



**Date:** September 17, 2013

**To:** Thomas J. Bonfield, City Manager  
**Through:** Keith Chadwell, Deputy City Manager  
**From:** Mark D. Ahrendsen, Director of Transportation  
**Subject:** Agenda Item – Durham Traffic Separation Study (TSS)

### **Executive Summary**

A Traffic Separation Study (TSS) has been prepared over the past two years to provide a comprehensive evaluation of traffic patterns and road usage at 18 public at-grade rail crossings. The purpose of the study is to assess existing conditions and determine needed improvements to enhance rail crossing safety. The study evaluated 18 at-grade crossings in Durham along the North Carolina Railroad (NCRR) corridor from Neal Road east to E. Cornwallis Road. The study also evaluated the Chapel Hill Street and Roxboro Street grade-separated crossings to develop more detailed recommendations for pedestrian enhancements and connectivity along the rail corridor in downtown. The project study included data collection, crossing analysis, safety and mobility issues, community impact, alternatives analysis, and public involvement.

The study report identifies and recommends a series of near-term (2-5 years), mid-term (5-7 years), and long-term (more than 7 years) crossing improvements. The long-term improvements are more complex and will require significant funding commitments for further detailed study and implementation. The TSS provides a sound foundation to seek funding from federal, state, regional and local funding sources. It also provides planning guidance for the development and implementation of other transportation improvement projects and land development. The draft TSS report was released to the public September 20, 2013 and is available for review on the City of Durham's website.

### **Recommendation**

The administration recommends that the City Council receive a presentation on the draft Durham Traffic Separation Study (TSS) report recommendations and hold a public hearing. The study presentation will be made at the City Council work session on October 10, 2013 and the public hearing held at the City Council meeting on October 21, 2013. Upon evaluation and response to public comments, a final report and recommendations are expected to be presented for City Council approval in December.

### **Background**

The N. C. Department of Transportation (NCDOT) has developed Traffic Separation Studies throughout the state in an effort to improve traffic operations and safety of at-grade railroad crossings. These studies are one of the comprehensive programs to improve rail-crossing safety administered by the NCDOT, Federal Highway Administration (FHWA), and the

Federal Rail Administration (FRA). Each study considers the unique needs and circumstances of each rail crossing and depends upon the active engagement of local governments, rail operators, and the public. The study process is essential for identifying, recommending and prioritizing rail crossing improvements and a step in qualifying projects for safety improvement funds, including NCDOT's Crossing Hazard Elimination Program. With renewed focus and planning for High Speed Rail and Regional Rail Service in the NCR corridor, including on-going rail crossing safety concerns, NCDOT proposed a comprehensive Durham TSS as a joint effort with the City of Durham, Norfolk Southern Corporation, and Triangle Transit. As the project manager, NCDOT selected and engaged Kimley-Horn and Associates in 2011 to prepare the engineering evaluation and study.

The TSS includes a comprehensive evaluation of existing safety conditions at 18 public highway/rail grade crossings along the Norfolk Southern rail line in Durham from Neal Road (SR 1314) to E. Cornwallis Road (SR 1121). Due to rapid development and increasing pedestrian activity in downtown, the study scope also included a more detailed evaluation and recommendation of pedestrian safety and access needs along the corridor in downtown between Chapel Hill Street and Roxboro Street.

The study process included an extensive public involvement process with committee meetings, stakeholder meetings, public workshops, environmental justice/limited English proficiency outreach, small group meetings, mailings, and press releases. Individuals, PACs, neighborhood associations and others registered on the City/County Planning Department's Organization Notification Directory and located within one mile of the corridor were included in project notices. A series of public workshops were held in November and December 2011 to obtain community input early in the study process. A second series of public workshops was held in March 2013 for input and comment on proposed crossing alternative treatments, closings, and grade separations.

### **Issues and Analysis**

The study report identifies and recommends a series of near-term (2-5 years), mid-term (5-7 years), and long-term (more than 7 years) crossing improvements. The City Department of Transportation has completed several of the low cost recommended near-term improvements and planning the implementation of the others. Additional near-term alternatives may be paid for through City and/or NCDOT funding sources. The near- and mid-term alternatives consist of pavement markings, warning signs, signal upgrades, lighting, bridge maintenance, asphalt/sidewalk improvements, access management, and traffic median barriers.

Long-term alternatives include grade separation, grade closing, and pedestrian underpass projects. Due to the complexity and costs of these long-term improvements, a ranking process was used to assist project stakeholders in identifying long-term alternatives which best balance safety improvements, cost benefit, environmental impact and general need. Long-term alternatives will require separate detailed project-level studies with further evaluation of alternatives, environmental impacts and public engagement. Projects will be selected for further study and funding through the development of the TIP and CIP. The projects must also compete with other transportation project priorities and available funding sources. The draft TSS report recommends the long-term at-grade rail crossing improvements as ranked in Table 1 below. However, projects may be selected at any time for further study regardless of ranking position.

Table 1. Long-Term Alternative Ranking

Crossing	Section	Alternative	Rank
Blackwell, Mangum, and Roxboro Streets	Downtown	Grade Separation	1
Ellis Road West	East	Grade Separation	2
S. Dillard Street	Downtown	Close Crossing (Construct Pedestrian Underpass)	3
Ramseur Street	Downtown	Close Crossing (Construct Pedestrian Underpass)	4
Cornwallis Road	East	Grade Separation	5
Briggs Avenue	Downtown	Grade Separation	6
Ellis Road East	East	Grade Separation	7
Plum Street	Downtown	Close Crossing (Construct Pedestrian Underpass)	8
N. LaSalle Street	West	Grade Separation	9
Fayetteville Street	Downtown	Grade Separation	10
Glover and Wrenn Roads	East	Grade Separation at Glover Road and Close Wrenn Road	11
Neal Road	West	Grade Separation	12

**Alternatives**

The TSS evaluated multiple alternatives for the 18 at-grade crossings. Based on input from the public and stakeholders, several alternatives were eliminated during the course of the study and as further identified in Appendix C of the draft TSS report. The eliminated alternatives included: a N. LaSalle Street bridge over rail option; Anderson Street bridge over rail and bridge over road options; Swift Avenue bridge over road and bridge over rail options; Duke Street bridge over rail and bridge over road options; a Plum Street bridge over road option; and two Ellis Road (West) bridge over rail options. The recommended options are listed in Table 1 above and described in detail in the TSS report.

**Financial Impact**

The project study was jointly funded by the NCDOT, the City of Durham, Triangle Transit, and Norfolk Southern Railway. The City cost share was \$20,000. Implementation of the study recommendations is subject to future funding allocations of federal, state, regional and local funds programmed through the TIP and CIP.

**SDBE Summary**

Due to the nature of this item, there is no SDBE review or summary.

**Attachments**

- Study Report Presentation Slides
- Draft Durham Traffic Separation Study Report