



December 6, 2016

*Freight Focused Developments
in North Carolina*

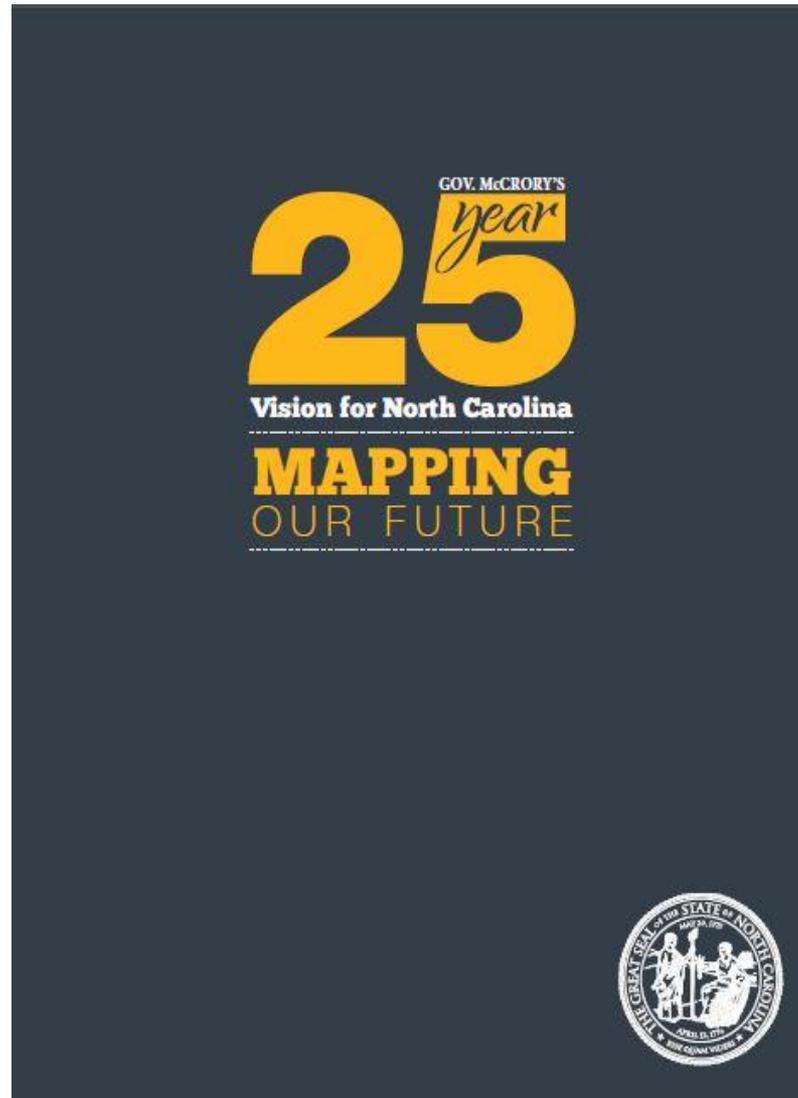
Charles HW Edwards, Director – Logistics Strategy



Outline

- Leadership – Guiding Principles
- We Now Know Who We Are – North Carolina's Supply Chain
- Logistics Demands – Constraints
- E-Commerce
- Evolving Freight Logistics Network
- New Challenges Everyday
- NC Department of Transportation – Freight Focus

Leadership – Guiding Principle



North Carolina's Growth = Challenges and Opportunities

Vision for North Carolina: Mapping Our Future

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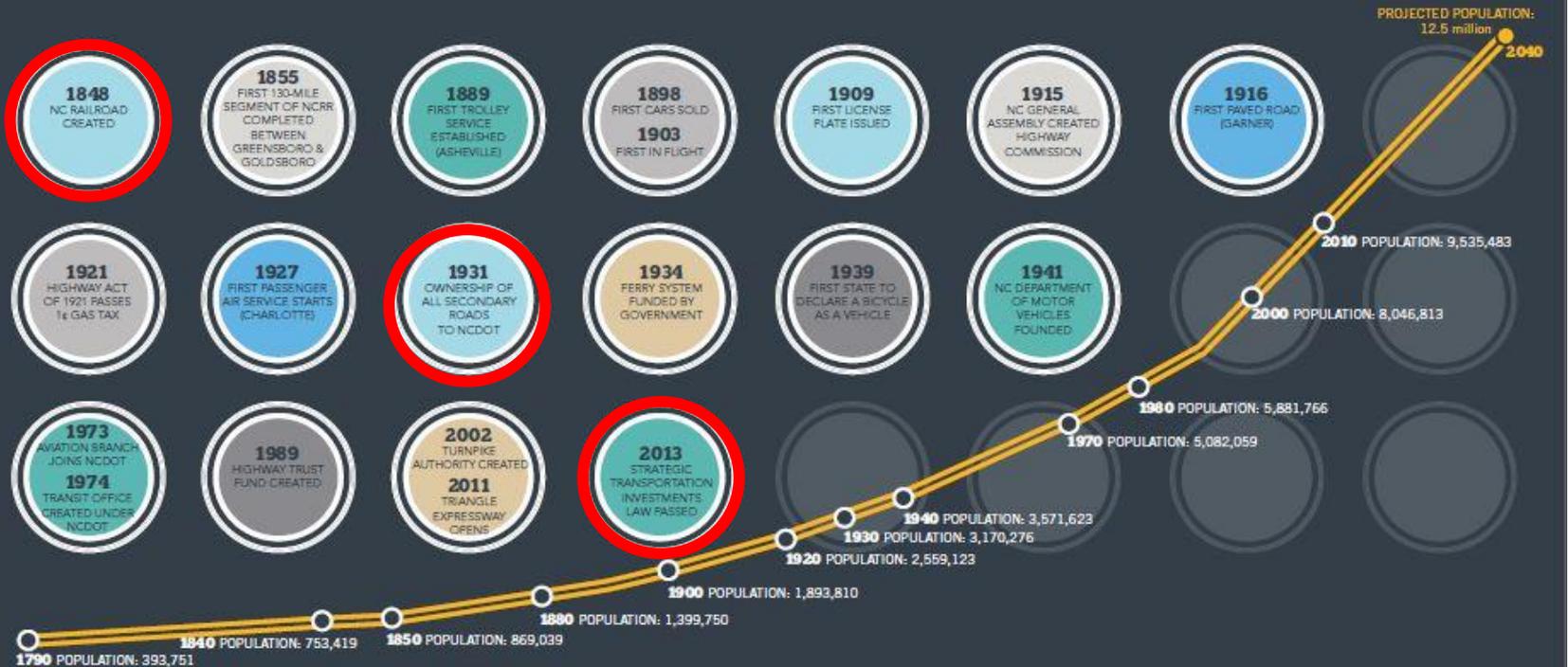
Vision for North Carolina: Mapping Our Future

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>1,300 new jobs in Sept. & Oct. 2016

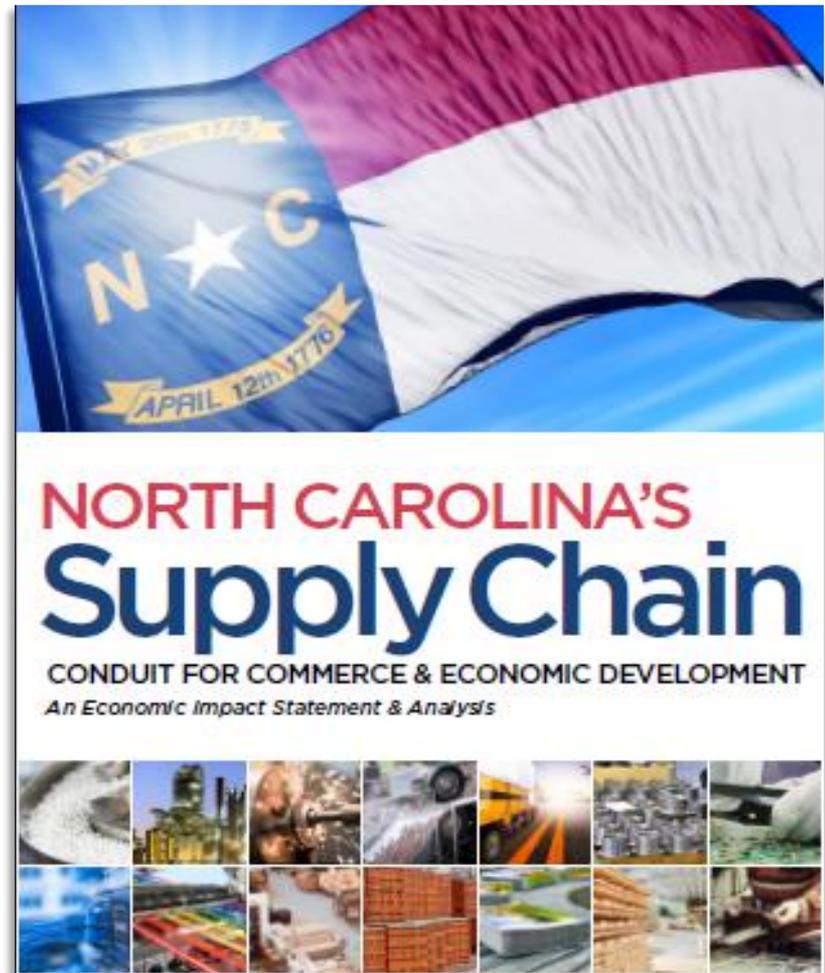
> 300,000 new jobs since 2013

CONTINUING GROWTH



We Now Know Who We Are

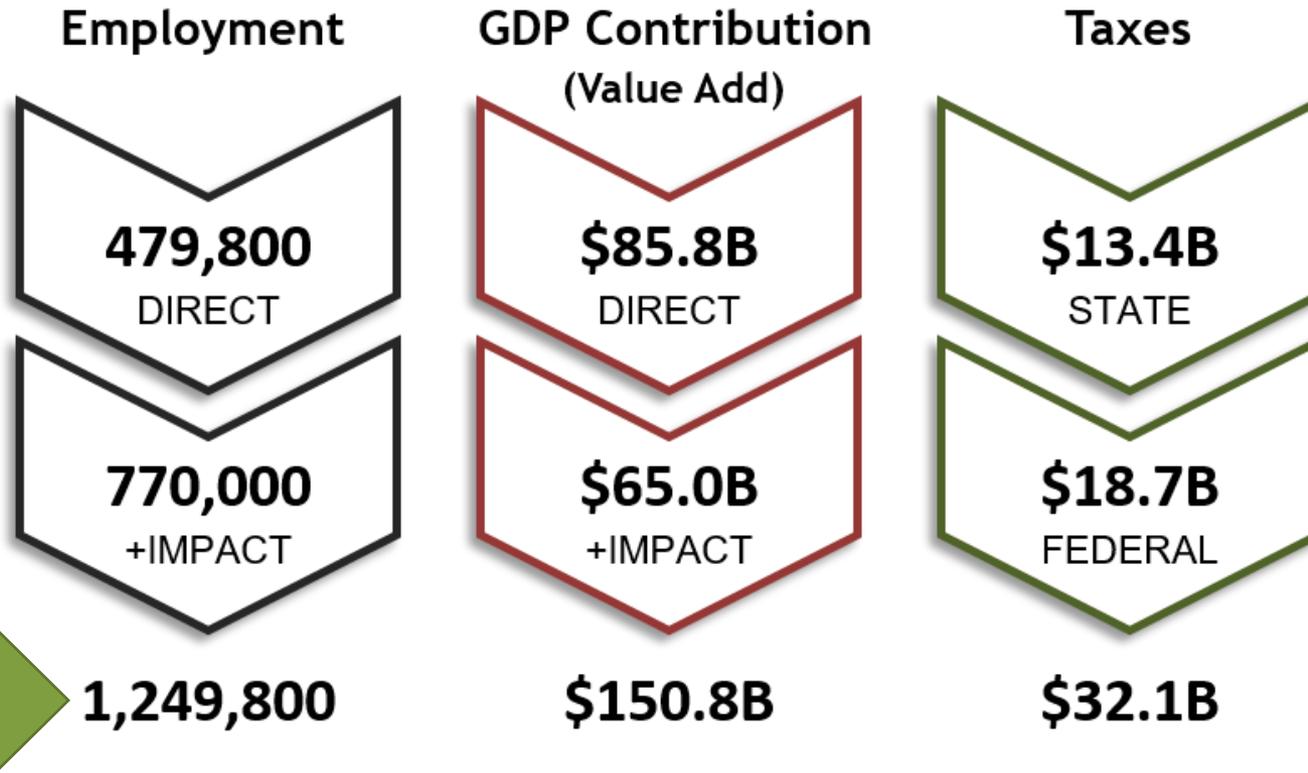
- **Quantify** the economic impact of the supply chain
 - **Identify** key connections, trends & context
 - Provide **perspective** for **planning, investment & policy**
-
- Published February 2016
 - Prepared by Supply Chain Resources Cooperative – NC State
 - MHI / NC Center for Global Logistics



<http://www.mhlroadmap.org/downloads/NCSupplyChainIndustry.pdf>



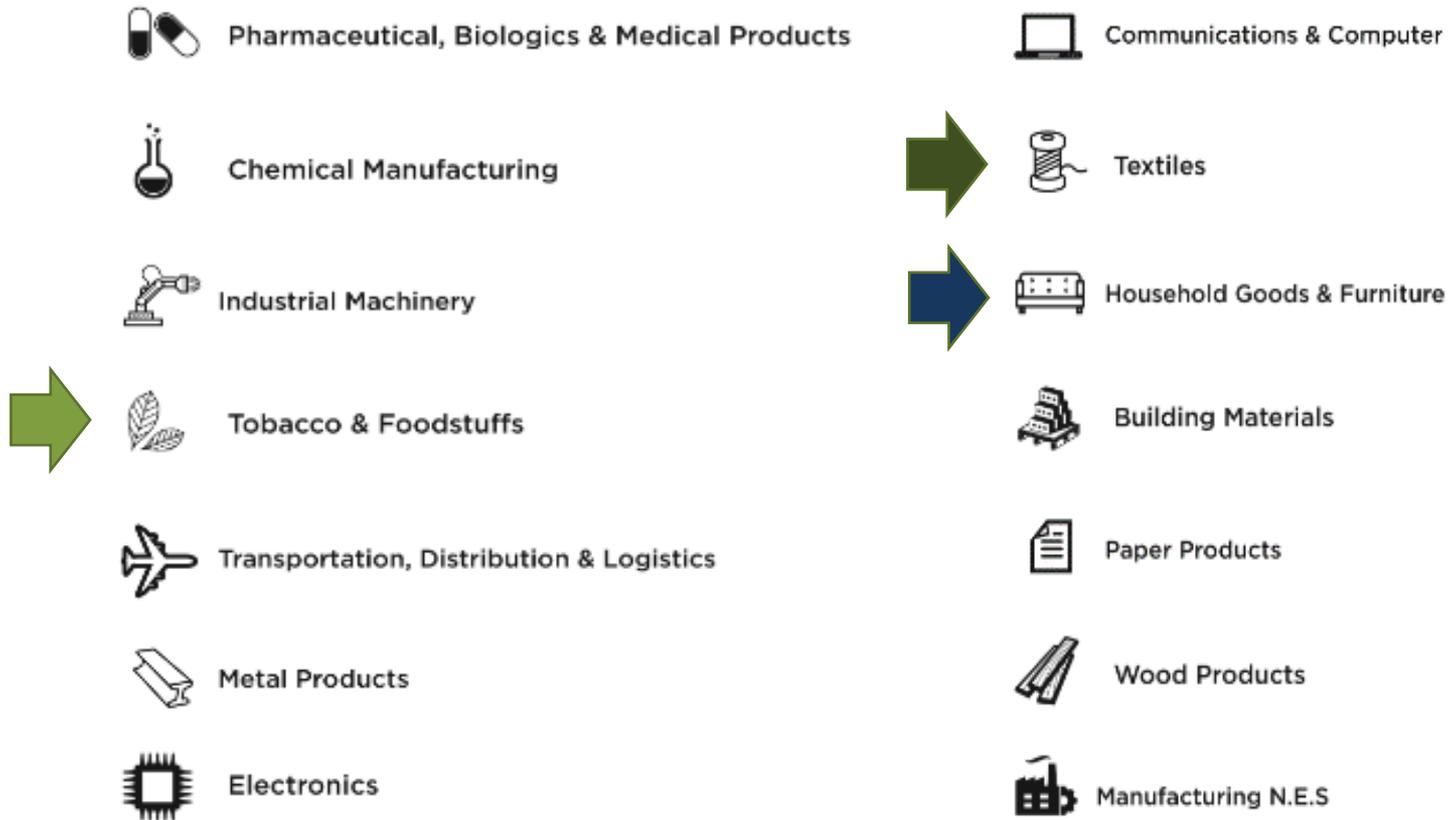
Key Findings



+IMPACT represents Indirect & Induced totals. All figures 2013 IMPLAN data

Defining the Supply Chain

• 14 North Carolina Industrial Sectors



Listed in order of Value Added (GDP Contribution)

NC's Supply Chain Leading Sectors

Rank	Employment	GDP Contribution	State Taxes Paid
1	Transportation, Distribution and Logistics	Pharmaceuticals, Biologics and Medical Products	Tobacco & Foodstuffs
2	Industrial Machinery and Transportation Equipment	Chemical Manufacturing	Transportation, Distribution and Logistics
3	Textiles	Industrial Machinery and Transportation Equipment	Industrial Machinery and Transportation Equipment
4	Chemical Manufacturing	Tobacco & Foodstuffs	Pharmaceuticals, Biologics and Medical Products
5	Household Goods and Furniture	Transportation, Distribution and Logistics	Chemical Manufacturing

Logistics Demands - Constraints

Each North Carolinian generates / consumes 20 tons of freight per year

Equals: 1 tractor-trailer (TL) load per resident per year = 9+ million TL per year and increasing!

- Road building is **expensive** - \$4M/mile (two-lane road)
- One size does **NOT** fit all
- Must **optimize** existing transport network and services



e-Commerce(B2B+B2C) ► Driving Use of Automation

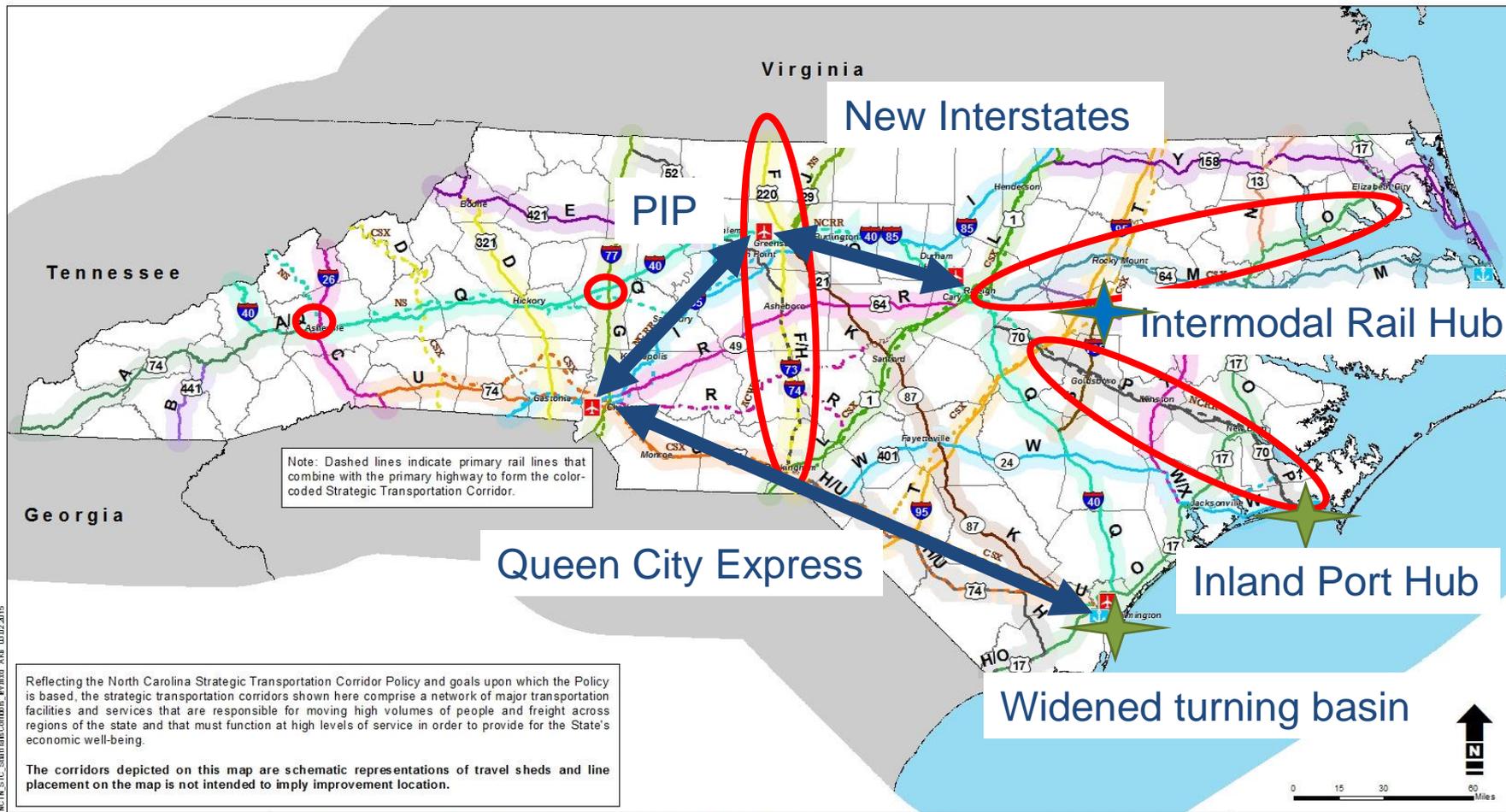
Estimate of B2B + B2C e-Commerce Sales (US\$, Bn)					
Category	2016	2017	2018	2019	2020
B2B	\$ 855	\$ 928	\$ 999	\$ 1,066	\$ 1,132
B2C	\$ 327	\$ 352	\$ 378	\$ 406	\$ 437
Combined	\$ 1,182	\$ 1,280	\$ 1,377	\$ 1,472	\$ 1,569

Typical Products:

- **Business 2 Business** – construction materials, repair components, cleaning supplies, packaging materials, raw and finished textiles, furniture, etc.
- **Business 2 Consumer** – clothing and footwear, electronics, white goods, furniture and housewares, books and media, jewelry, etc.

Reliability - keep costs down and deliver goods quickly

Evolving Freight Logistics Network



NCTM STC STRATEGIC CORRIDORS BYROAD A48 10/02/2015

NORTH CAROLINA TRANSPORTATION NETWORK
MARCH 2015
Source: NCOneM ap, NCDOT GIS, ESRI

Strategic Transportation Corridors (solid = highway; dashed = rail)

A (US74W)	F (I73/Future I73)	K (US421/NC87)	P (US70E/NCRR)	U (US74W/US74E)
B (US441)	G (I77)	L (US1)	Q (I40)	V (US264E)
C (I26/US23)	H (I74/Future I74)	M (I495/US64E)	R (US64W/NC49)	W (US401/NC24/US258)
D (US321/CSX)	I (I85)	N (US13)	S (I795/US117)	X (US258/NC11/US13)
E (US421W)	J (US29N/NS)	O (US17)	T (I95/CSX)	Y (US158)

NC Seaports
 NC Int'l or Major Freight Airports

NORTH CAROLINA STRATEGIC TRANSPORTATION CORRIDORS NETWORK

New Challenges Everyday

- **General**

- New economic paradigm / Anti-globalization sentiment
- Circular economy and logistics
- Internet of Things / Autonomous Vehicles

- **Specific**

- e-Commerce
- Modal shift and selection
- Truck driver shortage / HOS
- Class 1 railroads' focus / strategy
- Disruptions and delays



NC Department of Transportation – Freight Focus

- **Focus** – What does it really take to move freight?
 - ‘The’ key economic development factor
- **Optimized Infrastructure** – Meet needs of freight flows
 - All modes
 - Urban and rural freight corridors / Blue shield expansion
 - Geometry for trucks / intermodal connections
 - Multi-state perspective
 - Truck rest areas
- **Flexible Infrastructure** – Accommodate new technologies
 - Autonomous vehicles
 - Internet of Things

We plan for freight flows that never stop!

