ Yes					Statuton
	r Nat Hwy Systen ral AID, Not NHS		(2) Other Free (3) Other Prin			r Collector	5. Linear	Referencing S	system (LRS F	(oute ID)	•	
☑ (08) Non-			(4) Minor Arte		(0) Millio		6. LRS M	ilepost *				
7. Annual Average	Daily Traffic (AA		imated Percent 1		egularly Use	d by School		1000	10. E	mergency	Service	s Route
Year 2014 A		0		% I≌ Ye			umber per Da	y <u>6</u>	_ ☐ Yes			
Suhm	ission Infor	mation - Th	s information	is used for a	dministra	ntive num	nses and is	not availab	le on the n	uhlic w	ehsite	
Cabin		////	jorniacion	3500 751 0		puipt			- on the p	vv		
Submitted by			Organiz	ation				Phone		Dat	e	
Public reporting bu												
sources, gathering												
agency may not co												
displays a currently other aspect of this												
Washington, DC 20		ading for reduci	ag time burden to	. morrhation C	Onection O	nicer, redera	n namoad Adi	mmacration, 1	FOO INGIA 161	sey Ave. 3	L, 1413-2	
EODM EDVE		2/15\		OMAI		-11	3/31/201	0			D	2 OE

23





Figure 15 – SR 1402 Mattress Factory Road (735 474S), Photos of Directional Views



Looking North



Looking East



Looking South



Looking West





Figure 16 - SR 1114 Buckhorn Road (735 141R), Crossing Inventory

CROSSING 735141R

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRA	ANSPORTATION
CEDERAL PALLEDAD ADMINIST	PATION

OMB No. 2130-0017

Form. For private highy pedestrian station grade Parts I and II, and the Su	vay-rail grade cross e crossings), compl bmission Informati information section e: For private cross	ings, complet ete the Heade on section. Fo For changes ings only, Part	e the Heade or, Parts I and or grade-separ to existing of	r, Parts I and d II, and the rated highwardata, complet	I II, and the S Submission In y-rail or pathy to the Header	ubmission Information formation section. For ay crossings (includin , Part I Items 1-3, an	on section. For r Private path g pedestrian s d the Submiss	r public pathway way grade crossi tation crossings), sion Information	plete the entire inventory grade crossings (including ngs, complete the Header, complete the Header, Part section, in addition to the denotes an optional field.
A. Revision Date (MM/DD/YYYY) 03 / 08 / 2016	B. Reporting Railroad	☐ Trans	it 🗵 Char Data	nge in 🗆 I	ssing	☐ Closed	☐ No Train	☐ Quiet Zone Update	D. DOT Crossing Inventory Number
	State	Othe	r □ Re-C			Change in Primary Operating RR	☐ Admin. Correction		735141R
		ı	art I: Loc			tion Informatio	n		
Primary Operating Ra Norfolk Southern Rail	ilroad way Company [N	3]		2. State NORT	H CAROLINA		3. County ORANGE		
4. City / Municipality		BUCK	HORN ROA				6. Highway	Type & No.	
7. Do Other Railroads O			Road Name)			ck Number) Railroads Operate O	SR 1114	at Crossing?	Vac II No
If Yes, Specify RR					If Yes, Sp				
9. Railroad Division or F		10. Railroad		or District		anch or Line Name		H 003	4.11
None EASTERN 13. Line Segment		☐ None rest RR Timet	NC LINE	15 Parent	RR (if applica	-	16 Crass	(prefix) (nni	
*	Station		able	□ N/A	ни (у ирриси	viej	□ N/A	ang Owner (1) Opt	inconey
	8. Crossing Purpose		ng Position	20. Publi		21. Type of Train	Traction of the		22. Average Passenger
I Public □	Highway Pathway, Ped. Station, Ped.	RR Und	ler	☐ Yes	e Crossing)	☐ Freight ☐ Intercity Passeng ☐ Commuter		sit ed Use Transit ist/Other	Train Count Per Day Less Than One Per Day Number Per Day
23. Type of Land Use	Station, red.	Linnon		LINO				-	
24. Is there an Adjacent		idential	Commen		Industrial Julet Zone (F	☐ Institutional	☐ Recreat	ional 🗆 R	R Yard
24. Is there an Adjacent	Crossing with a se	parate Numbe	irr						
☐ Yes ☑ No If Yes 26. HSR Corridor ID	, Provide Crossing !		al damen	LN N		☐ Partial ☐ Chica de in decimal degrees		Date Establis	hed at/Long Source
26. HSR Comidor ID		tude in decim		10100				29. 0	ity Long Source
30 A Railroad Use *	N/A (WGS84	std: nn.nnn	nnnn) 36.08	346139	(WGS84 sta	: -nnn.nnnnnnn) -07! State Use *	9.225/998	□ Ac	tual 🗷 Estimated
SU.A. Raiiroad Use					31.A.	state use			
30.B. Railroad Use *					31.B.	State Use *			
30.C. Railroad Use *					31.C.	State Use *			
30.D. Railroad Use *					31.D.	State Use *			
32.A. Narrative (Railro	ad Use) *				32.B.	Narrative (State Use)	•		
33. Emergency Notificat	tion Telephone No.	(posted)	34. Railro	ad Contact (Telephone No.)	35. State Co	ontact (Telephon	e No.)
800-453-2530			800-946	-4744			919-715-8	803	
			P	art II: Rai	Iroad Info	rmation		1.	
1. Estimated Number of			T.			Linavir		1.50-171	
1.A. Total Day Thru Trai (6 AM to 6 PM) 12		otal Night The to 6 AM)		1.C. Total Swi	tching Trains	1.D. Total Transit	Trains	1.E. Check if L One Moveme How many tra	
2. Year of Train Count Da	ata (YYYY)			ain at Crossin Timetable S	g peed (<i>mph</i>)	60		The state of the s	The state of the s
1 Town and Count of You	-di-	3	.B. Typical Sp	eed Range O	ver Crossing (nph) From 5	to 49		
4. Type and Count of Tra									
5. Train Detection (Main	Track only)	ard	Transit		Industry				
☐ Constant Warning 6. Is Track Signaled?	gTime Motion	Detection		A. Event Rec		None		7 R. Remote	Health Monitoring
☐ Yes ☑ No				Yes [✓ Yes	
FORM FRA F 6180	0.71 (Rev. 3/15	i)		OM	Bapprova	expires 3/31/2	018		Page 1 OF 2

U. S. DOT CROSSING INVENTORY FORM PAGE 2

1. Are there	2. Types of Pa	ssive T		trol Devices asse		-								
Signs or Signals?	2.A. Crossbuci			OP Signs (R1-1)				nco M'-	raina e	ane (Choel: =1	that and	includ-	count) 🖫 None	
	2.A. Crossbuck Assemblies (count)		(count)		s (R1-1) 2.C. YIELD S (count)		igns (A1-2) 2.D. Adva				(Check all that apply; inclu W W10-3 2		W10-11 0	
☑ Yes ☐ No	0	June,	0				₩ W10-2						10-12 0	
2.E. Low Ground C	learance Sien	2 5 5	-	Markings	1.	26 (annelization			2.H. EXEMP			Sign (I-13)	
(W10-5)	learance sign	2.1.1	avement	markings			s/Medians		- 1	(R15-3)		Displaye		
☐ Yes (count 0		IN St	op Lines	□Dvn:	amic Envelo		pproaches	□Me	dian	Yes		™ Yes		
™ No			Xing Syn				Approach	₩ Nor		□ No		□ No		
2.J. Other MUTCD	Signs		Yes 🗆 I		1/2		ivate Crossing	2.L.	LED En	hanced Signs	(List types)			
							f private)							
Specify Type	0	Co	unt 2			250000000								
Specify Type R8-1		Co	unt 2			□Yes	□ No							
Specify Type														
3. Types of Train A 3.A. Gate Arms												-	3.E. Total Count of	
(count)	3.B. Gate Con	riguration	on	Structures		Bridged) Flash	ning Light		unt of m	Mounted Flash	ning Lights		Flashing Light Pairs	
(county	₩ 2 Quad	□ Ful	(Borrier)			0 🗆	Incandescent				☐ LED	- 1	riasining Light rans	
Roadway 2	☐ 3 Quad	Resist										ights	7	
Pedestrian 0	☐ 4 Quad	☐ Me	dian Gate	Not Over	Traffic Lane	0	LED	71-556			Included			
3.F. Installation Da	1			2.5 9/	tora:				20.00	takan Tanki	· Clavala Ca	at an III an a	21.5-8-	
Active Warning De		0		3.G. Wayside H	Horn				Crossii	ighway Traffi	c Signals Co	ntrolling	(count)	
/		Not Re	quired		talled on (M	M/YYYY)		_		ng ⊠ No			1	
		1100.110	danies	™ No			0.32		02704 90	01100000000				
3.J. Non-Train Acti □ Flagging/Flagma		perate	d Signals	☐ Watchman [Floodlight	ing 🗷 None			Other F	Flashing Light Si	s or Warnin pecify type	g Device	es .	
4.A. Does nearby h	lwy 4.B. Hwy	Traffic	Signal	4.C. Hwy Traffi	ic Signal Pre	emption	5. Highway		Pre-Sign	als			oring Devices	
Intersection have	Interconi						☐ Yes 🖼	No				(Check all that apply)		
Traffic Signals?	M Not Ir						200						deo Recording	
☐ Yes ☑ No	☐ For Ti			☐ Simultaneo ☐ Advance	us		Storage Dist		. —		☐ Yes – V	ehicle P	resence Detection	
Li tes Di NO	☐ For W	arning	oigns		. n. n.	1 101					LS NORE			
							aracteristi			- //	100			
1. Traffic Lanes Cro			-way Trat o-way Tra		2. Is Roadwa Paved?	y/Pathway	3. Does 7	Track Ru	un Dowr	a Street?			minated? (Street ox. 50 feet from	
Number of Lanes			ided Traff		₩ Yes	□ No		□Yes	IN N	lo.	nearest ra			
5. Crossing Surface						(MM/YYYY)	1		Wid			ength *		
☐ 1 Timber ☐							e and Rubber	□ 6	Rubber	r 🗆 7 Mer				
☐ 8 Unconsolidat	ced 🗆 9 Com	posite	□ 10 0	Other (specify)										
6. Intersecting Roa	adway within 500	feet?				7. Sma	llest Crossing /	Angle			8. Is Com	mercial	Power Available? *	
Section of the section of the section				0.00		5 (Table 1980)					200.00.00000000000000000000000000000000			
Ix Yes □ No	If Yes, Approxin	nate Dis	tance (fe			□ 0° -			R	60° - 90°		☑ Yes	□ No	
				Parl	t V: Publi	ic Highwa	y Informa	tion						
1. Highway System	ř		2.	Functional Class	ification of I	Road at Cross	sing	3.	Is Cross	ing on State H	lighway	4. H	ighway Speed Limit	
			100	□ IN	(0) Rural	(1) Urban	1		stem?			35	MPH	
	state Highway Sy			(1) Interstate			or Collector		Yes				osted Statutory	
	r Nat Hwy System			(2) Other Freev				5.	Linear R	teferencing S	stem (LRS)	Route ID) *	
☐ (03) Fede	ral AID, Not NHS			(3) Other Princ (4) Minor Arter				6.	LRS Mile	epost *				
7. Annual Average		IDT)		mated Percent Ti			ed by School I				10 5	mergen	cy Services Route	
Year 2014 A	ADT 8039	.5.7	1	mateu Percent II		Yes D	lo Average N	umber	per Day	25	□ Ye		No	
Subm	ission Infor	matio	n - This	information	is used fo						e on the r	ublic v	website.	
				,			, , , , , , , ,							
Submitted by				Organiza	ition					Phone		_ Da	ate	
Public reporting bu	rden for this info	ormatio	n collecti	on is estimated t	to average 3	0 minutes pe	r response, in	cluding	the time	e for reviewin	g instructio	ns, sear	ching existing data	
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Figure 17 – SR 1114 Buckhorn Road (735 141R), Photos of Directional Views



Looking North



Looking East



Looking South



Looking West





C. CROSSING ANALYSIS

1. Exposure Index

NCDOT uses an exposure index as one indicator to determine if a grade separation structure is warranted at street/rail grade crossings. The exposure index is calculated by multiplying the number of trains per day by the number of vehicles per day that use the crossing. As a general rule, grade separations should be considered in RURAL areas when the exposure index is 15,000 or more. In URBAN areas grade separations should be considered when the exposure index is 30,000 or more. Other factors that need to be considered in the feasibility of grade separations are:

- Accident history
- Topography
- Adjacent land use
- Geometric designs
- Construction impacts
- Costs

The exposure index was calculated for each of the six crossings (see Table D-1) using the following formula.

 $EI = N \times ADT$

Where:

EI = NCDOT Rail Division's Exposure Index
N = Number of Trains per Day
ADT = Average Daily Traffic at at-grade crossing

TABLE C-1 – Exposure Index

NS Crossings									
Crossing No.	Street Name	Trains per Day	2014 ADT	Exposure Index					
735 464L	SR 1940 – Gibson Road	16	2,304	36864					
735 465T	SR 1976 – Lake Latham Road	16	1,381	22096					
735 468N	SR 1965 – Moore Road	16	766	12256					
735 496V	SR 1962 – S 3 rd Street	16	4,546	72736					
735 471W	4 th Street	16	856	13696					
735 472D	NC 119 - 5 th Street	16	12,193	195088					
735 474S	SR 1402 - Mattress Factory	16	2,109	33744					
735 141R	SR 1114 - Buckhorn Road	16	8,039	128624					

2. Train Operations

The primary users of the NCRR Corridor through Mebane, NC include Amtrak and Norfolk Southern Corporation. Currently there are 6 passenger trains (*Carolinian* and *Piedmont*) daily serving 12 cities provided by Amtrak. Norfolk Southern Corporation operates regularly scheduled freight train service (8 freight trains daily).

3. Delay Analysis

Level of Service is a measure of the operational efficiency of the street/rail grade crossing. It is determined using procedures from the *Highway Capacity Manual* procedures. Level of service is expressed as a letter ranging from A (free flowing) to F (severely congested) and is determined using the



average delay for all vehicles. Table C-2 summarizes the average delay and corresponding level of service.

TABLE C-2 - LOS

Level of Service	Avg. Delay/Vehicle (seconds)
А	10.0
В	>10.0 to 15.0
С	>15.0 to 25.0
D	>25.0 to 35.0
E	>35.0 to 50.0
F	>50.0

The delay calculations are based on the methodology developed for the Proposed Conrail Acquisition Draft Environmental Impact Statement (DEIS) by the Surface Transportation Board's Sections of Environmental Analysis (SEA) and modified as needed for this project.

The following values were calculated for existing and future conditions.

- Blocked crossing time per train
- Event time
- Average delay per day
- Maximum vehicle queue
- Total stopped vehicle delay per day
- Average delay for all vehicles
- Traffic level of service (LOS)

The level of service (LOS) for each crossing was determined based on these computed values and the Highway Capacity Manual procedures. Table C-3 summarizes the delay and LOS results for the existing conditions.





TABLE C-3 – Delay and LOS

	NS Crossings Capacity Analysis															
Crossing No.	Street Name	No. Lanes (one-way direction)	ADT	Arrival Rate (Veh/Min) 2x uniform	Departure Rate	Trains per day	Train Speed (miles/hr)	Train Length (ft)	Crossing Blockage Time (min) T _c	Event (Queue) Time (min) T _e	Total Stopped Vehicle Delay Per Day (min/day) D⊤	Number Vehicles Delayed/Day V _D	Max. Peak Hr. Queue (veh/lane) Q	Average Delay /Stopped Veh. (mins) D _{avg}	Avg. Delay/Veh. In Secs. (All Vehicles) D _v	SOT
735 464L	SR 1940 – Gibson Road	1	2,304	3.20	30	16	45	9,000	2.27	2.54	82.85	65	5	1.27	4.31	А
735 465T	SR 1976 – Lake Latham Road	1	1,381	1.92	30	16	45	9,000	2.27	2.43	45.23	37	3	1.21	3.93	A
735 468N	SR 1965 – Moore Road	1	766	1.06	30	16	45	9,000	2.27	2.36	23.63	20	2	1.18	3.70	А
735 496V	SR 1962 – S 3 rd Street	1	4,546	6.31	30	16	45	9,000	2.27	2.88	209.27	145	10	1.44	5.52	A
735 471W	4 th Street	1	856	1.19	30	16	45	9,000	2.27	2.37	26.63	23	2	1.18	3.73	А
735 472D	NC 119 - 5 th Street	2	12,193	16.93	60	16	45	9,000	2.27	5.22	1844.75	707	14	2.61	18.16	С
735 474S	SR 1402 - Mattress Factory	1	2,109	2.93	30	16	45	9,000	2.27	2.52	74.33	59	5	1.26	4.23	А
735 141R	SR 1114 - Buckhorn Road	1	8,039	11.17	30	16	45	9,000	2.27	3.62	585.26	323	18	1.81	8.74	А





4. Crash Analysis

At-Grade Crossings

At least thirty crashes have occurred in the corridor since the 1970's. Only two vehicular crashes have occurred in the past ten years, and only one of those involved injuries. Table C-4 summarizes the accident data.

Crashes are summarized using the following classifications:

- Fatality
- Injury
- > PDO property damage only

NCDOT Division 7 Highways recently conducted an intersection diagnostics analysis pertaining to the signalized intersection of NC 119 (5th Street) and Washington Street and US 70. The analysis identified short term improvements for the signal operations and vehicle queueing along 5th Street. Recently, NCDOT Division removed the advanced stop lines And re-stripped the intersection of 5th Street and Washington Street with a "Do not block intersection" marking (along with signage). Prior to the TSS study, results of those stripping improvements showed minimal improvements due to the continuous left turn ability onto Washington Street.

Recently, NCDOT Division 7 conducted a crash analysis at the intersections to identify the types of accidents and at which locations. As shown in Figure 18, there is a high volume of accidents at the intersection of 5th Street and Washington Street, relating to left turn traffic crossing 5th Street or vehicles trying to cross 5th Street.

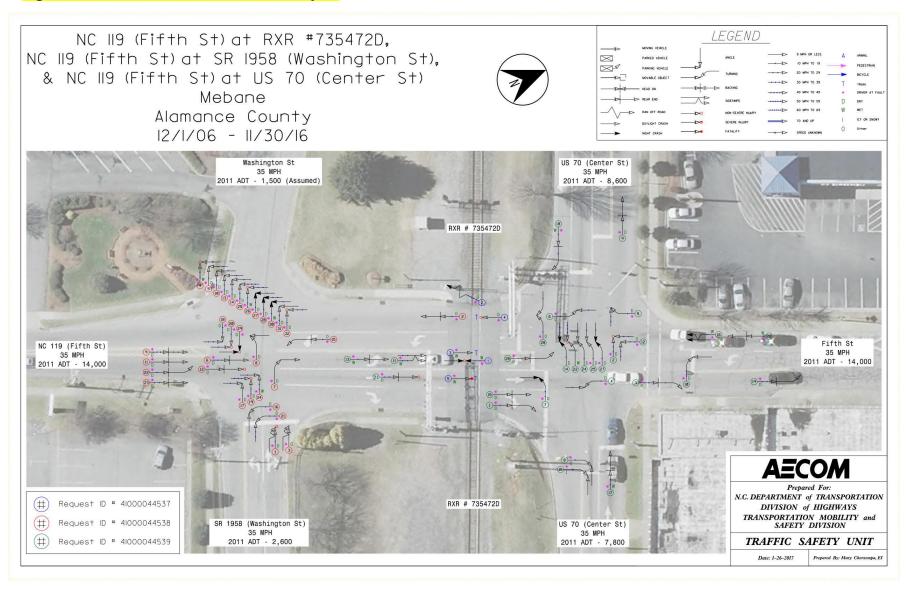
TABLE C-4 – Crash Summary

NS Crossings										
Crossing No.	Street Name	Total # of Crashes	# of Fatalities	# of Injuries	PDO					
735 464L	SR 1940 – Gibson Road	3	0	3	0					
735 465T	SR 1976 – Lake Latham Road	4	0	1	3					
735 468N	SR 1965 – Moore Road	2	0	1	1					
735 496V	SR 1962 – S 3 rd Street	0	0	0	0					
735 471W	4 th Street	2	0	1	1					
735 472D	NC 119 - 5 th Street	8	2	1	5					
735 474S	SR 1402 - Mattress Factory	4	0	3	1					
735 141R	SR 1114 - Buckhorn Road	3	1	0	2					
Pedestrian C	crossing Tracks	3	4	0	0					





Figure 18 - NC 119 & SR 1958 Crash Analysis







5. Future Highway Projects

One project is listed in the current NCDOT 2016-2025 State Transportation Improvement Program (STIP). U-3109A – NC 199 Bypass. This project is currently in the final design phase and will be located within the western portion of the study area. The project will construct a grade separation over the railroad corridor, Holt Road, and US 70, thus closing the existing Lake Latham Road at-grade crossing. Access will be provided to US 70 via interchange on the north side of US 70.





D. SAFETY AND MOBILITY ISSUES

There are several methods available to enhance railroadcrossing safety. This chapter discusses some of these methods in more detail.

1. Vehicles Queuing across Railroad Tracks

The presence of nearby traffic signals, intersections, or parallel roadways can result in queues of stopped vehicles extending onto or across a street/rail crossing. As such, vehicles may then queue over the railroad tracks when the tracks are near parallel roadways, especially when vehicles on the road across the railroad tracks are required to stop at a stop sign or traffic signal. All study crossings have "Do Not Stop On Tracks" and/or "Stop Here When Flashing" signs, as appropriate. In several locations where the railroad tracks are close to the adjacent signalized intersection, the stop bar with a "Stop Here On Red" sign is behind the railroad tracks. The intent of this design is to discourage drivers from queuing over the railroad tracks when stopped at the traffic signal.

If vehicles are queued over the tracks when the train is approaching, they may become trapped by the vehicles in front of them and behind them, and become unable to exit from between the gates. Where four quadrant gate systems are installed, the gates are timed to allow vehicles to clear the crossing prior to both gates coming down; however, if vehicles are queued up, this may cause a vehicle to become trapped between gates. The table below identifies the location of four-quad gate systems. Traffic signals are often coordinated with the train signals to allow all vehicles to clear the tracks before the train arrives. Table D.1 lists the study crossings that are within 75 feet of a parallel roadway and which one's contain four quadrant gates.

TABLE D-1 – At-Grade Crossings within 75 feet of Parallel Roadway

Crossing No.	Street Name	Approx. Distance	Adjacent Roadway	Four- Quad Gates
735 465T	SR 1976 – Lake Latham Road	85 feet	US 70	Yes
735 468N	SR 1965 – Moore Road	73 feet	US 70	No
735 496V	SR 1962 – S 3 rd Street	63 feet	US 70	No
735 471W	4 th Street	63 feet	US 70	No
735 472D	NC 119 - 5 th Street	63 feet	US 70	Yes

2. Traffic Signal Preemption

Standard practice (based on *The Manual on Uniform Traffic Control Devices*) requires that traffic signals located within 200 feet of a street/rail at-grade crossing be coordinated with the crossing's train detection and warning system to preempt normal operations of the traffic signal. 3rd Street, 4th Street, and 5th Street currently have signal preemption with the NS rail line.

3. Humped Crossings

A "humped" crossing exists where the elevation of the railroad is significantly higher than the crossing roadway, causing vehicles to ascend on one side of the tracks and descend on the other. The severity of this condition can range from





discomfort at normal speeds, to "bottoming out" of vehicles with long wheelbases or low clearances. This dragging can damage vehicles, or cause them to become stuck on the crossing, creating a serious hazard. Routine track maintenance tends to exacerbate the problem over time, as track ballast work typically adds about three inches per occurrence. Over a ten-year period, the railroad may rise as much as one foot as a result of this routine maintenance.

Crest vertical curves across the tracks that do not create a need for the driver to reduce speed are not considered to be a humped profile. The combination of short crest and sag vertical curves caused by a buildup of the ballast and raising of the track create a need to reduce speed across the crossing. The following crossing has a slight humped profile: 5th Street.

4. Grade Crossing Condition

A poor grade crossing surface can result in a rough, uneven ride. This can increase wear and tear on vehicles, potentially create a traffic safety hazard, and may add to congestion by reducing travel speeds. The crossing materials used on these grade crossings include asphalt, concrete slab, and rubber. Even though some materials provide a slightly improved ride and longer term maintenance, the main safety issue is the condition of the crossing. None of the crossings have surfaces that are deemed to be in poor condition.

5. Vehicles Driving Around Automated Gates

Several situations can lead to the circumvention of automated gates by motorists:

- Gates are lowered, but no train is visible
- Gates fail, and remain in the lowered position
- Gates are lowered and train is visible, but motorist is too impatient to wait

During the field analysis, there were no signs of vehicles circumventing the gates when a train was approaching. There were also no signs (tire tracks, disturbed ground) of vehicles previously circumventing the gates.





E. SYSTEM ENHANCEMENT OPTIONS

1. Grade Separation Structures

Many factors must be considered before suggesting grade separation, including:

- Traffic volumes (both vehicle and train)
- Accident history
- Topography
- · Adjacent land use
- Construction impacts
- Costs

Some of these factors apply to Buckhorn Road, suggesting the potential need for grade separating Buckhorn Road. A grade separation is already programmed for Lake Latham Road.

2. Crossing Protection Device Upgrades



Example of gates, signs and flashing lights

The most common and cost-effective way to increase the safety at a railway crossing is to upgrade existing warning devices at the crossing. Typical warning devices include signs, gate arms, flashing lights and bells. Passive devices, such as advanced warning signs and crossbucks, merely warn the motorist of the existence of a railroad

crossing. These devices are most suitable where train and

traffic volumes and speeds are low, and where sight distance is adequate.

NCDOT Rail and Norfolk Southern have been using advanced crossing protection devices on the main line from Raleigh to Charlotte since 1995. These devices are most appropriate where high-volume multi-lane roadways cross railroad main lines, and where significant numbers of motorists are ignoring or circumventing existing warning devices.

Active devices that warn motorists of approaching trains include flashing lights, bells, and automated gates. Such devices are usually employed at locations exhibiting higher volumes or speeds, or greater potential for accidents.

a. Gates and Signals

Gates and signals are mainly installed where trains travel at 25 miles per hour or more. They are electronic warning devices for road vehicles at railroad grade crossings with flashing red lights, a crossbuck and a bell. The gates are typically activated and fully lowered before the train arrives. The gates will rise or the signals will shut off once the end of the train clears the island circuit. All of the crossings within the study area have gates and signals.

b. Median Separators

Median separators consist of markers mounted on raised islands along the roadway centerline to discourage motorists from driving in opposing travel lanes to avoid lowered gates. Where markers are not preferred, a







4-foot median can be constructed with an 8-inch curb, which allows for landscaping. Median treatments typically extend 70 feet to 100 feet back from the gates, but may be precluded by driveways or intersecting roads within this distance.

c. Four-Quadrant Gates

Four-quadrant gate involve treatments gate arms on both approaches and departures of the roadway. This restricts vehicles from being able to drive around the approach gate arms, completely "sealing" the crossing. Several measures are



Example of four-quadrant gate

employed to prevent vehicles from becoming "trapped" inside the gates, including careful timing of the gates to allow traffic to clear; providing 16 feet of clearance between track center and gates; leaving adequate space between gate tips for a vehicle to "squeeze" out; and use of breakaway arms. 5th Street is only crossing that has four-quadrant gates within the study area.

d. Remote Video Detection

The Crossing Law Enforcement and Research of (CLEAR) Violations program employs video cameras to monitor selected crossings. The recordings provide information on crossing operations, violations, and accidents for both enforcement and research purposes.

e. Roadway Improvements

Roadway improvements can reduce both accident potential and traffic delay at railroad crossings. Realignment and regrading can improve visibility and reduce the time required to traverse a crossing. Additional lanes significantly increase capacity, reducing the residual delay following a crossing event. New roadways can provide alternative routes, allowing crossings to occur at more desirable locations, and potentially eliminate the number of crossing trips.

f. Traffic Signals

Traffic signals are not specifically intended as warning devices at railroad crossings. However, when a street/rail grade crossing is located near a signalized intersection (typically within 200 feet), special steps should be taken to insure that vehicles do not get trapped on the tracks due to queues resulting from an adjacent street intersection's red signal. The normal sequence of traffic signal indications should be preempted by the approach of a train, eliminating the possibility of entrapment due to conflicting traffic and railroad crossing signals. Ideally, the preempted signal phasing should be designed to allow non-conflicting movements to proceed during a train crossing, thereby minimizing overall traffic delay. 3rd Street, 4th Street and 5th Street have signal pre-emption installed due to their close proximity to US 70.

g. Crossing Consolidation & Elimination

Crossing consolidations eliminate the potential for train/vehicle collisions. Crossing-related installation and





maintenance costs are reduced, and concentrates traffic at fewer, higher-volume crossings.

Redundant low-volume crossings can be unnecessary due to the availability of alternative access across the tracks. Train volumes, geometry, and safety are factors that are considered when identifying potential crossing closures.

Therefore, consolidation and closure of these minor crossings is an effective strategy in terms of both costs and safety benefits. A crossing is considered redundant (and therefore a candidate for elimination) if it is within a reasonable distance of another crossing connected to the same street network. Crossings with high potential for elimination include:

- Crossings with relatively low traffic volumes where alternative access is reasonably available.
- Redundant crossings near parallel crossings or grade separations, or where traffic can be safely and efficiently diverted to another crossing;
- Skewed crossings, or those where sight distance is limited by horizontal/vertical curvature, vegetation, or permanent obstructions;
- Crossings with a history of accidents;
- Crossings adjacent to a newly constructed crossing or grade separation;
- Private crossings with no identifiable owner, or where the owner is unwilling or unable to fund crossing upgrades (and where alternative access is reasonably available); Since NCDOT does not currently have jurisdiction over private crossings; closing of these crossings is determined by the railroad and property owner if identified.

 Complex crossings that cannot be effectively served by warning devices due to multiple tracks, extensive switching operations, etc.

j. Grade Separation

Grade-separated crossings eliminate the potential for train/vehicle collisions while maintaining vehicular and pedestrian access across the railroad tracks. Railroad overpasses of highways require approximately 17 feet of vertical clearance, and highway overpasses of railroad tracks require approximately 23 feet of clearance. Sight distance requirements on the overpass vertical curves generally result in long approaches, which can create adjacent property access and connectivity issues. In addition, visual and noise impacts associated with overpasses can negatively affect neighborhoods or historic areas.

Crossings with a history of crashes, humped crossings (topography challenges), high vehicular volumes, and an exposure rating that exceeds the standard are locations where grade separations should be considered.

As grade separations are considered, topography, adjacent land uses, construction costs, and impacts need to be thoroughly vetted. The cost of grade separation can be significantly reduced in situations where the topography facilitates a highway overpass due to the need for relatively minimal earthwork or right-of-way requirements. With challenging site constraints, it may be necessary to adjust roadway and railroad grades to facilitate an acceptable grade separation. Likewise, grade separations may not be feasible in heavily developed areas such as central business or historic districts. Right-of-Way costs or socio-economic impacts associated with the potential loss of businesses and jobs can result in an unfavorable cost-benefit ratio for the





project. New bridges also have the potential to relocate a large number of people and/or disrupt neighborhoods.

The impacts associated with the construction of new grade-separated crossings can be substantial and can include visual, noise, and access degradation and the relocation of dwellings or businesses. Environmental features like wetlands or woodlands, historical and archaeological sites, and the presence of hazardous materials can also pose considerable challenges. Finally, grade separations are significant long term infrastructure investments. A detailed feasibility study, including a cost benefit analysis, is required before a grade separation is implemented.





F. PUBLIC INVOLVEMENT

A Public Involvement program was established as part of this study.

The program involved:

- Two Stakeholder Committee Meetings
- Two Public Informational Workshops (PIWs)

A Stakeholder Committee was established to provide critical input in reaching consensus on grade crossing recommendations. The Stakeholder Committee met three times during the course of this study. The first meeting was held on June 10th with various city departments, local neighborhood associations, emergency response, and school district representatives.

The Stakeholders included the following:

- NCDOT Rail Division
- Norfolk Southern
- NCDOT Division 7
- City of Mebane
- Burlington-Graham MPO
- Durham-Chapel Hill-Carrboro MPO
- City of Mebane Fire Department
- City of Mebane Police Department
- Alamance County Schools

A second Stakeholder Committee meeting was held on February 16th to present that various design concepts for improving the safety at the at-grade crossings and receive feedback on concepts. The concepts would be carried forward to a second Public Information Workshop.

The third Stakeholder Committee meeting was held on June 14, 2017. The final recommendations were presented to the committee for their approval to include in the report and present to City Council. Discussions revolved around options for 735 472D (NC 119/5th St). The committee recommended moving forward the option that is found in Section G. Further studies relating to the 735 141R (Buckhorn Rd) at-grade crossing should coordinate with Orange County Planning Department and the Interchange Analysis & Corridor Study for Mattress Factory Road and any modifications to Buckhorn Road related to that study.

Citizen Informational Workshops

The Citizen Involvement program included two Public Informational Workshops (CIWs). These meetings are summarized below.

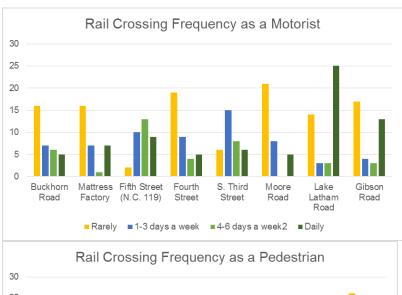
Citizen Informational Workshop #1

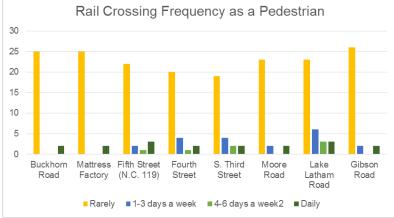
The first CIW was held on November 15th. Study team members were available to introduce the Mebane Traffic Separation Study, to answer questions related to the study, and to receive comments to aid in developing recommendations for improving the eight rail crossings.

During the workshop, attendees were asked questions relating to the frequency of use per at-grade crossings as a motorist and as a pedestrian. This information provided insight on how the residents utilized the roadway network to traverse through the City. Responses are found in the following two graphs.









Residents of area neighborhoods were primarily concerned with increased traffic along Holt Street and reduced access to US 70 through the closing of Lake Latham Road at-grade crossing. The closing of the crossing is part of the NC 119 Bypass (U-3109A). Concern revolved around the traffic along the 5th Street at-grade crossing, as well as the lack of pedestrian connectivity between Washington Street and US 70.

Citizen Informational Workshop #2

The second CIW was held on April 18th, 2017 at Mebane City Hall. The workshop presented the various improvement options for each crossing, provided explanation onto how/why the concepts were developed, and answered questions related to the concept recommendations for improving the six of the eight rail crossings.

The study team presented improvements for six of the eight rail crossings, with two rail crossings identifying multiple options for improvements. Two crossings recommended median barriers and widening of crossing shoulders, one crossing identified three different types of grade separation options, one crossing with multiple intersection improvements, and a crossing closure option, and two pedestrian grade separated crossing options.

Comments revolved around utilizing elevators and not ramps at the pedestrian crossing options in order to reduce the footprint. One other common theme was 5th Street Option 3 was preferred, though recommended closing 4th Street atgrade crossing. The graph below provides a summary of the preferred recommendations per the four most discussed crossings the second public information workshop.





City of Mebane Council

The TSS was presented to the City Council on September 11, 2017. The intent was to provide the council with a synopsis of the study process, findings, and recommendations.

Council members were in full support of majority of the recommendations. Though council members did convey their concern about approving the closure of 4th Street at-grade crossing and the design configuration of 5th Street at-grade crossing. Council members believed that 4th Street should remain open.

As for 5th Street, council members agreed that combining the through and right turn movements into a single lane, thus providing opportunity for constructing a sidewalk and reducing the radius at the intersection with US 70 would be beneficial. However, council members were concerned that the mountable median barrier along 5th Street would impact travel movements across Washington Street. Council members

believed that there was a significant movement across Washington Street and by requiring drives to turn right on 5th Street would impact their ability to cross through town.

Their motion was to adopt the TSS recommendations except for not closing 4th Street at-grade crossing. In addition, the motion included approving, in concept, the 5th Street recommendation but that further study and design coordination with an on-going signal improvement project at 5th Street evaluate a solution where the Washington Street/5th Street intersection remains a full access intersection.





G. RECOMMENDATIONS

With the projected increase in both passenger and freight rail traffic, there is a need to focus attention to the safety of this corridor. Recommendations were identified for improvements to eight at-grade crossings in the City of Mebane to provide safer and improved mobility on and adjacent to the rail corridor for all forms of traffic. The corridor is also part of the Southeast High Speed Rail Corridor, and NCDOT Rail Division has committed to enhancing the operations of passenger rail service by upgrading the rail corridor for increased passenger train operations and speeds. It will be important for the City of Mebane and NCRR work together in installing fencing along the rail corridor through the downtown. This would facilitate and direct pedestrians to the appropriate sidewalks at at-grade crossings as a safe crossing movement.

Street/Rail Grade Crossing Recommendations

This section describes the recommendations for the eight atgrade crossings. The primary objective of these improvements is to provide guidance to the local and state agencies on the mechanisms that could trigger the need for further evaluation and design. The following figures illustrate the various options at each crossing.

Financial Guidance

The at-grade crossing improvements will most likely be funded through either State or Federal funding, however the pedestrian grade separations would not be eligible.





A. SR 1940 - Gibson Road (Crossing # 735 464L, MP H0034.11)

1. Short-Term

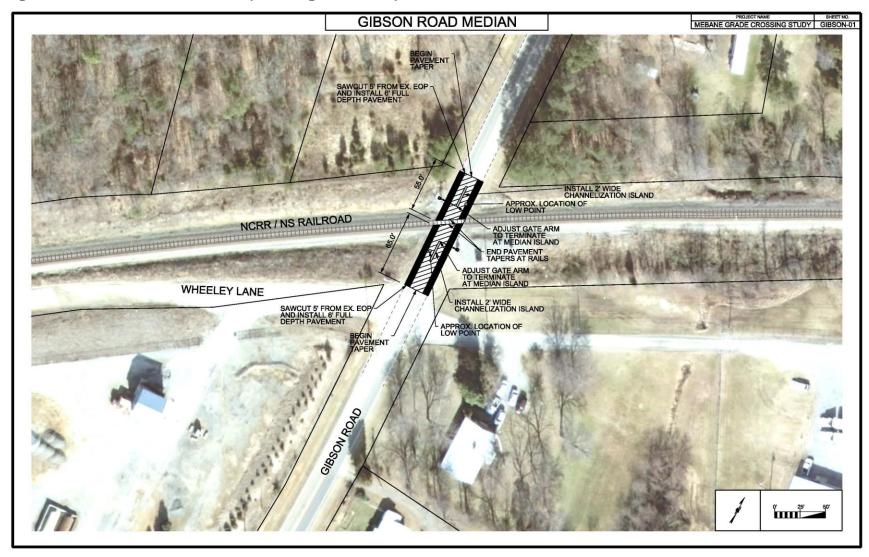
Crossing to continue to operate as an at-grade crossing and install median barriers and widen crossing shoulders. The widened shoulder is also intended to provide additional width for projected truck traffic.

The 2014 annual daily traffic (ADT) at this crossing is 2,304.





Figure 19: SR 1940 - Gibson Road (Crossing # 735 464L) Recommendations







B. SR 1976 – Lake Latham Road (Crossing # 735 465T, MP H0029.83)

1. Short-Term Continue to operate the crossing as an at-grade crossing.

2. Long-Term Existing at-grade crossing will be closed once the NC 119 Bypass (NCDOT Project U-3109) is constructed.

The 2014 ADT is 1,381.





Figure 20: SR 1976 – Lake Latham Road (Crossing # 735 465T) Recommendation







C. SR 1965 – Moore Road (Crossing # 735 468N, MP H0030.69)

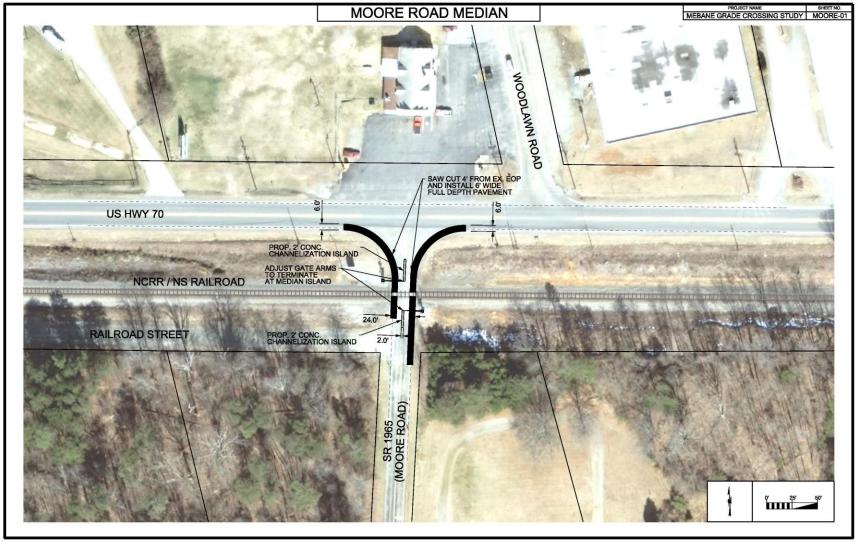
1. Short-Term

Crossing to continue to operate as an at-grade crossing and install median barriers and widen crossing shoulders. The widened shoulder is also intended to provide a safer pedestrian connection across the railroad corridor at this crossing.

The 2014 ADT is 766.



Figure 21: SR 1956 – Moore Road (Crossing # 735 468N) Recommendation







D. SR 1962 3rd Street (Crossing # 735 496V, MP H0031.46)

1. Short-Term

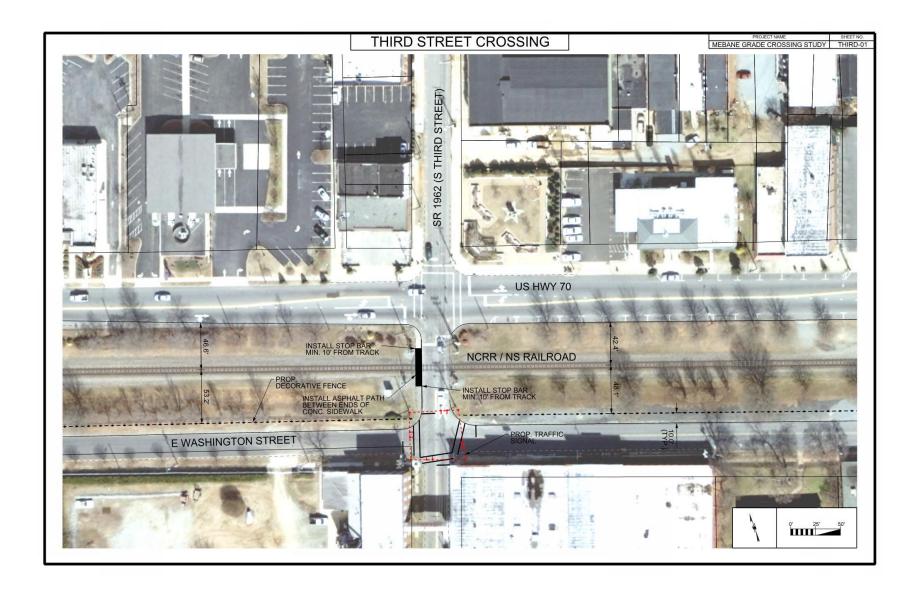
Crossing to continue to operate as an at-grade crossing. Widen the existing at-grade crossing shoulder six (6) feet on each side to provide a safer pedestrian connection across the railroad corridor. The widened shoulder will provide the pedestrian connection that is needed within the downtown of Mebane. This will also connect to the intersection improvements at 3rd Street and Washington Street, and the existing sidewalk network in downtown Mebane.

The 2014 ADT is 4,546.





Figure 22: SR 1962 – 3rd Street (Crossing # 735 486V) Recommendation







E. 4th Street (Crossing # 735 471W, MP 0031.56)

1. Short-Term

Crossing to remain open. The existing crossing would continue to operate as an at-grade crossing. Widen the existing at-grade crossing shoulder six (6) feet on each side to provide a safer pedestrian connection across the railroad corridor. The widened shoulder will provide the pedestrian connection that is needed within the downtown of Mebane due to the numerous pedestrian fatalities with trains. This will also connect to the intersection improvements at 4th Street and Washington Street, and the existing sidewalk network in downtown Mebane.

The 2014 ADT is 856.





Figure 23: 4th Street (Crossing # 735 471W) Recommendation

See Figure 24 (5th Street)





F. NC 119 – 5th Street (Crossing # 735 472D, MP H0031.64)

Results from the crash analysis at the intersections identified a high volume of accidents at the intersection of 5th Street and Washington Street relating to left turn traffic crossing 5th Street or vehicles trying to cross 5th Street. Various scenarios were evaluated and designed.

1. Short-Term

The recommendation includes installing mountable medians, with a pedestrian refuge along 5th Street from the at-grade crossing south of Washington Street and along Washington Street west of 5th Street. The mountable median along 5th Street would eliminate the left turn conflicts and through movements from Washington Street to eliminate majority of the accidents at that location.

5th Street would continue to operate as an at-grade crossing but also improve the geometry at the crossing and intersection with US 70. Eliminate the northbound dedicated right turn lane onto US 70 to increase the curve radii for vehicle turning movements. Install asphalt path to connect sidewalks on the eastern side of crossing to improve pedestrian connectivity. Install cross walks on the south and east segments of Washington St/5th Street intersection.

4th Street crossing would remain open. The existing crossing would continue to operate as an at-grade crossing. Widen the existing at-grade crossing shoulder six (6) feet on each side to provide a safer pedestrian connection across the railroad corridor. The widened shoulder will provide the pedestrian connection that is needed within the downtown of Mebane due to the numerous pedestrian fatalities with trains. This will also connect to the intersection improvements at 4th Street and Washington Street, and the existing sidewalk network in downtown Mebane.

The 2014 ADT is 12,193.





Figure 24: NC 119 – 5th Street (Crossing # 735 472D) Recommendation

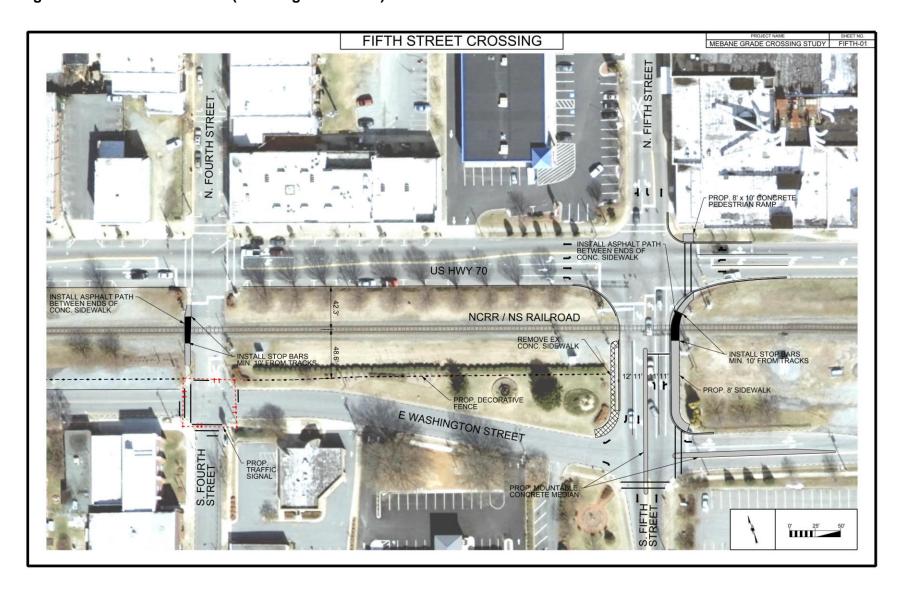






Figure 25: Example of a Mountable Concrete Median that could be installed on 5th Street







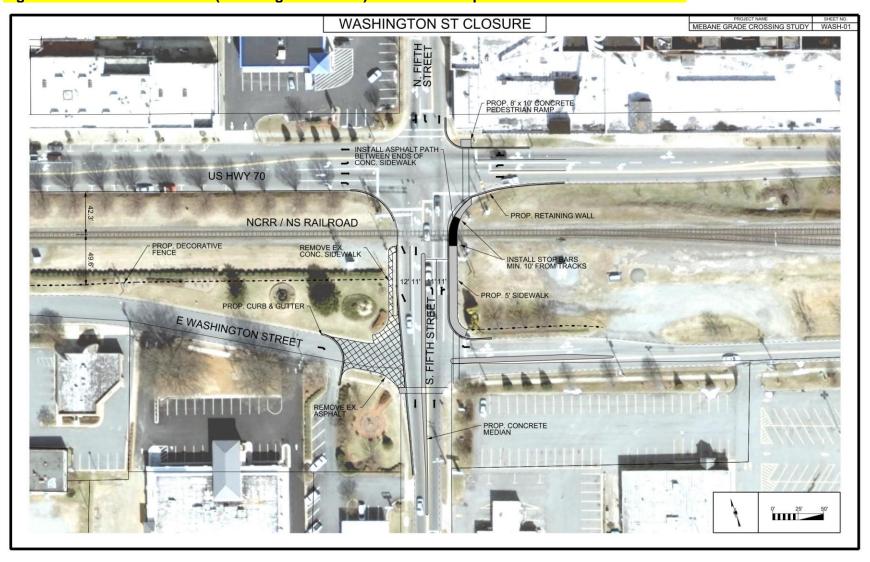
Figure 26: NC 119 – 5th Street (Crossing # 735 472D) – Exhibit depicting if sidewalks could be installed on the western side of 5th Street, which would require eliminating one of the two southbound travel lanes on Fifth Street.







Figure 27: NC 119 - 5th Street (Crossing # 735 472D) - Other Concepts Evaluated but not Selected







G. SR 1402 – Mattress Factory Road (Crossing # 735 474S, MP H0032.79)

- 1. Short-Term Continue to operate the crossing as an at-grade crossing.
- 2. Long-Term None

The 2014 ADT is 2,109.





Figure 28: SR 1402 – Mattress Factory Road (Crossing # 735 474S) Recommendation





H. SR 1114 – Buckhorn Road (Crossing # 735 141R, MP H0034.11)

Short-Term Continue to operate the crossing as an at-grade crossing.

2. Long-Term

Grade-separate Buckhorn Road by building a roadway bridge over the tracks (this includes three (3) grade separated options). These options depict an ability to construct a grade separation while limiting surrounding impacts. As funding is secured for this improvement, these three options, along with other potential options will be developed and evaluated during the NEPA process. These options are intended to be concepts only for the ability to develop order-of-magnitude costs in order to assist in identification of funding sources.

As the recommendation of grade separating Buckhorn Road moves forward, it will be important to continue to collaborate and coordinate with the Orange County Interchange Analysis and Corridor Study. This study has identified the need to extend Industrial Drive to the east. Continued coordination in future roadway networks, connections with existing intersections, and interchange ramp modifications should occur to ensure proper planning and design.

The 2014 ADT is 8,039.





Figure 29: SR 1114 - Buckhorn Road (Crossing # 735 141R) Recommendation Option 1

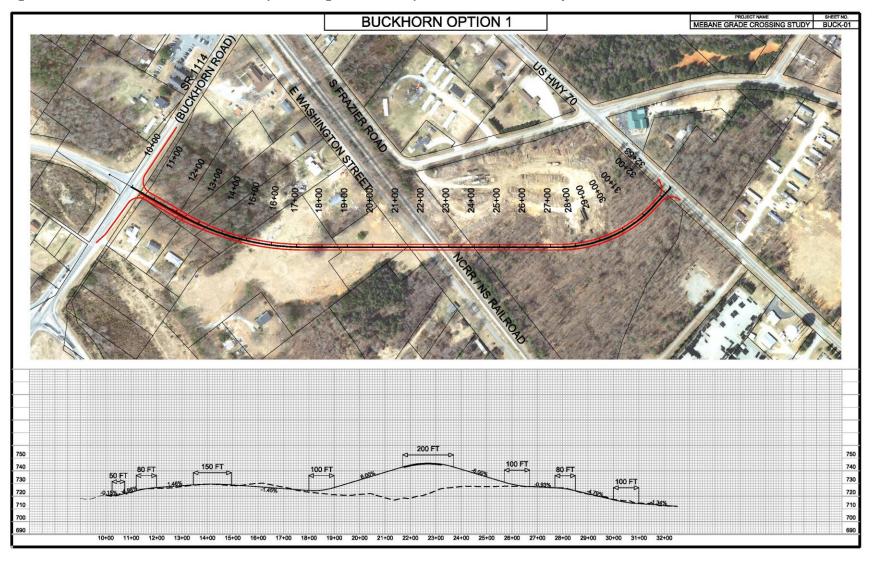




Figure 30: SR 1114 – Buckhorn Road (Crossing # 735 141R) Recommendation Option 2

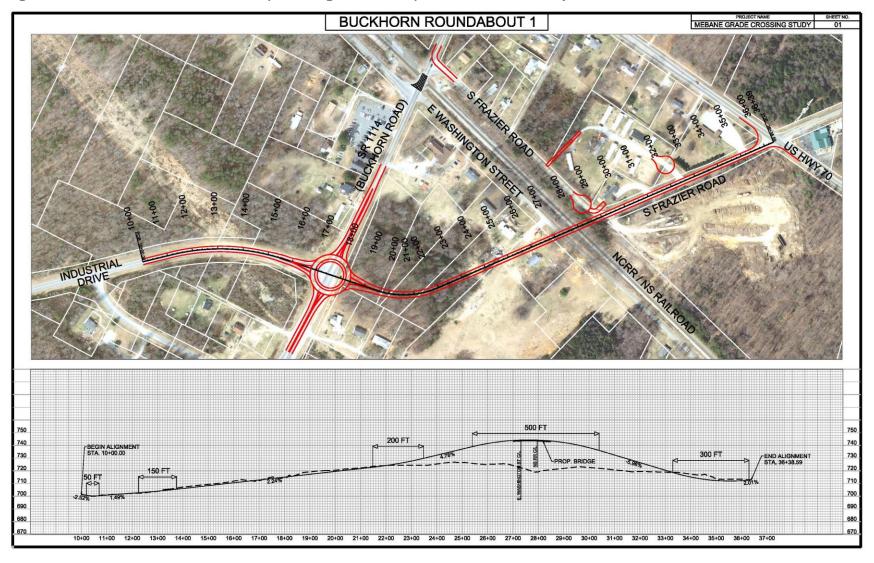
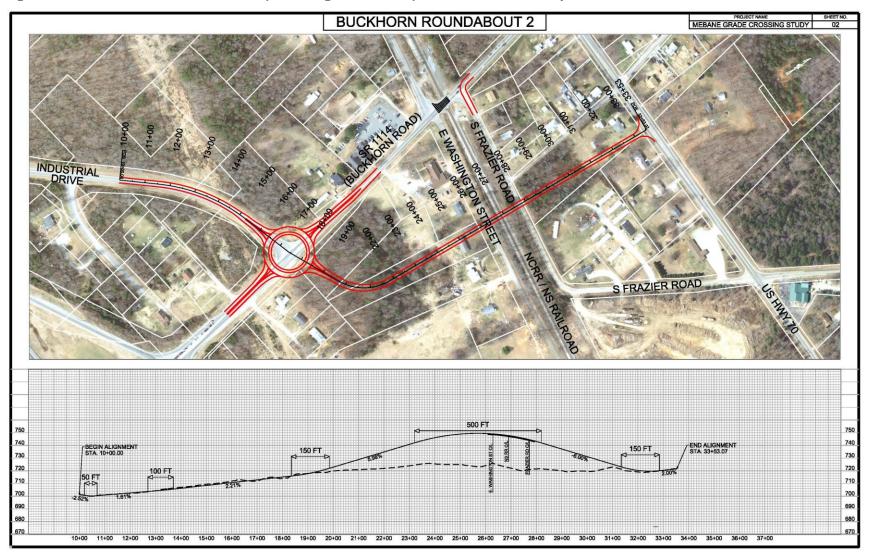




Figure 31: SR 1114 - Buckhorn Road (Crossing # 735 141R) Recommendation Option 3







I. Pedestrian crossing near First Street - Underpass Option

1. Long-Term

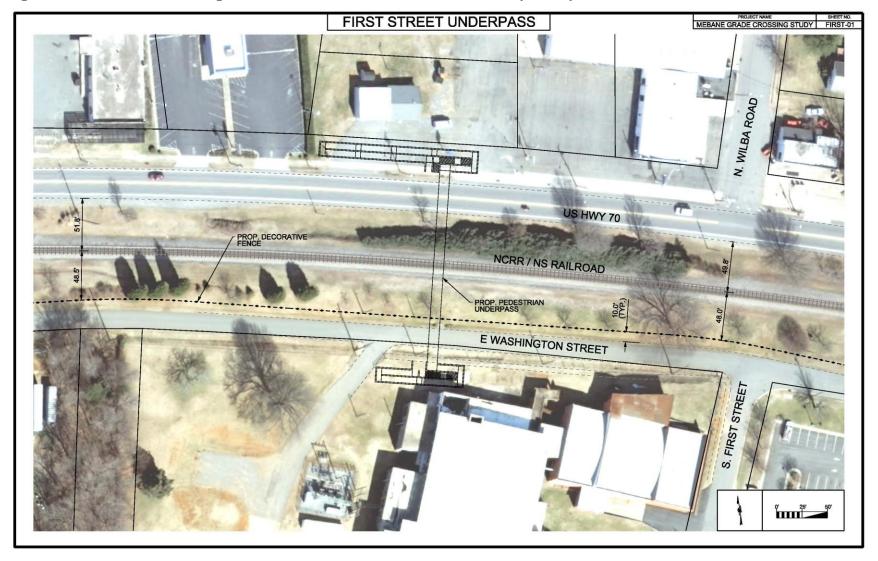
Construct an underpass connecting Mebane Mill Lofts and northern side of US 70. The intent for evaluating a pedestrian connection between the north side of Mebane to the south side is due to the historic pedestrian fatalities within this area. Fatalities have occurred where residents were crossing the NCRR Corridor. Any type of pedestrian grade separated structure (aerial or underpass) must meet the following design standards:

- Designed with a minimum clear span between bridge piers and /or abutments of 100 feet (perpendicular to track centerlines).
- Minimum for vertical clearances for a proposed span over main tracks, measured at a distance of 5 feet 6 inches from centerline of track, shall be 24 feet 3 inches from the top of rail of any existing or potential future track.
- Location of pedestrian crossing structure shall take into account the location and grade of the existing and potential future tracks within the NCRR corridor.
- Depth of an underpass shall be adequate to provide enough cover over the pedestrian structure to account for freight track loading, track drainage, utilities within the rail corridor including railroad communication and signal needs, and any other requirements to allow the operating railroad to safely operate and maintain the railroad.
- Any sidewalk and stairway structures, required to provide access to an overhead/underpass pedestrian structure, need to be constructed on the opposite sides of US Hwy 70 and E Washington Street respectively from the railroad roadbed.





Figure 32: Pedestrian Crossing near S. First Street/N. Wilba Road – Underpass Option Recommendation







J. Pedestrian Crossing near Second Street - Overpass Option

1. Long-Term

Construct an overpass connecting southern side of Washington Street near Second Street and northern side of US 70. Any type of pedestrian grade separated structure (aerial or underpass) must meet the following design standards:

- Designed with a minimum clear span between bridge piers and /or abutments of 100 feet (perpendicular to track centerlines).
- Minimum for vertical clearances for a proposed span over main tracks, measured at a distance of 5 feet 6 inches from centerline of track, shall be 24 feet 3 inches from the top of rail of any existing or potential future track.
- Location of pedestrian crossing structure shall take into account the location and grade of the existing and potential future tracks within the NCRR corridor.
- Depth of an underpass shall be adequate to provide enough cover over the pedestrian structure to account for freight track loading, track drainage, utilities within the rail corridor including railroad communication and signal needs, and any other requirements to allow the operating railroad to safely operate and maintain the railroad.
- Any sidewalk and stairway structures, required to provide access to an overhead/underpass pedestrian structure, need to be constructed on the opposite sides of US Hwy 70 and E Washington Street respectively from the railroad roadbed.





Figure 33: Pedestrian Crossing near Second Street - Overpass Option Recommendation

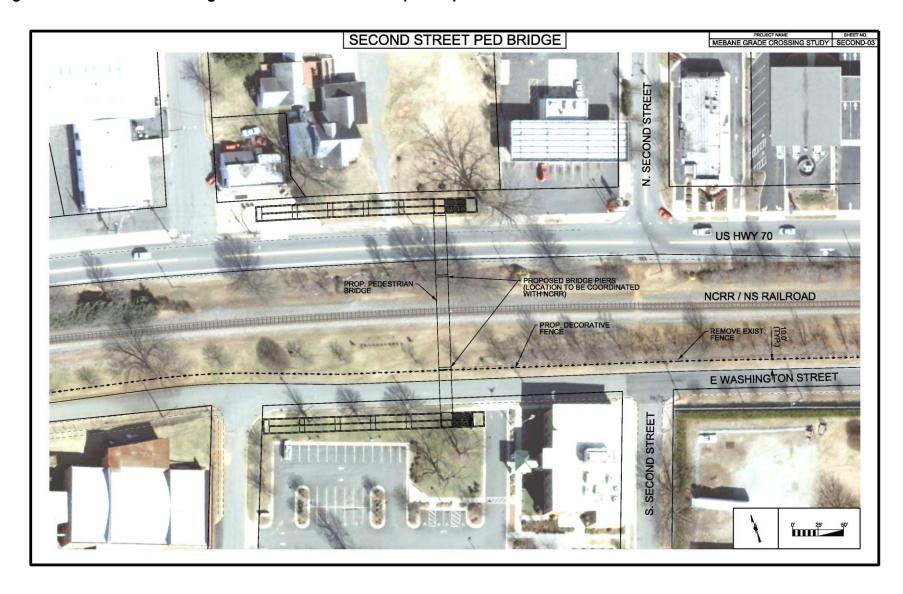




Table G1 - Order of Magnitude Costs

		Cost Range	
Crossing Number	Street Name	Low	High
735 464L	SR 1940 – Gibson Road	\$43,000	\$55,000
735 465T	SR 1976 – Lake Latham Road	NA	NA
735 468N	SR 1965 – Moore Road	\$49,000	\$62,000
735 496V	SR 1962 – S 3 rd Street	\$31,000	\$39,000
735 471W	4 th Street	NA	NA
735 472D	NC 119 - 5 th Street/4 th Street	\$74,000	\$94,000
735 474S	SR 1402 - Mattress Factory	NA	NA
735 141R	SR 1114 - Buckhorn Road: All Options*	\$5,900,000	\$7,500,000
Pedestrian Crossing	Near First Street – underpass	\$2,700,000	\$3,400,000
Pedestrian Crossing	Near Second Street - overpass	\$3,700,000	\$4,700,000
Fencing	Within Downtown Mebane	\$60,000	\$120,000

^{*}Includes preliminary costs for right-of-way needs





Appendix A – Stakeholder Meeting Minutes

PLANNING & INSPECTIONS DEPARTMENT Craig N. Benedict, AICP, Director

(919) 644-3002 (FAX) Administration 919) 245-2575



131 W. Margaret Lane Hillsborough, NC 27278 Suite 201 Box 8181 P. 0.



MEMORANDUM – TRANSMITTED BY EMAIL

June 14, 2017 DATE:

Scot Sibert, AICP, Senior Rail and Transit Planner, Parsons Brinckerhoff <u>0</u>

Nancy Horne, Project Manager, NC Department of Transportation (NCDOT)

City of Mebane Manager David Cheek,

Chris Rollins, City of Mebane Assistant City Manager

Craig Benedict, Planning & Inspections Department Director FROM:

Comment on Buckhorn Road rail-highway crossing options for SUBJECT:

Mebane Traffic Separation Study (TSS)

Buckhorn Road TSS options ATTACHMENTS:

EDD area between Buckhorn Road and Mt. Willing Road

Orange County Future Land Use Map

Orange County Development Pod Map

Orange County Planning staff has reviewed the three options provided for the Buckhorn Road rail-highway crossing included in the Mebane TSS and has the following comments:

- We have a strong preference for the connections with Industrial Drive and S. Frazier Road depicted in Option 2. This alignment coordinates well with the County's future road alignment concepts through this area, which is the focus of many of our economic We will need an on-grade connection to the east economic development area. This is imperative since this area is isolated due to the rail line and the interstate (see attached map). development efforts.
- side of Hillsborough and north into Virginia. Buckhorn Road is one of the main interchanges being used by truckers to avoid the truck scales at the NCDOT weigh station on I-85/I-40. This alignment will help with the problem of truckers using primary and secondary streets in Efland to avoid the weigh station, and/or headed to Virginia. A connection with S. Frazier Road will provide a more direct route around the western α

- The elevated rail crossing will help with school bus traffic in the area. ი.
- Option 2 intersects US 70 in locations that will promote future traffic lights which will be necessary in the Buckhorn I-85/I-40 area. Buckhorn Road will likely be a four-lane adopted land use map (see attached). The other alternatives do not intersect US 70 in divided roadway between US 70 and West Ten Road based on our studies locations that will promote these future traffic lights. 4
- Buckhorn Road and Industrial Drive due to a limited distance of approximately 600 feet from the interchange ramps, the high volume of traffic forecasted and the heavy truck study that indicates very high future 2025 traffic projections on Buckhorn Road (north of I-85/I-40, south of US 70) with a Level of Service (LOS) of F. This analysis was designation and examination of eighteen development pods. For reference, a Development Pod map is attached with the approximate future square footage of anes is recommended by Orange County to address these issues. The intersection at There is substantial concern however about the proposed round-about depicted at traffic. An Orange County transportation consultant has recently completed a technical performed with the development in those pods impacting Buckhorn Road. A cross intersection with turn Industrial Drive will need to accommodate a high volume of traffic and trucks, and based on a fairly detailed build-out analysis for the area, quickly move them away from the interstate interchange. 5.

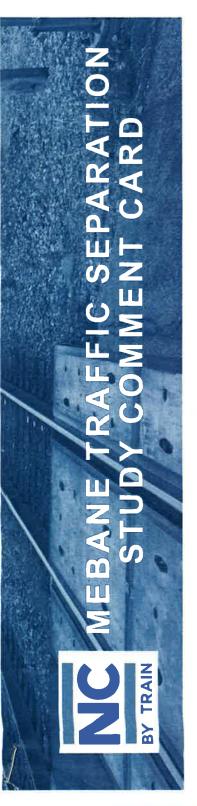
Orange County Planning appreciates the opportunity provided to comment on the proposed We would welcome the occasion to collaborate with the City of Mebane and NCDOT in planning the future transporation network rail-highway options included in the Mebane TSS. through the Mebane-Efland-Buckhorn area.

Please contact Abigaile Pittman of my staff at 919-245-2567, or myself at 919-245-2585 should you wish to further discuss our comments or future collaboration.





Appendix B – Public Workshop Summaries



We need your input! Please provide us with your comments regarding the Mebane Traffic Separation Study. All comments will be provided to the project team for review and consideration. Thank you!

Name:	CHAPLIES DOAM
Address:	31 LACE LATER DD
Email:	CHALLES, DOLLY (1) HOTMEL. COM

1. After reviewing the handout and display boards select the option you prefer most for each crossing location listed below.

	Option 1	Option 2	Option 3
Buckhorn Road		Cour Dissort	
Fifth Street (N.C. 119)			
Fourth Street	% S S		N/A
Pedestrian Crossings		Safague	N/A

are not listed above because those crossings either have only one recommended option or (Mattress Factory, South Third Street, Moore Road, Lake Latham Road, and Gibson Road no grade crossing recommendations at this time.)

	4		
	THANK?		
	ents:		
	3. Comments:		

2. Are there any improvements you wish to tell the project team about that were not shown today?

Please return this comment card before leaving today. If you need to return this form later, please email or mail it no later than May 18, 2017 to:

Mr. Scot Sibert, sibertsr@pbworld.com 1001 Morehead Square Drive, Suite 610 Charlotte, NC 28203

For more information on this project please contact:

1548 Mail Service Center, Raleigh, NC 27699-1548 Ms. Nancy Horne, NCDOT Project Engineer (919) 715-3686, nhorne@ncdot.gov



We need your input! Please provide us with your comments regarding the Mebane Traffic Separation Study. All comments will be provided to the project team for review and consideration. Thank you!

Name:	Sondy Bankar t
Address:	16 Leeds Court, Mebane
Email:	Sandy-barnhart@med.unc.edy

1. After reviewing the handout and display boards select the option you prefer most for each crossing location listed below.

	Option 1	Option 2	Option 3
Buckhorn Road	×		
Fifth Street (N.C. 119)			×
Fourth Street		×	N/A
Pedestrian Crossings		AW Clearer N/A	SC N/A

are not listed above because those crossings either have only one recommended option or (Mattress Factory, South Third Street, Moore Road, Lake Latham Road, and Gibson Road no grade crossing recommendations at this time.)

2. Are there any improvements you wish to tell the project team about that were not shown today?	equited space,						
ere any improvements you wish to tell the project tean	reduce required space		E.	ints:			
2. Are ther	9			3. Comments:			,

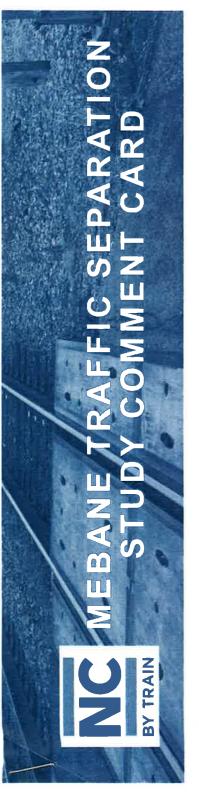
8

Please return this comment card before leaving today. If you need to return this form later, please email or mail it no later than May 18, 2017 to:

1001 Morehead Square Drive, Suite 610 Mr. Scot Sibert, sibertsr@pbworld.com Charlotte, NC 28203

For more information on this project please contact:

1548 Mail Service Center, Raleigh, NC 27699-1548 Ms. Nancy Horne, NCDOT Project Engineer (919) 715-3686, nhorne@ncdot.gov



We need your input! Please provide us with your comments regarding the Mebane Traffic Separation Study. All comments will be provided to the project team for review and consideration. Thank you!

Name:	1 ~407	John F. Barnhan		
Address:	16 Leeds	(000+	Mebone, N.C. 27307	27307
Email:	Johnbanhar	imbounhartehou, com	7	

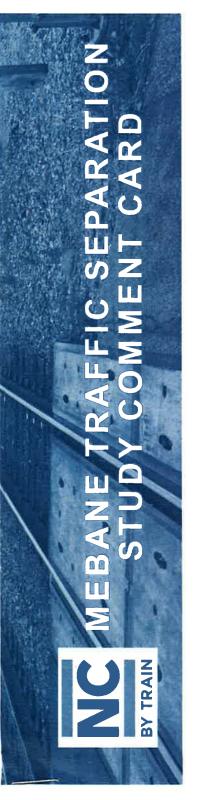
1. After reviewing the handout and display boards select the option you prefer most for each crossing location listed below.

	Option 1	Option 2	Option 3
Buckhorn Road	>		
Fifth Street (N.C. 119)			\D
Fourth Street	Ma		N/A
Pedestrian Crossings	Þ		N/A

are not listed above because those crossings either have only one recommended option or (Mattress Factory, South Third Street, Moore Road, Lake Latham Road, and Gibson Road no grade crossing recommendations at this time.)

2. Are there any improvements you wish to tell the project team about that were not shown today? Use Fish Street 607.00 3 AND
1 close 4th Street
3. Comments:
361
_
email of mail it no later than imay 16, 2017 to:
Mr. Scot Sibert, Sibertsi@poworid.com
1001 Morehead Square Drive, Suite 610
Charlotte, NC 28203
For more information on this project please contact:
Ms. Nancy Horne, NCDOT Project Engineer
1548 Mail Service Center, Raleigh, NC 27699-1548

(919) 715-3686, nhorne@ncdot.gov



We need your input! Please provide us with your comments regarding the Mebane Traffic Separation Study. All comments will be provided to the project team for review and consideration. Thank you!

1. After reviewing the handout and display boards select the option you prefer most for each crossing location listed below.

	Option 1	Option 2	Option 3
Buckhorn Road			
Fifth Street (N.C. 119)			
Fourth Street		N	N/A
Pedestrian Crossings		M	N/A

are not listed above because those crossings either have only one recommended option or (Mattress Factory, South Third Street, Moore Road, Lake Latham Road, and Gibson Road no grade crossing recommendations at this time.)

3. Comments:	Please return this comment card before leaving today. If you need to return this form later, please email or mail it no later than May 18, 2017 to:	1001 Morehead Square Drive, Suite 610	Charlotte, NC 28203 For more information on this project please contact:	Ms. Nancy Horne, NCDOT Project Engineer	1548 Mail Service Center, Raleigh, NC 27699-1548	(919) 715-3686, nhorne@ncdot.gov
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2. Are there any improvements you wish to tell the project team about that were not shown today?



We need your input! Please provide us with your comments regarding the Mebane Traffic Separation Study. All comments will be provided to the project team for review and consideration. Thank vou!

Name:	TRITING PATRICK	ICK SHEPPARD	
Address:	1908	seech Glen Court mebane NC 27302	20212
Email:	irving Sheppord @ GMAIL. COM	GMAIL . COM	

1. After reviewing the handout and display boards select the option you prefer most for each crossing location listed below.

Option 3			N/A	N/A
Option 2			Ø	
Option 1		X		
	Buckhorn Road	Fifth Street (N.C. 119)	Fourth Street	Pedestrian Crossings

are not listed above because those crossings either have only one recommended option or (Mattress Factory, South Third Street, Moore Road, Lake Latham Road, and Gibson Road no grade crossing recommendations at this time.)

Sth Street	2. Are there any improvements you wish to tell the project team about that were not shown today? Sheed taidening. 119 BY Pass inFormation. Althouse Below in improvement
3. Comments:	
Please return this e	Please return this comment card before leaving today. If you need to return this form later, please email or mail it no later than May 18, 2017 to:
•	Mr. Scot Sibert, sibertsr@pbworld.com
	1001 Morehead Square Drive, Suite 610
	Charlotte, NC 28203

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For more information on this project please contact:

1548 Mail Service Center, Raleigh, NC 27699-1548 Ms. Nancy Horne, NCDOT Project Engineer (919) 715-3686, nhorne@ncdot.gov

Sibert, Scot R.

From: Sibert, Scot R.

Thursday, November 17, 2016 9:28 AM Sent:

FW: Fourth Street Pedestrian Bridge Rubrecht, Genevieve **Subject:**

Please put this on file for public comments

Scot Sibert, AICP

Senior Rail and Transit Planner

(c) 704-962-4962

sibertsr@pbworld.com

WSP | Parsons Brinckerhoff

Use the Train!

1-800-ByTrain http://www.ncbytrain.org/

Amtrak http://www.amtrak.com/home

From: Horne, Nancy M [mailto:nhorne@ncdot.gov]

Sent: Wednesday, November 16, 2016 4:30 PM

To: Sibert, Scot R.

Subject: FW: Fourth Street Pedestrian Bridge

I don't think these would be ADA compliant but below is a comment I received this afternoon.

From: Stephen Vargha [<u>mailto:tvgnusnc@gmail.com]</u>

Sent: Wednesday, November 16, 2016 4:24 PM

To: Horne, Nancy M < nhorne@ncdot.gov>

Cc: David Cheek < dcheek@cityofmebane.com>; Chris Rollins < crollins@cityofmebane.com>

Subject: Fourth Street Pedestrian Bridge

Good afternoon, Ms. Horne.

crossings for the Mebane area. Per the folks from NCDOT, I submitted my ideas and Thank you very much for last night's public meeting concerning the railroad grade thoughts concerning the grade crossings in our area.

Third Street. Using those streets will not make one's trek much longer no would it really vehicle. Anyone that needs to go south on Fourth Street can easily use Fifth Street and As I stated on paper and to a couple of NCDOT employees, I see no need for vehicular traffic to cross the railroad tracks via Fourth Street. It is not a thoroughfare, and it is not a busy street. Having the crossing only tempts fate with a train and a be inconvenient.

/ East Center Street and Washington Street. This is dangerous! The old White Furniture country. Apparently, Mebane cannot build a sidewalk along Fifth Street between US-70 What I tried to stress to NCDOT with my written input was the dire need for pedestrian safety. Mebane's hands are tied due to the antiquated railroad laws in this

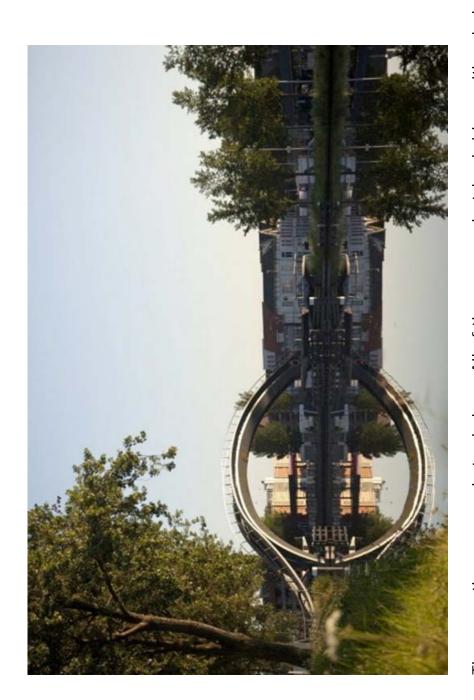
Mebane, making it extremely important that pedestrians be able to walk around the is now home to about 300 residents. More and more people are living in downtown

US-70 / Center Street has just one crosswalk with a crossing light. Right now, eleven of Street / NC-119 is always heavy with vehicular traffic. Every time I cross Center Street any signals to help pedestrians cross the road. Center Street is extremely busy. Fifth the twelve crosswalks at the Center Street intersections with traffic lights do not have at Fifth Street, I hold my breath. I do not want to think about the number of times vehicles have stopped within a foot or two of my legs. One of your NCDOT employees and I talked about a tunnel or a bridge for pedestrians to problem. We talked about a pedestrian bridge over the railroad tracks, half way between Third Street and Fourth Street. The biggest concern is that there is not a huge use at Fourth Street. A tunnel may end looking like a ditch, and drainage could be a amount of land between Washington Street and Center Street. A standard, straight pedestrian bridge is really not feasible.

Because of the space limitations, I fear that I have not presented my idea in Because there are more and more pedestrians crossing the railroad tracks, some sort of I tried to show an example on my written submission safe way to get across is needed. the best manner. to NCDOT.

bridge in Purmurend, Netherlands that gets one's attention. The Dutch town had similar A quick look at the Internet helps me present bridge possibilities. There is a pedestrian space restrictions and came up with a cool bridge. It is actually more than one bridge, but I want to focus on the one that arches. In the two photos below, you can see how the Dutch dealt with the narrow space. People of all ages climb this high arched bridge. Many take photos from the top of it. With the numerous railroad buffs in the area, they would love that vantage point! Here are two different angles of the Dutch pedestrian bridge:

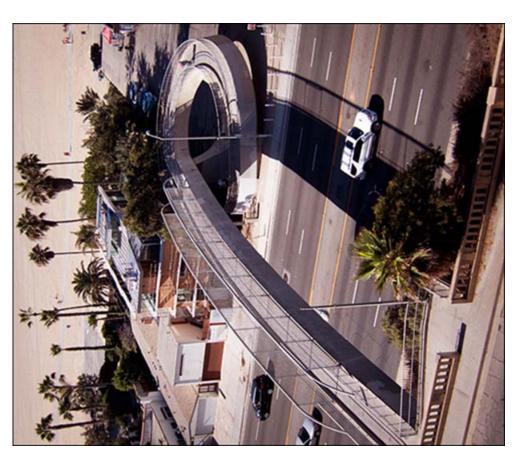




By using curved ramps, NCDOT can defeat the narrow width of the land to have enough height for trains to get underneath it. The ramp on the south side could end up at Mebane City Hall as many residents would have 106 East Washington Street as their There are three more photos below. All of them are pedestrian bridges with spiral destination. ramps.

would be a lovely addition to the historic district. The other two photos are just to show what many cities are doing. A bridge can be a work of art while providing a safe way for Mebane has done a great job of landscaping the railroad corridor in downtown. A green bridge The first photo below shows a very green bridge. It blends in to the landscape. pedestrians to cross the railroad tracks.







We have to think outside of the box with downtown Mebane. This progressive city is growing rapidly thus building something to serve its residents who are traveling on foot is an immediate concern. It is especially true with the recent fatalities in this small stretch of railroad tracks.

Hopefully, you will find my idea to be a very valid one, and one that I am copying this email to my town's leaders as I have strong feelings for a pedestrian can be implemented in a reasonable amount of time. Thank you very much for your time with my thoughts and concerns. bridge to be built.

Best regards,

Stephen Vargha

201 East Center Street #339 Mebane, NC 27302-2553 919.475.3592 tvgnusnc@gmail.com

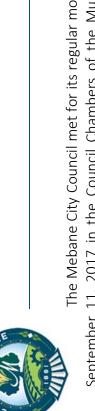
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Appendix C – Public Hearing Minutes and Comments





September 11, 2017 in the Council Chambers of the Municipal Building located at 106 East The Mebane City Council met for its regular monthly meeting at 6:00 p.m., Monday, Washington Street.

Also Present:

Councilmembers Present:
Mayor Glendel Stephenson
Mayor Pro-Tem Ed Hooks
Councilmember Patty Philipps
Councilmember Jill Auditori
Councilmember Everette Greene
Councilmember Tim Bradley

David Cheek, City Manager Chris Rollins, Assistant City Manager Lawson Brown, City Attorney Cy Stober, Development Director Franz Holt, City Engineer Stephanie Shaw, City Clerk Jeanne Tate, Finance Director Mark Reich, Engineer, AWCK, Inc.

the NC General Assembly enacted a law designating September 11th as First Responders Day. He Mayor Stephenson called the meeting to order and Mr. Bradley announced that earlier this year then gave the invocation.

proposal for a public disc golf course on the recently purchased 54.6 acres of the Cates Farm to be used as passive recreational purposes. He spoke of his passion for the growing sport, along with several reasons why he feels Mebane needs this sport as an additional recreational opportunity During the Public Comment period Bradley Dixon, 503-A Hawfields Road, Mebane, shared for the community. Mr. Cheek stated staff has talked with Mr. Dixon. Staff thinks it is a good fit for the property and would like to include the disc golf course in the comprehensive plan. Ross Davis, 2360 Deep Creek Church Road, Burlington, owns a 30 acre private disc golf course. He shared details about the sport and offered to help with the design should the City decide to proceed with a course.

Council spoke favorably about the idea of a disc golf course. No formal action taken.

the back of their businesses where folks could gather to smoke. He requested that this issue be Will Atherton, Business Owner at 126 W. Clay Street, Mebane, shared his desire for Council to especially near the businesses front doors. He stated many of the businesses downtown have external areas around considered during the downtown improvement plans. Council requested staff look into this. adopt an ordinance prohibiting smoking on the sidewalks downtown,

downtown public restroom. She suggested the pocket park/parking lot area beside the old Mary McFarland, 307 N. Wilba Road, Mebane, suggested the City should consider having Warrens Drug store at the corner of Fourth and Clay Streets.

Mr. Cheek presented the consent agenda as follows:

- a) Approval of Minutes- Regular Meeting- August 14, 2017
- b) Contract Award for 2017-18 Street Repair & Resurfacing
- c) Contract Award for Effluent Discharge Line at WRRF
- d) NC Division of Water Infrastructure Asset Inventory and Assessment Grant- Sanitary Sewer System

Mr. Bradley made a motion, seconded by Mr. Hooks, to approve the consent agenda as presented. The motion carried unanimously.

the North Carolina Department of Transportation Rail Division (NCDOT Rail), and North Carolina Recommendations. In a joint cooperative effort with the City of Mebane, Norfolk Southern (NS), Rail A Public Hearing was held for presentation of the Traffic Separation Study

roadway-railroad crossings along a 5-mile span. Also at the request of the City of Mebane, NCDOT train, and pedestrian patterns and interactions along a defined local or regional rail corridor. The grade crossings to improve safety and mobility for motorists, pedestrians, rail passengers, and planned or programmed railroad and roadway improvements within the study area. The process Informational Workshops were held during the course of the study. Mr. Siebert presented the Railroad (NCRR), the Mebane Traffic Separation Study (TSS) focused on eight (8) existing at-grade Rail also studied the possibility of an underpass and overpass pedestrian crossing (one near First Street and one near Second Street) due to the history of pedestrian fatalities. Scot Sibert, AICP consultant for NCDOT Rail, explained that TSS is part of a comprehensive evaluation of vehicular, purpose of the TSS is to determine the need for improvements and/or elimination of public attrain crews. The TSS evaluated the rail line in Mebane that crosses various streets, as well as any involved components relating to Crash Data, Traffic Data, Capacity Analysis, Safety and Mobility and Committee Meetings following recommended improvements for each of the crossings: Stakeholder Two Involvement. Public

A. SR 1940 – Gibson Road (Crossing # 735 464L)-

Continue to operate as an at-grade crossing and install median barriers and widen crossing shoulders. around gates that are down. The widened shoulder is also intended to provide additional width for By installing a median barrier with bollards, there will be a significant reduction in vehicles driving projected truck traffic.

movement at this crossing but it does provide a wider shoulder. Nancy Horne, PE with NCDOT Rail, stated once this plan moved into design they could look at making the shoulder wide enough so that if the City decided at a later time they wanted to put sidewalks in, the widening would accommodate the same. Council questioned why the widening and if it was for pedestrian traffic. Mr. Sibert replied to allow installation of the bollards, not for pedestrian traffic as the study did not reveal major pedestrian

B. SR 1976 – Lake Latham Road (Crossing # 735 465T)-

Continue to operate the crossing as an at-grade crossing. Existing at-grade crossing will be closed once the NC 119 Bypass is constructed.

community on the south, so they will have to take that into consideration determining the width of the Ms. Horne stated they noted the proximity to the new park on the north side and the residential crossing. This crossing will need to allow pedestrian traffic.

C. SR 1965 – Moore Road (Crossing # 735 468N)-

vehicles driving around gates that are down. The widened shoulder is also intended to provide a safer crossing shoulders. By installing a median barrier with bollards, there will be a significant reduction in Crossing to continue to operate as an at-grade crossing and install median barriers and widen pedestrian connection across the railroad corridor.

Council questioned if any turn lanes or other improvements were discussed in conjunction with the new park and this study due to the high vehicle traffic during school hours. Mr. Siebert said there were discussions stakeholder-wise about this intersection and one thing that can be done is for NCDOT-Division of Highways to do a traffic signal warrant study.

D. SR 1962 3rd Street (Crossing # 735 496V)-

the intersection improvements at 3rdStreet and Washington Street, and the existing sidewalk network downtown of Mebane due to the numerous pedestrian fatalities with trains. This will also connect to corridor. The widened shoulder will provide the pedestrian connection that is needed within the shoulder six (6) feet on each side to provide a safer pedestrian connection across the railroad Crossing to continue to operate as an at-grade crossing. Widen the existing at-grade crossing

Council stated that the west side is wide already and questioned if a pedestrian crossing (sidewalk) could be added to the east side as well. Ms. Horne stated that is not be likely to happen. There was discussion about a fence to divert pedestrian traffic to the designated pedestrian crossings and funding sources.

E. 4th Street (Crossing # 735 471W)-

constructed per the below recommendation. If the 5th Street improvements are not made, 4th Street Continue to operate the existing at-grade crossing if the 5th Street crossing improvements are is recommended for closure.

Ms. Philipps expressed opposition to closing Fourth Street which resonated with Council.

F. NC 119 – 5th Street (Crossing # 735 472D)-

segments of Washington St/Fifth St intersection. Install mountable medians, with a pedestrian refuge side of crossing in order to improve pedestrian connectivity. Install cross walks on the south and east Continue to operate the crossing as an at-grade crossing and improve the geometry at the crossing curve radii for vehicle turning movements. Install asphalt path to connect sidewalks on the eastern and intersection with US 70. Eliminate the northbound right turn land onto US 70 to increase the along Fifth Street from the at-grade crossing south of Washington Street and along Washington Street west of Fifth Street. Pedestrian crossing warning signs will be installed leading up to the crosswalks at Washington Street. Fourth Street crossing would not be closed. The existing crossing would continue to operate as an atpedestrian fatalities with trains. This will also connect to the intersection improvements at 4th Street grade crossing. Widen the existing at-grade crossing shoulder six (6) feet on each side to provide a safer pedestrian connection across the railroad corridor. The widened shoulder will provide the pedestrian connection that is needed within the downtown of Mebane due to the numerous and Washington Street, and the existing sidewalk network in downtown Mebane.

Mr. Bradley expressed strong opposition to the blocking of E. Washington Street from left or right turns.

G. SR 1402 – Mattress Factory Road (Crossing # 735 474S)-

Continue to operate the crossing as an at-grade crossing.

H. SR 1114 – Buckhorn Road (Crossing # 735 141R)-

Grade-separate Buckhorn Road by building a roadway bridge over the tracks. There are three options These options depict an ability to construct a grade separation while limiting surrounding impacts. As funding is secured for this improvement, these three options, along with other potential options will only for the ability to develop order-of-magnitude costs in order to assist in identification of funding be developed and evaluated during the NEPA process. These options are intended to be concepts for the roadway bridge. Two of the options include a roundabout at the intersection of Industrial Drive and the re-aligned Buckhorn Road, while the other option would not include a roundabout. sources.

coordination in future roadway networks, connections with existing intersections, and interchange As the recommendation of grade separating Buckhorn Road moves forward, it will be important to continue to collaborate and coordinate with the Orange County Interchange Analysis and Corridor Study. This study has identified the need to extend Industrial Drive to the east. Continued ramp modifications should occur to ensure proper planning and design.

Pedestrian crossing near First Street – Underpass Option

Construct an underpass connecting Mebane Mill Lofts and northern side of US 70.

J. Pedestrian Crossing near Second Street – Overpass Option

Construct an overpass connecting southern side of Washington Street near Second Street and northern side of US 70. Abigail Pittman, Orange County Transportation Planner, provided comments in regard to the connections with Industrial Drive and Frazier Road, option 2, and shared the reasons behind their strong preference rail-highway crossing options. She cited their Buckhorn Road

Mr. Stober read aloud comments submitted by Mark Angel, 617 N. Charles Street, who was unable to stay for the meeting. His comments suggested rebuilding the Mebane Train Depot as a solution

to the train wrecks.

feels it's a point well made. Mr. Boney commented that he was under the impression that local time. Ms. Horne added that when you lengthen the warning time, people become impatient and Johnny Jeffries, 4870 Mebane Rogers Road, Mebane, suggested that earlier warnings be provided when a train is approaching the crossings. Ms. Horne stated Amtrak runs on a schedule, however freight trains do not. Mr. Bradley stated discussions took place with DOT in the past and according to DOT they are meeting federal regulations in regard to the timing of crossing warnings but he municipalities could govern the timing within their jurisdiction as long as they didn't lessen the that's when they go around the arms/gates.

the driver's eyesight. Mr. Rollins and Mr. Bradley explained DOT's reasoning for having the signals David Shanklin, Mebane resident, stated the traffic signals at the intersection of Center Street, north of Fifth Street are unsafe and confusing and should be angled to shine in the proximity of Fifth Street and Washington Street which govern traffic coming across the train tracks headed work that way, which is an effort to keep someone from being trapped on the tracks. Mayor Stephenson called for a motion to close the public hearing. Mr. Bradley made a motion, seconded by Mr. Greene, to close the public hearing. The motion carried unanimously. Mr. Cheek suggested that further discussion take place with the consultants to clarify some of the recommendations. Mr. Bradley stated if accepting the report does not include the Buckhorn Road item, he is comfortable with the recommendations, except for the blocking of E. Washington Street from left or right turns. Ms. Auditori said she agrees with Mr. Bradley but she also opposes closing Fourth Street.

understanding that Council, staff and the consultants with revisit the item of the intersection of Washington Street and Fifth Street before moving forward and omit the blocking of Fourth Street. a motion, seconded by Mr. Bradley, to accept the TSS report with the The motion carried unanimously. Ms. Auditori made

Special Use Permit for "Northeast Village", Phase 1 previously approved by the City Council on Quasi-judicial Public Hearing was held on a request from Franklin Legacy, LLC to amend the November 4, 2014 for 99 single-family homes.

City Clerk Shaw swore in and/or affirmed the following:

Jim Parker- Developer with Franklin Legacy, LLC Phil Koch- Engineer with EarthCentric Engineering Cy Stober- Development Director Chris Rollins- Asst. City Manager Mr. Stober stated staff has no objection to the amendment request and the burden is upon the applicant to make their case. Jim Parker spoke on behalf of Franklin Legacy, LLC requesting that the approved SUP for the Northeast Village be amended based on the following: To include vinyl siding as an acceptable building material, such that at least 25% of house's front elevation will have stone or masonry finishes

Mr. Greene commented on how the market has changed and vinyl siding has improved over the

continued stating that the change of the building material will not materially endanger the public health or safety and will not substantially injure the value of adjoining or abutting property as the Mr. Parker stated other subdivisions in Mebane currently have been approved with vinyl siding value of homes would begin at a minimum of \$185,000. The homes would be in harmony with the area in which it is located and would be in conformity with the land development plan because allowed, and prohibiting the use in this subdivision is making the property unmarketable. it was approved in 2005 and 2014. No one from the public spoke. Ms. Philipps made a motion, seconded by Ms. Auditori, to close the

Public Hearing. The motion carried unanimously.

seconded by Ms. Phillipps, to approve the special use permit amendment as presented. The application is generally consistent with the objectives and policies for growth and development in the City's 2017 Comprehensive Land Development Plan, Mebane by Design. It is both reasonable and in the public interest based on the findings that it: Mr. Bradley made a motion,

- 1. Will not materially endanger the public health or safety;
- Will not substantially injure the value of adjoining or abutting property; 2
- Will be in harmony with the area in which it is located; and
- Will be in conformity with the land development plan, thoroughfare plan, or other plans officially adopted by the City Council

The motion carried unanimously.

A Public Hearing was held on a request to amend the Unified Development Ordinance (UDO)-

- Article 6, Section D(5): Tree Placement, pg. 6-26
- Article 7, Section 4.4(D): Review Process for Final Major Subdivision Plats, pg. 7-9 Ь.

Article 7, Section 4.5(B): Dedication and Acceptance, pg. 7-10

- c. Article 12, Section 4: Definitions, page 12-29
- d. Article 12, Section 4: Definitions, page 12-38
- e. Appendix A, various pages
- Appendix B, five amended certificates and one new certificate: City of Mebane Certificate of Approval on new page B-9

All proposed amendments are designed to enhance the plan review process for the City, plat They are consistent with the City's mission and goals, and are reasonable and within the public's Mr. Stober reviewed the proposed amendments. No one from the public spoke. Mr. Greene made recordation needs for applicants going to the Planning Department, and improve municipal safety. The motion carried a motion, seconded by Ms. Auditori, to close the public hearing. The motion carried unanimously. Mr. Hooks made a motion, seconded by Mr. Bradley, to approve the amendments as presented interest, placing no burdens upon any distinct population of the City.

established by November 2017. Ms. Philipps made a motion, seconded by Ms. Auditori, to adopt the Ordinance to create the City of Mebane Bicycle and Pedestrian Advisory Commission. The motion Mr. Stober presented a request for approval to create a Bicycle and Pedestrian Advisory Commission, to advise City Council on relevant matters. The Commission shall be composed of seven (7) community members, including at least one member of City Council. Terms shall last three (3) years. The Commission shall meet at least once every three (3) months, for a minimum Staff hopes to have a committee of four (4) meetings per year. The positions will be advertised. carried unanimously.

of "Downtown Revitalization and Economic Development," as stipulated by North Carolina Session infrastructure, and navigability needs for the District, with a robust stakeholder and public input Mr. Stober explained that The North Carolina Department of Commerce, Rural Economic Development Division, is offering the City of Mebane a \$50,000 grant for the expressed purpose Law 2017-257 §15.8(a). The City Planning Department proposes to use these funds to support a Small Area Plan to realize the Historic Downtown Mebane Vision. He stated that in October 2017 staff would issue a Request for Qualifications for a \$50,000 Small Area Plan for City of Mebane Historic Downtown District and a firm would be selected by December 2017. All aspects would The plan would be a detailed assessment of current conditions in the Downtown District and recommendations on how to best capitalize on its safety, economic, and address its challenges. The plan will address aesthetic, effort to inform the plan and its recommendations. need to be completed by October 2018.

Mr. Bradley stated earlier in the meeting issues of smoking downtown and the need for public restrooms downtown were addressed. He questioned if this plan would address issues of that

engineering and architectural designs for city blocks. Mr. Cheek stated he would like to put the Ms. Philipps made a motion, seconded by Ms. Auditori, to approve the execution of the application Development grant valued at \$50,000. The motion authorizes the Mayor of the City of Mebane to sign on its behalf to receive these funds, for use by the City to solicit third party services to address nature. Mr. Stober replied the plan will address the visible and invisible atmosphere of downtown. Mr. Stober stated the \$50,000 will pay for the product which will be the vision plan, including Fifth Street Improvement Plan on hold until this plan is complete so that the plans will be cohesive. 2017-2018 NC Department of Commerce Downtown Revitalization and it economic development needs. The motion carried unanimously.

the Police Department. Business owners and staff have been discussing problems with storm water drainage in this alleyway for over a year, and as a result, the 2017-18 budget includes \$100,000 to address the storm water issue. The decision on whether to purchase this land is predicated on how extensively the alleyway should be improved. As such, the Council will be Mr. Cheek requested that Council consider the purchase of vacant land (GPIN #9825046382) on the south side of Clay Street for \$25,000, an issue that arose when staff discovered that the land was for sale, and in light of discussions to improve the storm water runoff in the alleyway behind presented with three options with varying degrees of infrastructure improvements. Depending on the scope of the project, the purchase of the vacant lot may be necessary.

condition of the alleyway, as well as creating a possible throughway for traffic should be parking lot in question. The storm water runoff from the City's alleyway behind the Police Department during major rain events has resulted in complaints from adjoining property owners. The existing 12-inch and 4-inch storm sewer piping system is undersized and not functioning storm water issues, staff believes that improving the Mr. Reich shared a PowerPoint depicting the existing conditions of the alleyway and the gravel properly. Replacing the existing piping system with larger piping should resolve the matter; considered as well. The following options were presented for consideration. however, in addition to resolving the

- Improvements with this option include the installation of a 15-inch storm drain and 8-inch trench drains that connect to a 30-inch pipe, installed in 2009 located in North Third Street. This option only addresses the storm water runoff issues and the purchase of land is not required. The cost of these improvements is \$144,000.
- pickup for business owners, and creates vehicular access with the connection to Clay Street In addition to addressing the storm water runoff issues, this option improves the condition of the alleyway, provides potential additional public parking, allows for better garbage from Third Street. The purchase of the land is required with this option. The cost of these improvements is \$270,000. Option 2
- In addition to the improvements included in Option 2, this option adds a pedestrian component with a new walkway from Center Street to Clay Street. The purchase of the land is required with this option. The cost of these improvements is \$309,000. Option 3.

seconded by Mr. Greene, to proceed with Option 1 and have staff speak with property owners as Staff recommended, at a minimum, Option 2 and therefore, the purchase of the land on Clay Street. Final determination of needed improvements to the alleyway could be postponed until the Downtown Vision Plan is completed. After considerable discussion, Mr. Bradley made a motion, soon as possible in regard to acquiring easements. The motion carried unanimously.

municipality, we know what our responsibilities are, as far as infrastructure: police, fire, recreation, Ms. Philipps spoke about the issue of school overcrowding in the Mebane. She said as a and public works. She added that all of the Councilmembers are tax payers to Alamance County facilities on the Counties, not the municipalities. She urged everyone to encourage, persuade, aide and partner with other governmental entities in the County to make things move forward to ensure that everyone has an adequate public education and to ensure that our schools are adequately funded. Mr. Bradley added that Mebane is not the only city or town adding to Eastern High School's overcrowding. More schools need to be built in Alamance County. Mr. Hooks added some additional comments about Mebane's efforts to make sure that the county and the school system has been a part of Mebane's planning process including individual meetings with county and the City of Mebane. The North Carolina General Statutes places responsibility for commissioners and the school superintendent.

Mr. Cheek announced the following:

- Groundbreaking for New Community Park- October 11^{th} at $4:00\mathrm{pm}$
- Public Meeting Mebane Oaks Interchange- September 14th, 5-7pm
 - Single Family Rehabilitation Funding Available
- Parks & Recreation Trust Fund Grant not funded
- Gateway Signage Highway 70

Mr. Hooks assured the citizens that Mebane will, in addition to NCDOT's already great landscaping plan, enhance the landscaping after the 119 Bypass has been completed.

There being no further business, the meeting was adjourned at 9:25pm.

ATTEST: Stephanie W. Shaw. City Clerk	





Appendix D – Public Meeting Sign-In Sheets

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Location

Project Road/Railroad Traffic Separation Study (TSS) in Mebane

November 15, 2016

Mebane City Hall, 106 E. Washington Street

Alamance, and Orange Counties

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N.A	AME	ADDRESS	EMAIL	PHONE
1 Montren	a W. Hadley	City of Mebane Planning Ster Bept.	mhadley e czystmebare, can	919-563-9990
2 MARY	MCh) HERTER	107 KESTREL G MEBANE	mand; 7-1 @ hotma, 1, com	919-304-2422
3 Meliss	a Whetel	363 Gibson Rd Mebany	melissa, who traleduke	
4 Roger	Janus	11 11 K	rogrames e commed	1,00 919 \$ZZ-645
CAR	1 1	1 1200 PEALHTREE ST. ATLANTA SA		404 582 5295
5 Choonne	- D Danuil	3144 Lake Ralham Crail Dri.		919-563-9056
Le	Hoffman	212 S Fifth Mebanc	oxiejay@hotmail.com	580-532-5597
ERIC	Corbent	1768 W HOLL ST MEBANE	ECOLBETT @ CAMBRO CON	714887 7363
Max I	Bishell	150 W. Margaret La., lltlsburgh, M.	in bushell Corange countries	102(919)245-2582
o Scar I	Betancourt	204 Emerson Dr. Mebane	courttina 7@ yahoo.com	
April 10	Arant	2809 Alghwords Blvd. Radag-NC 276	the same transfer of the same	919 954 7601
2 Adam	Powell	Metane Enterprise Newspaper	Kazponelle yahoo con	(919)260-1989
3 5TEPHE	NARGHA	201 E. CENTERST.# 389, MEBANE	tygnusncegnail.com	99.475.3592
Ennin	han	301 Large Calla-Melane	Druce, Lunning hampbel.com	n 9196385956
5 Andrei	1	125 Gibson Rd Mebane	vacousty@Email.on	

A NORTH CAROLINA	Project	Road/Railroad Traffic Separation Study (TSS) in Mebane	November 15, 2016
REAL OF TRANSPORT	Location	Mebane City Hall, 106 E. Washington Street	Alamance, and Orange Counties
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	NAME	ADDRESS	EMAIL	PHONE
1	OMECAR Wilson	DB BOX 66 MEBANE, N	C WERA 145a DEARC	SSPIGIS-1600
2	muty Dally	125 Gibson Rd		336-516-1644
3	Curtis Reamey	125 GIBSON RD MEBANE (206 Moore Rd		390 919-568 997
4	Brenda Wilson	P.O. Box 66 / melane	WERA 1 USA @ Earth L	ink, net
5	DMiddh			336 269-4066
6	Dill Lumped	100 E. Roosevolt St	gglunsogmail, com	919-563-0326
7	Sandra Walter	5822 Runey word Dr	Swelkerbasane, rr.com	9A-563-2503
8	Gova Burg	HOG TATE ALV		919-563-2679
9	Bourry Parken	314 Mattress Factory Rd		919-563 -8840
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Location

Project	Road/Railroad Traffic Separation Study (TSS) in Mebane
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November 15, 2016

Mebane City Hall, 106 E. Washington Street

Alamance, and Orange Counties

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	NAME	ADDRESS	EMAIL	PHONE
1	Margie Alston	431 wood Jan N Rd, P. O. Box 1032 Meb	ane we margical stone bellsouth.	nt (336) 684-1712
1	Brenda Holt	611 W. McKinkySt, Mebane NC		(919) 563-1569
3	Tom Shideler	283 Willowshy Ct; Builington, NC		336-229-6481
4	Davan Helf	715 Mckinley St. Me bane NC		3366 84 6124
5	Harry Marvin	200 Oakmontet, milan		
6	PAUL SONE(BLD		parl eps durhamapa com	(919) 382 - 2507
7	Mary F. McClende			
8	And I have	S822 Romerous Messing		919-563-2503
9	Vanessa D. trust			919 563-5981
10	CHUCK EDWARDS		CUCDWARD CUCKT. GOV	(28)570-6832
11	Chery Parker	SLY Mathross Factory Rd	Coar Ker@div.duke.edu	(336) 24-6195
12	Jim / AppING	505 S. 4It / MEBANO	hardry 649 @ gmail con	
13	4.	1950 Martin St. Durlington Ne 27215	pareting 649 @ gmail. Com matthewkenn to alamace- ne. con	(506)570-4080
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Project	Road/Railroad Traffic Separation Study (TSS) in Mebane	April 18, 2017
Location	Mebane City Hall, 106 E. Washington Street	Alamance, and

SIGN IN SHEET (please print)

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2	CHARLES DOWN	311 LAKE CATHAN RD	CHARGES, DOHN DHOMBL	8505727695	
3	Donald Arant	2809 Highwoods Blvd. Raleigh	of donald aroust encir.com	919 895 8806	
4	Pecil Dove	133 N. GIBSON Rd	Rocky Dove 50 @ YAhoo. Com		
	David Check	207 Coloniel Wy	clark.dandogralic		
6	ED LEWIS	NCDOT 7	elewis@ncdot.gov	336 487 0000	
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		16 Leeds Ct. Mebone	sandy_barnhartemed.unc.ed		
	4	707 w Holt st. Mebane	lyn-dee Olive, Com		
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12	8				
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15			+		