North Carolina
DEPARTMENT OF TRANSPORTATION

NCDOT Rail Division

Joint Legislative Transportation Oversight Committee Presentation
February 7, 2014

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North Carolina
DEPARTMENT OF TRANSPORTATION

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Rail Primer

Railroads operate in 86 of 100 NC Counties

2
Class I Railroads
2,432 miles

15
Short Line Railroads
919 miles

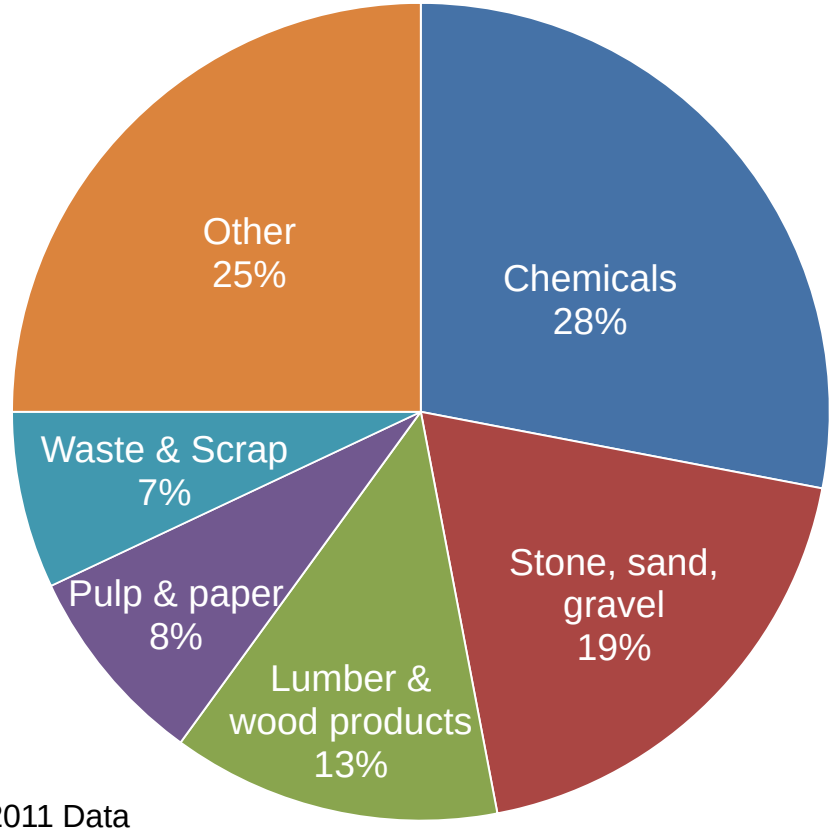
14
NCDOT-owned Corridors
109 miles

6
Daily NCDOT Trains

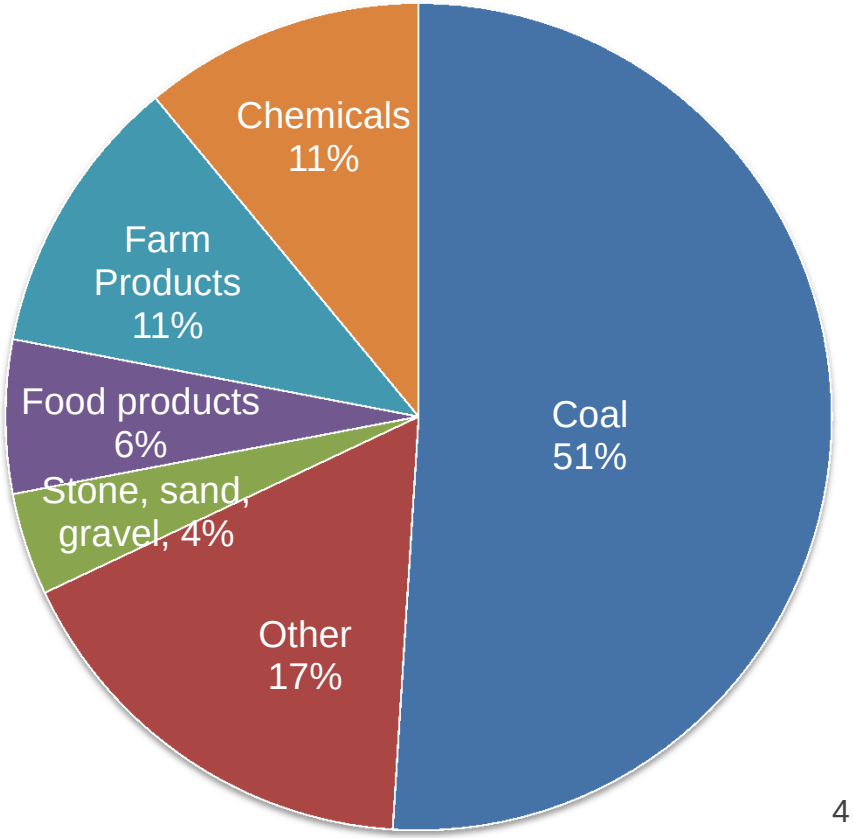
8
Daily Amtrak Thru-Trains

North Carolina receives more goods that it originates

Originated in NC
10.2 million tons/194,000 carloads

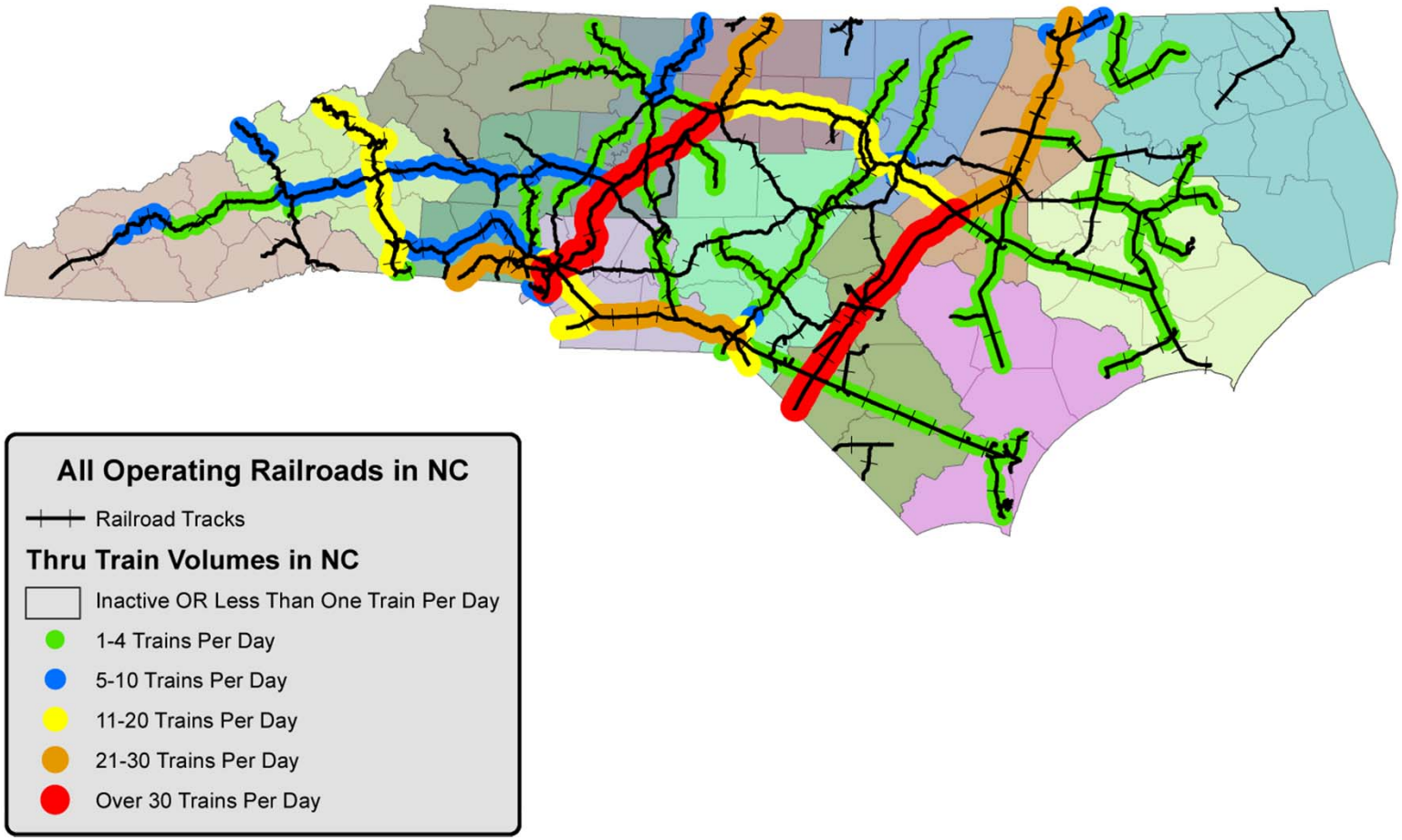


Terminated in NC
55 million tons/641,000 carloads



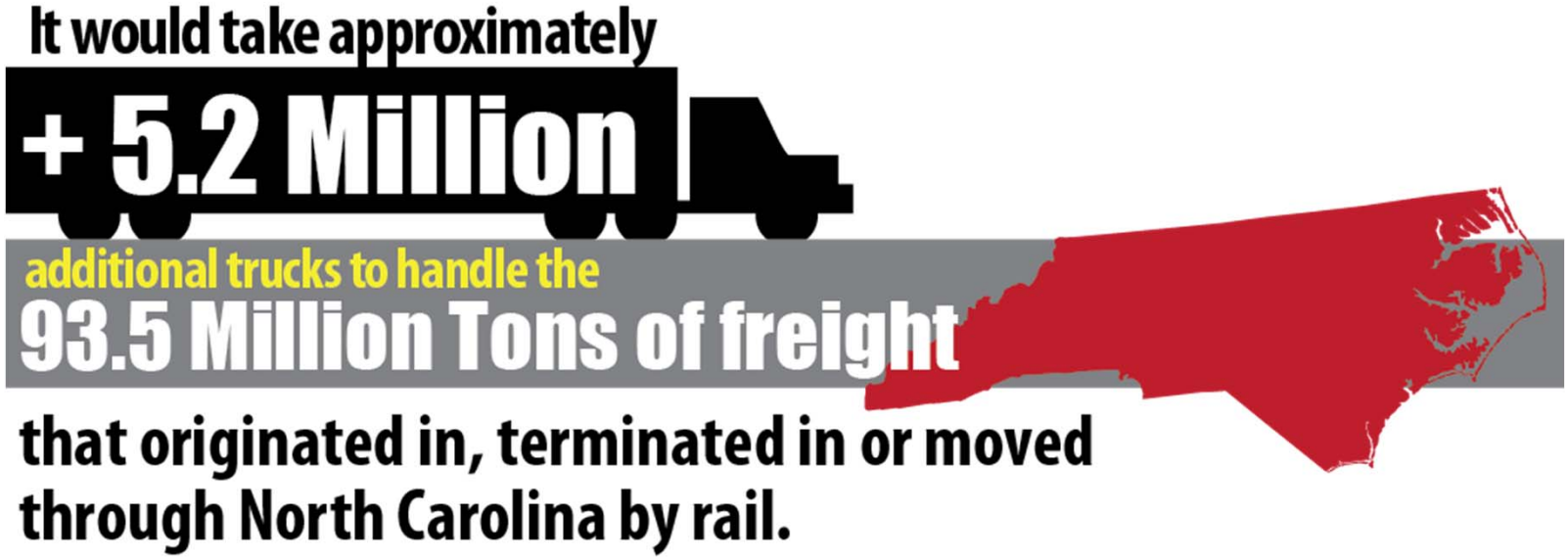
*2011 Data

2014 Train Volumes in NC



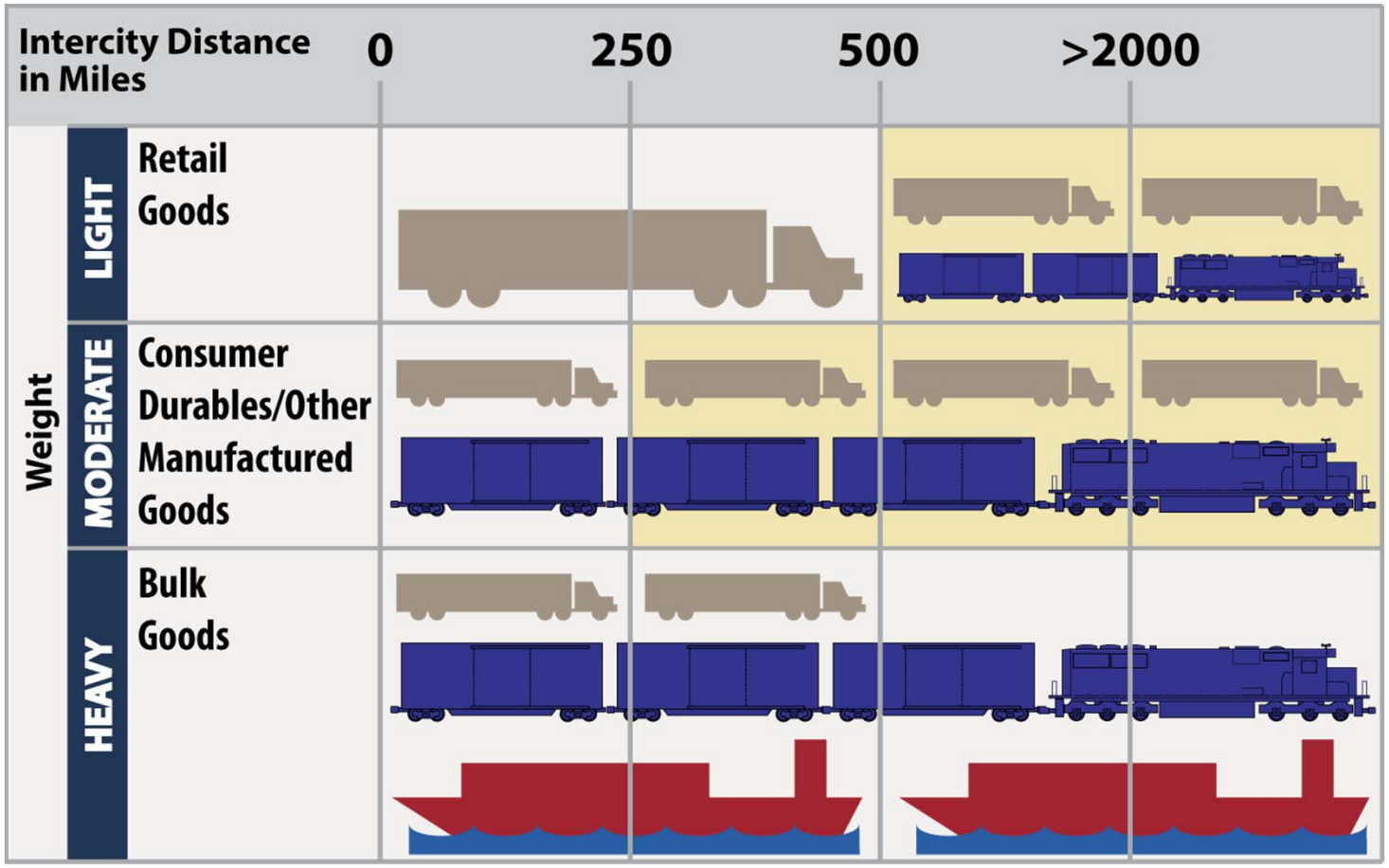
The Economics of a Rail Move

- One train can carry as much freight as several hundred trucks
- Reduction in long-distance truck volumes on highways
- Most rail moves are more than 400 miles and heavy loads



Rail's Role in Freight Transportation

The potential advantage of different modes with respect to weight and distance



NCDOT Currently Owns 14 Corridors – 109 miles rail banked

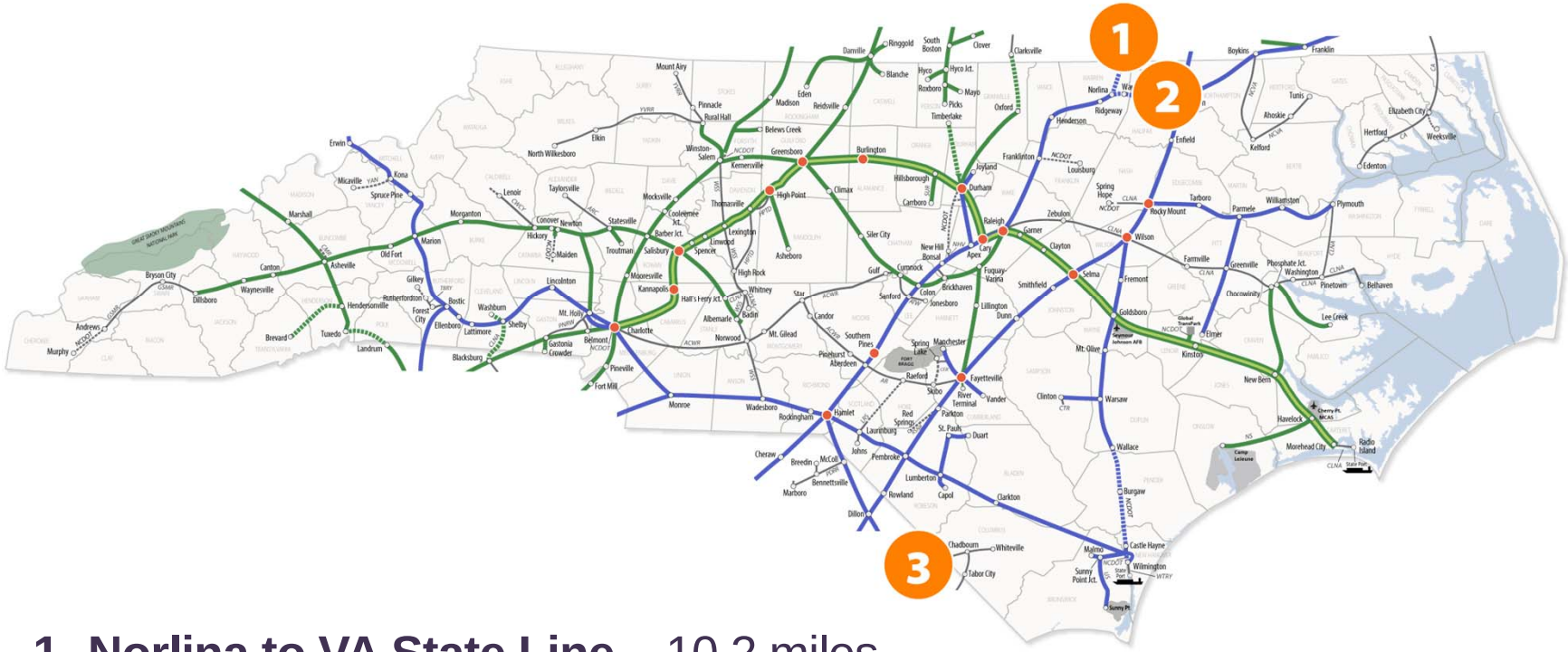
Corridor	Location	Date acquired	Length (miles)	Cost	Status
1. **Murphy Branch**	Andrews to Murphy	7-18-88	14.23	$650,000	Rail Banked
2. **Franklin County**	Franklinton to Louisburg	11-2-90	9.6	$162,108	Rail Banked
3. **Piedmont & Northern** (Charlotte)	Charlotte	11-27-91	0.77	$186,000	Trail Lease
4. **Piedmont & Northern** (Mt. Holly)	Mt. Holly to Gastonia & Belmont	12-5-91	11.6 (main) 3.0 (spur)	$483,221	Operating Lease
5. **Maiden Branch**	S. Newton to Lincoln Co. line	4-13-93	6.3	$130,000	Rail Banked
6. **Wilmington & Weldon**	Wallace to Castle Hayne	8-4-94	27.1	-	Rail Banked
7. **Durham & South Carolina**	Durham to NC 54	8-18-95	5.07 (main) 3.07 (spur)	$1	Trail Lease & Rail Banked
8. **Durham & South Carolina**	Chatham-Wake Co. line to New Hill	8-18-95	7.35	$1	Trail Lease & Rail Banked
9. **Lincolnton** (C&NW)	Lincolnton	1-27-97	0.61	$10	Rail Banked
10. **Durham & South Carolina**	Fayetteville Street to Chatham-Wake Co. line	8-6-98	6.34	$425,000	Trail Lease
11. **Wilmington Lead**	Fourth Street to McRae Street	6-12-02	.25	$100,000	Rail Banked
12. **Nash County Railroad**	Momeyer to Spring Hope	11-02-05	4.3	$10	Rail Banked
13. **Winston-Salem R-Line**	Downtown Winston-Salem	2-26-06	2.0	$2,686,276	Trail Lease & Rail Banked
14. **Global TransPark Spur**	Kinston	9-30-12	5.7	-	Soliciting Lease

NCDOT Preserved Corridor Activity

- **Piedmont & Northern** – Gastonia to Mount Holly, resumed operation February 2012, leased by Patriot Rail
- **Nash County Railroad –** Leased by CLNA, industry has expressed interest
- **Andrews to Murphy Line** – Study underway
- **Global TransPark** and **Wallace to Castle Hayne Line** – Both part of Eastern Infrastructure Improvement Program Studies (EIIS), underway

Photo - Kinston.com

Some Corridors of Interest



1. **Norlina to VA State Line** – 10.2 miles
2. **Norlina to Roanoke Rapids** – 30.42 miles
3. **Mullins, SC – Whiteville, NC – Tabor City, NC** – 35.95 miles in NC

Freight/Passenger Coexistence

Numerous issues to consider for new passenger service on freight routes

- Transparency
  - Speed and Shared Corridors
  - Capacity
  - Modeling
- Liability
- Costs to host railroad

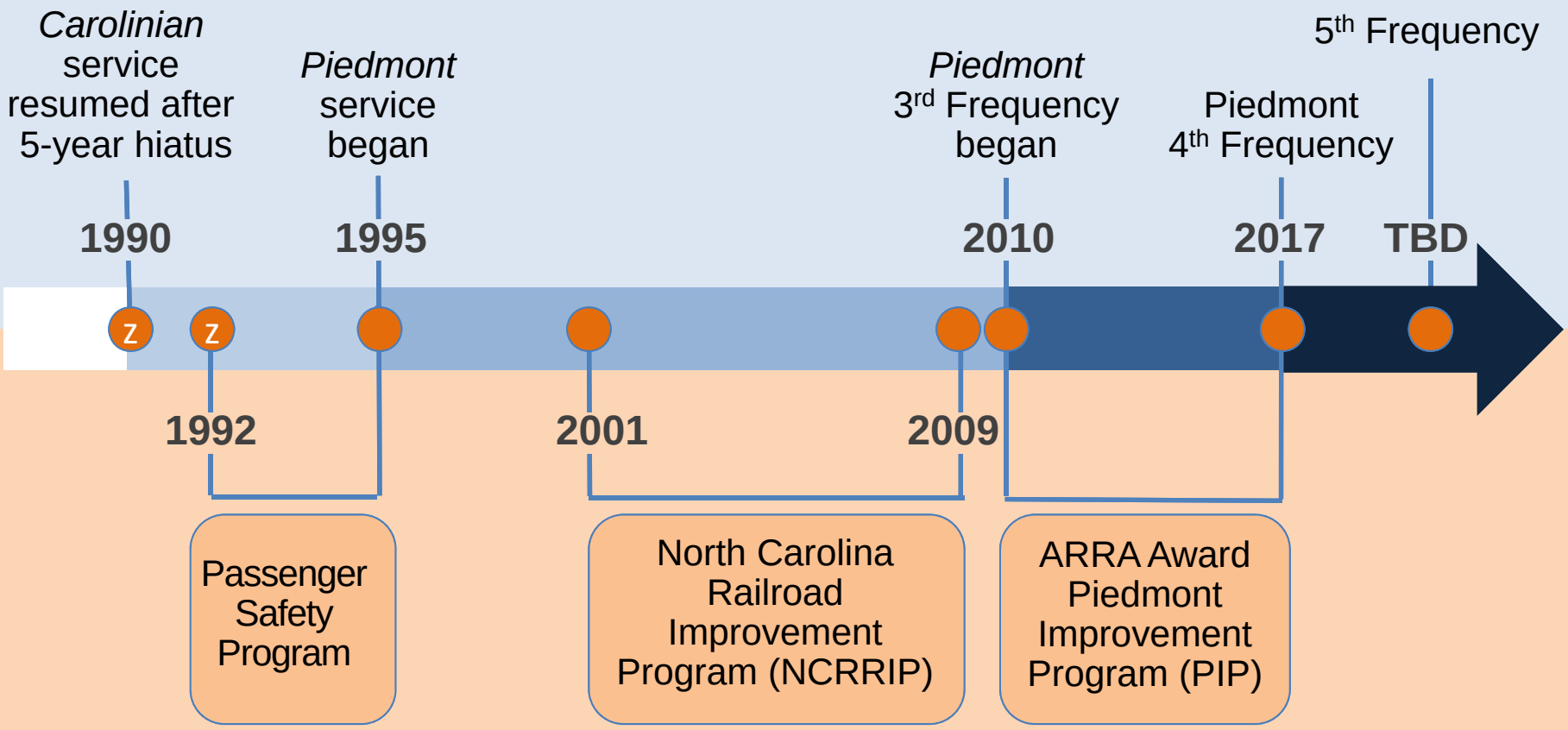
Examples beyond NC

- Virginia – 2 routes, $197M
- Michigan – 3 routes, $336M

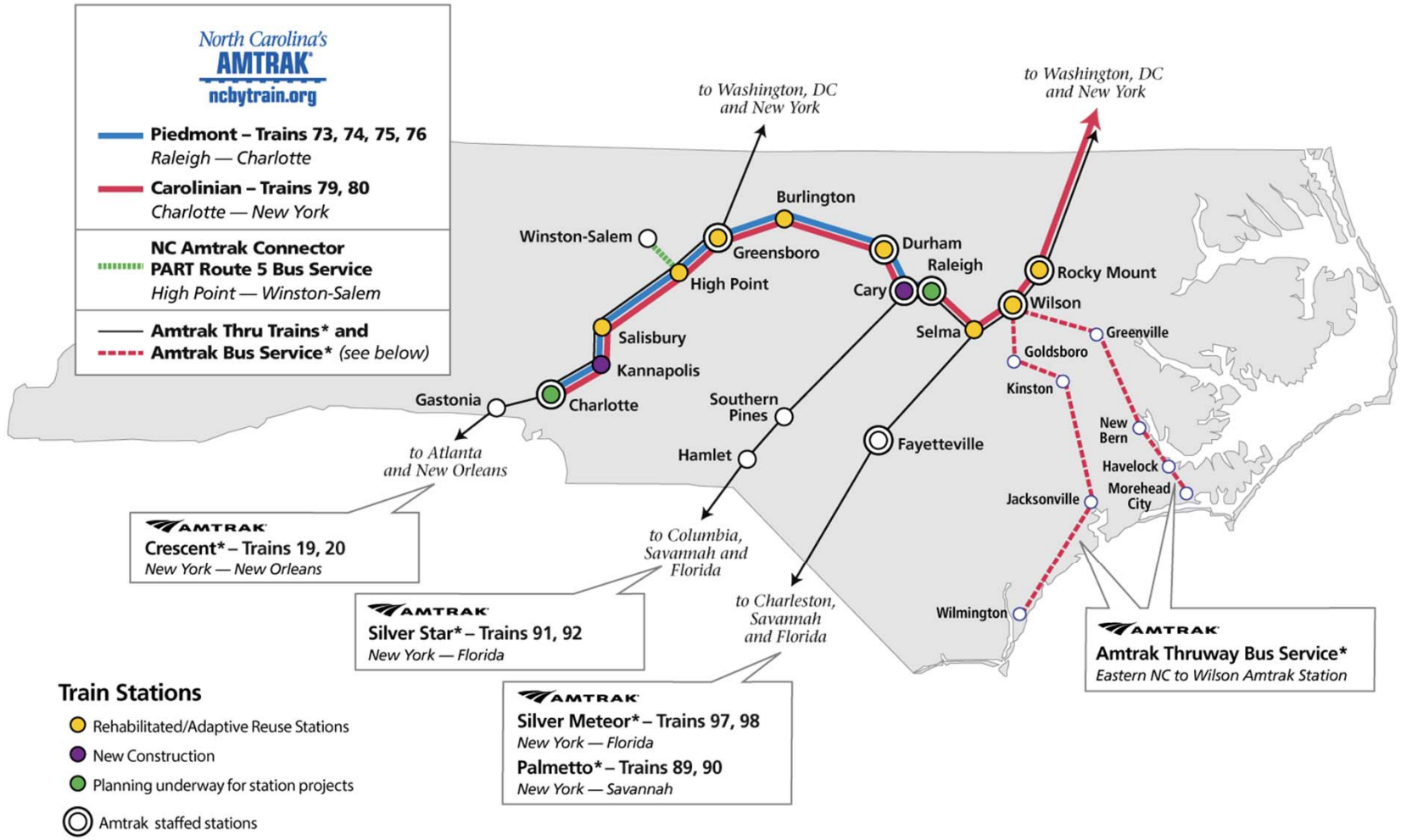
Each one is unique

North Carolina Railroad Company/photographer: Nick D'Amato

Passenger Service Development



Current Passenger Rail Services



Asset Utilization

Piedmont capacity – two to four coaches*

- 110 to 300 revenue seats per train
- Average 117 riders per train FFY2013

Carolinian capacity – four coaches + one business class car

- 339 revenue seats
- Average 434 riders per train FFY2013
  - *Many seats will sell more than once as numerous city pairs are served over the 704 mile route between Raleigh and NYC*
- Average Peak Leg Load Factor for FFY 2013 = 77%
- Peak leg load factor of over 85% in March, June, July and August
- Capacity expansion during the peak travel period currently being evaluated

**Consist adjusted daily based on demand*

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Piedmont Improvement Program

PIP Funding & Service Requirements

2009 – NCDOT was awarded $546.5M in FRA grants for a series of rail projects along the Piedmont corridor between Charlotte and Raleigh and Congestion Mitigation projects north of Rocky Mount on CSX.

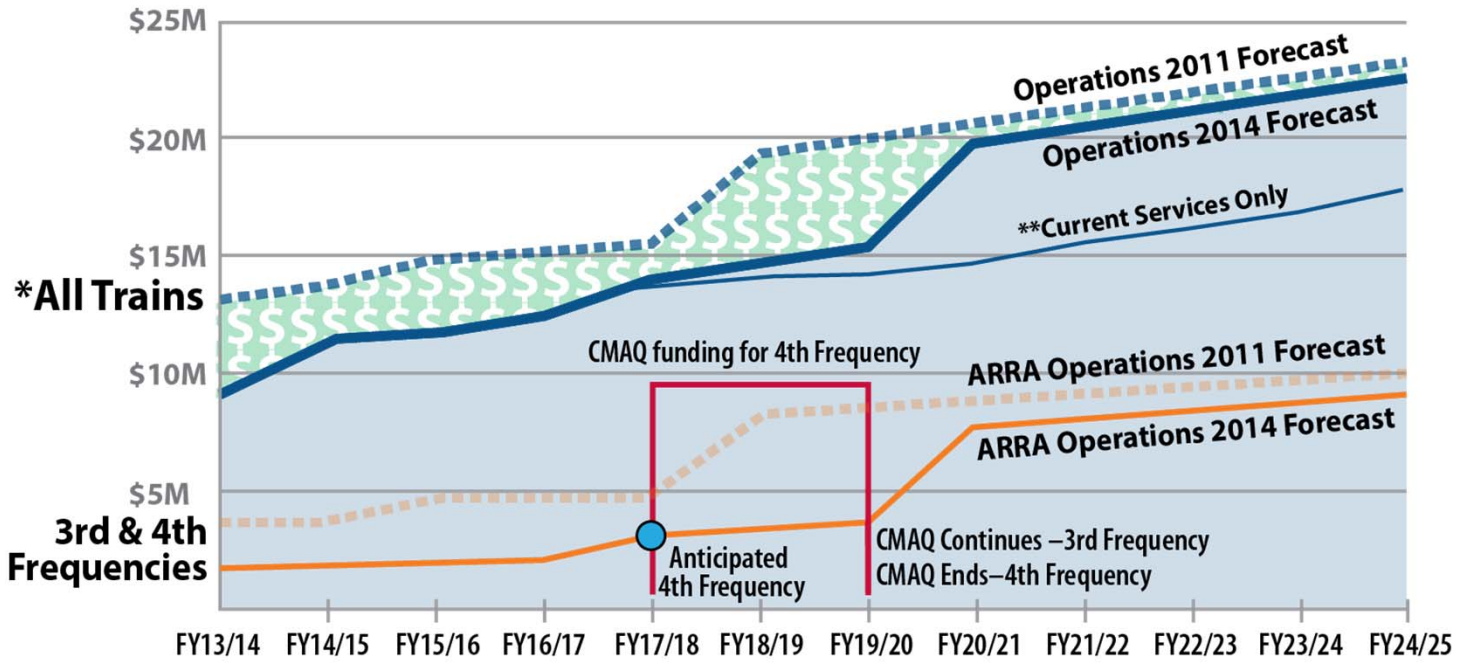
Cooperative Agreement – Defines NCDOT's requirements:

- Continue the 3rd frequency
- Introduce 4th frequency
- Maintain improvements
- Subject to Federal reimbursement for incomplete projects
- Modeling verified capacity for 5th frequency

PIP Funding & Service Requirements

Piedmont Improvement Program

Operations Funding Forecast



***All Trains:** Carolinian (1st frequency) Piedmont (2nd, 3rd & 4th frequencies)

****Current Services Only:** Carolinian (1st frequency) & Piedmont (2nd & 3rd frequencies)

(Includes Direct Costs, Station and Facility rents and NCDOT Station Attendants)

PIP Components

The Piedmont Improvement Program is divided into individual project components:

- **Equipment**
- **Station & Facilities**
- **Track & Structures**
- **Congestion Mitigation**
- **Program Development & Administration**

PIP Projects Benefit Passenger and Freight Trains

Piedmont Improvement Program

Benefits include:

- Improve capacity, operations and reliability
- Reduction in both highway and train delays
- Make railroads safer for all trains and motorists by eliminating at-grade crossings
- Modernize the railroad

PIP Program Development & Resulting Scope Reductions

Piedmont Improvement Program

Two Substantial Scope Reductions

1. Mainline Grade Separation

Funding: Conceptual $143.6M (included $20M Mobility Funds)

Benefits:

- Reduce train conflicts
- Separate NS and CSX tracks

Risks:

- Funding and schedules extending beyond grant limitations
- Businesses would be impacted under this schedule

PIP Program Development & Resulting Scope Reductions

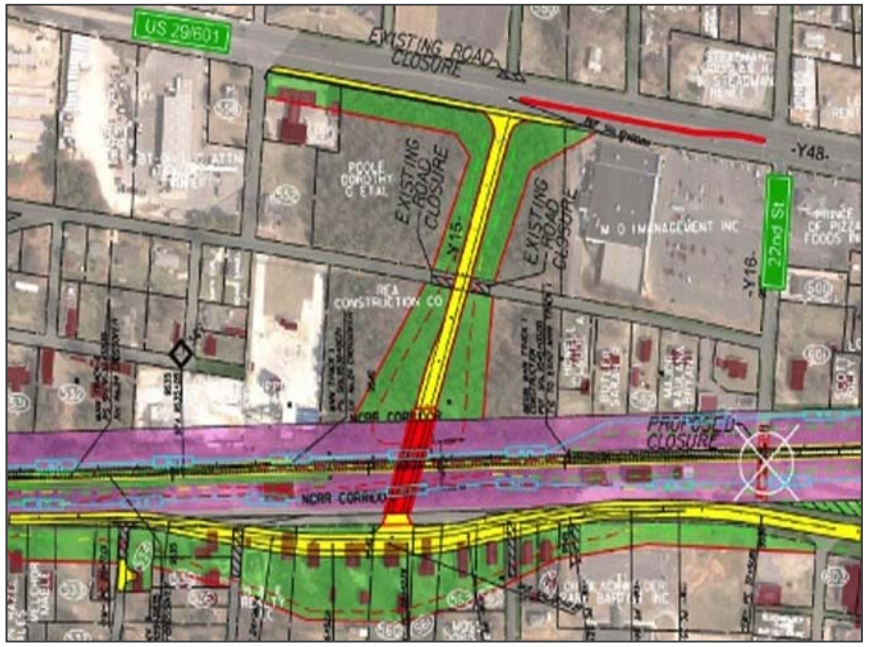
Piedmont Improvement Program

2. 24th Street Grade Separation, Kannapolis

Funding: Conceptual $11M

Benefits:

- Eliminates two at grade crossings



Risks:

- Local opposition
- Increasing project costs
- Small business impacts and costly detours
- Coordination efforts are underway to study alternative locations with local leaders in Kannapolis, Landis and the MPO

PIP Program Development & Resulting Scope Additions

Piedmont Improvement Program

Scope Additions

1. **Equipment** – Four cab control cars and truck refurbishments ($5M)

   Benefits:

   – Ability to implement push/pull operations
   – Uniform equipment to streamline maintenance operations

2. **Station & Facilities**

   – Charlotte Maintenance Facility ($51.5M)
   – Raleigh Union Station ($15M of the $73M total Estimated Cost)

   Benefits:

   – Operational efficiencies
   – Grow the Raleigh market

PIP Program Development & Resulting Scope Additions

Piedmont Improvement Program

Scope Additions

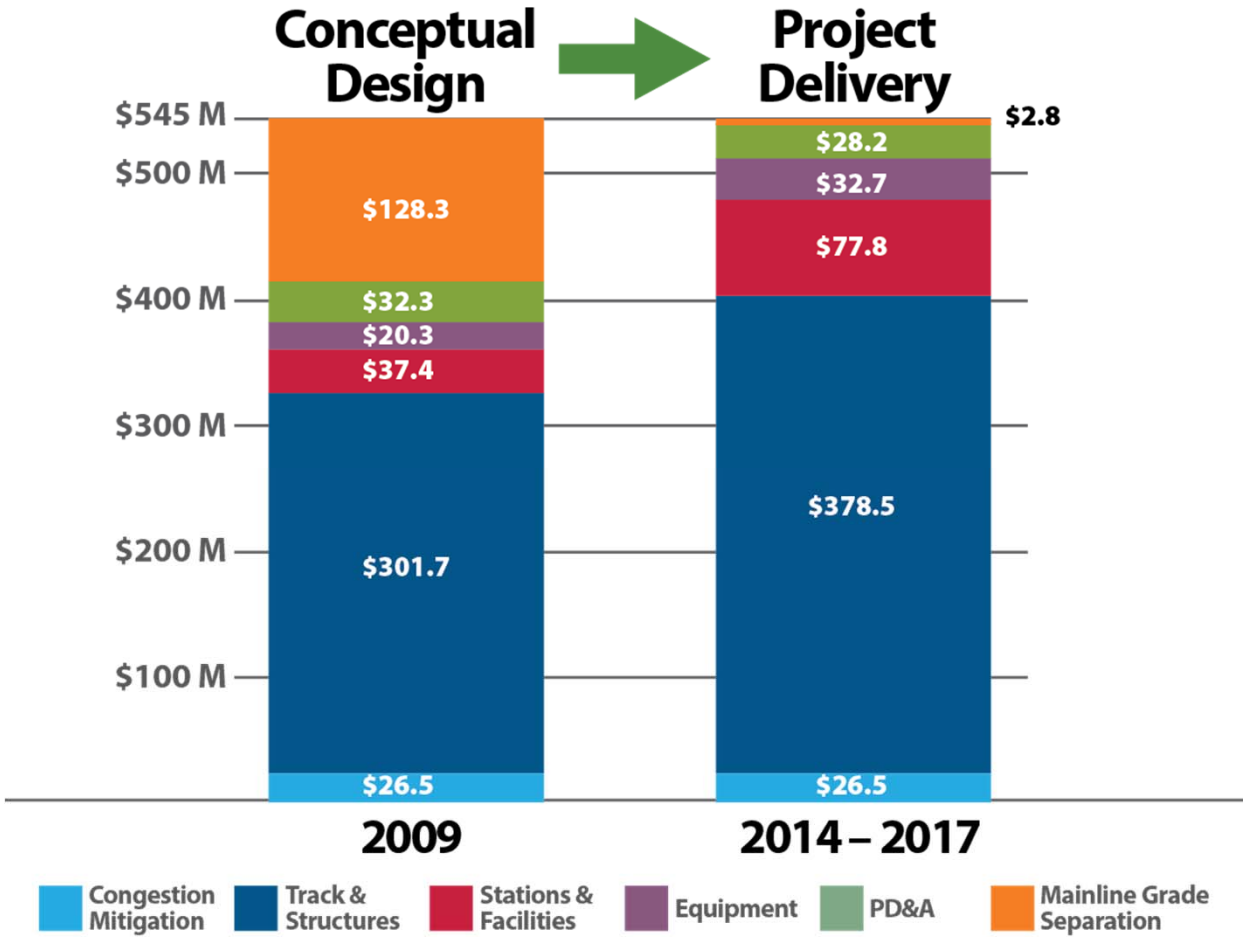
3. Track & Structures – $415.4M

– Funding adjustments for plans development from *Conceptual Design* to *Project Delivery*

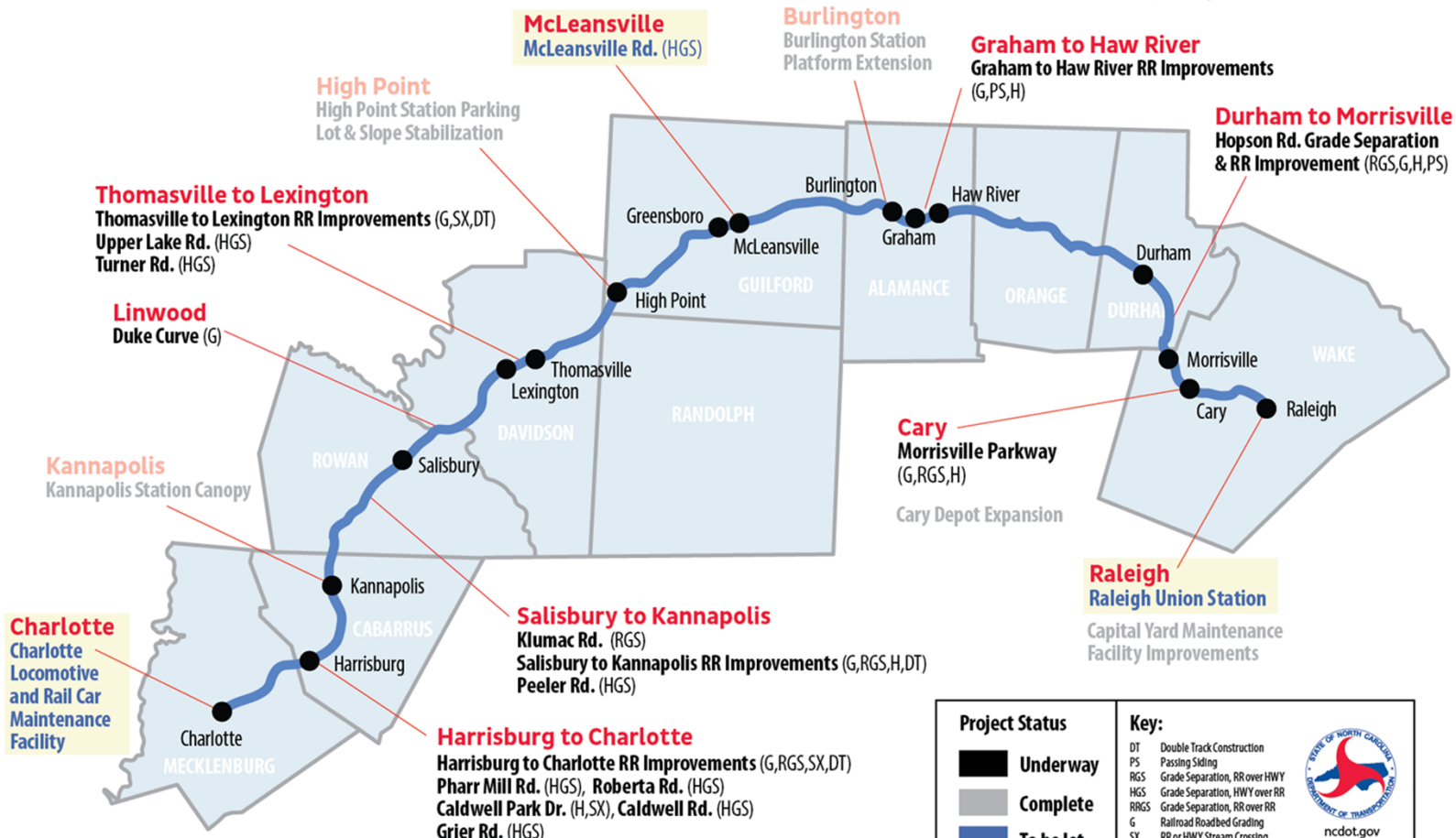
4. Program Development & Administration - $28M

– Adjust funding for additional construction oversight & stakeholder coordination, NS Project Management/Review, and NCDOT Program Administration

PIP Federal Funding Reallocation



Piedmont Improvement Program Projects



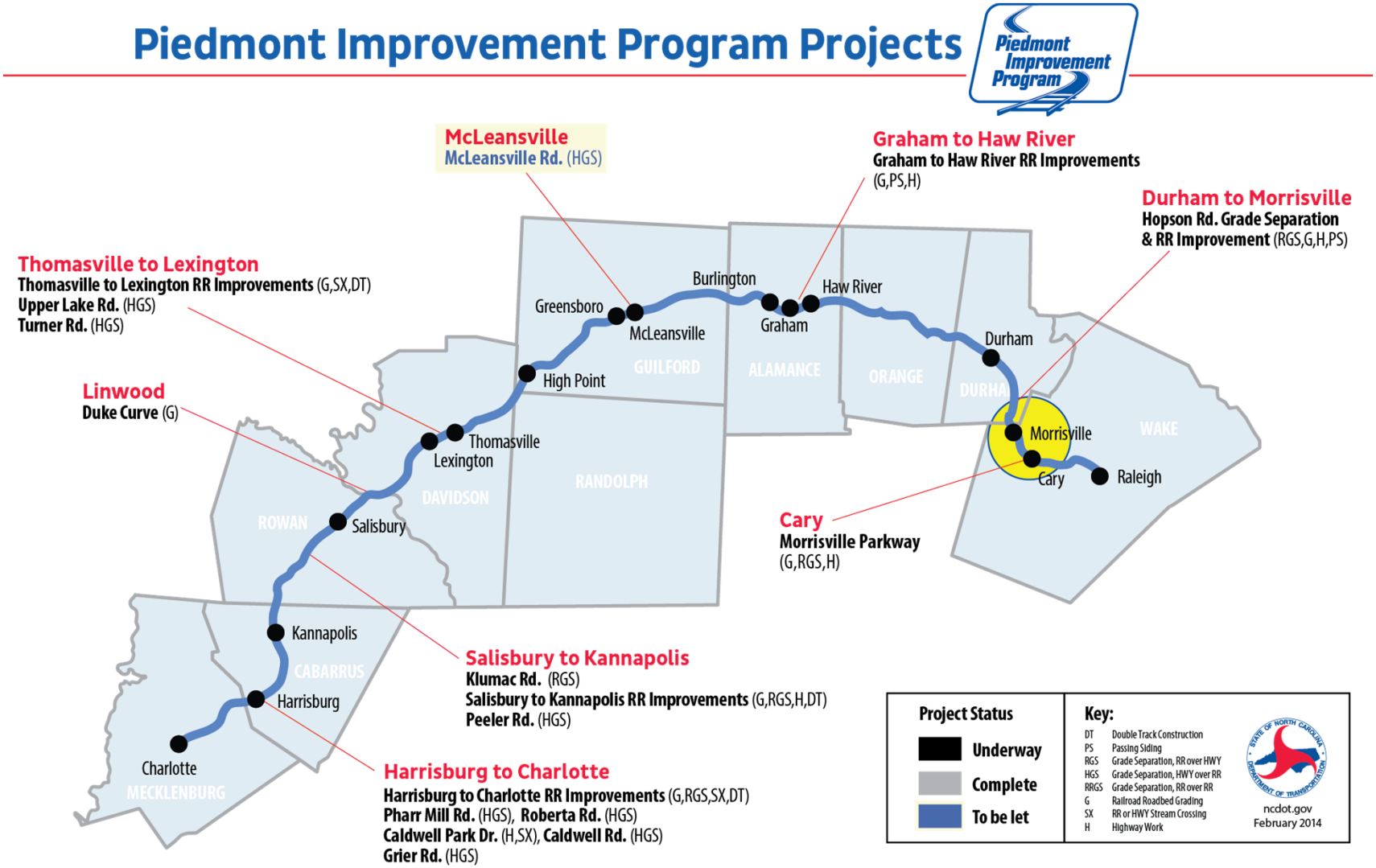
Piedmont Equipment

✓ 5 Locomotives rebuilt, 2 Lounge Cars, 2 Coaches refurbished & in service

Reburbish 7 Coaches
Purchase/refurbish 2 Locomotives and 5 Cab Control Units

Private Crossing Safety Initiative Projects totaling $1.3M will be constructed in Alamance, Cabarrus, Guilford, Orange, Rowan & Wake Counties.

Piedmont Improvement Program Projects




U-4716 Nelson to Clegg Grading
2014/01/03

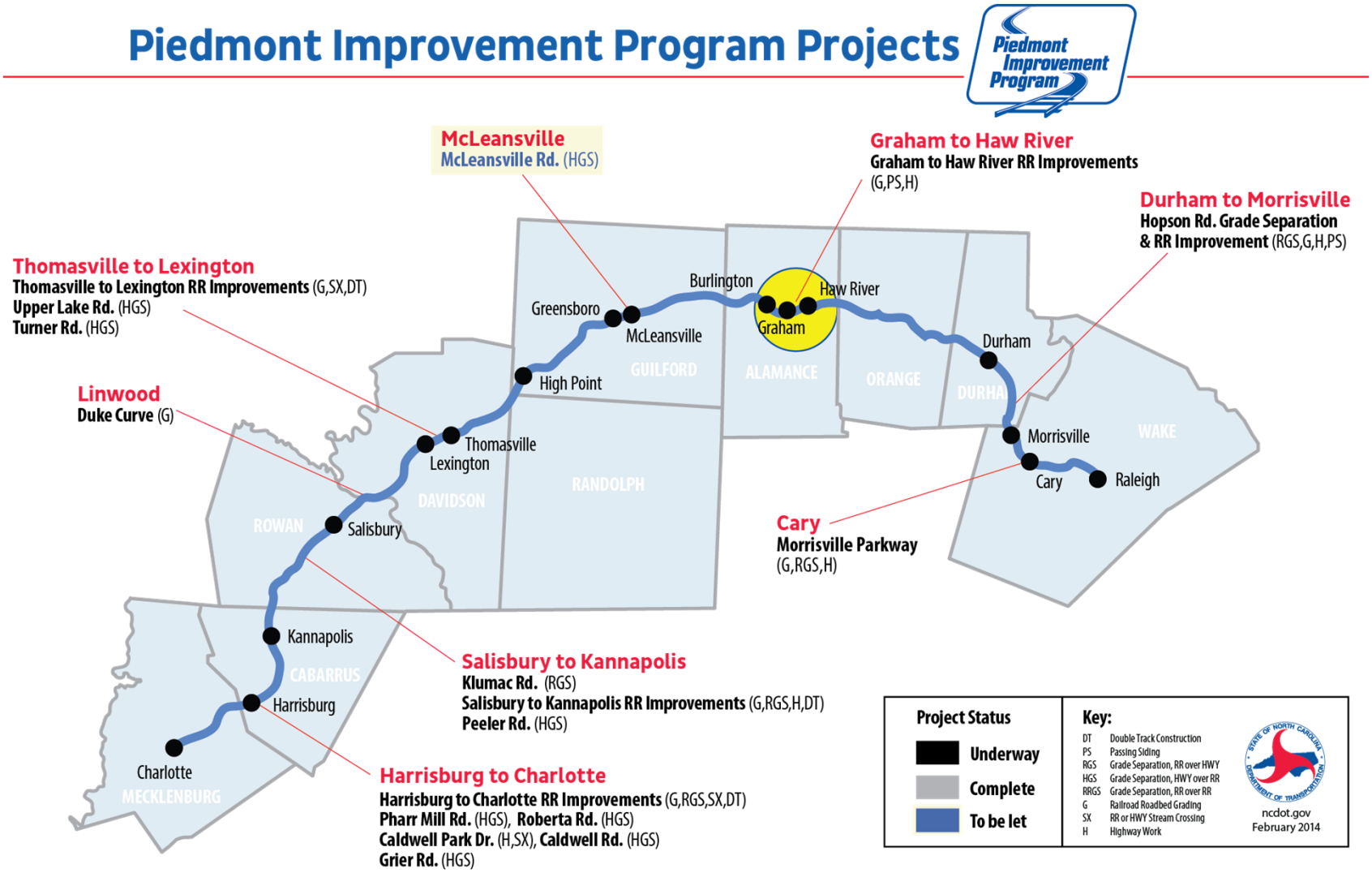

U-4716 Nelson to Clegg Grading
2014/01/03


U-4716 Signal Cabinet Installation
2014/01/08


U-4716 Crossties await installation
2013/12/31


U-4716 Nelson to Clegg Grading
2013/12/31

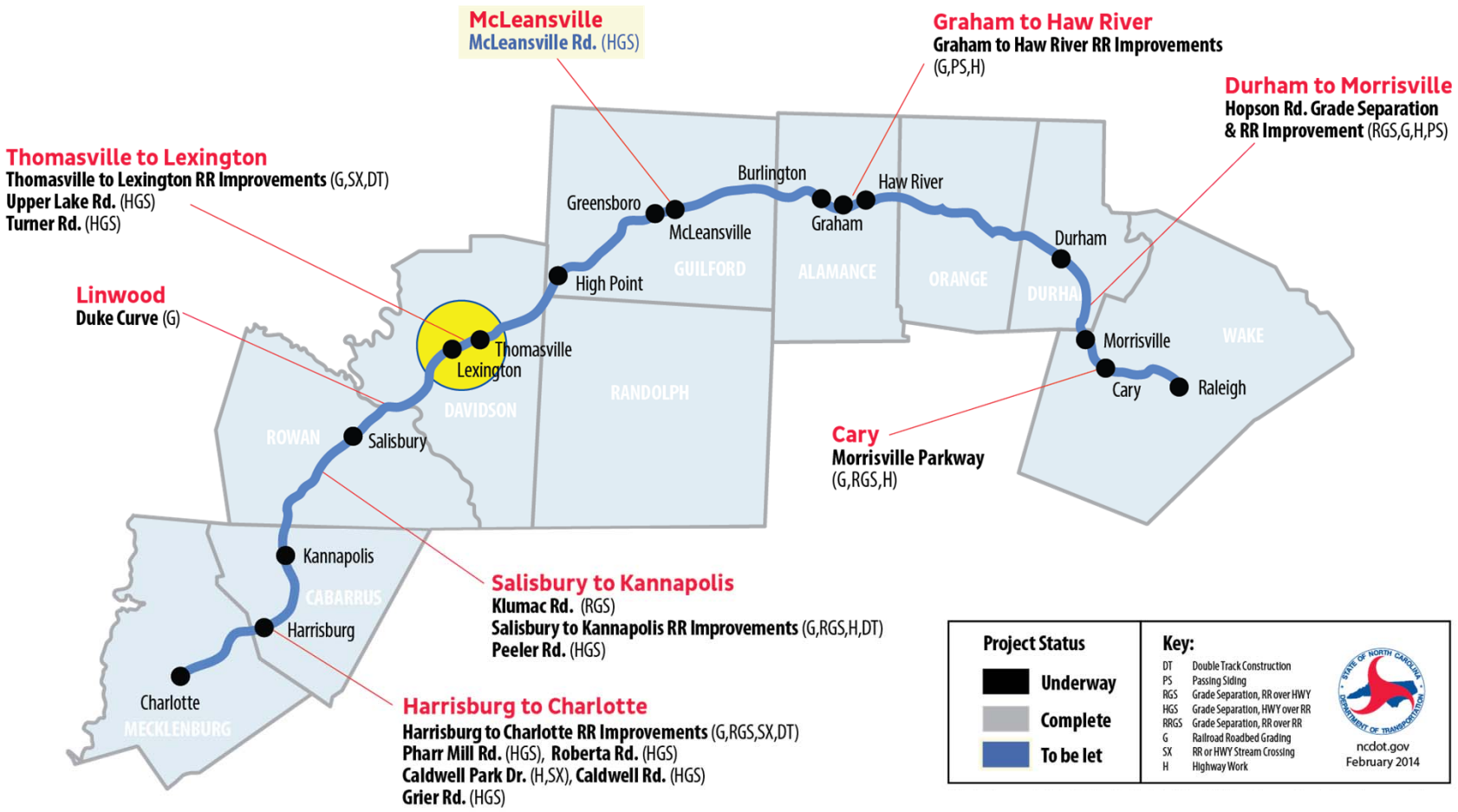
Piedmont Improvement Program Projects



P-5205 Graham to Haw River Grading

2013/12/31

Piedmont Improvement Program Projects



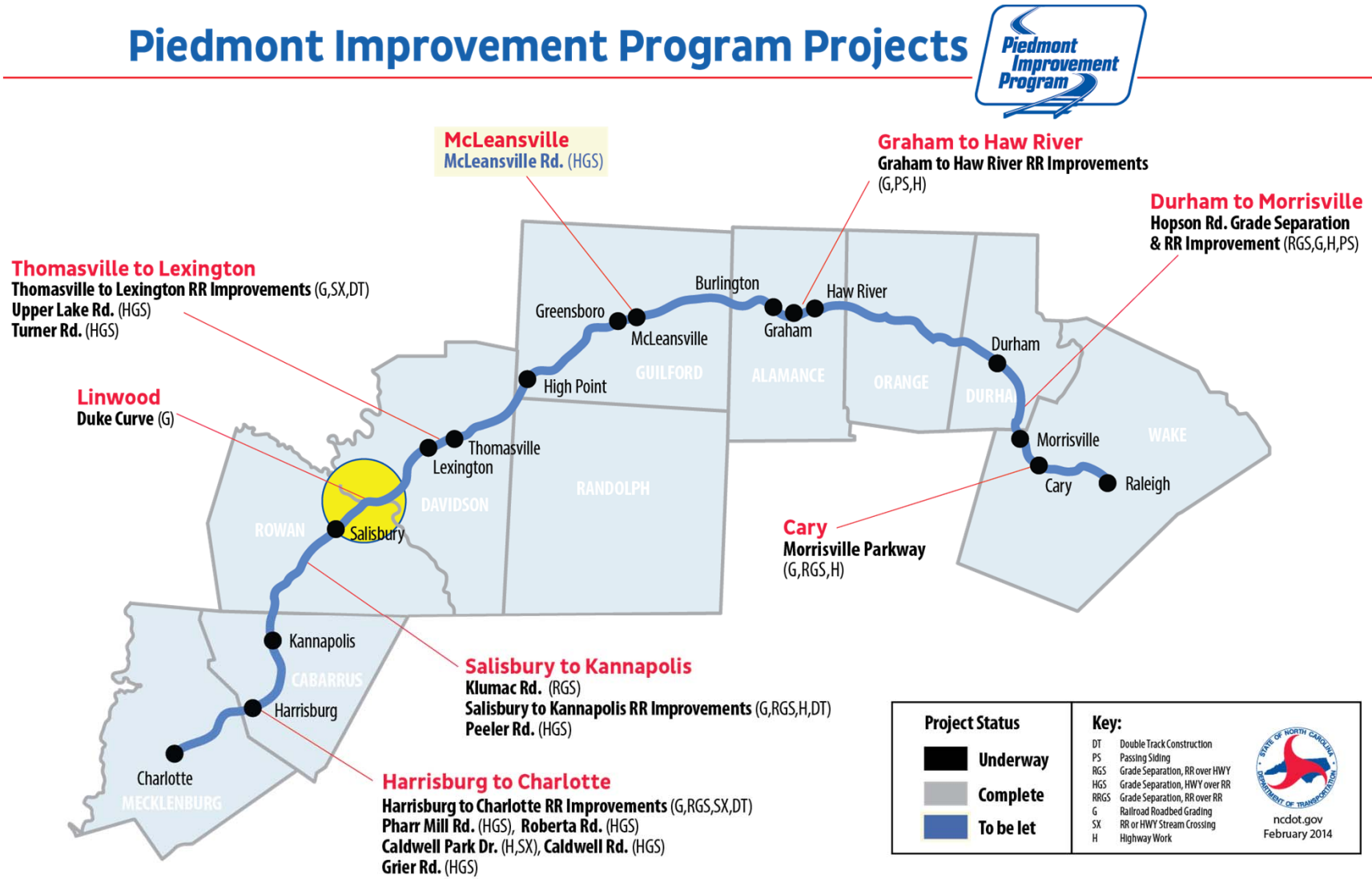

C-4901 Turner Road Grade Separation Bridge Construction
2014/01/08


C-4901 Upper Lake Road Bridge Construction
2014/01/08


C-4901 Upper Lake Grade Separation Bridge Construction
2014/01/08


C-4901 Double Track Grading
2014/01/08

Piedmont Improvement Program Projects

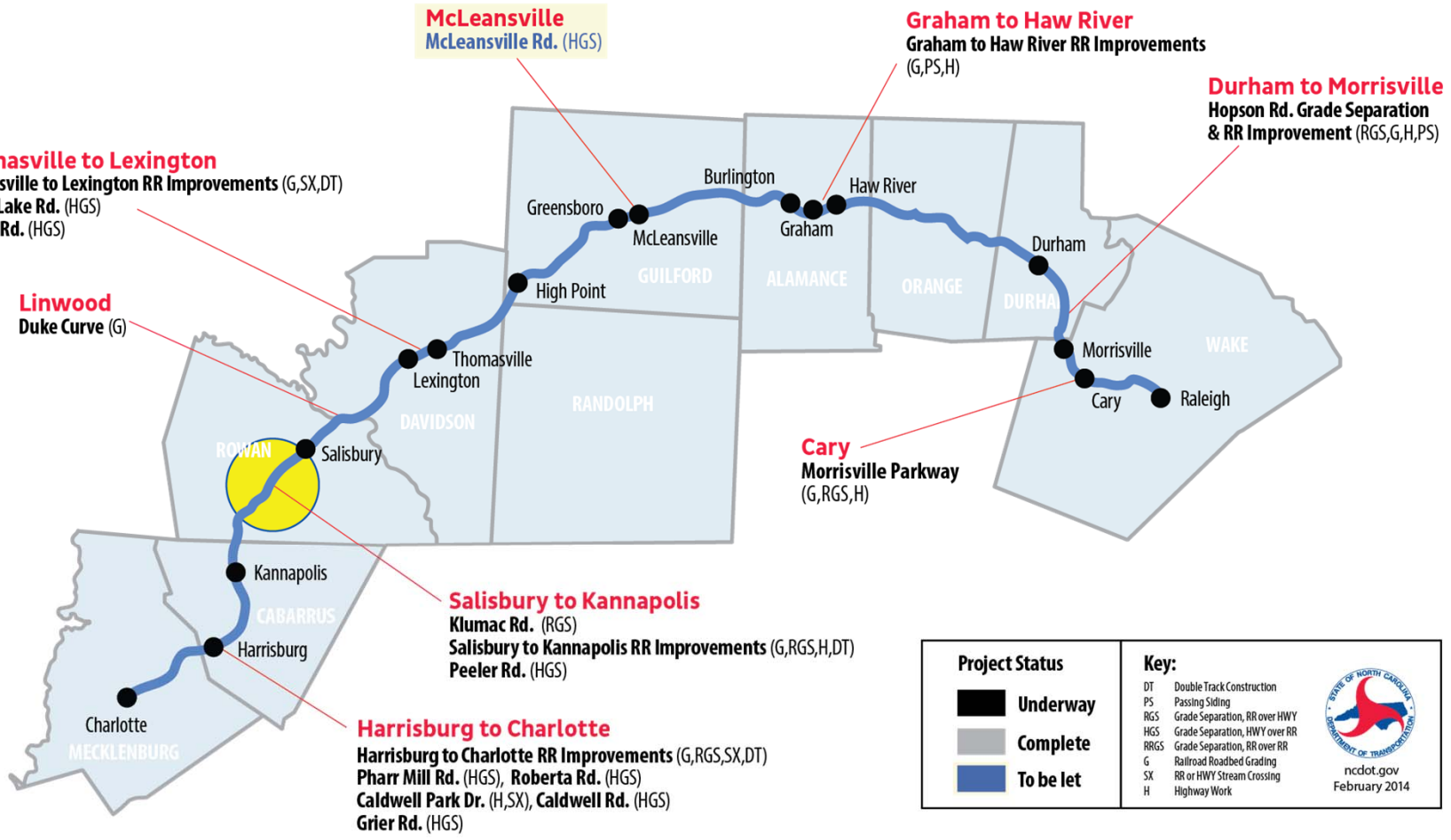



I-2304 AE Duke Curve Realignment, Sub ballast
2014/01/07


I-2304 AE Duke Curve Realignment, Sub ballast
2014/01/07

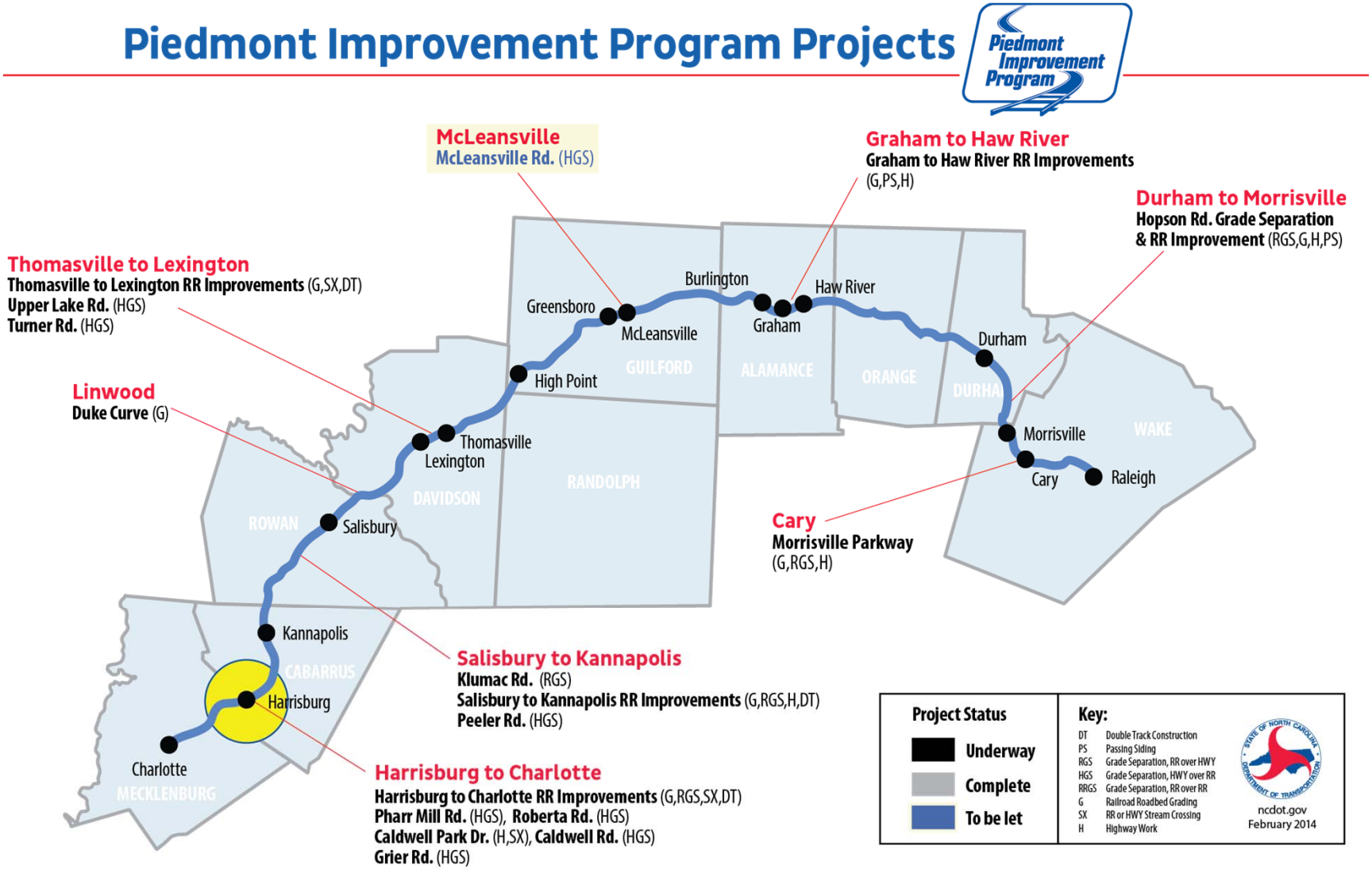

I-2304 AE Duke Curve Realignment, Sub ballast
2014/01/07

Piedmont Improvement Program Projects



U-3459 Klumac Road Detour Track Roadbed

Piedmont Improvement Program Projects




P-5208 Roberta Road Grade Separation Construction
2013/12/05


P-5208 Caldwell Road Grade Separation Construction
2013/12/07


P-5208 Double Track Clearing
2013/12/19

P-5208 Double Track Clearing

2013/12/19

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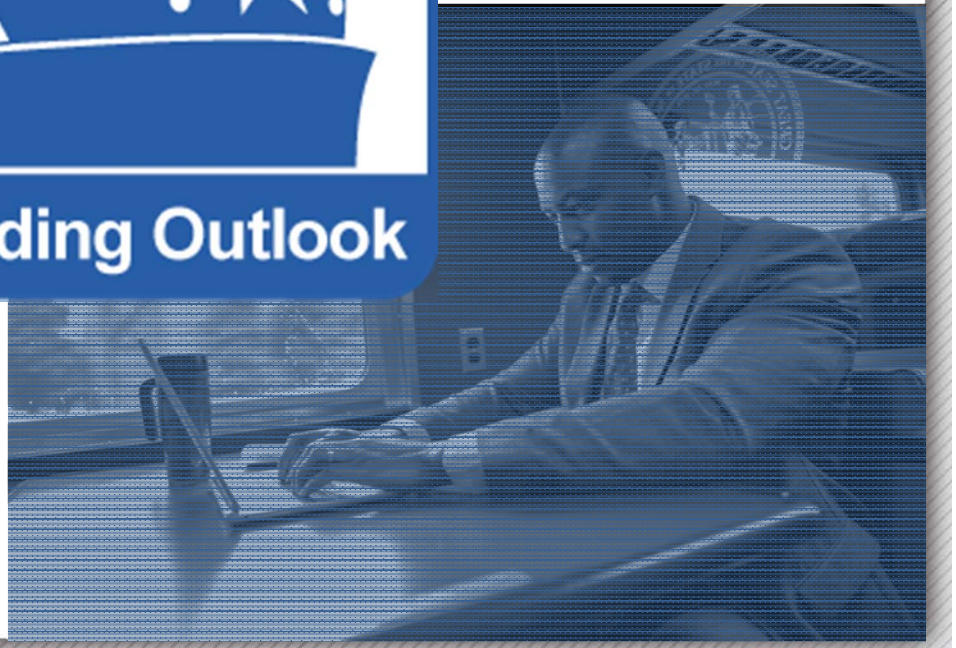
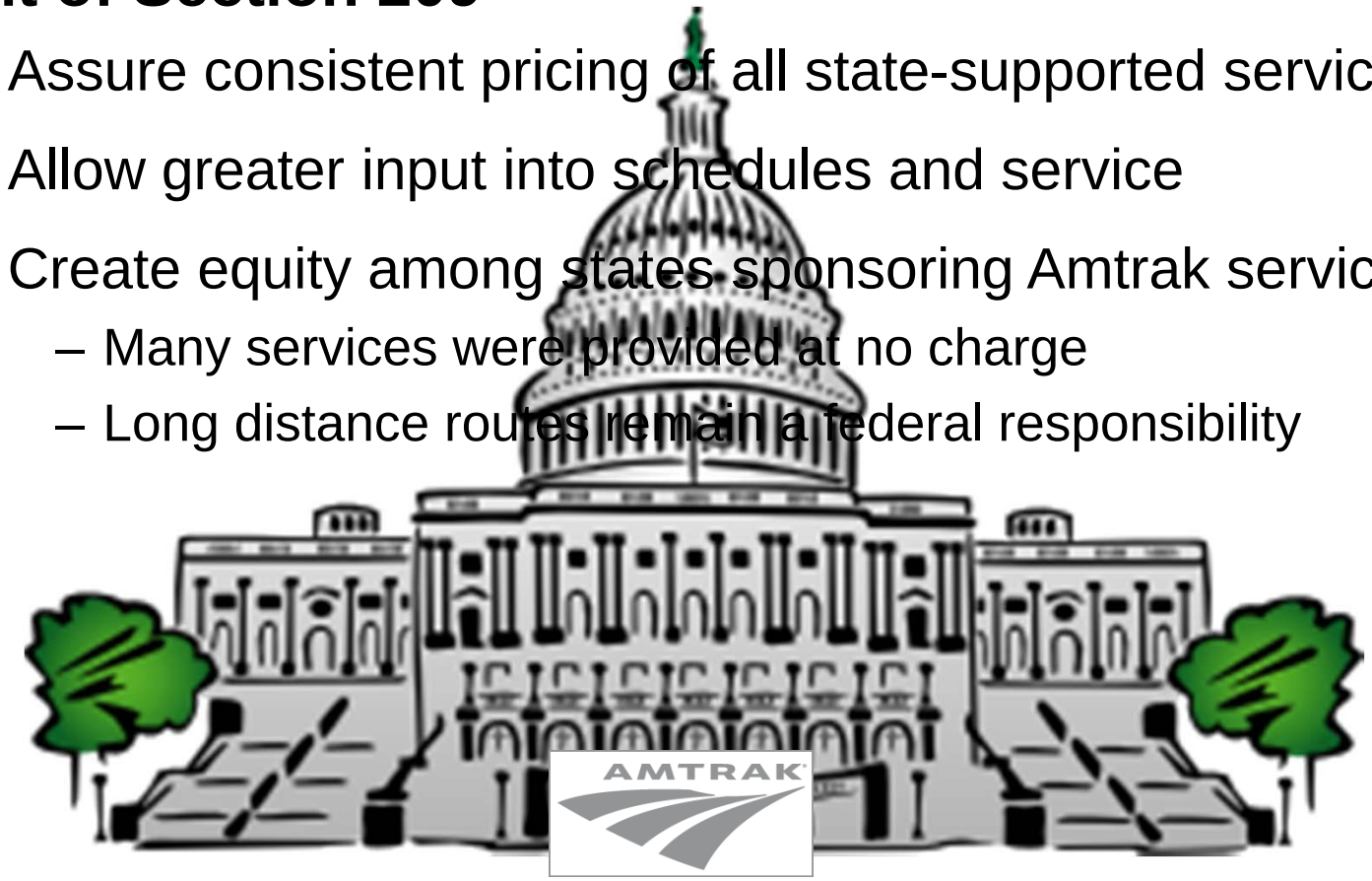


Intercity Funding Outlook

Passenger Rail Investment & Improvement Act of 2008 (PRIIA) Section 209

Intent of Section 209

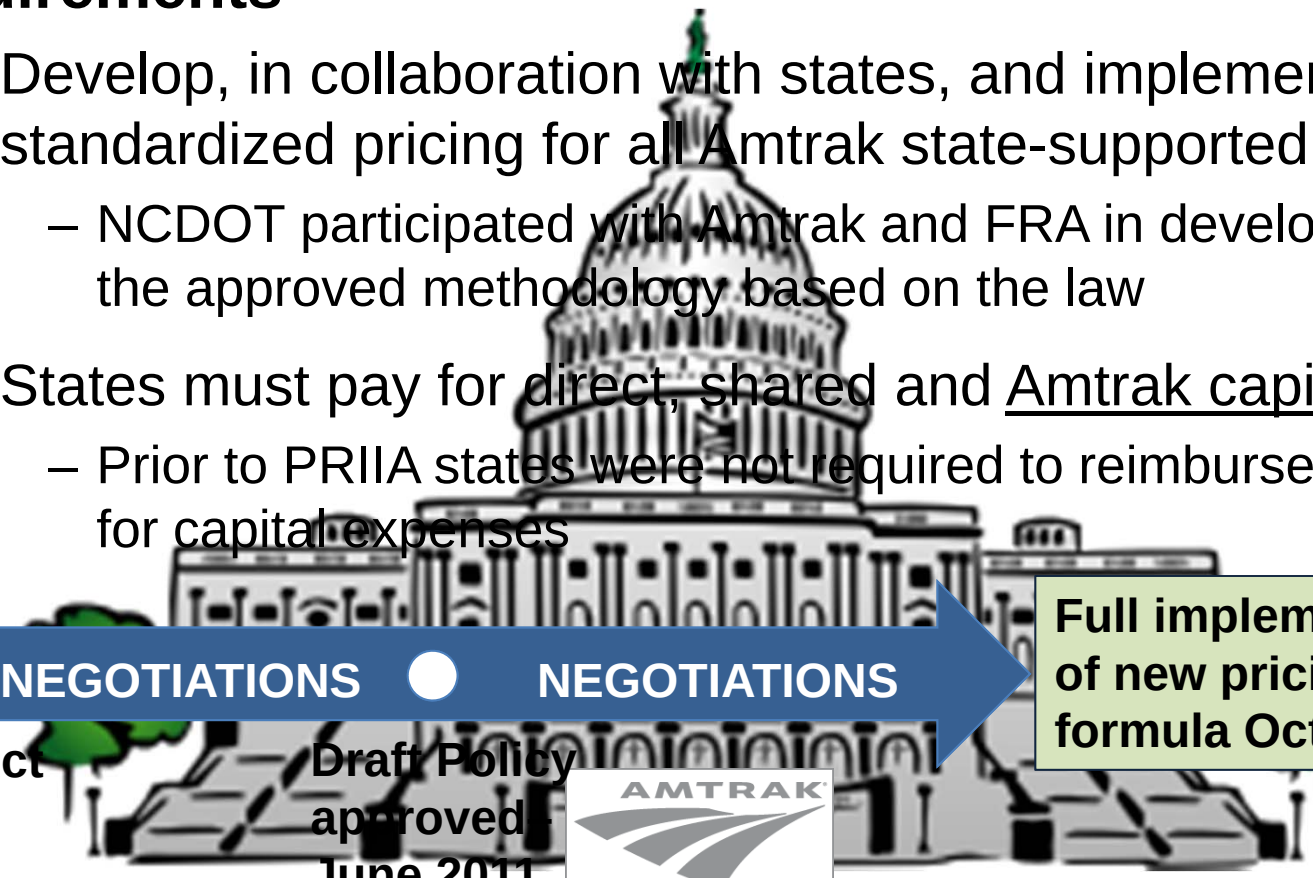
- Assure consistent pricing of all state-supported services
- Allow greater input into schedules and service
- Create equity among states sponsoring Amtrak services
  - Many services were provided at no charge
  - Long distance routes remain a federal responsibility



Passenger Rail Investment & Improvement Act of 2008 (PRIIA) Section 209

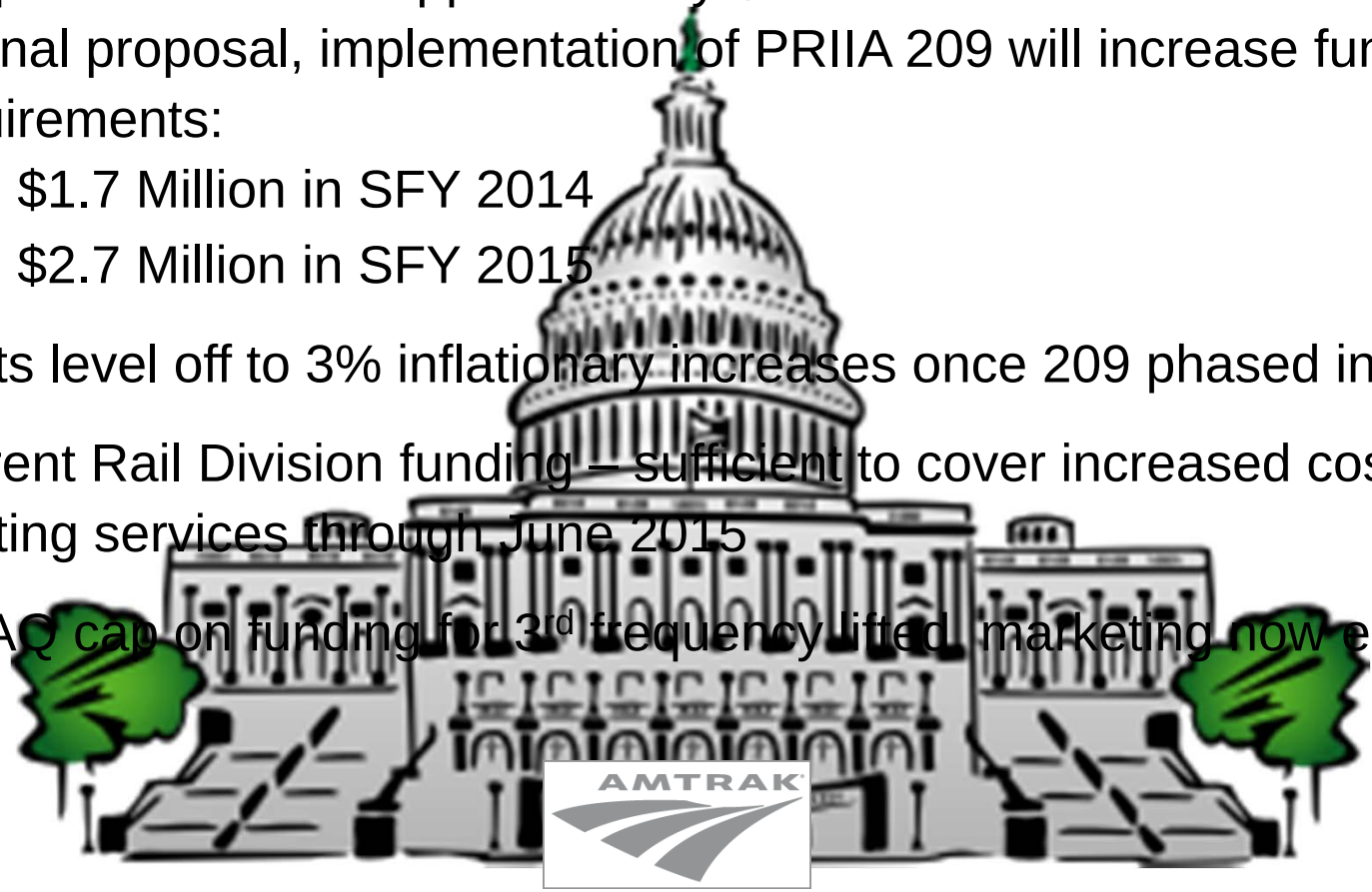
Requirements

- Develop, in collaboration with states, and implement standardized pricing for all Amtrak state-supported services
  - NCDOT participated with Amtrak and FRA in development of the approved methodology based on the law
- States must pay for direct, shared and Amtrak capital costs
  - Prior to PRIIA states were not required to reimburse Amtrak for capital expenses



Impact of PRIIA

- Despite reduction of approximately $1 Million from Amtrak's original proposal, implementation of PRIIA 209 will increase funding requirements:
  - $1.7 Million in SFY 2014
  - $2.7 Million in SFY 2015
- Costs level off to 3% inflationary increases once 209 phased in
- Current Rail Division funding – sufficient to cover increased cost for existing services through June 2015
- CMAQ cap on funding for 3rd frequency lifted, marketing now eligible



CMAQ Funding Extended

- Previous time limitation (3 years) governing the use of CMAQ for *Piedmont* Operations support has been removed
  - Funds can now be used on an on-going basis without time limitation
  - Eligibility extended through the Omnibus Consolidated Appropriations Act of 2014
  - $3 Million (annually) will continue to be used to support the 3rd Frequency

Piedmont Route Performance

		Projected	
Piedmont Service	SFY2013	SFY2014	SFY2015
Passenger Revenue	$3,295,597	$3,400,000	$3,500,000
CMAQ	$3,054,059	$3,300,000	$3,300,000
State Rail Funds (Budgeted)	$6,370,544	$8,576,420	$9,297,882
Total Revenue	**$12,720,200**	**$15,276,420**	**$16,097,882**
Amtrak	$5,259,271	$6,623,342	$7,155,979
Fuel	$1,310,598	$1,591,524	$1,639,270
Mechanical	$2,842,601	$3,240,000	$3,315,816
Insurance	$1,268,686	$1,307,924	$1,397,162
Total Direct Expense	**$10,681,156**	**$12,762,790**	**$13,508,226**
Passenger Program Overhead & Contingency*	**$2,039,044**	**$2,513,630**	**$2,589,656**
Total Direct & Overhead Exp. w/Contingency	**$12,720,200**	**$15,276,420**	**$16,097,882**
Fare Box Recovery Ratio	**31%**	**27%**	**26%**
Passengers	**169,415**	**174,500**	**180,000**

*Includes Station & Facility Rent, NCDOT Station Attendant Program, NS Maintenance Payments and Administrative

Carolinian Route Performance

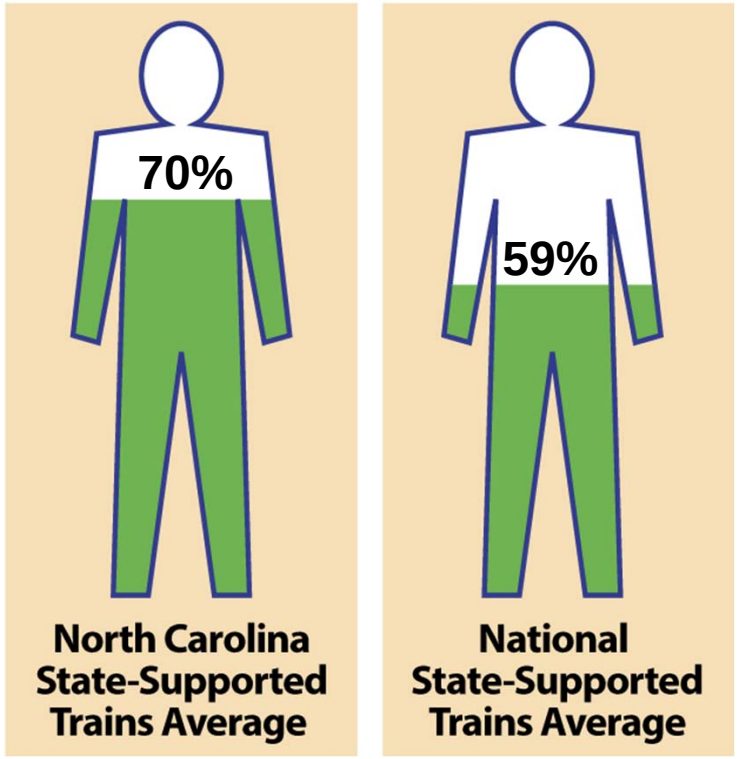
		Projected	
Carolinian Service	SFY2013	SFY2014	SFY2015
Passenger Revenue	$16,543,385	$16,400,000	$16,443,000
CMAQ		$600,000	$600,000
State Rail Funds (Budgeted)	$2,052,291	$3,072,455	$4,872,731
Total Revenue	**$18,595,676**	**$20,072,455**	**$21,915,731**
Amtrak	$17,746,440	$18,999,178	$20,712,026
Total Direct Expense	**$17,746,440**	**$18,999,178**	**$20,712,026**
Passenger Program Overhead & Contingency*	**$849,236**	**$1,073,276**	**$1,203,705**
Total Direct & Overhead Exp. w/Contingency	**$18,595,676**	**$20,072,455**	**$21,915,731**
Fare Box Recovery Ratio**	**93%**	**89%**	**85%**
Passengers	**316,416**	**313,000**	**316,000**

*Includes Station & Facility Rent, NCDOT Station Attendant Program, NS Maintenance Payments and Administrative

**Fare Box Recovery Ratio excludes Amtrak Equipment Capital Charge

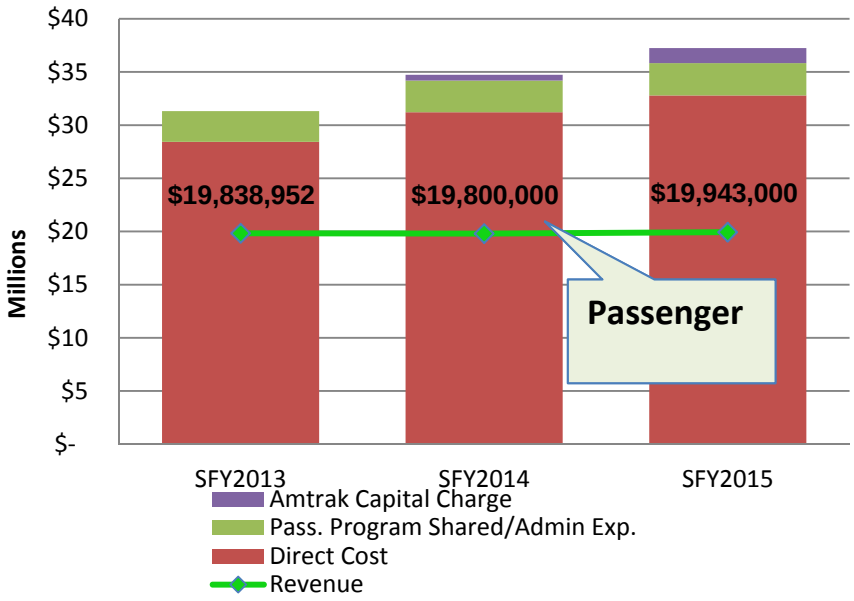
How NC Compares to National Average

Farebox Recovery 2013



Combined State-Supported Services

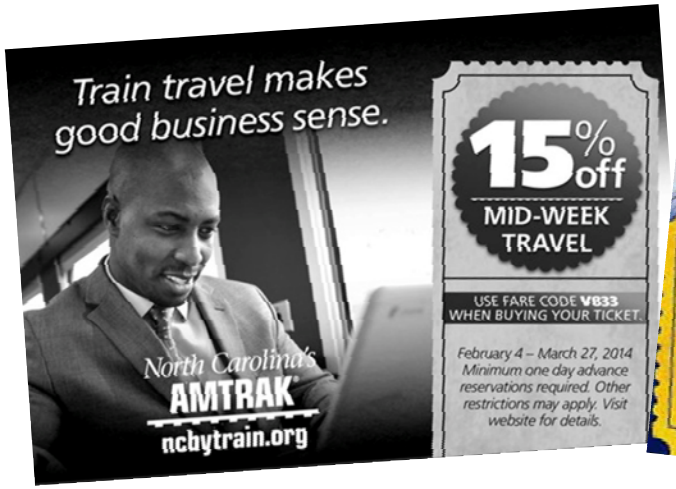
Calculated as Passenger Revenue / Direct Costs



Revenue shown does not include fare strategy adjustments under development

Recently Implemented Cost Reductions and Enhancements

- Amtrak for High Point and Salisbury station attendants ($44K)
- Reduced 1-800 BYTRAIN Call center costs ($40K)
- Enhanced marketing efforts



Cost Saving/Revenue Generating Measures Under Consideration for FY 2014-15

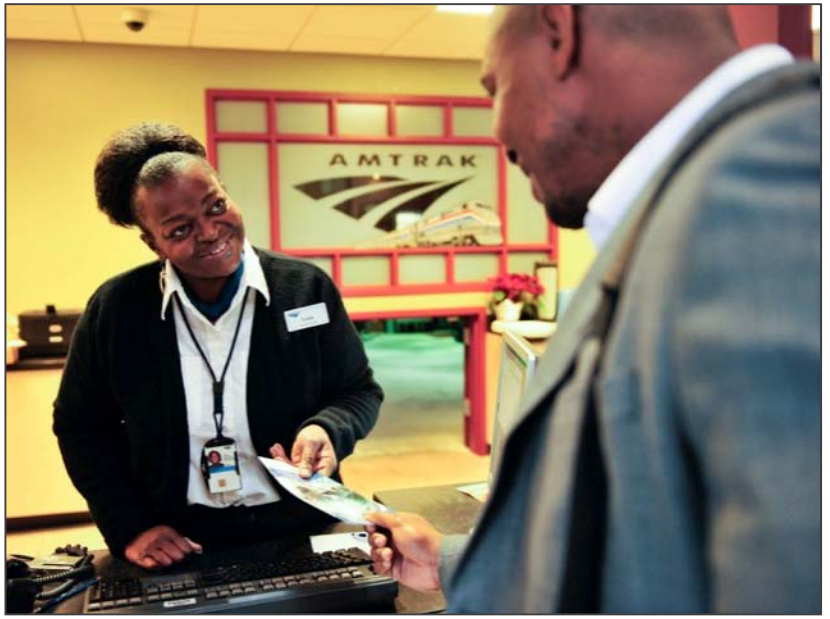
Measures could generate $500K – $800K

- Fare Increases, Market Pricing – FY2014 ($200K to $300K)
- Crew and staffing levels – FY 2015 ($150K to $250K)
- Reservation Center and Ticket Sales Strategies – FY 2015 ($150K to $250K)
- Piedmont WiFi Service – FY 2015 (TBD, Currently in Procurement)
- Liability insurance options – FY 2015 (TBD)

Rail Operations Cost Savings Alternatives Studies

Passenger Program Efficiency Goals:

- Identify ways to reduce costs and improve performance
- Implement short and intermediate-term fare strategies
- Explore additional federal funding opportunities for services



Rail Operations Cost Savings Alternatives Studies (KPMG)

Study Underway – to be complete Spring 2014

- Assess and benchmark performance
- Evaluate opportunities to reduce costs by increasing competition for services
- Identify alternative contract structure and associated pros and cons
- Identify additional non-state funding/revenue enhancement opportunities


FREIGHT RAIL & RAIL CROSSING
SAFETY IMPROVEMENT FUND

Freight Rail & Rail Crossing Safety Improvement Fund

Established 2013 under NCGS §124-5.1, funded by annual NCRR cash dividends

- Eligible freight and rail-highway crossing safety project types include:
  - Track & associated infrastructure improvements
  - Grade crossing protection, elimination, hazard removal, and signalization improvements
  - Improving rail access to industrial, port, & military facilities and for freight intermodal facility improvements
- Short line railroads are eligible

NCRR Dividend Status

$19.2M Paid to State

- Dividends allocated to NCDOT Rail Projects
- Funds to be allocated to projects based on:
  - Eligibility
  - Needs
  - Prioritization methodologies
- Rail Division coordinated to identify project categories and establish tentative category allocations
- $3.5M in budget for SFY 2015

Project Categories & Needs

- **Identified projects/programs with limited funding availability**
- **State grant programs** – Short line Infrastructure Assistance Program (SIAP) & Rail Industrial Access Program (RIAP)

Track & Infrastructure Improvements	Grade Crossing Protection, Elimination & Signalization Improvements	Rail Access Improvements
– Short Line Infrastructure Assistance – Class I Infrastructure Projects – Federal Grant Matching Funds	– Closures – Corridors – Signals – Signage – Surfaces	– Discretionary Grant Matching Funds – Rail Industrial Access – Military – Ports – Industry

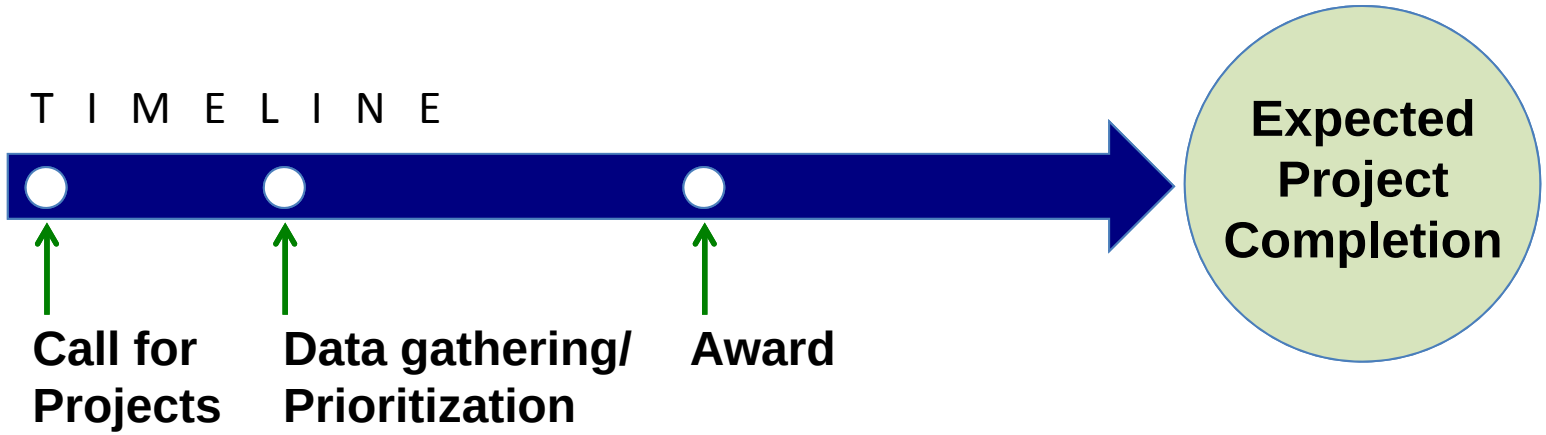
Project Categories & Needs

- **State grant programs**
  - **Short Line Infrastructure Assistance Program (SIAP)**
    - Traditionally funded by annual state legislative allocation
    - Previous annual allocations have ranged from $0 to $2 million
    - FR&RCSI is the new source of funding in FY14 & FY15
  - **Rail Industrial Access Program (RIAP)**
    - Traditionally funded by annual state legislative allocation
    - Previous annual allocations have ranged from $119k to $1 million
    - Provides funds for construction of rail spurs to allow industries new or expanded rail access

- **Bringing jobs to people**
- **Diverting freight from highways to rail**

FR&RCSI Project Programming

- Solicited projects from Norfolk Southern, CSX, NC Ports Authority, short line railroads
- Recommended fund allocations by category based on anticipated project needs in each category
- Final project list to be determined based on appropriate established prioritization methodologies for each project type.



Recommended Fund Allocations

Project Category	Project Type	Preliminary Estimates	
Track Infrastructure & Improvements		Short Line	$3M
		Potential Federal Match and Other Projects	$5.152M
Total			**$8.152M**
Grade Crossing Protection, Elimination & Signalization Improvements		Closure	$2.09M
		Corridor	$1.6M
		Crossing Assistance	$2.8M
Total			**$6.490M**
Rail Access Improvements		Industrial Access	$1.25
		Military/Port/Industry	$3.08
Total			**$4.558**
Grand Total			**$19.2M**

Established Prioritization Process

At-Grade Crossing Closure Projects

1. ID unsafe/redundant crossings based on inventory
2. Review sites for appropriateness of closure
3. Recommend crossing closures
4. Approval by municipality (municipal crossings) or Technical Review Committee and Board of Transportation (state road crossings)
5. Funding authorization based on construction readiness, cost benefit and funding availability

Established Prioritization Process

Crossing Signalization Projects

- **Crossings with crashes:**
  - Benefit/Cost of at least 3:1 submitted to Transportation Mobility & Safety Division (TMSD)
  - TMSD prioritizes based on traffic crash data and analysis
  - Funding allocated from MAP-21, HSIP, other funds
- **All crossings:**
  - High Investigative Index crossings prioritized by Rail Division and Regional Traffic Engineers based on traffic data and local knowledge
  - Prioritized regional lists developed by Rail Division's Project Prioritization Committee based on:
    - Appropriateness of existing warning devices for conditions
    - Cost-effectiveness
    - Physical site constraints
    - Community support
    - Availability of Section 130 funds

Established Prioritization Process

Short Line Infrastructure Assistance Program (SIAP)

- Comprehensive Data-Driven Grant Application
- Numerical project score calculated based on over 70 data elements related to:
  - Infrastructure condition
  - Financial need
  - Project benefits
- Final prioritization based on:
  - Project score
  - Historical SIAP funding
  - Prior SIAP project performance

Short Line customers are often large, rural employers and often the only employer in the area.

Prioritization

Short Line Infrastructure Assistance Program (SIAP)

SIAP Scoring Factors	Category	Minimum Points	Maximum Points
	Shipper Benefits	0	33
	Direct Project Benefits	0	45
	Safety Benefits	0	60
	Abandonment Impacts	0	20
	Employment	0	12
	Other Benefits	0	34
	Industrial Site Benefits	0	5
	County Tier	0	5
	Transportation Benefits	0	10
	Financial Need	-170	91
	Track Condition and Volume	0	35

Established Prioritization Process

Rail Industrial Access Program (RIAP)

- Project score based on the industry's:
  - Projected employment
  - Capital investment
  - Projected annual carloads
  - Location – distressed county or region
  - Preservation of a short line railroad

- Percent match ranges from 35% to 50%, depending on score
- NCDOT match is capped, historically between $95,000 and $250,000 – based on total RIAP funds available

Prioritization

RIAP Scoring Factors

Employment in first 2 years of operation	
50-99 employees	**4 pts**
100-199 employees	**8 pts**
200-299 employees	**12 pts**
300+ employees	**16 pts**
Capital investment in first 2 years of operation	
$5 - $14 million	**2 pts**
$15 - $24 million	**4 pts**
$25 - $34 million	**6 pts**
$35 million +	**8 pts**
Annual rail carloads	
50-199	**2 pts**
200-349	**4 pts**
350-499	**6 pts**
500+	**8 pts**
Distressed County or Appalachian Regional Commission-eligible	
Yes	**2 pts**
No	**0 pts**
Short Line Preservation	
Yes	**2 pts**
No	**0 pts**

Rail Industrial Access Program (RIAP)

Percent of Total Project Costs Funded	
35+ points	**50%**
24-34 points	**45%**
16-23 points	**40%**
8-15 points	**35%**
Less than 8 points	**Not Eligible**

FR&RCSI Program Goals

- Making North Carolina's railroads safer
- Meeting the needs of existing rail customers
- Addressing needs of prospective rail customers
- Building to meet the needs of future rail customers in small urban and rural areas

Thank You.

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