



NC State Freight Plan

NCARPO Quarterly Meeting

January 26, 2017



Agenda

- NC Freight Tool
- Freight System Designation
- Update on Schedule and Tasks
- Next Steps





NC Freight Tool Overview

- Based on Tableau Desktop visualization software
- Provides insight into multimodal freight flows into, out of, within, and through NC including:
 - » Origin-Destination
 - » Mode
 - » Commodity
 - » Flow direction
 - » Years: 2012, 2015* and 2045
- Data Sources:
 - » FHWA's Freight Analysis Framework Version 4.1 (FAF4.1) county-level disaggregation for 2012, 2015, and 2045
 - » STB's Rail Carload Waybill Sample for NC for 2012 and 2014 and forecasted to 2045.




NC Freight Tool Demo

NC Freight Tool





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Navigation

- Tabs:


NC Economy	State Profile	County Profiles	National Trading Partners	International Trading Partners
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- Restoring a tab's original layout:  

County Profiles

- Additional utilities for the tool:

Undo	Redo	Reset	tableau	Share	Download	Full Screen
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4 views | more by this author

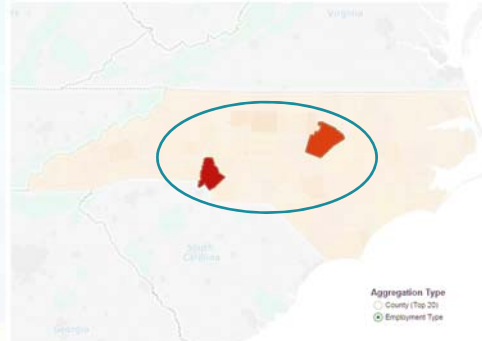


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NC Economy Tab

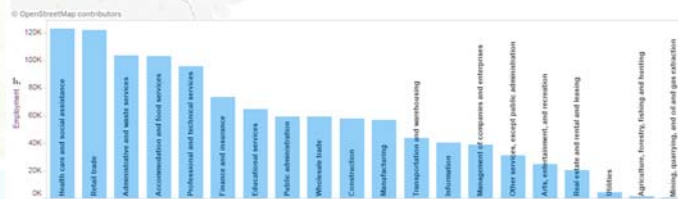
- Introduction
- Example of cross filtering - "drill down" into the data
 - » Hold down the <ctrl> key and click additional choices
 - » To remove a filter click on that segment again
- Hover over the charts or maps to display its name and value



Welcome to the interactive North Carolina freight flow query tool. Each chart or map element can be clicked on to filter information across the page. For example, try clicking an employment type in the bar chart below to see employment for that sector in the map. Click a second time to remove the filter.

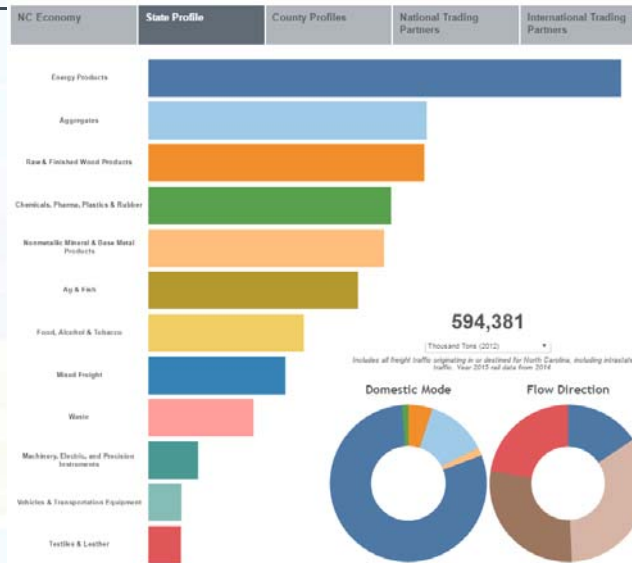
Combinations of filters can be used to get more detailed information. Use the <ctrl> key to select more than one option from a given dashboard element. If you get stuck, there is a reset button at the bottom of the screen.

Use the navigation tabs above to view information on intrastate, interstate, and international trade flows. Try filtering by mode, flow direction, or commodity type to learn more about North Carolina's trade activity.



State Profile Tab

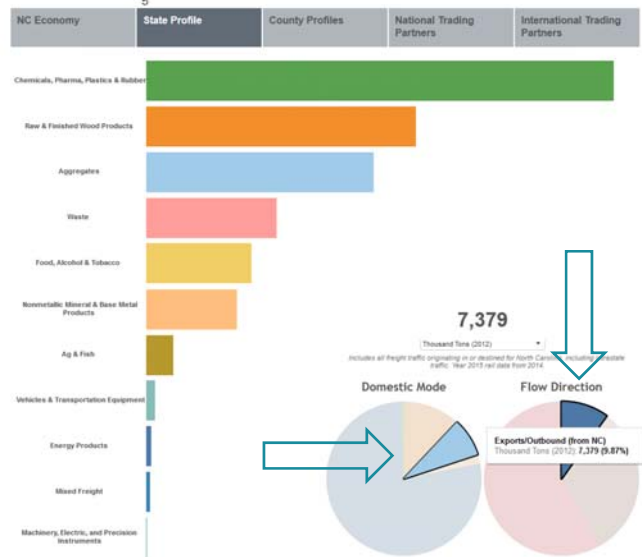
- Commodities range from unprocessed raw materials to finished goods
- Mode: truck, rail, air, water, pipeline, other
- Flow direction: inbound, outbound, intrastate, through
- Units: Tons and Value (2012, 2015*, 2045)





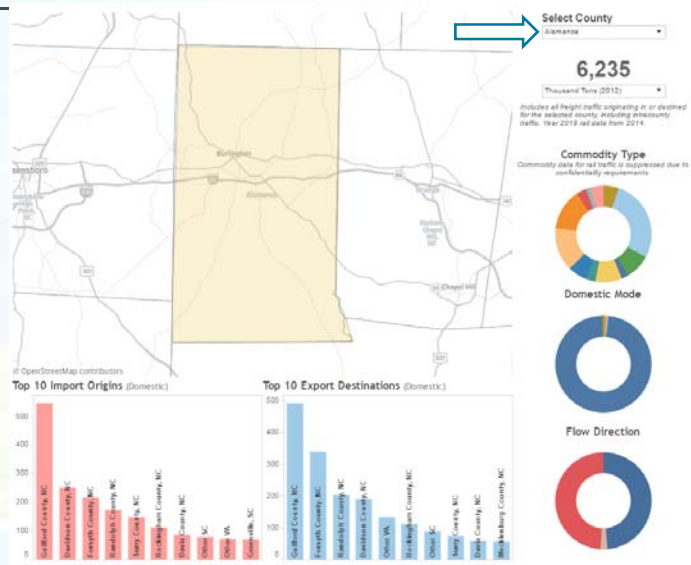
State Profile Tab Filtered

- Dropdown menu selection for units: 2012 Thousand Tons
- Selection: Rail Carload mode, and Export/Outbound flow direction



County Profiles Tab

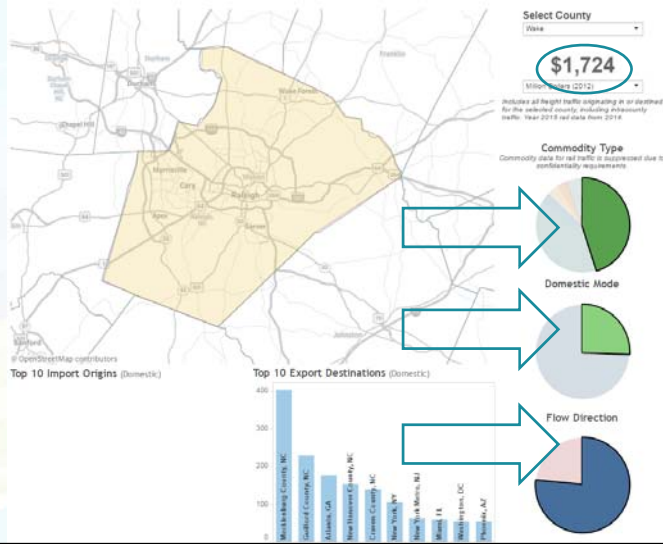
- Unique “fact sheet” for each county
- Commodity Type (except for rail)
- Mode
- Direction: to, from, or within the county
- Top ten import origins and export destinations





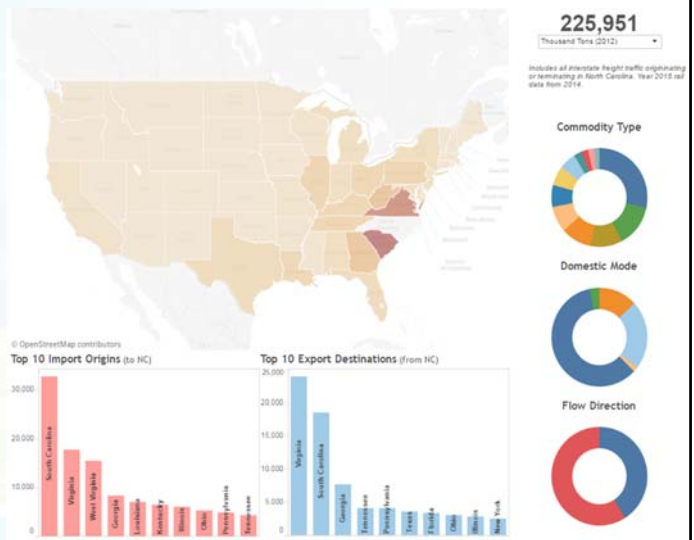
County Profiles Tab Filtered

- County: Wake County,
- Units: 2012 Million Dollars
- Selection: 'Chemicals, Pharmaceuticals, Plastics and Rubber'; the mode 'Air'; and the flow direction 'Outbound'



National Trading Partners Tab

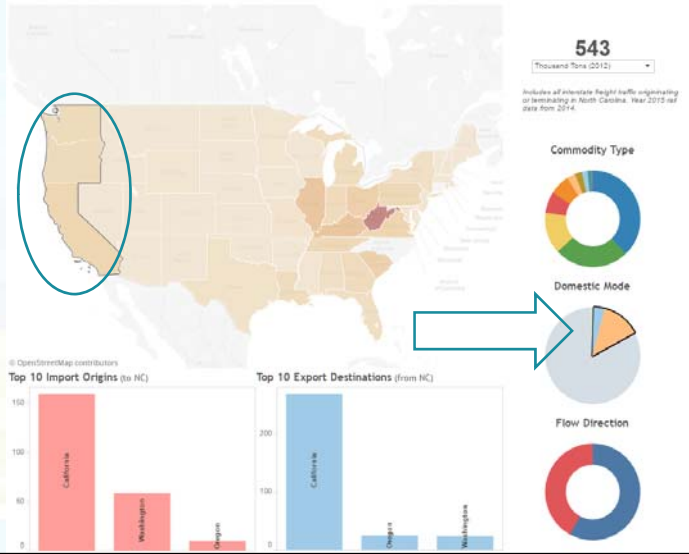
- Inbound and outbound trading partners
- Select trading partner states on the map
- Through traffic is excluded in this tab





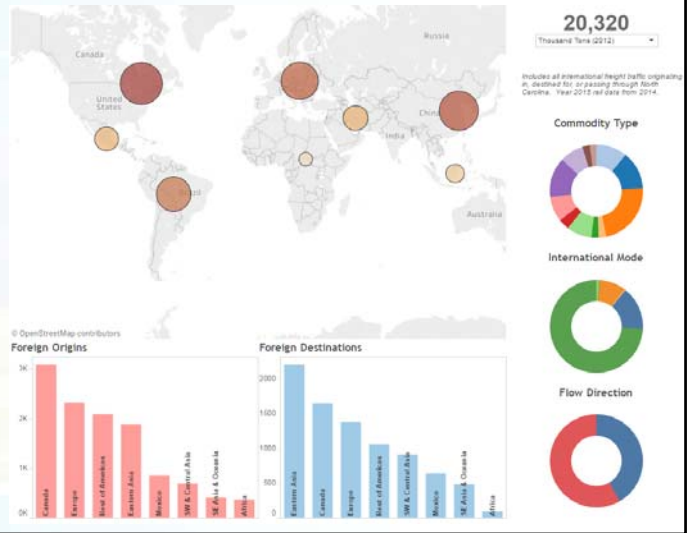
National Trading Partners Tab Filtered

- California, Oregon, and Washington have been selected (using the <ctrl> key), as well as Rail (Carload) and Rail (Intermodal)



International Trading Partners Tab

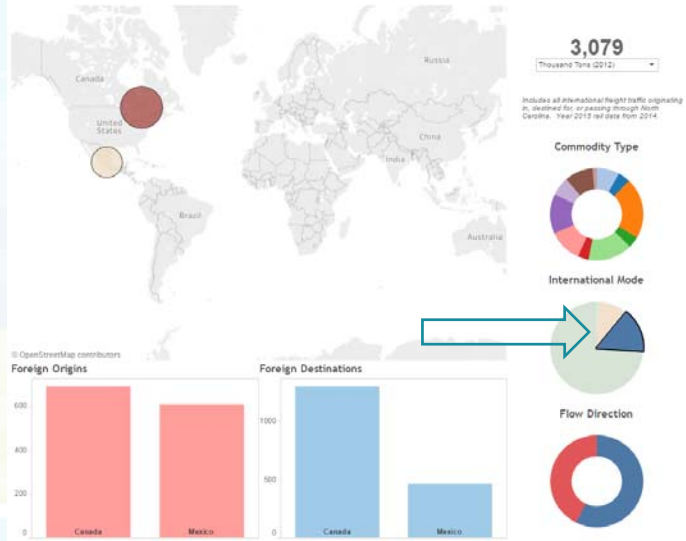
- International freight moving from, to, or through NC
- International Partners:
 - » Canada
 - » Mexico
 - » Rest of Americas (South and Central America, including the Caribbean)
 - » Europe
 - » Africa
 - » Southwest and Central Asia
 - » Eastern Asia
 - » Southeast Asia and Oceania





International Trading Partners Tab Filtered

➤ Truck has been selected



FREIGHT SYSTEM DESIGNATION PROCESS





National Primary Freight Network



CRFC Criteria

ID	Route/facility descriptor:
A	Rural principal arterial roadway with a minimum of 25 percent of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks
B	Provides access to energy exploration, development, installation, or production areas
C	Connects the PHFS or the Interstate System to facilities that handle more than: <ul style="list-style-type: none"> - 50,000 20-foot equivalent units per year; or - 500,000 tons per year of bulk commodities;
D	Provides access to a grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility
E	Connect to an international port of entry
F	Provides access to significant air, rail, water, or other freight facilities
G	Corridor that is vital to improving the efficient movement of freight of importance to the economy of the State.



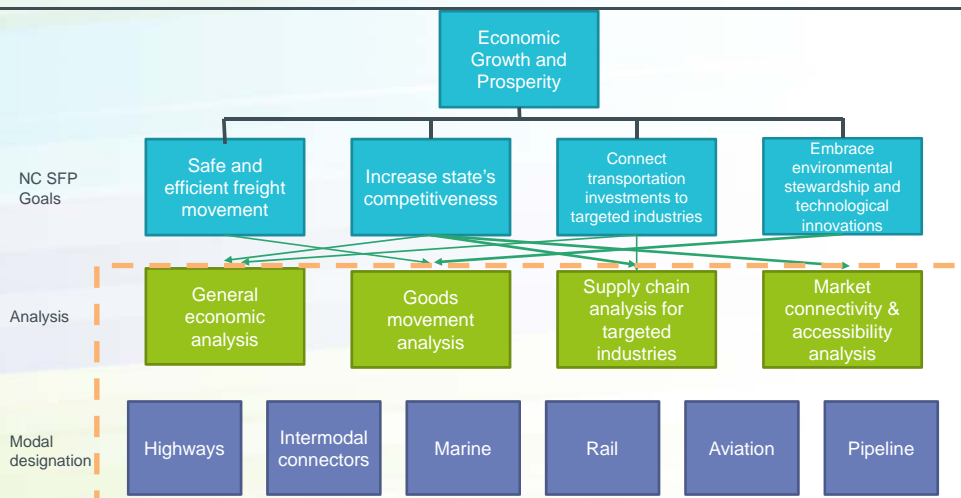


CUFC Criteria

ID	Route/facility descriptor:
H	Connects an intermodal facility to the PHFS, the Interstate System, or an intermodal freight facility.
I	Located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement
J	Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land
K	Corridor that is important to the movement of freight within the region, as determined by the MPO or the State



Analysis and Designation Process





Data Sources

- FHWA Freight Analysis Framework (FAF) 4.1
- NCDOT
 - » Classification counts
 - » HPMS data
 - » Statewide travel demand model
 - » Crash data
- INRIX, HERE and NPMRDS
 - » Truck travel time
 - » Reliability
- Establishment and economic data



General Economic Analysis

- Demographic preparedness index – workforce quality and quantity
- Freight intensity index – employment and number of establishments in transportation dependent industries
- Supporting facilities/infrastructure – serves regional economic generators that also require significant freight such as military, education and medical facilities





Goods Movement Analysis

- Truck volumes and percentages
 - » Current
 - » Growth (% change)
- Truck VMTs
 - » Absolute
 - » Normalized by lane mile
- Commodity tonnage and value



Supply Chain Analysis

- Examine freight supply chains to understand how businesses move goods between suppliers, producers, distributors and final consumers
- Number of targeted supply chain industries supported

Aerospace, Aviation and Military/Defense	Automotive, truck, heavy equipment	Biotechnology, Pharmaceuticals and Life Sciences
Information and Communications Technology	Chemicals, Plastics and Rubber	Distribution/Logistics
Food Processing and Distribution	Green Energy	Textiles, Apparel and Textile Machinery





Market Access and Connectivity

- Connectivity to North American trading partners
- Access to international gateways
 - » Markets served
 - » Number and schedule of vessel calls/international flights/trains

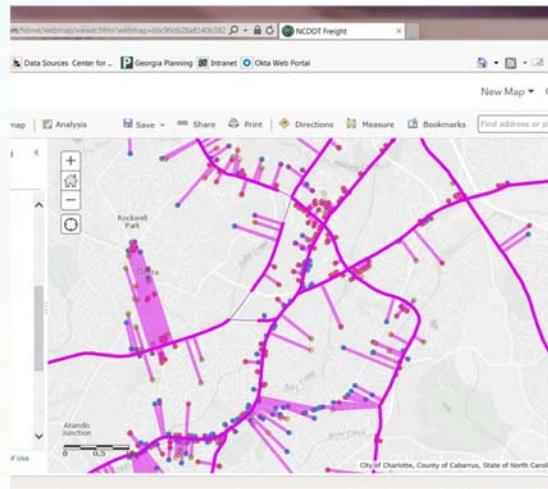


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Freight System Designation Tool

- GIS tool will use geospatial data to calculate scores for highway links
- Metrics and scoring methodologies have been developed for each analysis category




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UPDATE ON SCHEDULE AND TASKS





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Key Work Tasks

- Stakeholder Outreach
- NC Freight Network Assessment
- Supply Chain and Logistics Profile
- Strategies and Recommendations
- Final Plan and Training



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Schedule

- FAC meeting – Feb 14
- Detailed needs assessment – Feb 15
- Supply chain and economic analysis – March 1
- MPO/RPO workshops – April
- FAC meeting – April in conjunction with MPO conference in New Bern
- Recommendations and performance measures – July 1
- Draft plan – Aug 15

