



GREATER CHARLOTTE REGIONAL FREIGHT MOBILITY PLAN

STEERING COMMITTEE MEETING #2

DECEMBER 9, 2015

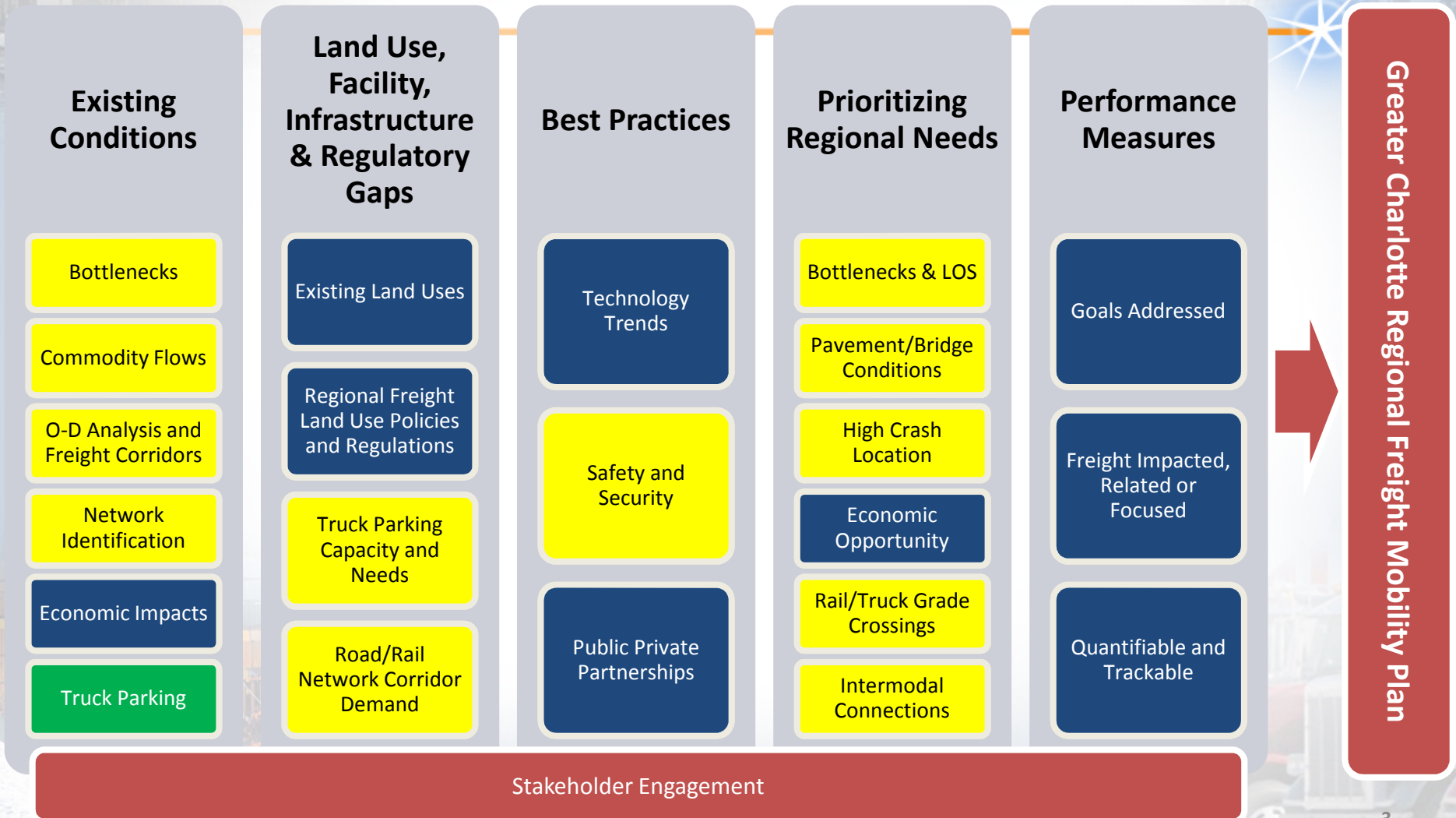


Work in Progress Notes

- Trucking
 - Working with statewide model for truck volumes and VMT
 - ATRI working to identify bottlenecks
- Railroads—Mapping of projects
- Aviation—Working to identify air cargo tonnages and values at each airport
- Commodity Flows—Working on refining to smaller geography
- Economic Impacts—Will begin to quantify based on commodity flows and values

Plan Development Process

 Complete
 Working



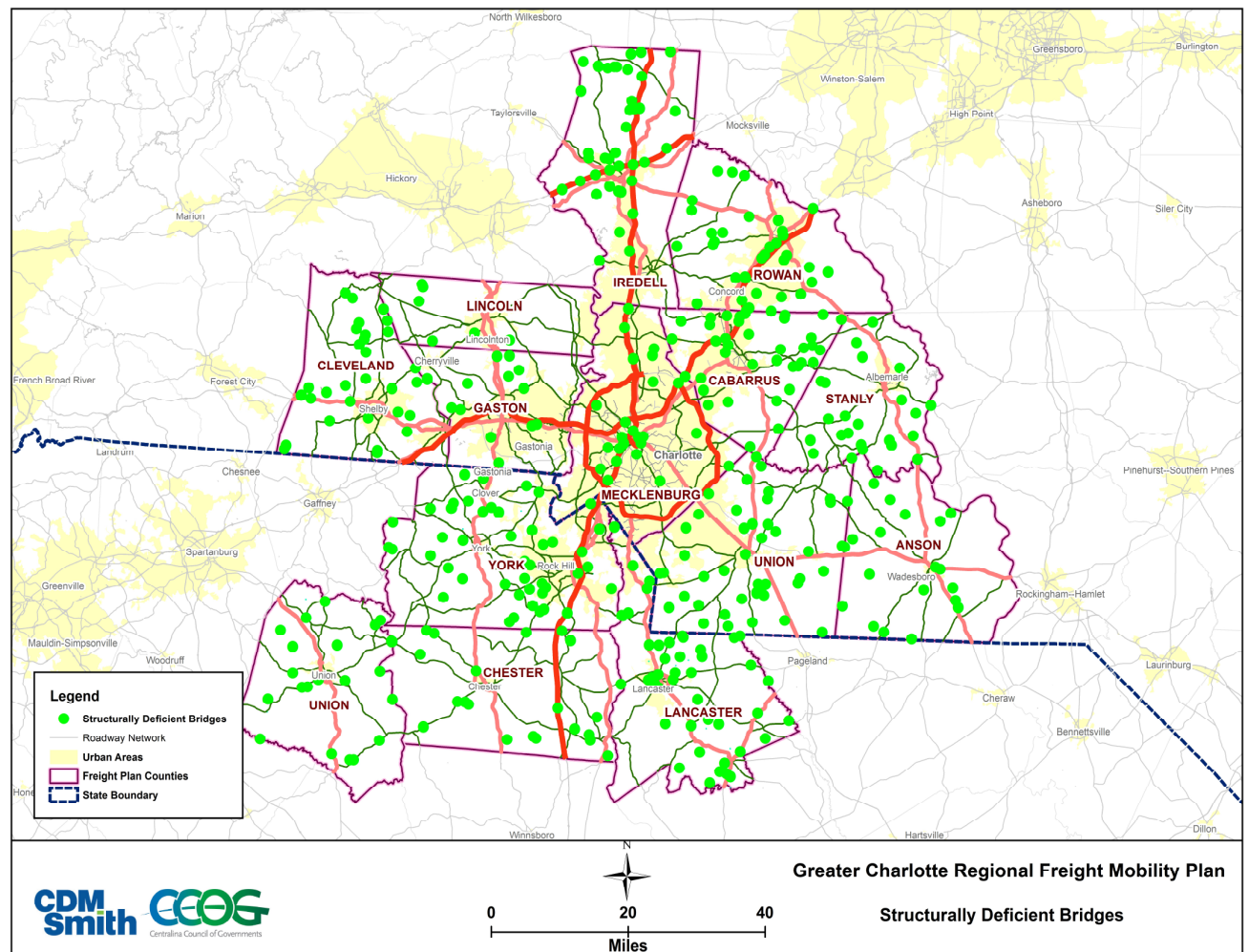
The background of the slide is a collage of transportation-related images. In the top left, a freight train with a locomotive numbered 2800 is visible. In the top right, the nose of a large commercial airplane is shown. In the bottom left, the bow of a cargo ship is depicted. In the bottom right, a red semi-truck is visible. A horizontal orange line runs across the upper portion of the slide, and a blue starburst graphic is located near the airplane's nose. The text is centered in the lower half of the slide.

EXISTING CONDITIONS—BRIDGES, PARKING AND SAFETY

Bridges—Structurally Deficient

- North Carolina: 282 Bridges
- South Carolina: 139

A structurally deficient bridge typically requires significant rehabilitation or replacement to address the deterioration of one or more of its elements





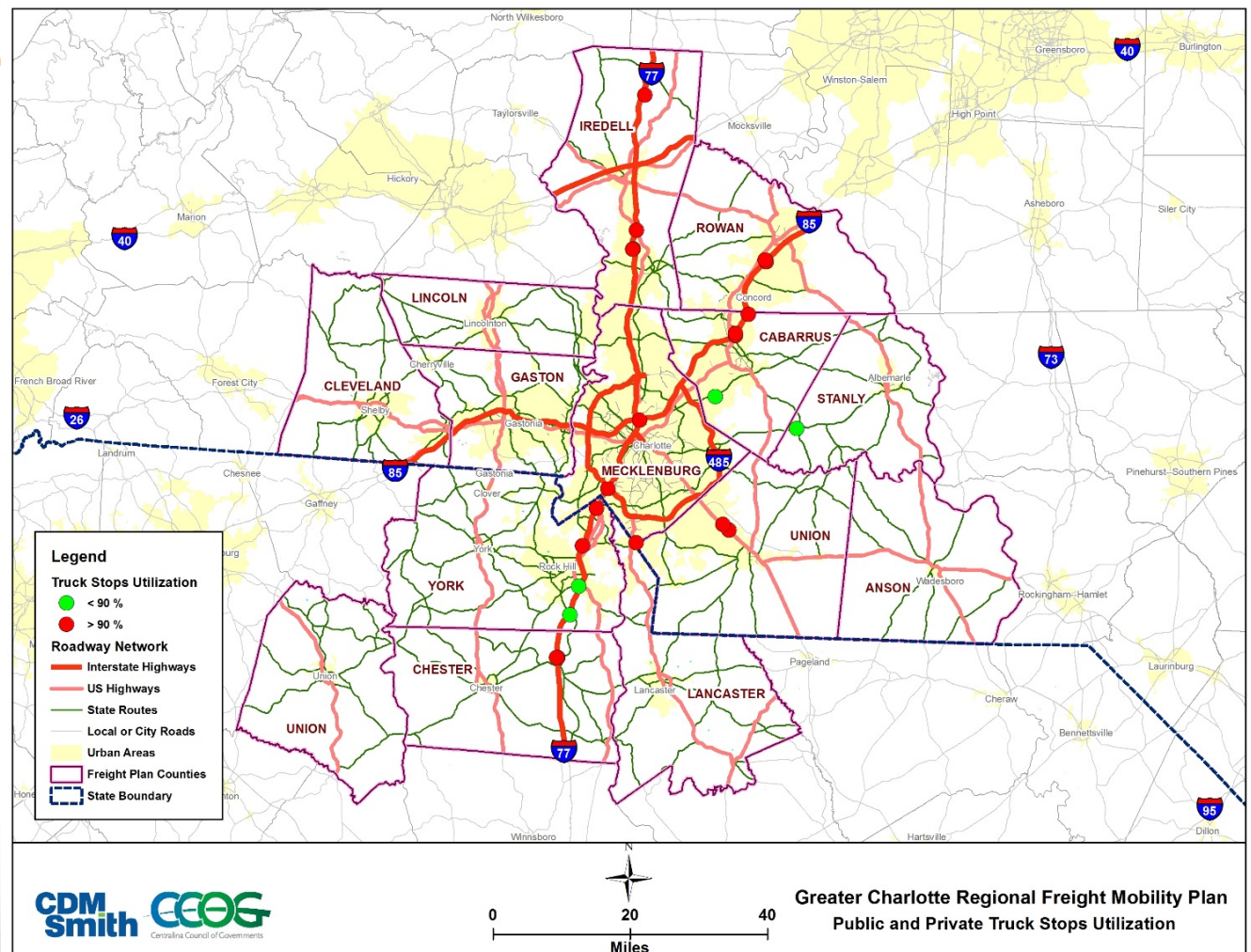
Truck Parking Demand

- Observations
 - Heavy utilization of truck parking facilities along I-77 between Exit 65 and Exit 36 in Iredell County.
 - Trucks parked on multiple I-77 interchange and rest area ramps.
 - Heavy utilization of I-85 truck parking facilities from Exit 71 in Rowan County to Exit 39 in Mecklenburg.
 - Trucks observed being parked on shoulders, ramps and side streets.
 - Heavy utilization of I-77 facilities south of the city through Chester County, SC.

Truck Parking Utilization

Of the 26 truck parking locations, only 5 are less than 90% utilized.

Jason's Law report driver survey notes that North Carolina and South Carolina are among those states with truck parking shortages.



Truck Parking Demand

| Facility Name | County | State | Truck Parking Capacity (spaces) | Trucks Parked | Utilization |
|---|-------------|-------|---------------------------------|---------------|-------------|
| Union Grove Quick Stop (BP) | Iredell | NC | 16 | 16 | 100% |
| Rest Area: Iredell County, I-77 Southbound | Iredell | NC | 10 | 10 | 100% |
| Rest Area: Catawba County, I-40, Westbound | Catawba | NC | 20 | 20 | 100% |
| Rest Area: Catawba County: I-40, Eastbound | Catawba | NC | 20 | 20 | 100% |
| Country Market #9 (Exxon) | Lincoln | NC | 40 | 29 | 73% |
| Rest Area: Iredell County, I-77 Northbound | Iredell | NC | 16 | 16 | 100% |
| Wilco Hess #0357 | Iredell | NC | 90 | 88 | 98% |
| Rest Area: Iredell County, I-77 Southbound | Iredell | NC | 16 | 16 | 100% |
| Wilco Hess #0364 | Rowan | NC | 70 | 70 | 100% |
| Love's Travel Stop #507 | Rowan | NC | 85 | 84 | 99% |
| Pilot Travel Center #056 | Cabarrus | NC | 48 | 48 | 100% |
| Rest Area: Cabarrus County, I-85 Southbound | Cabarrus | NC | 22 | 22 | 100% |
| Rest Area: Cabarrus County, I-85 Northbound | Cabarrus | NC | 21 | 21 | 100% |
| Pilot Travel Center #275 | Mecklenburg | NC | 24 | 24 | 100% |
| Welcome Center/Rest Area: Mecklenburg County, I-77 Northbound | Mecklenburg | NC | 16 | 16 | 100% |
| Welcome Center: Southbound I-77 Fort Mill | York | SC | 14 | 14 | 100% |
| Love's Travel Stop #333 | Lancaster | SC | 50 | 50 | 100% |
| Southern Pride (Valero) | Lancaster | SC | 20 | 15 | 75% |
| Wilco Hess #0906 | Lancaster | SC | 30 | 30 | 100% |
| Crenco Auto/Truck Stop #8 (Exxon) | Lancaster | SC | 40 | 32 | 80% |
| Rest Area: Chester County, SC I-77 Southbound | Chester | SC | 14 | 14 | 100% |
| Rest Area: Chester County, SC I-77 Northbound | Chester | SC | 14 | 14 | 100% |
| Grand Central Station (Shell) | Chester | SC | 120 | 120 | 100% |
| Wilco Hess #0932 | Chester | SC | 120 | 120 | 100% |
| Wilco Hess #0383 | Union | NC | 50 | 49 | 98% |
| BP #15 | Union | NC | 42 | 42 | 100% |
| Quik Chek #5 (Citgo) | Stanley | NC | 12 | 5 | 42% |
| Sam's Mart (Shell) | Cabarrus | NC | 15 | 4 | 27% |

The background of the slide is a collage of transportation-related images. On the left, a freight train with locomotives numbered 2800 and 2801 is visible. On the right, the nose of a large commercial airplane is shown. At the bottom, a cargo ship is depicted on the left, and a red semi-truck is on the right. A bright blue starburst graphic is positioned near the top right of the text area.

Question #1

- With most trucking parking facilities in the region fully utilized, what are the impacts to the safety of semi-truck drivers and to fellow motorists?
 - What are some infrastructure solutions that the public sector can provide?
 - What are solutions that private industry can provide?

Truck Crash Statistics

Frequency

| Commercial Vehicle and All Motor Vehicle Crashes (2009 -2013) | | | |
|---|----------------------------|---------------------------|-------------------------|
| Year | Commercial Vehicle Crashes | All Motor Vehicle Crashes | CMV/All Vehicle Crashes |
| 2009 | 1,172 | 51,411 | 2.3% |
| 2010 | 1,298 | 52,145 | 2.5% |
| 2011 | 1,321 | 52,172 | 2.5% |
| 2012 | 1,437 | 56,270 | 2.6% |
| 2013 | 1,398 | 59,593 | 2.3% |
| Total | 6,626 | 271,591 | 2.4% |



Truck Crash Statistics Severity

- There were 6,626 crashes involving commercial vehicles between 2009 and 2013.
 - 1.4% involved fatalities
 - 30.6% involved injuries
 - 67.2% involved property damage only (PDO)
 - Fatal and injury commercial vehicle crashes represented 0.03% and 0.72% of all motor vehicle crashes in 2013

Truck Crash Statistics

Severity

| Commercial Vehicle Crashes by Roadway Type and Severity (2009 – 2013) | | | | | |
|--|-------|--------|-------|---------|-------|
| Roadway Type | Fatal | Injury | PDO | Unknown | Total |
| Interstate | 30 | 819 | 1,808 | 6 | 2,663 |
| US Highway | 11 | 240 | 476 | 2 | 729 |
| State Primary | 15 | 178 | 311 | 3 | 507 |
| State Secondary | 8 | 139 | 243 | 6 | 396 |
| County/ Local | 12 | 581 | 1,702 | 36 | 2,331 |
| Total | 76 | 1,957 | 4,540 | 53 | 6,626 |

Truck Crash Statistics

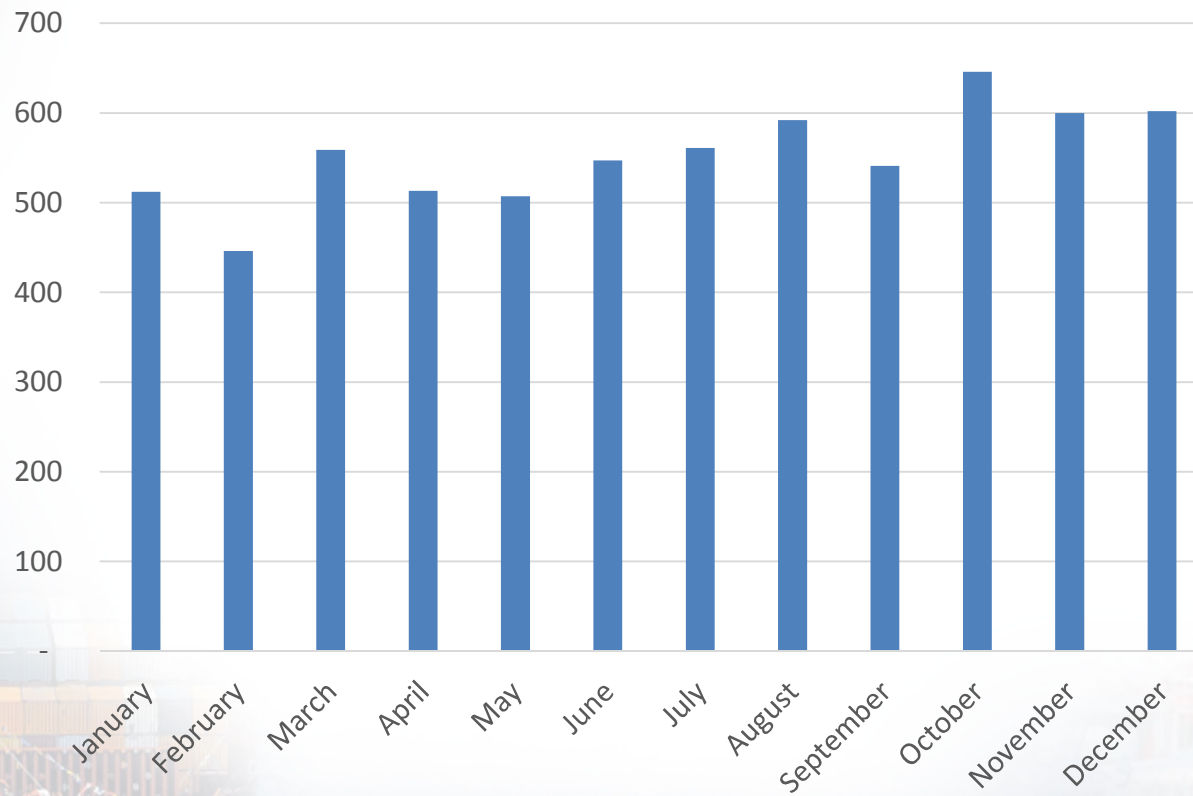
Severity

**Persons Killed and Injured by Commercial Vehicle Crashes
(2009 -2013)**

| Year | Persons Killed | Persons Injured | Total |
|--------------|-----------------------|------------------------|--------------|
| 2009 | 19 | 524 | 543 |
| 2010 | 9 | 538 | 547 |
| 2011 | 15 | 618 | 633 |
| 2012 | 18 | 638 | 656 |
| 2013 | 22 | 618 | 640 |
| Total | 83 | 2,936 | 3,019 |

Truck Crash Statistics By Month

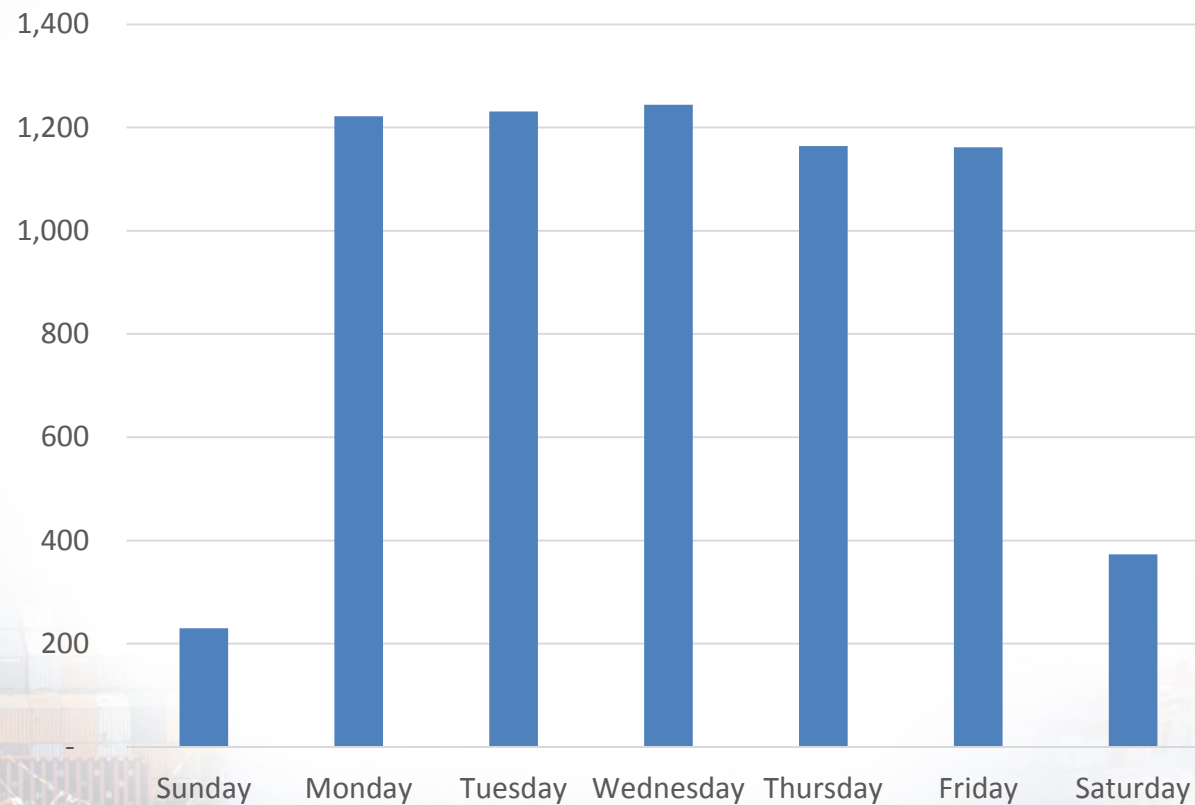
Commercial Vehicle Crashes by Month (2009 - 2013)



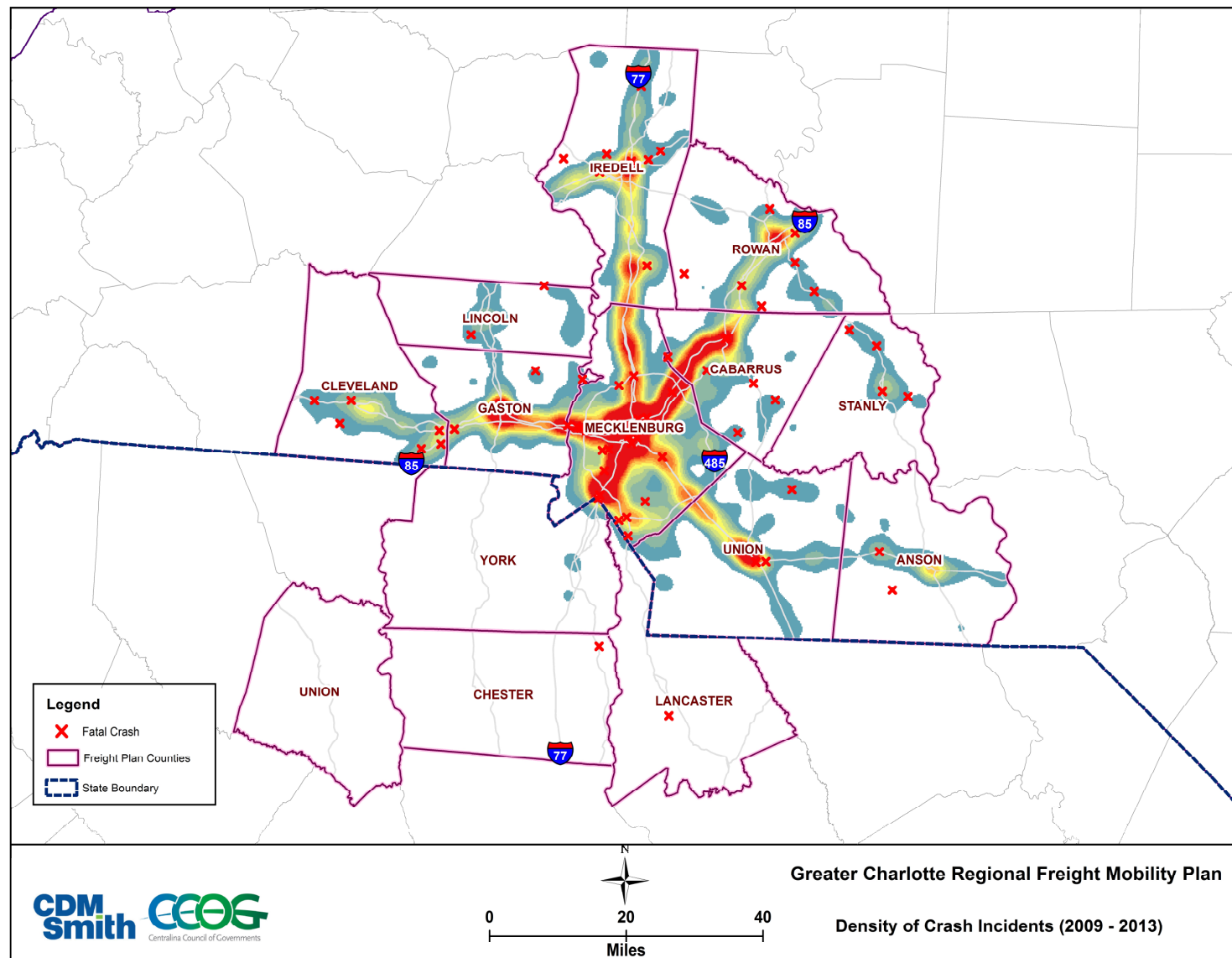
Truck Crash Statistics

By Day of the Week

Commercial Vehicle Crashes by Day of Week (2009 - 2013)



Truck Crashes





Question #2

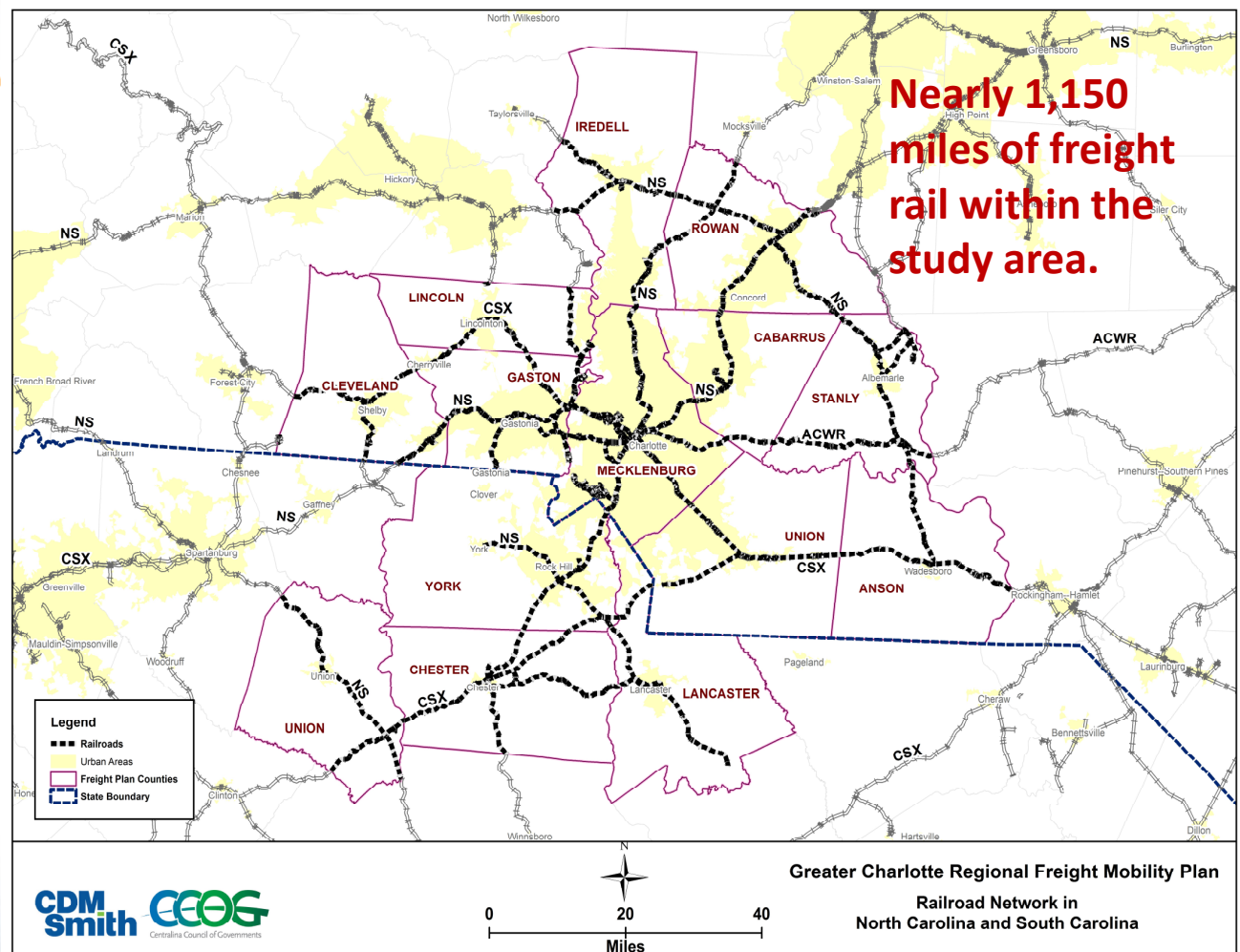
- Incident management continues to be a major issue for the movement of freight in this region. Commercial vehicles, incidentally, make up a small percentage of overall crashes in the region, but freight is delayed due to any crash.
 - What policies and/or technologies could be adopted to reduce crashes and/or improve the response and clearance times?



EXISTING CONDITIONS— RAILROADS

Region's Railroads

| Railroad Owner | Miles |
|-------------------------------------|-------|
| Aberdeen Carolina & Western Railway | 50.8 |
| Alexander Railroad Company | 13.6 |
| Carolina Coastal Railway | 13.5 |
| CSX | 335.0 |
| NCDOT | 1.0 |
| Norfolk Southern | 593.7 |
| Piedmont & Northern Railway | 15.5 |
| Winston-Salem Southbound Railway | 42.10 |
| Lancaster & Chester | 66.8 |
| Others/Unknown | 10.0 |





Railroad Inventory

- North Carolina Railroad (NCRR)
 - Owns and manages a 317-mile corridor extending from the Port of Morehead City to Charlotte.
 - Developed with both public and private investment in order to connect the eastern and western parts of North Carolina and promote development along the rail line.



Railroad Inventory

- Norfolk Southern (NS) Main line is the primary corridor paralleling I-85 through the central part of the State connecting Charlotte and Greensboro with Atlanta, GA
 - On average, 35 freight trains per day operate along this line



Railroad Inventory

- There are five other NS lines within the study area:
 - Mooresville - Winston-Salem
 - Charlotte - Mooresville
 - Charlotte - Rock Hill, SC - Columbia
 - Shelby, NC - Blacksburg, SC
 - Newport, SC - Rock Hill - Lancaster, SC
- NS also operates an intermodal facility at CLT and two bulk transfer terminals south of Charlotte.



Railroad Inventory

- CSX Transportation
 - There are three primary corridors in the study area
 - SF line (east-west): Johnson City, TN – Shelby, NC -
Lincolnton - Charlotte - Monroe - Hamlet
 - SFE line: Charlotte - Terrell, NC (serving the Marshall Power
Plant)
 - SG line: Monroe - Chester, SC
- Within the study area CSXT operates the Charlotte
Intermodal Terminal and Pinoca Yard.



Railroad Inventory

- Short Line Railroads
 - Within North Carolina, there are twenty short line railroads operating approximately 950 miles of track.
 - 213 miles within the study area



Railroad Inventory

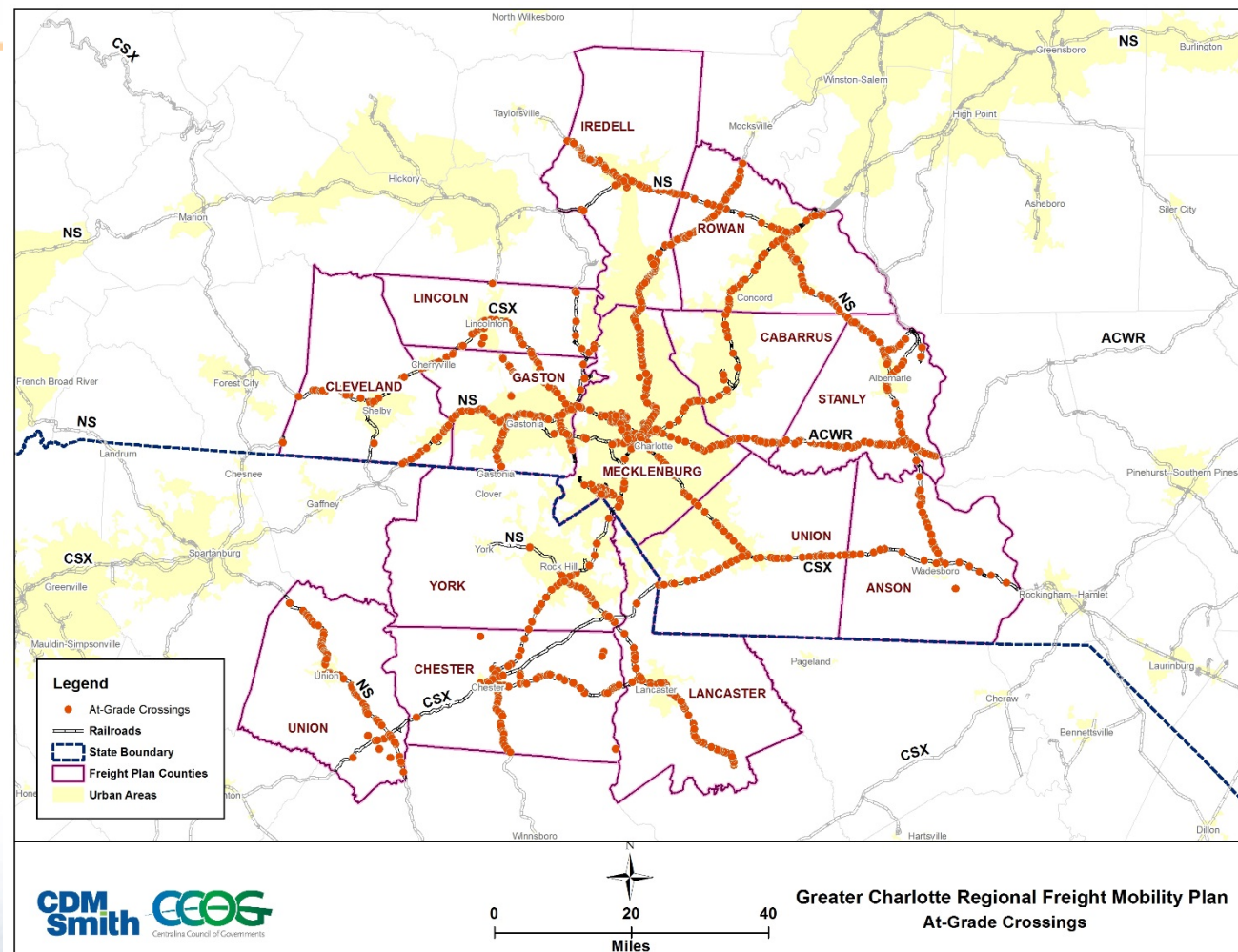
- Key Corridors and Facilities
 - Both NS and CSX have key rail corridors and intermodal yards.
 - For NS, the Main Line operating through Kannapolis, Charlotte and Gastonia serving the CLT's Intermodal Yard is one of the busier corridors along the east coast.
 - The CSX SE Line connects to the Port of Wilmington and Hamlet Yard.

Rail/Highway at-Grade Crossings

North Carolina -
1,158 crossings

South Carolina -
343 crossings

In NC, 63
accidents
occurred at 53 of
the at-grade
crossings in past 5
years.



Rail/Highway at-Grade Crossing Accidents

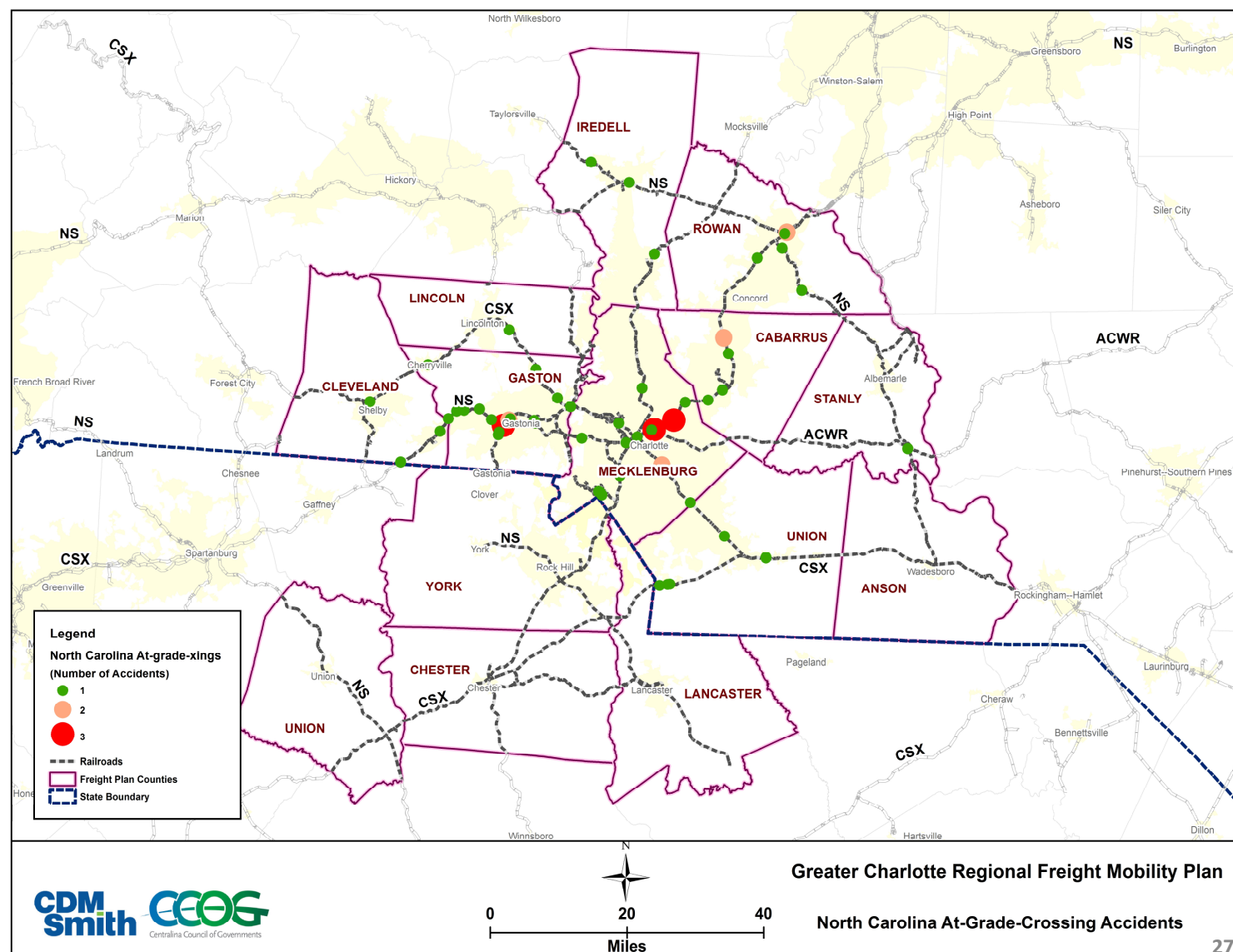
Legend
North Carolina At-grade-xings
(Number of Accidents)

- 1 (Green dot)
- 2 (Orange dot)
- 3 (Red dot)

--- Railroads
--- Freight Plan Counties
--- State Boundary

Greater Charlotte Regional Freight Mobility Plan
North Carolina At-Grade-Crossing Accidents

27

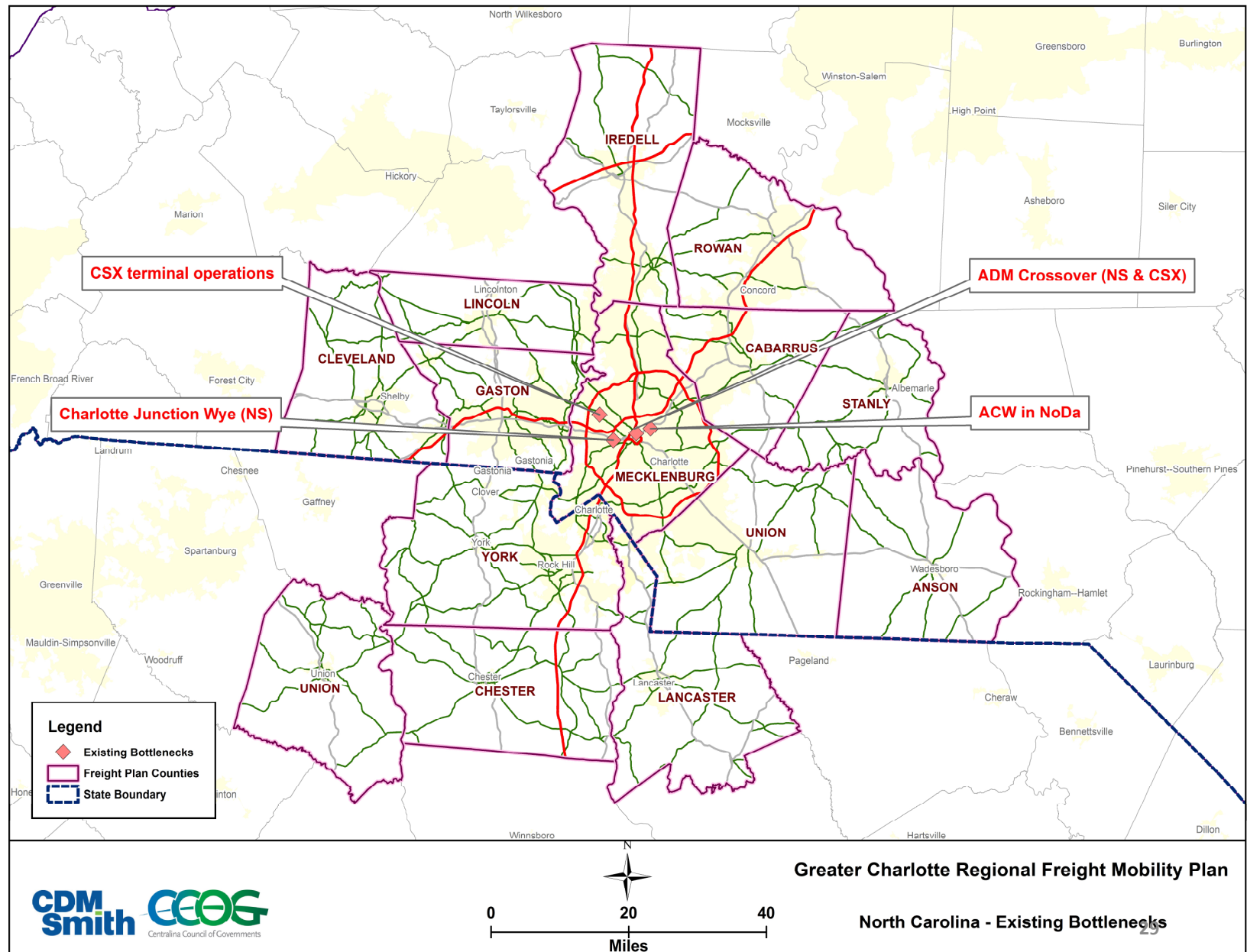




Rail Bottlenecks and Constraints

- Along both the NS Main line and the CSXT SF line at the ADM Mill in downtown Charlotte.
- The Charlotte Junction Wye, located west of downtown Charlotte, connecting the NS Main line and the R line.
- Aberdeen Carolina & Western Railway (ACW) corridor creating bottlenecks in CSXT's North Davidson yard.
- Extensive CSXT northwest yard terminal operation impacting local roadway networks (roadway bottleneck caused by rail).

Rail Bottlenecks





Question #3

- We know that freight transportation deficiencies, location of loading zones, and physical location of distribution centers have been identified as key policies that impact the movement of freight.
 - What general land use and transportation planning policies do you think are creating issues for freight mobility in the region?



Rail Capacity Improvement Projects

- Piedmont Improvement Project (PIP) improvements—Salisbury and Kannapolis
 - Constructs approximately 11 miles of second track within Rowan County. Will also grade separate the railroad tracks over Kimball Road, upgrade 6 at-grade crossings, and close 6 existing at-grade crossings.
 - Klumac Road will be grade separated
 - Peeler Road will be relocated to the north with a grade separation over the tracks and U.S. 29, with ramps to provide connection to U.S. 29.

The background of the slide is a collage of transportation-related images. On the left, a freight train with locomotives numbered 2800 and 2801 is visible. On the right, there are images of commercial airplanes at an airport gate. At the bottom, a large cargo ship is shown on the water, and a semi-truck is partially visible on the right side. The title 'Rail Capacity Improvement Projects' is centered in a large, bold, black font, with a horizontal orange line extending from the left side of the text.

Rail Capacity Improvement Projects

- PIP Improvements—Harrisburg to Charlotte
 - Constructs approximately 12 miles of second track and realigning curves within Mecklenburg and Cabarrus County.
 - Will also grade separate over the future extension of Mallard Creek Church Road and upgrade 3 at-grade crossings (City of Charlotte project).
 - Pharr Mill Road will be grade separated over the tracks and close 1 at-grade crossing.



Rail Capacity Improvement Projects

- PIP Improvements—Harrisburg to Charlotte (cont)
 - Roberta Road extension will be grade separated over the tracks and close 2 at-grade crossings.
 - Caldwell Park Drive will be extended for approximately 1 mile into Mecklenburg County and close 1 public and 3 private crossings.
 - Caldwell Road will be grade separated.
 - Grier Road will be extended with a grade separation over the tracks and close 1 at-grade crossing.



Rail Capacity Improvement Projects

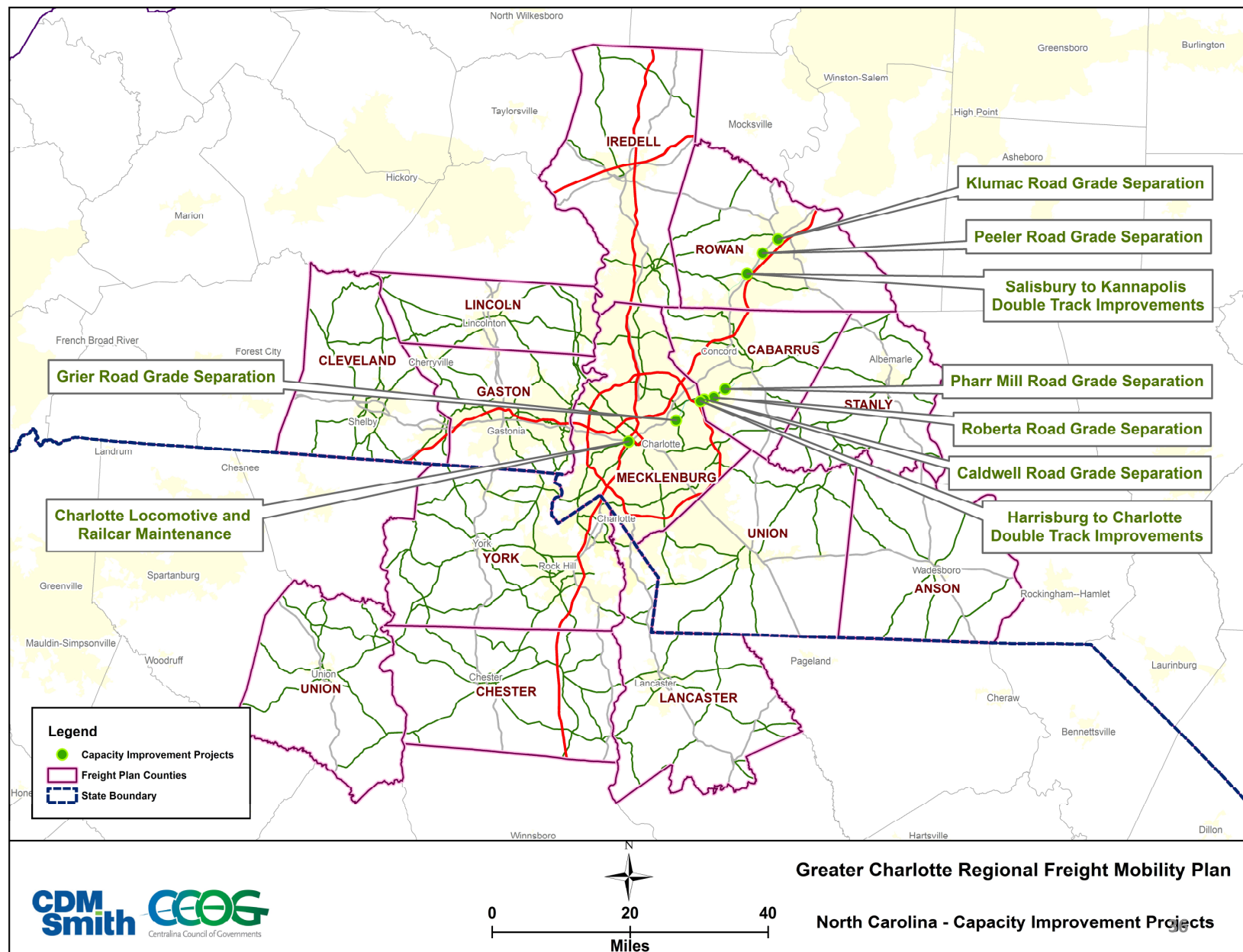
- PIP Improvements within Charlotte
 - Charlotte Locomotive and Railcar Maintenance Facility will be a new state-owned facility to serve the Piedmont and Carolinian trains during layovers in Charlotte.
 - The facility will include a connection to the NS Main Line, construct 2 service tracks, and an office building for Amtrak crews and maintenance employees.



Rail Capacity Improvement Projects

- NCDOT STIP Improvements
 - Grade separating Sugar Creek Road with the NCRR corridor, and closing the crossing at East Craighead Road
 - Handles over 30 NS freight trains and 8 passenger rail trains with increases expected
 - Part of the federally-designated Southeast High Speed Rail Corridor (SEHSR)
 - Increased safety and reduced rail and vehicle congestion
 - 2-mile NS Upgrade in Stanly County

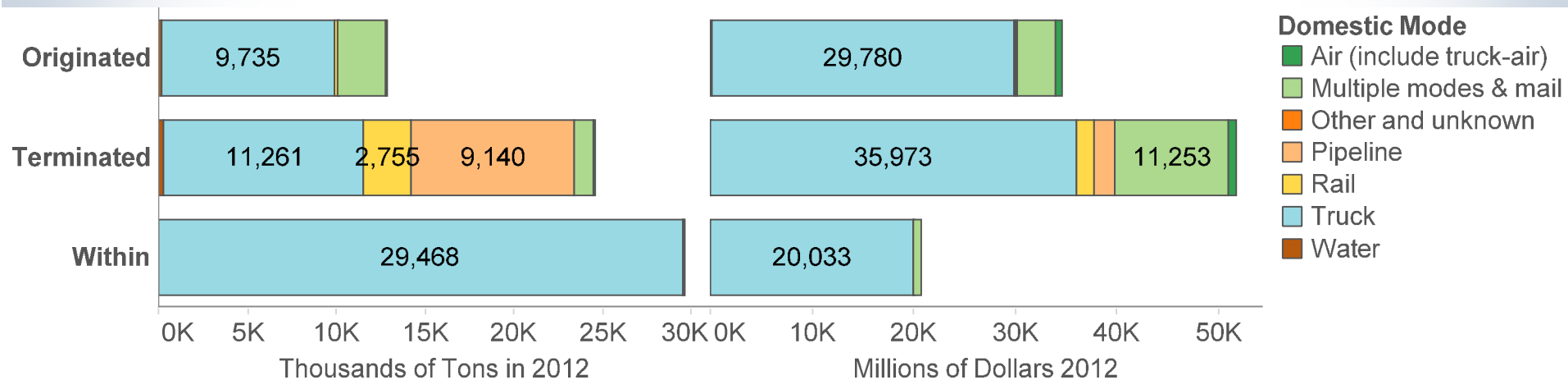
Rail Improvements





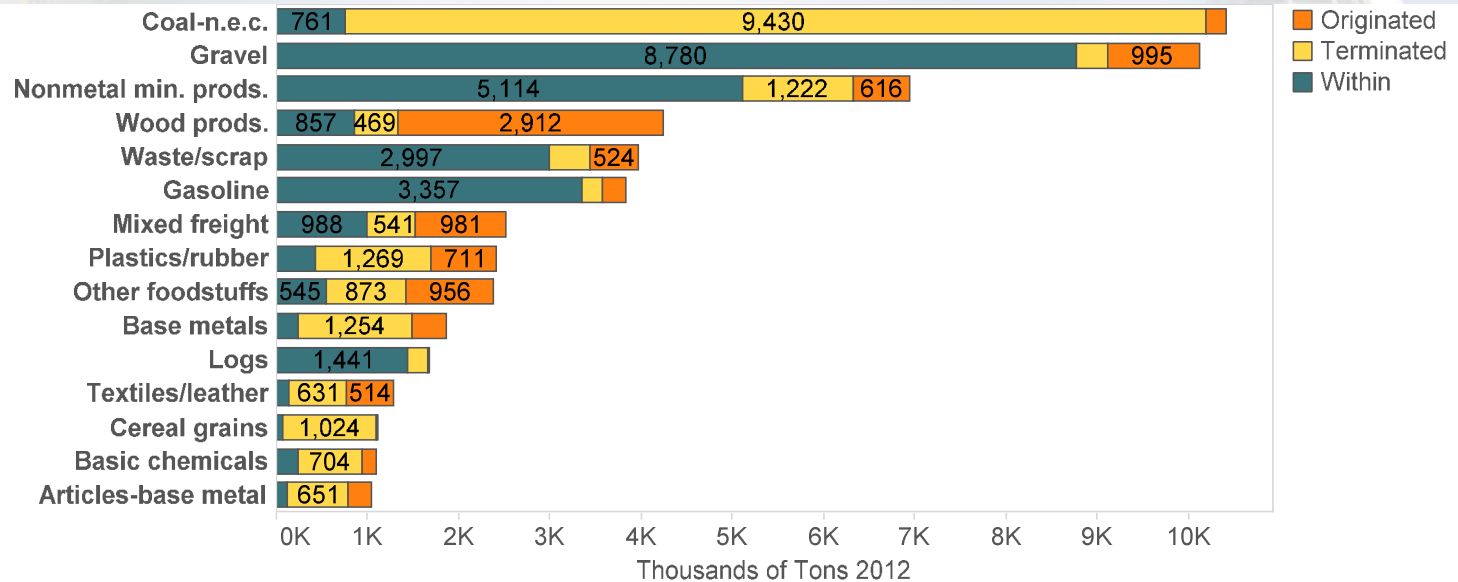
COMMODITY FLOWS

Modal Breakdown of Freight Originated or Terminated in Charlotte MSA in 2012

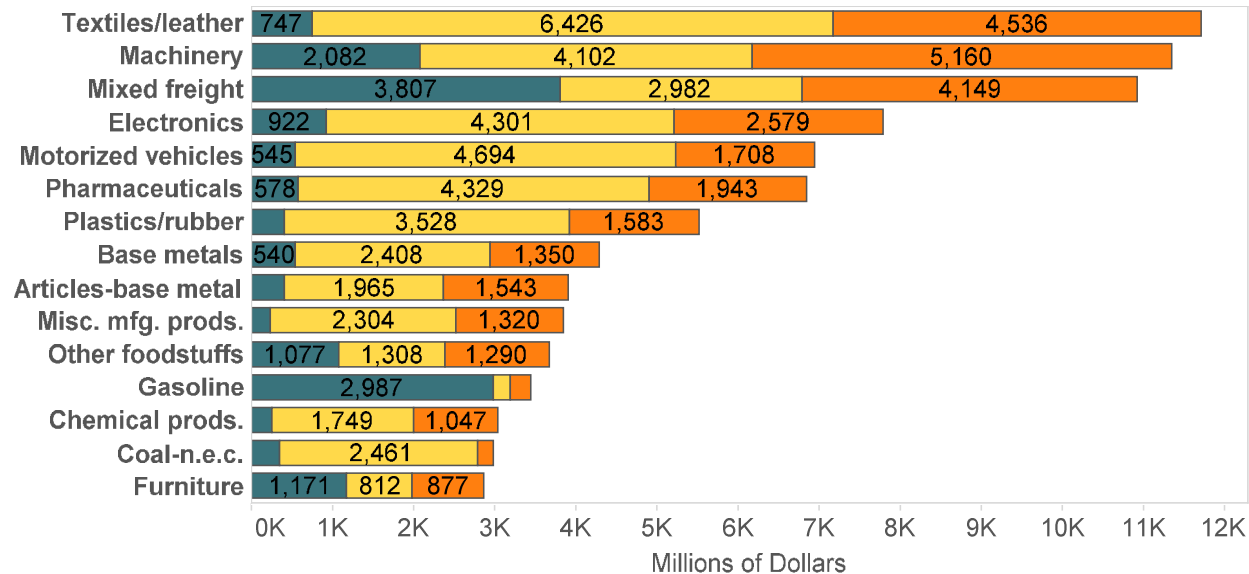


Top 15 Commodities by Tons and Value for Charlotte MSA in 2012

Tonnage

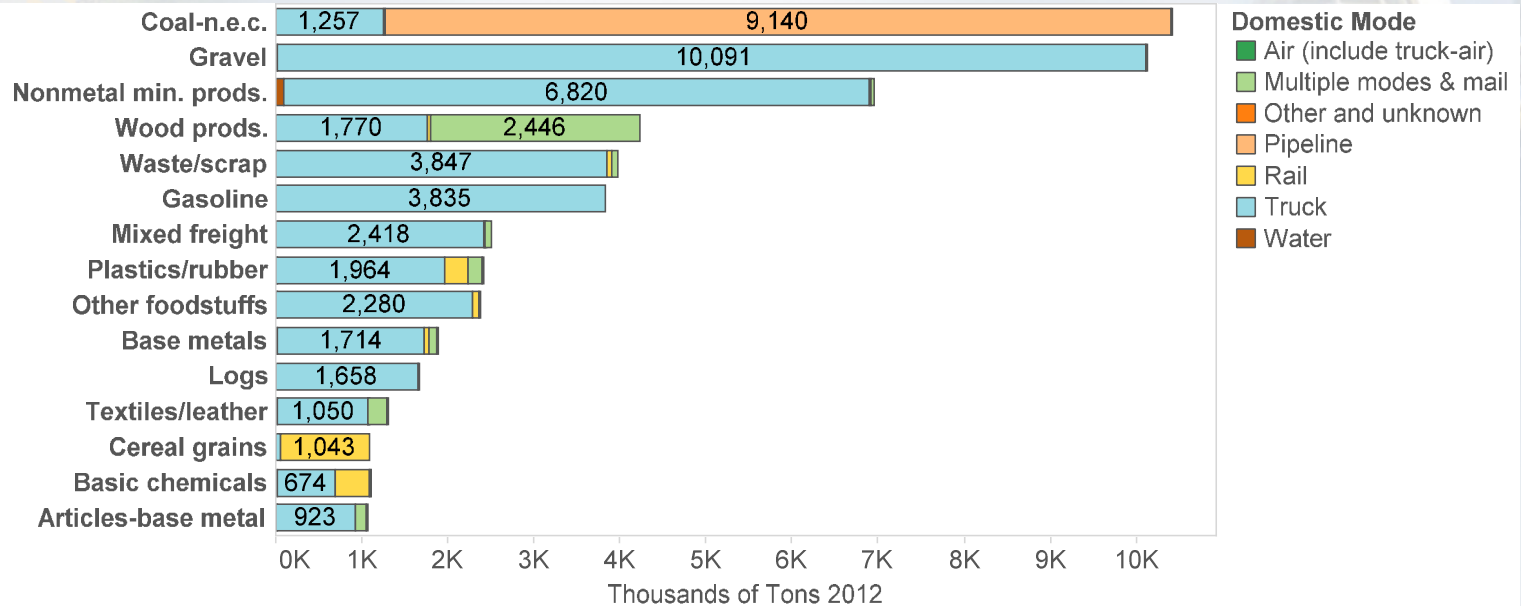


Value

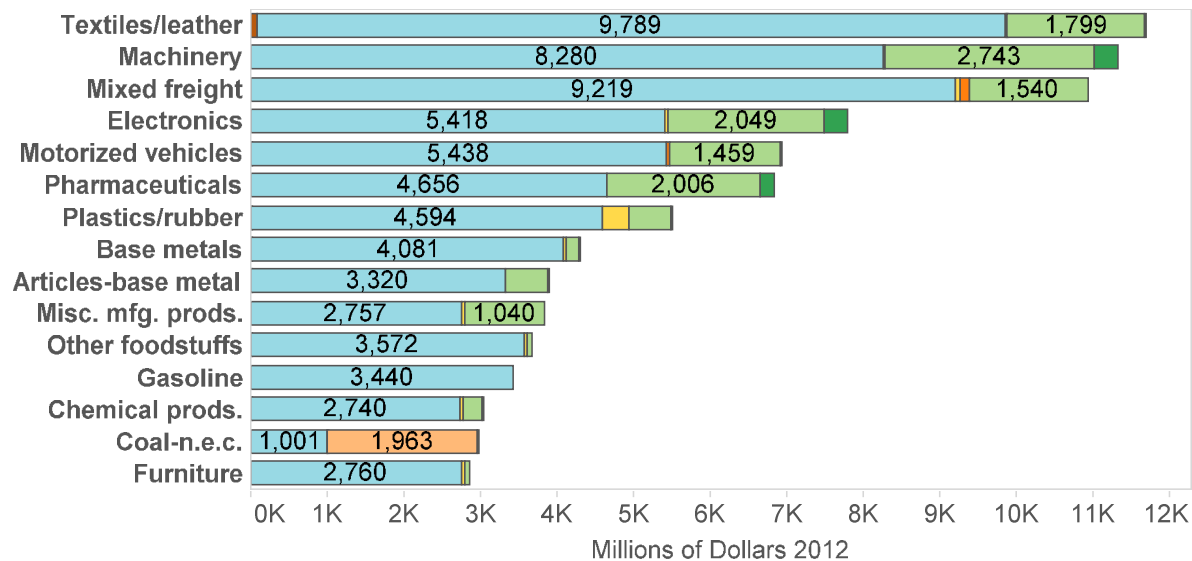


Top 15 Commodities by Tons and Value for Charlotte MSA in 2012

Tonnage

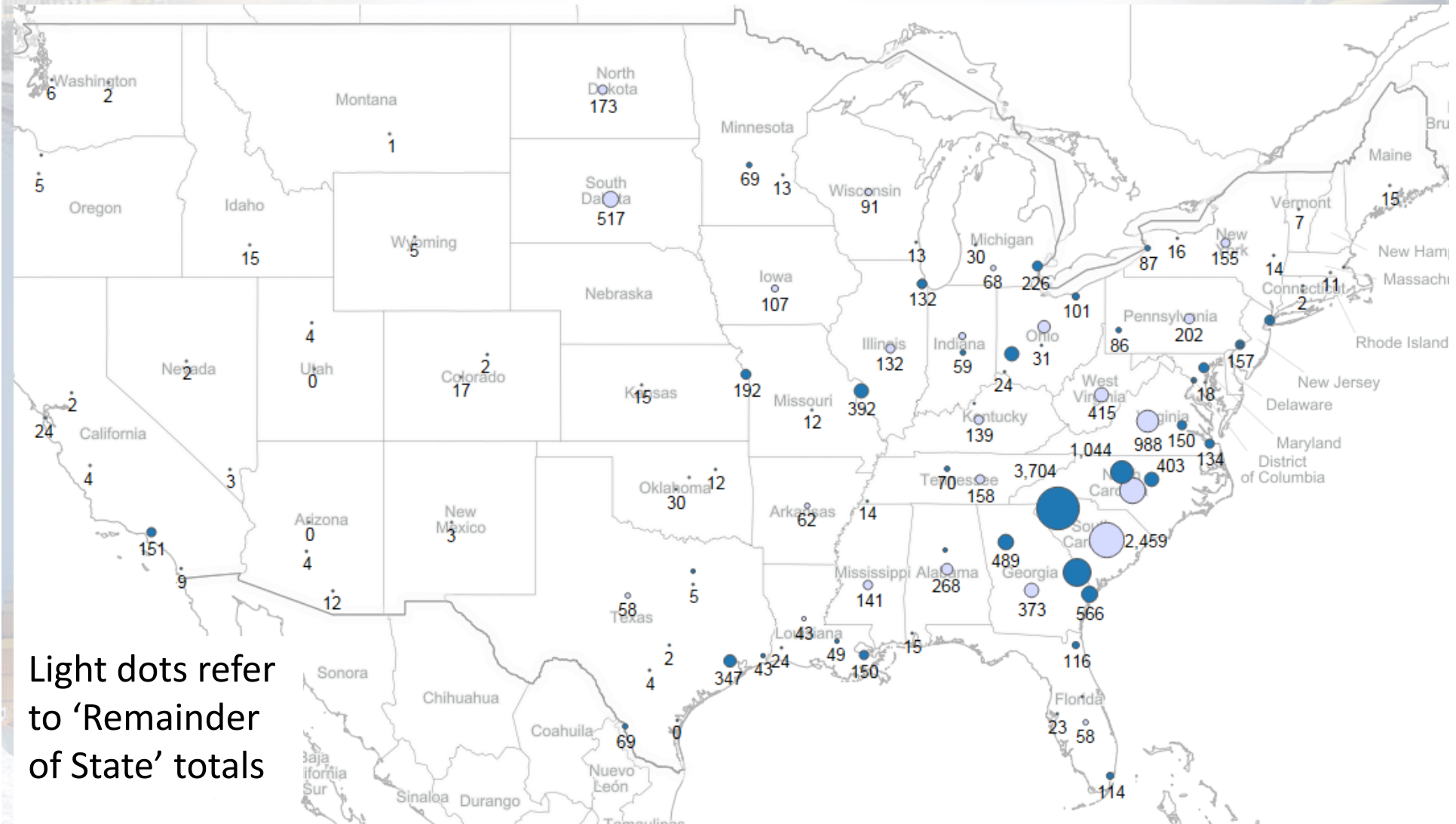


Value



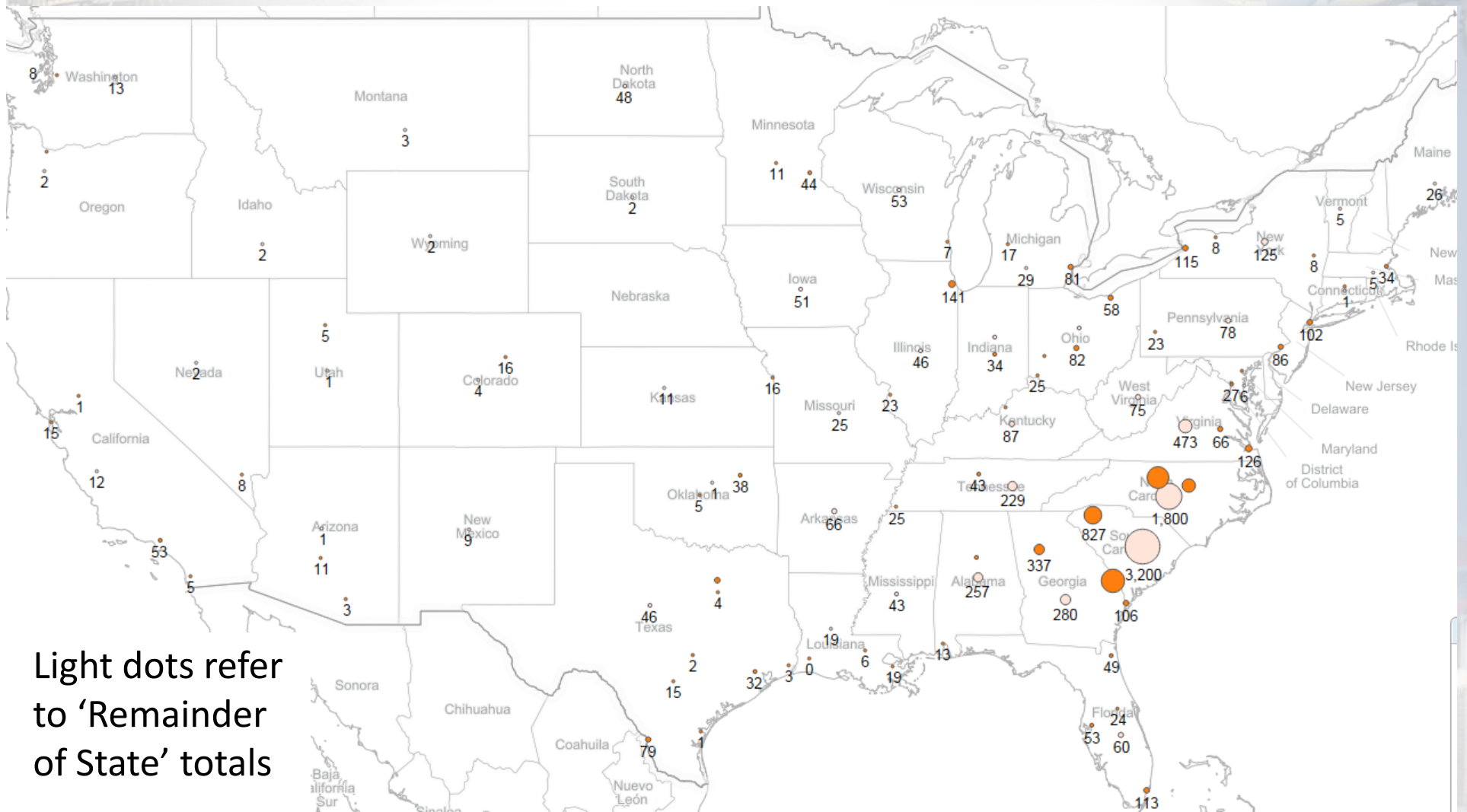


Origins of Freight Terminated in Charlotte, Tons (000') in 2012



Light dots refer to 'Remainder of State' totals

Destinations of Freight Originated in Charlotte, Tons (000') in 2012





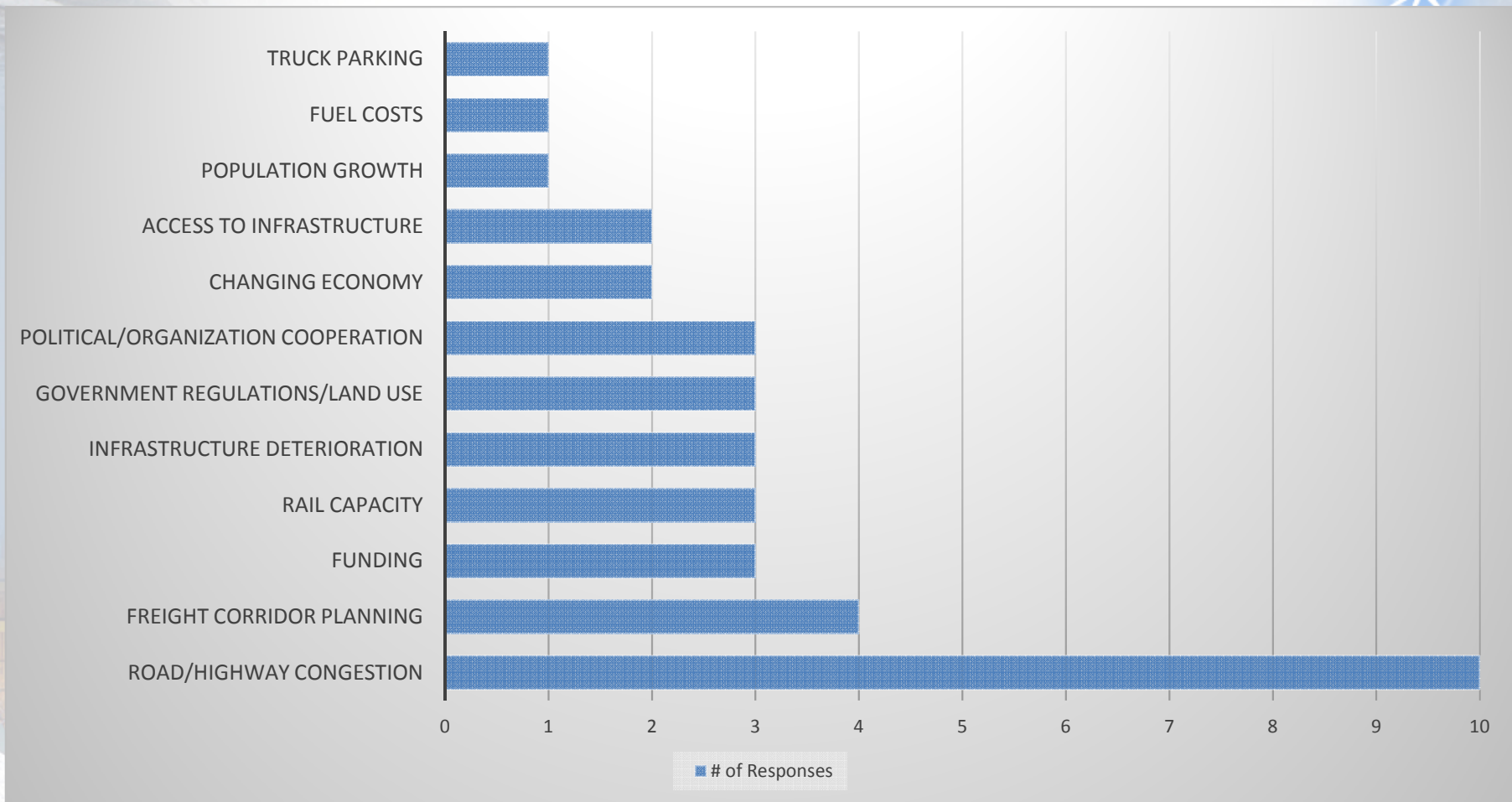
Question #4

- Based on your personal knowledge and that of the Comprehensive Economic Development Strategy (CEDS):
 - What are the new emerging sectors?
 - Where are they locating in the region?
 - How can transportation infrastructure investment play a role by improving freight efficiency, reliability, and safety?
 - What are solutions that local and state governments can provide?

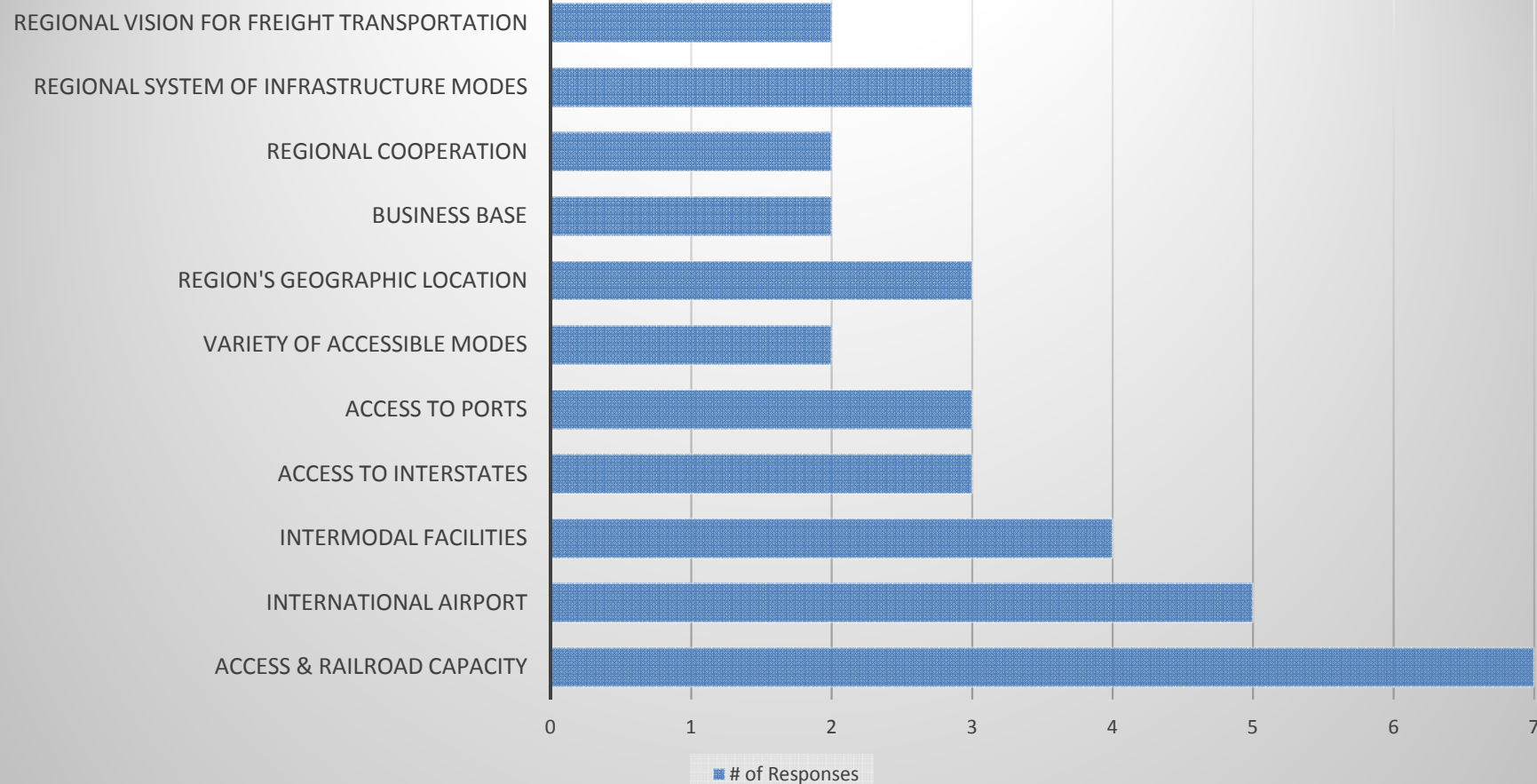


STEERING COMMITTEE PRIORITIES

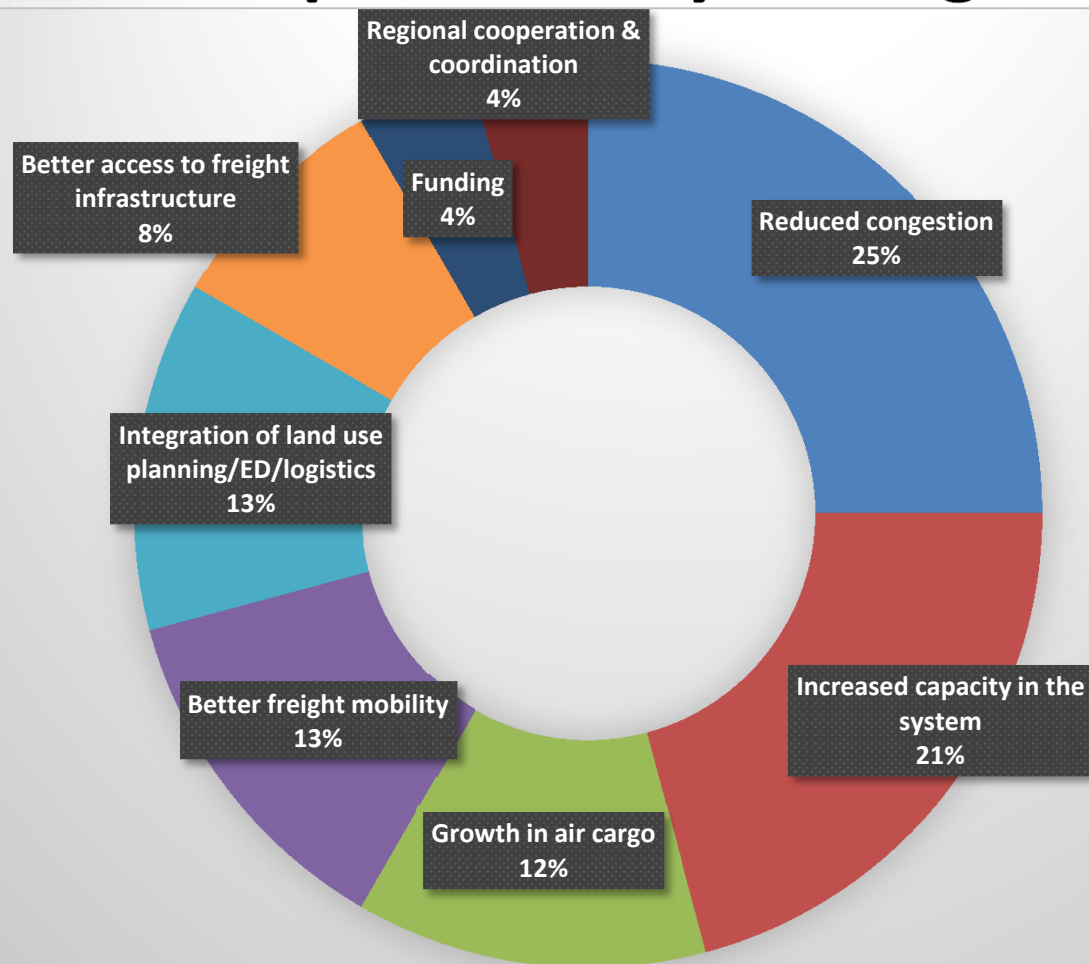
Question 1: Largest issues and challenges affecting freight movement in the region?



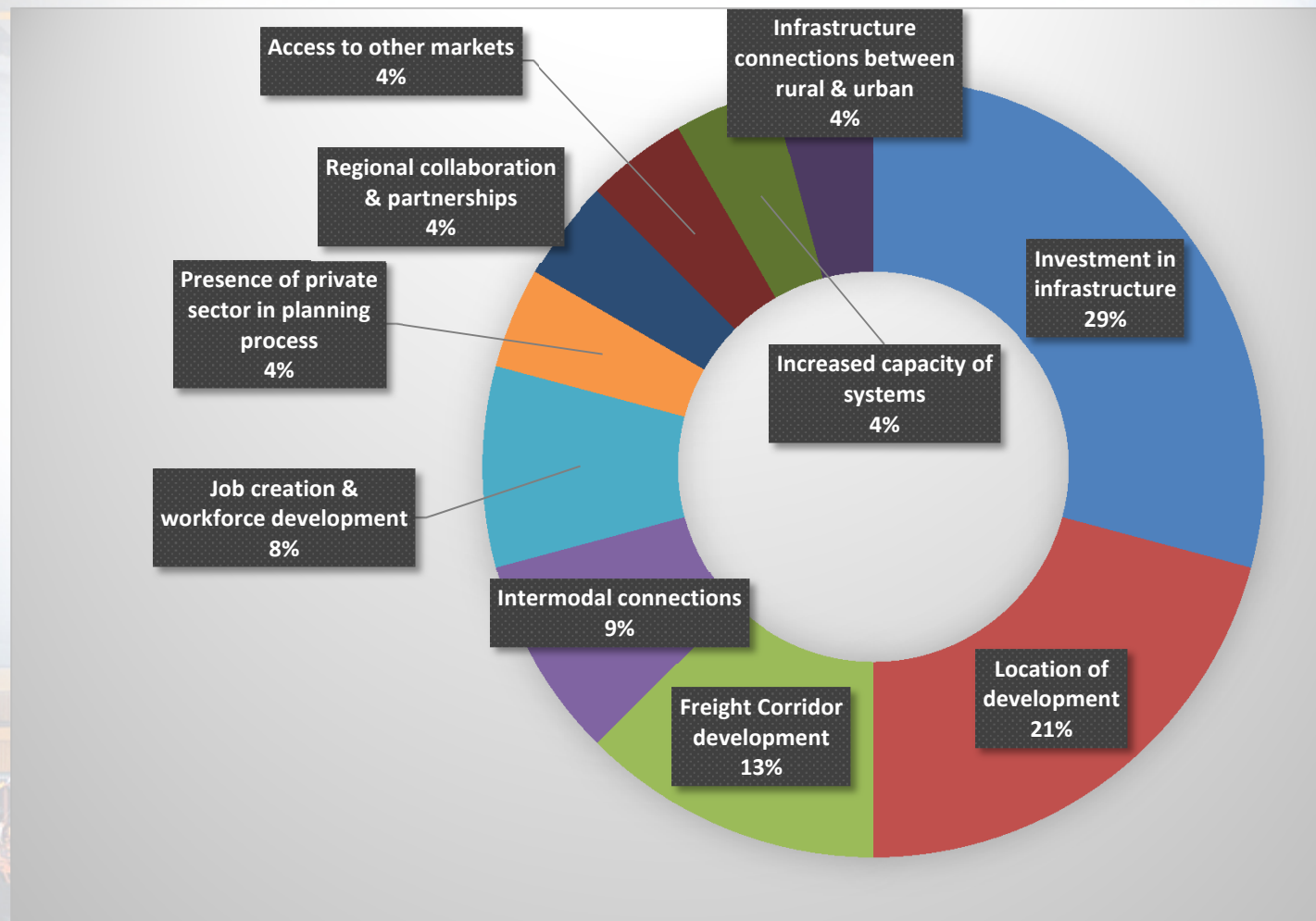
Question 2: Greatest strengths of the current freight transportation system in the region?



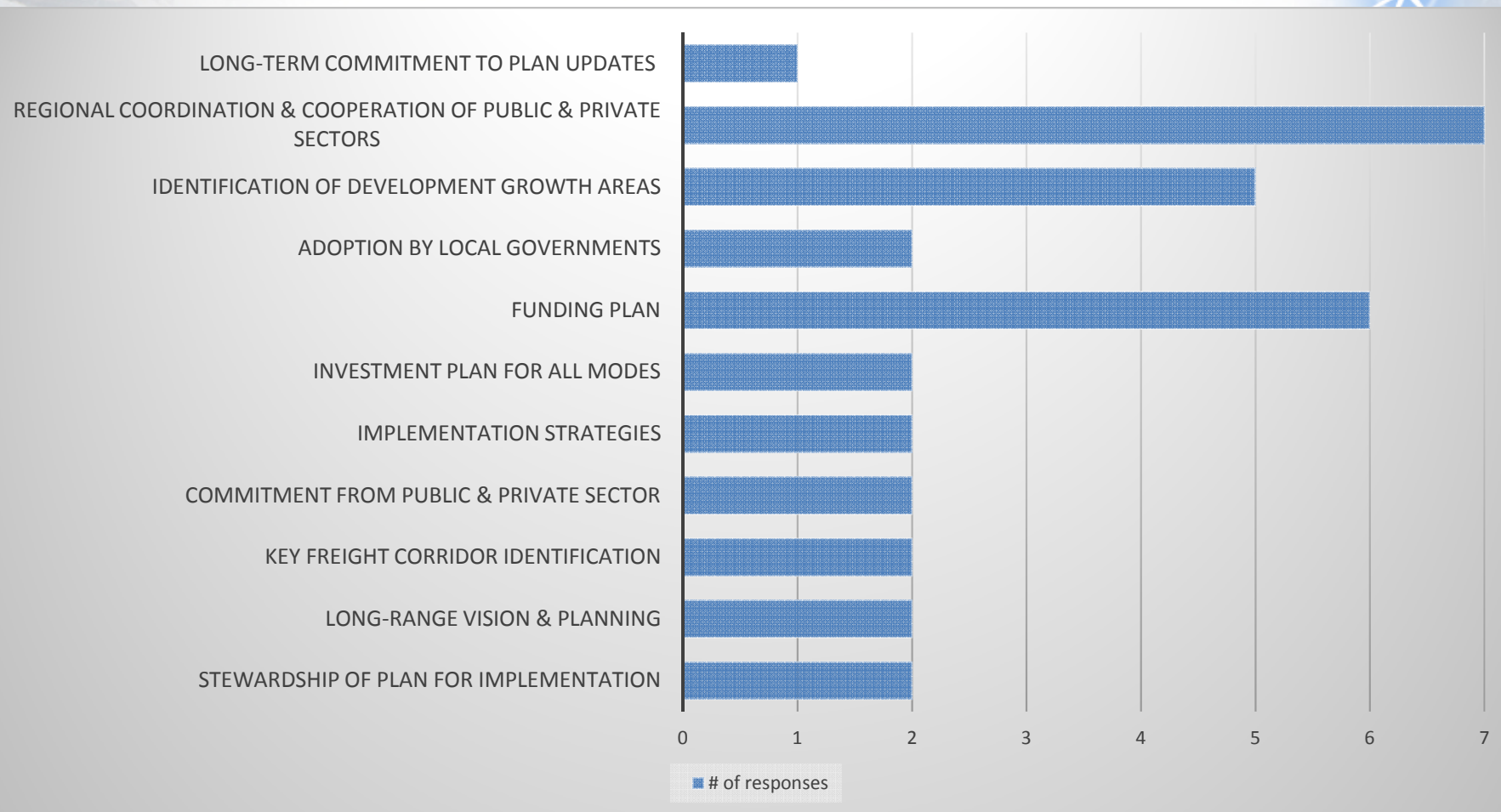
Question 3: What freight-related issues are most important to your organization?



Question 4: What opportunities exist to support economic growth through freight mobility?



Question 5: The most critical actions or decisions for a successful plan?





Question #5

- Critical actions for a successful freight mobility plan include regional cooperation and coordination among the public and private sectors, and a funding plan.
 - What immediate actions need to occur?
 - What form should long-term partnerships and coordination take?

Question 6: Specific groups or individuals that should be included in the regional freight planning process?

- Class I and shortline RRs
- FHWA, FTA, NCDOT Rail
- Businesses that use freight services
- Land use & transportation planners
- State and federal elected representatives
- American Trucking Association
- Freight & brokerage trade groups
- Supply chain professionals
- 3rd Party warehouses
- Major shipper logistic experts
- First responders
- MPOs/RPOs
- Chambers of Commerce
- Colleges/Universities
- Airports
- Ports
- Local Municipalities/Counties
- SC DHEC Bureau of Air Quality staff
- NC Economic Development Corp



Question 7: What should we know that we haven't asked?

- What will be the impact of expansive foreign direct investment coming from expanding international trade?
- How can we include the rural communities in this process for growth?
- What's the status of rail lines that are no longer in use? Do railroads plan to reinvest in unused rail lines to move freight?
- What is the general feeling of businesses in the freight system in the Charlotte region?
- Locating new firms in less congested areas of the region.



Questions for Discussion (#6)

What are we missing? Final thoughts?