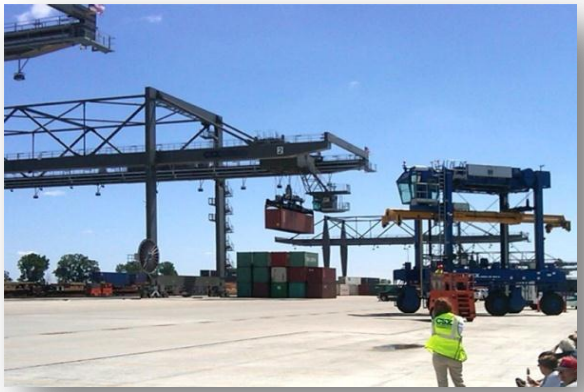
Prioritization 3.0/Strategic Transportation Investments

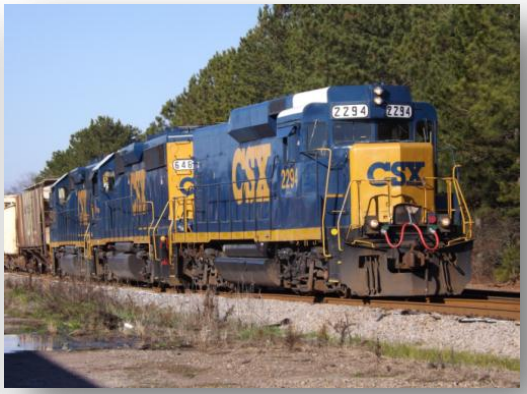
BOT Approved Rail Quantitative Scoring Criteria

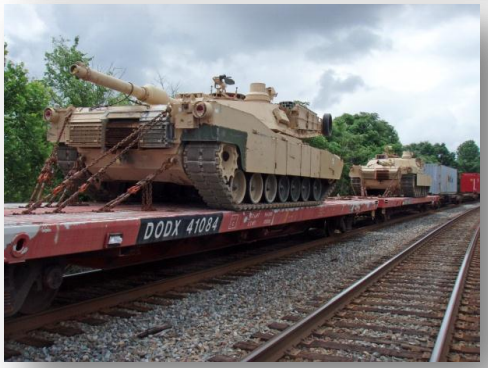
September 10, 2013

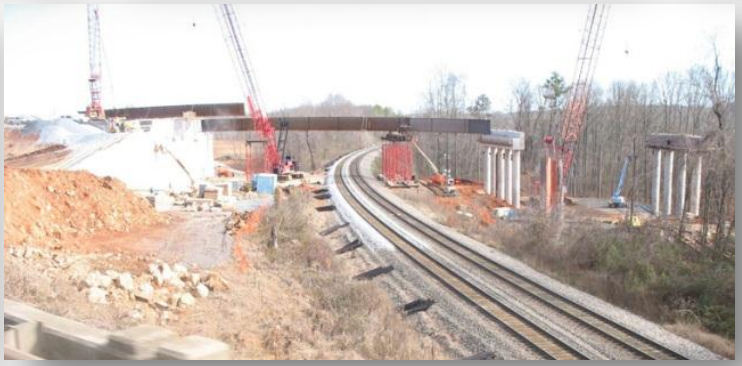
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

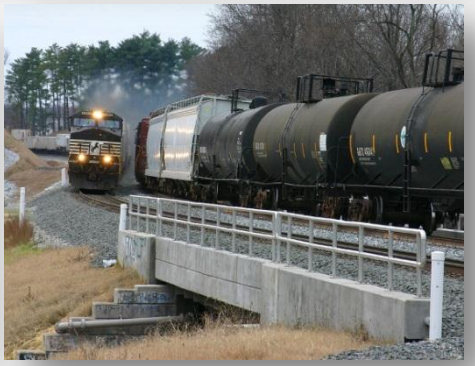
RAIL DIVISION











Eligible Project Types by Funding Category

Funding Category	Project Types			
	Freight Track & Structures	***Freight Intermodal***	***Intercity Passenger Track & Structures***	***Intercity Passenger Service & Stations***
Statewide (100% Criteria Score)	**Class I** sidings, double-track, grade separations, new improved access	Not Eligible	Not Eligible	Not Eligible
Regional (70% Criteria Score)	Same as Statewide	Not Eligible	**Rail lines crossing a county line** sidings, double-track, grade separation, curve realignment	**Rail lines crossing a county line** intercity passenger service
Division (50% Criteria Score)	Same as Statewide	**Class I -** Intermodal or transload facilities	Same as Regional	Same as Regional plus intercity passenger stations

Acquisition/Ownership of Rail Corridors

- More than 100 miles of NCDOT-owned rail corridors
- Preservation for future transportation uses
  - Freight operations (Class I, Short line)
  - Passenger operations (Intercity, Commuter, Light rail, Busways)
- Benefits:
  - Support economic development opportunities
  - Meet future transportation needs
- Example NCDOT-owned rail corridors:
  - Wallace to Castle Hayne
  - GTP Rail Spur
  - Andrews to Murphy

Rail Project Prioritization Criteria
Track & Structure Projects

		Weighted Score				
		Statewide Freight	Regional		Division	
			Freight	Pax	Freight	Pax
Benefit-Cost	*Emissions* *Highway-to-rail diversion* *Fuel savings* *Travel time savings*	20%	10%	10%	10%	10%
Economic Competitiveness	*Long-Term Economic Benefits*	10%	-	-	-	-
Capacity/ Congestion	*Volume-to-Capacity*	15%	15%	25%	10%	15%
Safety	*RR/Hwy crossing incidents*	15%	15%	15%	10%	10%
Accessibility	*New or enhanced accessibility*	10%	10%	-	5%	-
Connectivity	*Multimodal improvement*	10%	5%	-	5%	-
Mobility	*Service improvement*	20%	15%	20%	10%	15%
Total		100%	70%	70%	50%	50%

Rail Project Prioritization Criteria

Freight Intermodal Facilities/Intercity Passenger Service and Stations

		Weighted Score		
		Statewide Freight	Regional – Intercity Passenger Service only	Division – Facilities / Intercity Service & Stations
Benefit-Cost	*Emissions* *Highway-to-rail diversion* *Fuel savings* *Travel time savings*	-	15%	10%
Economic Competitiveness	*Long-term Economic Benefits*	-	-	-
Capacity/ Congestion	*Volume-to-Capacity*	-	25%	15%
Connectivity	*Multimodal improvement*	-	10%	10%
Mobility	*Service improvement*	-	20%	15%
Total		100%	70%	50%

Rail – Benefit/Cost

Definition: Benefits associated with emissions savings, fuel savings, travel time savings, & highway-to-rail diversions. B/C value is determined using TREDIS.

Scoring: Total project benefits divided by the project cost to the state.

Weighted % per Project Type (as recommended by Workgroup):

	Statewide	Regional	Division
Freight Track & Structures	**20%**	**10%**	**10%**
Freight Intermodal & Transload Facilities	N/A	N/A	**10%**
Intercity Passenger Track & Structures	N/A	**10%**	**10%**
Intercity Passenger Service (Regional & Division) Stations (Division only)	N/A	**15%**	**10%**

Rail – Economic Competitiveness

Definition: High-level relative measure of the anticipated statewide benefits of project improvements. Number of jobs is a TREDIS output.

Scoring: Number of full-time jobs expected in Year 30 after project constructed

Weighted % per Project Type (as recommended by Workgroup):

	Statewide	Regional	Division
Freight Track & Structures	**10%**	N/A	N/A
Freight Intermodal & Transload Facilities	N/A	N/A	N/A
Intercity Passenger Track & Structures	N/A	N/A	N/A
Intercity Passenger Stations & Service	N/A	N/A	N/A

Rail – Capacity/Congestion

Definition: Percentage that the existing facility is over-capacity.

Scoring: ((Current daily volume/Maximum daily allowable volume) - 1)*100

- *For a Track & Structures project with multiple rail segments, score is based on the most congested segment*
- *For a Intercity Passenger Station or Service project, capacity % for each project element is multiplied by the element's % of project cost, summing all elements*
- *Log used to scale scores within the range*

	Statewide	Regional	Division
Freight Track & Structures	**15%**	**15%**	**10%**
Freight Intermodal & Transload Facilities	N/A	N/A	**15%**
Intercity Passenger Track & Structures	N/A	**25%**	**15%**
Intercity Passenger Service (Regional & Division) Stations (Division only)	N/A	**25%**	**15%**

Rail – Safety

Definition: Consideration of crash potential for railroad/highway at-grade crossings

Scoring: Safety Review Index value (from Rail Division's State Authoritative Rail and Highway - SARAH Database)

- *For grade separations: multiply by 1 (eliminates risk)*
- *For at-grade improvements: multiply by 0.5 (reduces risk)*
- *No credit given if crossing improvements are not part of project*
- *Log used to scale scores within the range*

Weighted % per Project Type (as recommended by Workgroup):

	Statewide	Regional	Division
Freight Track & Structures	**15%**	**15%**	**10%**
Freight Intermodal & Transload Facilities	N/A	N/A	N/A
Intercity Passenger Track & Structures	N/A	**15%**	**10%**
Intercity Passenger Stations & Service	N/A	N/A	N/A

Rail – Accessibility

Definition: Measures the potential for new or improved accessibility for industries by a freight rail project. Considers project length, National Highway System (NHS) miles within 5 miles of the rail project centerline, and county unemployment rate.

Scoring: (Rail Route Miles + NHS Miles)*(1+Unemployment Rate)

- *Multiply by 1 if project provides new access.*
- *Multiply by 0.5 if project provides improved access.*
- *No credit given if neither new nor improved access provided.*

Weighted % per Project Type (as recommended by Workgroup):

	Statewide	Regional	Division
Freight Track & Structures	**10%**	**10%**	**5%**
Freight Intermodal & Transload Facilities	N/A	N/A	N/A
Intercity Passenger Track & Structures	N/A	N/A	N/A
Intercity Passenger Stations & Service	N/A	N/A	N/A

Rail – Mobility

Definition: Measures either the change in percentage of available capacity or travel time savings provided by project (for track projects). Measures daily volumes in relation to catchment area population (for freight intermodal projects and intercity passenger service/station projects).

Scoring:

- *Track (capacity): % change in available capacity for each rail segment, weighted by number of trains per segment*
- *Track (travel time): Travel time savings*Current daily volume*
- *For intercity passenger projects, travel time savings is considered for freight & passenger train volumes, and added to automobile travel time savings*
- *Intermodal & Intercity Passenger Station/Service: Projected new daily volume*(1+ % NC population in catchment area)*
- *Log used to scale scores within the range*

Weighted % per Project Type (as recommended by Workgroup):

	Statewide	Regional	Division
Freight Track & Structures	**20%**	**15%**	**10%**
Freight Intermodal & Transload Facilities	N/A	N/A	**15%**
Intercity Passenger Track & Structures	N/A	**20%**	**15%**
Intercity Passenger Service (Regional & Division) Stations (Division only)	N/A	**20%**	**15%**

Rail – Connectivity

Definition: Measures project's connectivity to strategic corridors, intermodal facilities, and stations.

Scoring:

Freight Track: *Mobility score*(25% port + 25% intermodal + 25% transload + 25% military)*

Freight Intermodal: *[Projected new daily volume*(25% port + 25% intermodal + 25% transload + 25% military)]*0.5 + [(Number of NHS facilities in catchment area/(1+ % NC population in catchment area)]*0.5*

Intercity Passenger Station/Service: *Ridership increase*(25% intercity + 25% parking + 25% commuter + 25% bus)*

Weighted % per Project Type (as recommended by Workgroup):

	Statewide	Regional	Division
Freight Track & Structures	**10%**	**5%**	**5%**
Freight Intermodal & Transload Facilities	N/A	N/A	**10%**
Intercity Passenger Track & Structures	N/A	N/A	N/A
Intercity Passenger Service (Regional & Division) Stations (Division only)	N/A	**10%**	**10%**

Example – New Class I Siding

Project constructs a new 2-mile siding along a Class I railroad – Statewide

Criteria	Raw Score	Statewide Freight Track & Structures Weights	Score (max 100)
Benefit-Cost	0	20%	0
Economic Competitiveness	2	10%	0
Capacity/Congestion	52	15%	8
Safety	0	15%	0
Accessibility	0	10%	0
Connectivity	100	10%	10
Mobility	100	20%	20
Total	n/a	100%	38

Note: Raw scores are the same for all funding categories. Final score variations are determined by applying criteria weighting percentages.

Example – Road Grade Separation

Sugar Creek - Construction of highway bridge over Norfolk Southern mainline in Charlotte – Regional

Criteria	Raw Score	Regional Intercity Passenger Track & Structures Weights	Score (max 70)
Benefit-Cost	1	10%	0
Capacity/Congestion	43.2	25%	11
Safety	99	15%	15
Mobility	40.53	20%	8
Total	n/a	70%	34

Note: Raw scores are the same for all funding categories. Final score variations are determined by applying criteria weighting percentages.

Example – Passenger Track

Construction of passing siding and curve realignment for the purpose of passenger train reliability – Regional

Criteria	Raw Score	Regional Intercity Passenger Track & Structures Weights	Score (max 70)
Benefit-Cost	1	10%	0
Capacity/Congestion	25.4	25%	6.4
Safety	28.3	15%	4.3
Mobility	79.3	20%	15.9
Total	n/a	70%	27

Note: Raw scores are the same for all funding categories. Final score variations are determined by applying criteria weighting percentages.

Example – Multimodal Station

New location/expansion of station and associated track – Division

Criteria	Raw Score	Division Intercity Passenger Stations/Service Weights	Score (max 50)
Benefit-Cost	3.82	10%	0.4
Capacity/Congestion	79	15%	11.9
Connectivity	16.64	10%	1.7
Mobility	25.72	15%	3.8
Total	n/a	50%	17.7

Note: Raw scores are the same for all funding categories. Final score variations are determined by applying criteria weighting percentages.

Example – Expanded Intermodal Facility

Expansion of a Class I intermodal facility – Division

Criteria	Raw Score	Division Freight Intermodal Weights	Score (max 50)
Benefit-Cost	8	10%	0.8
Capacity/Congestion	5.85	15%	0.9
Connectivity	17.34	10%	1.7
Mobility	67.18	15%	10.1
Total	n/a	50%	13.5

Note: Raw scores are the same for all funding categories. Final score variations are determined by applying criteria weighting percentages.