Freight and Commuter Trains on the North Carolina Railroad

Can They Work Together ?

Mission of the North Carolina Railroad

To manage, improve and protect the State of North Carolina's rail properties and corridors in a manner that will enhance passenger and freight service and promote economic development

The NCRR . . . .

- . . is a 317 mile rail corridor from Charlotte to Morehead City.
- . . carries over 70 freight trains daily for Norfolk Southern and CSX.
- . . corridor is used by eight Amtrak inter-city passenger trains daily.

North Carolina Railroad Company Corridor

North Carolina Railroad Company
Norfolk Southern
CSX Transportation
Various Short Lines

NORTH CAROLINA RAILROAD COMPANY

NCRR Economic Benefits

- Industries representing over 24% of North Carolina's economy ($143 billion of economic output) rely on rail freight service on NCRR.
- Industries utilizing NCRR freight rail provide 14.7% of North Carolina jobs.
- NCRR saves its freight customers $198 million in transportation costs annually.

(The Economic Impact of the North Carolina Railroad, Research Triangle Institute, May 2007)

NCRR Public Benefits

- $65 million annual benefits, including:
  - Reduced air pollution and greenhouse gas emissions
  - Reduced noise
  - Reduced injuries and accidents
- 254,000 rail car loads per year on NCRR
  - removes over 1 million trucks from North Carolina highways
  - saves over $20 million in highway maintenance costs
- 300,000 passengers per year removes more than 200,000 cars from North Carolina highways

Passenger Rail Transportation

Passenger Rail Mode characteristics include:

- Frequency of service
- Station spacing
- Type of equipment (FRA or non-FRA compliant)
- Right of way requirements

Most common Passenger Rail modes are:

- Light Rail
- Heavy Rail
- Intercity Passenger Rail
- Commuter Rail – **This is what NCRR is studying**

Light Rail Transportation

- Generally has frequent service (Several times per hour) over relatively short distances (5 to 20 miles)
- Stations spacing is ¼ to 2 miles
- Lightweight rail cars not suitable for use in mixed operations with freight rail. Must have physical or time separation from freight rail.
- Operates in a separate right-of-way or in mixed street traffic

Heavy Rail Transportation

- Generally has frequent service (Several times per hour) over distances of 15 to 40 miles.
- High platform stations with spacing of ½ to 5 miles.
- Electrically powered heavy weight rail cars.
- Operates on a dedicated right of way. Not suitable for mixed operation with freight rail.
- Sophisticated signaling systems

Intercity Passenger Rail

- Operates over long distances on a regular schedule between major city centers. Station spacing usually greater than 30 miles.
- Service frequency varies between several times per week to several times per day.
- FRA compliant equipment operates mixed with freight rail traffic on dedicated rights of way.
- Amtrak is primary US operator, NCDOT supports service in North Carolina

Intercity passenger rail routes in North Carolina

Commuter Rail Transportation

NCRR Study Focus

- Operations focused primarily on peak commuter times. Additional service can be added mid-day, evenings and weekends.
- Regularly scheduled service between a central city and adjacent suburbs and towns, or between nearby city centers.
- Stations generally spaced 2 to10 miles apart.

Commuter Rail Transportation

- FRA compliant equipment
  - Diesel multiple units (DMU)
  - locomotives and coaches (push pull operation)
- Ability to operate mixed with freight rail service

This is the type of service NCRR is studying

Freight and commuter trains can co-exist if…

- Infrastructure is improved to maintain safety and to provide capacity and reliability:
  - Upgrade existing tracks
  - New double track sections
  - New passing sidings
  - Improved signal systems
- Public funding provided for:
  - Capital Improvements
  - Equipment
  - Maintenance
  - Operations

Safety Issues

- Passengers in proximity to freight railroad operations
- Needed improvements to grade crossing protection. Eliminate or grade separate some key crossings
- Minimize risks resulting from co-mingling of freight and passenger train operations.

NCRR Commuter Capacity Study:

What planning and funding is necessary for commuter rail to co-exist with freight operations?

- NCRR and NSR must maintain the ability to serve existing and future freight customers 24/7 without delay
- Safety is paramount - some grade crossings will need additional protection, elimination or grade separation.
- Single dispatcher for all passenger and freight trains
- All passenger equipment must meet Federal Railroad Administration crashworthiness standards

The HNTB Project Team

HNTB Corporation

- **A leading planning and engineering firm serving both the freight and commuter rail industry.**
- **Strengths in railroad operations; track and signal design; and the evaluation of infrastructure requirements.**
- **Raleigh based staff with a knowledge of regional freight railroad and passenger rail transportation issues.**

Woodside Consulting Group

- **A leader in the development of capacity analysis models to evaluate impacts of proposed rail operations.**
- **Extensive experience with NS, including recent modeling of the Greensboro to Charlotte corridor.**

Ecoscience Corporation

- **Extensive experience in the evaluation of environmental and permitting issues in NC, including those for railroad projects.**

Define Assumptions

- Number of commuter trains
  - **Four peak hour each direction plus one mid-day**
- Number of freight trains and intercity passenger trains
  - **Base year 2007**
  - **Planning year 2020**
- Station locations
  - **General locations for planning purposes**
- FRA compliant equipment
  - **Locomotive and four coaches**
  - **Push pull operation**
- NCRR study limits:
  - **Burlington to Greensboro**
  - **Burlington to Goldsboro**
  - **Chapel Hill – Carrboro Branch**

Develop Infrastructure Requirements

- Rail Traffic Controller (RTC) Model used to identify capacity constraints
- Develop improvements to address those constraints
  - **double track, sidings, signal improvements, etc.**
- Perform high level conceptual environmental analysis to identify potential concerns
- Identify other capital construction items to support a commuter rail operation
  - **maintenance and storage facilities; layover facilities; stations and parking facilities, etc.**
- Develop conceptual level cost estimates for needed improvements

North Carolina Railroad Company
Track Expansion Study Areas

Burlington to Greensboro

Goldsboro to Burlington

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Norfolk Southern

CSX Transportation

----- Short Line Railroads

▲ Dept. of Defense Military Installations

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Project Schedule

- Study began October 2007
- Currently developing assumptions and building the RTC model
- Public dialogue is on-going
  - Cities, counties and towns
  - Business groups and Research Triangle Park
  - Economic development organizations
  - TTA, PART, NCDOT
- Anticipated completion in June 2008

Freight and Commuter Trains on the North Carolina Railroad

A study to determine if it can work, what are the infrastructure needs and what it will cost

Thank You

For More Information Contact:

Jim Kessler, HNTB (919) 424-0460 jkessler@hntb.com

Alan Tobias, HNTB (804) 838-8218 atobias@hntb.com

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