



GREATER CHARLOTTE REGIONAL FREIGHT MOBILITY PLAN

STEERING COMMITTEE MEETING

May 19, 2016

Welcome

- Builds on past regional work
 - Three Pillars: land use, economy, and transportation
 - CONNECT Our Future
 - Comprehensive Economic Development Strategy (CEDS)
 - MPO & RPO's transportation plans



Why a Regional Freight Mobility Plan?

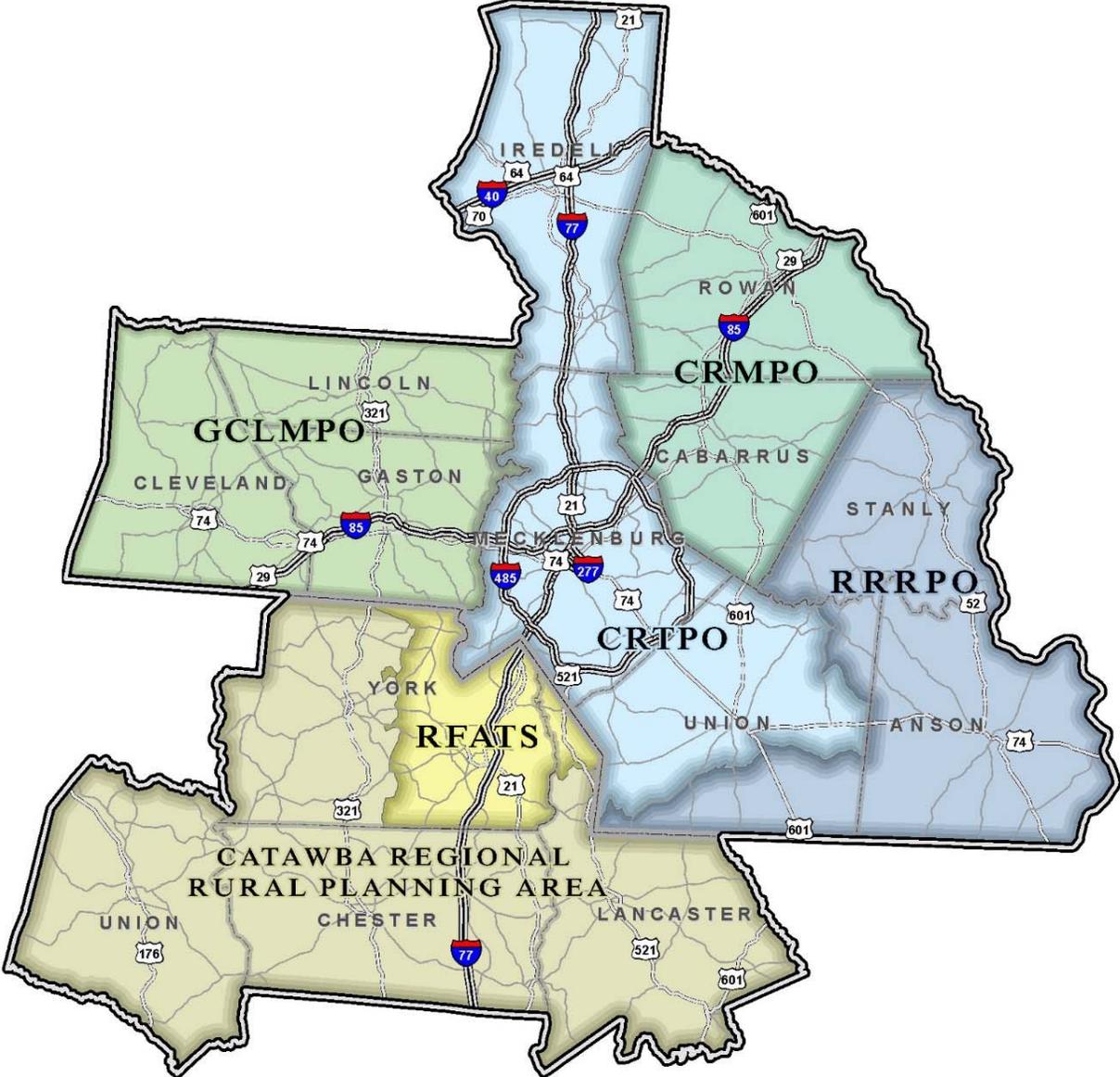
- Address Private Sector Needs
- Promote Economic Development
- Reduce Congestion - Transportation Planning
- Provide Development Predictability



Who is Involved?



Who is Involved?





Vision Statement

“With its unique logistical and global competitive advantage for domestic and international commerce, the Charlotte region **enhances economic competitiveness** by **collaboratively** developing and investing in an integrated, **multimodal freight transportation system** that provides **safe, reliable, efficient and sustainable freight mobility** and by coordinating transportation and land use decisions across the region.

This goods movement system **supports the region’s economy, creates jobs,** and provides the mechanisms to **maintain and improve quality of life** for the region’s residents.”

The background of the slide is a collage of transportation modes: a freight train on the left, an airplane on the right, and a truck at the bottom right. The text is overlaid on this background.

Freight Plan Goals

Goal 1: Economic Competitiveness and Efficiency

Goal 2: Safety and Security

Goal 3: Infrastructure Preservation and Maintenance

Goal 4: Environmental Stewardship

Goal 5: Congestion and Reliability

Goal 6: Performance and Accountability

Goal 7: Regional Coordination

Where Will Recommendations Go?





Mike Manis, Centralina COG

Michael Gallis, Michael Gallis & Associates

FREIGHT ORIENTED LAND USE CORRIDORS AND NODES

Economic Imperative for Freight Mobility Alignment

- ❖ Charlotte Region's manufacturing ecosystem is comprised of a tremendous base of exporting and logistics-dependent industries and manufacturers that are already the existing foundation for future economic success and potential.
- ❖ Combined with improved mobility and efficiency of freight operations, developing new land use linkage and promoting the intermodal transfer of goods will further develop and strengthen our world class economic base and increase its global competitiveness.
- ❖ Export & Logistic assets provide major competitive economic advantages for the Greater Charlotte Region and are important foundations to the IMCP Global Charlotte Manufacturing Ecosystem Development Strategy (MEDS).

Freight Mobility Steering Committee – May 19, 2016

Mike Manis, CEcD

Director, Community and Economic Development

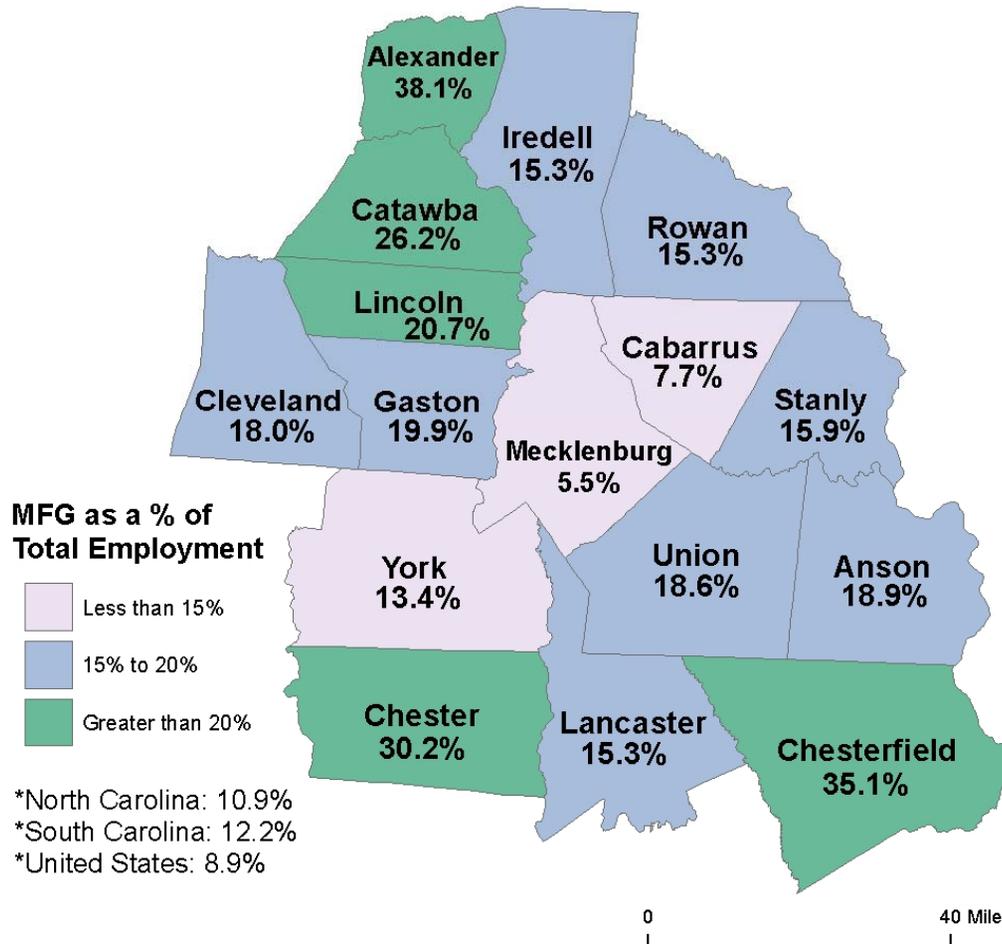
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Planning for Fast, Efficient Freight Transport in the Greater Charlotte Bi-State Region

Manufacturing remains one of the Charlotte Region's Primary Economic Drivers

Manufacturing as a share of total employment (Charlotte USA Region, 2014)

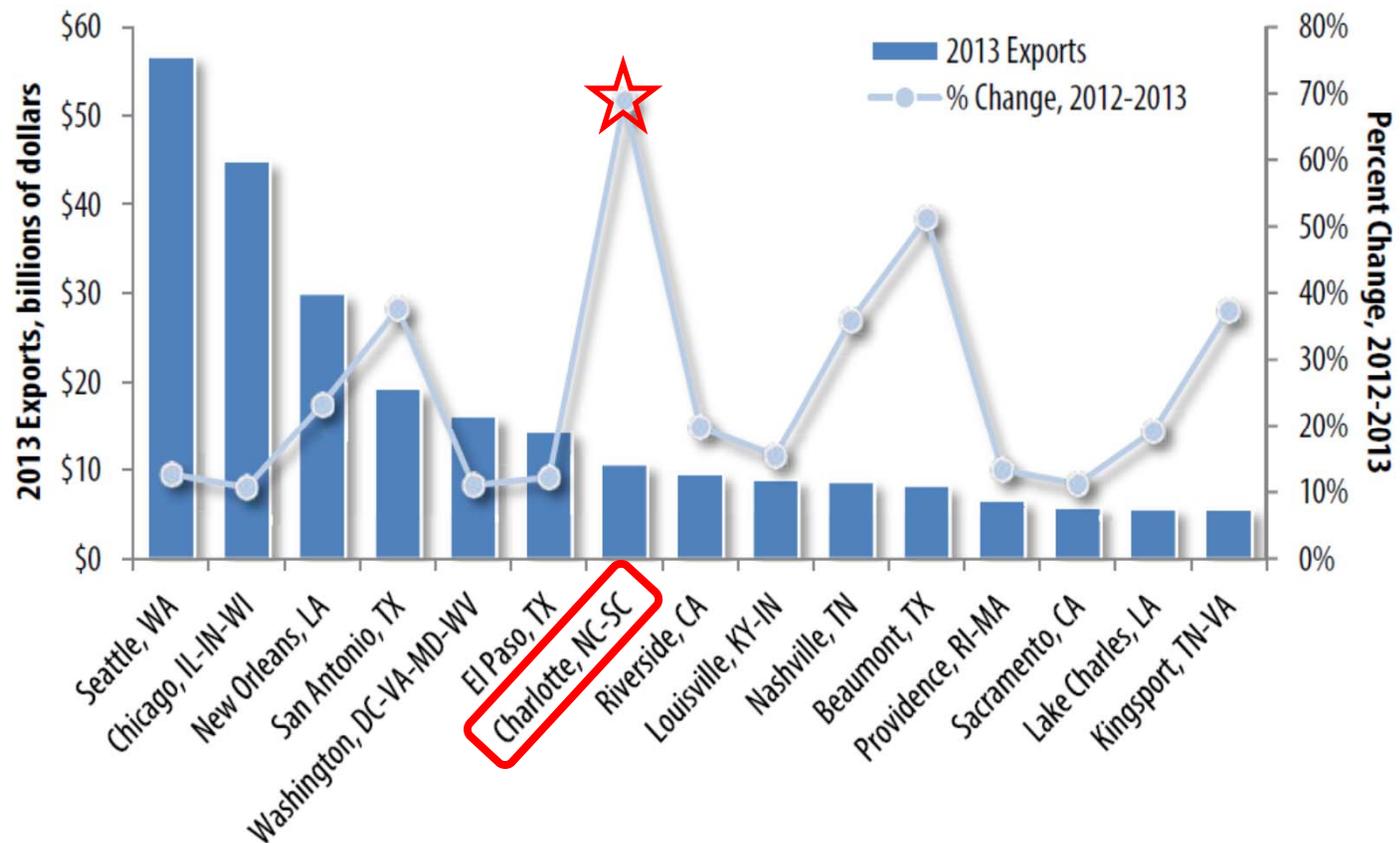


Source: Economic Modeling Specialist, Int'l

Charlotte, NC-SC (up 158%) was one of seven MSAs out of top 50 metropolitan area exporters that saw their exports more than double since 2009.

Charlotte, NC-SC was # 1 fastest percentage growth in exports among the top 50 metro areas from 2012 to 2013 increasing by 69.0 percent.

Fifteen Top 50 Metro Areas Saw Double-Digit Export Growth in 2013



U.S. Department of Commerce | International Trade Administration



CHARLOTTE-CONCORD-GASTONIA, NC-SC

Merchandise Exports in 2014

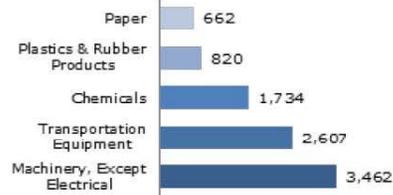
24th Largest export market in the United States

\$12.9 billion
Total merchandise exports

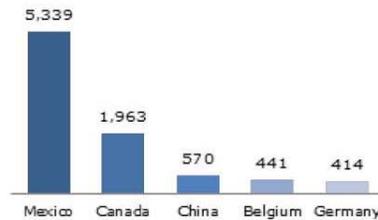


Up \$2.2 billion
(20.6% increase over 2013)

Top Export Sectors Millions of dollars



Top Export Markets Millions of dollars

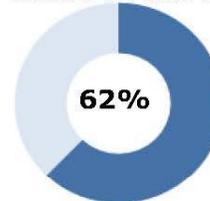


Selected Exporting Counties

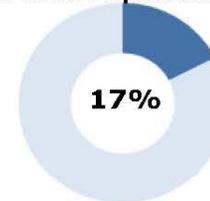
County	Value
Mecklenburg County	\$7.0 billion
York County	\$1.4 billion
Union County	\$1.1 billion
Cabarrus County	\$868 million
Gaston County	\$768 million

**Indicates that the export value is suppressed to avoid disclosing confidential information*

Current and Future FTAs Matter to Charlotte Area Exporters



Share of merchandise exports to Trans-Pacific Partnership (TPP) members



Share of merchandise exports to Trans-Atlantic Trade & Investment Partnership (T-TIP) members

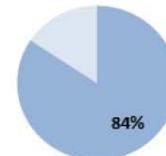
\$8.3 billion

Total merchandise exports to current FTA partners; 65% of Charlotte total

Exports Sustain Charlotte Area Businesses

2,877

Companies exported from Charlotte MSA in 2012 (Latest available)



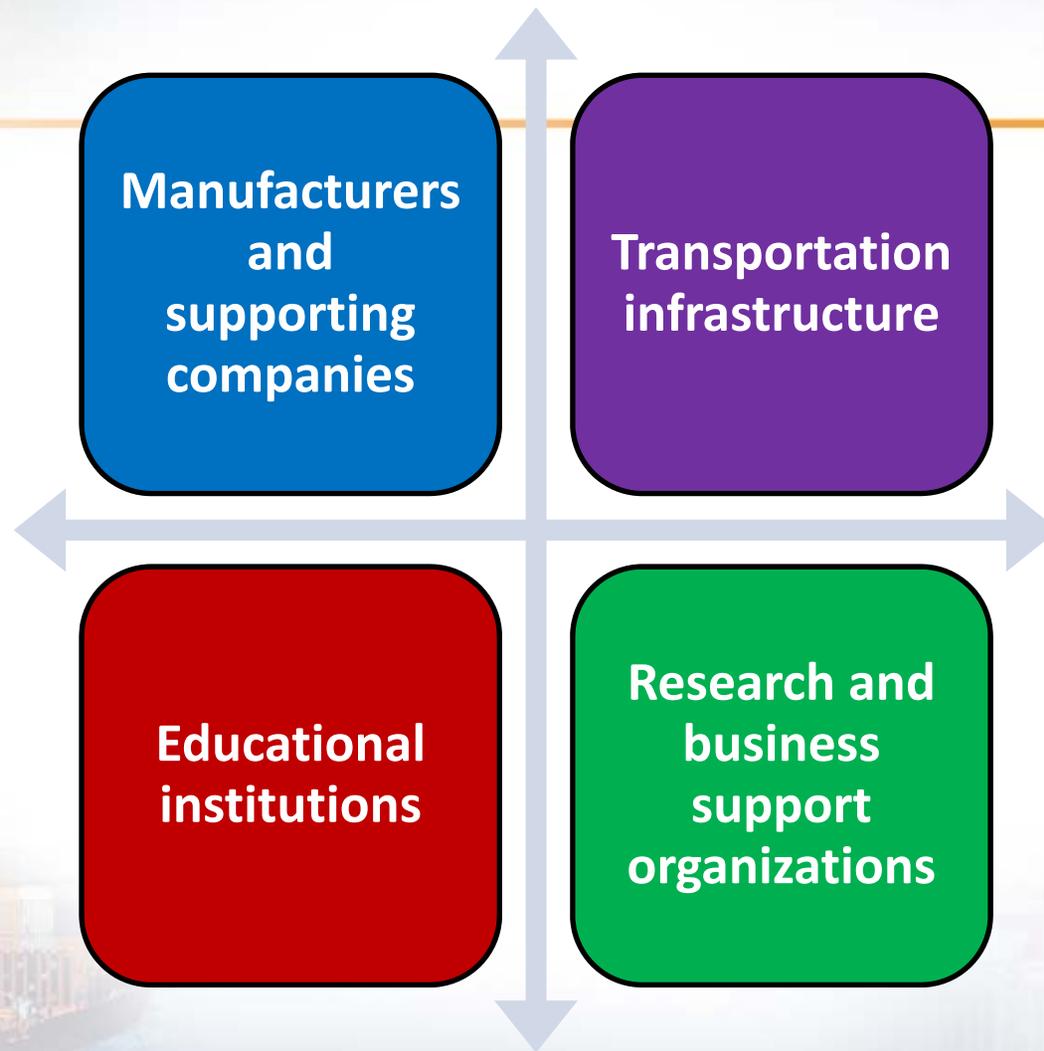
Small-Medium Business share of Charlotte MSA exporters in 2012 (<500 employees)

Updated July 2015

\$1 billion in new exports creates 5,400 additional jobs

For every \$10 billion in sales in a metropolitan export industry, its workers earn 10 to 20 percent higher wages than those in non-exporting jobs

The Global Charlotte Manufacturing Ecosystem



Centralina Advanced Manufacturing Ecosystem Development Strategic Plan

An outcome and initiative of;

EDA “Investing in Manufacturing
Communities Partnership”
(IMCP) Grant Program

&

2013-2017 CEDS “PROSPERITY
FOR GREATER CHARLOTTE
PROJECT”

&

“CONNECT OUR FUTURE” HUD
SCI PLANNING GRANT

MAPPING KEY VALUE CHAINS

- Current Ecosystem Assessment
- Current Trends and Practices
- Recommendations

MANUFACTURING EDUCATION ASSET INVENTORY

- Current Ecosystem Assessment
- Trends and Current Practices
- Recommendations

ENTREPRENEURIAL SUPPORT AND INNOVATION

- Current Ecosystem Assessment
- Trends and Current Practices
- Recommendations

EXPORT AND LOGISTICS ASSETS AND ADVANTAGES

- Current Ecosystem Assessment
- Trends and Current Practices
- Recommendations

IMCP IMPLEMENTATION STRATEGIES AND OBJECTIVES

- Primary Strategic Objectives
- Ancillary Supporting Strategic Objectives
- Strategic Objectives, Metrics, and Indicators



Centralina Advanced Manufacturing Ecosystem Strategic Plan

U.S. Economic Development Administration
 Investing in Manufacturing Communities Partnerships
 September 1, 2015

<https://Centralina Manufacturing Ecosystem Development Strategy 2009.30.2015.pdf>

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CREC

CENTER FOR
REGIONAL ECONOMIC
COMPETITIVENESS



Mapping Key Value Chains for the Centralina Region's Investing in Manufacturing Communities Partnership (IMCP)

January 29, 2015

Value Chain Mapping Methodology



Centralina
↑



2014 Relative Concentration in Centralina Region ≥ 1.2



2014 Relative Concentration in Centralina Region < 1.2 but ≥ 0.8



2014 Relative Concentration in Centralina Region < 0.8



2014 Employment = 0



Growth in region (2010-14)



Decline in region (2010-14)

Bolded Industries > 1,000 jobs

Underlined industries are identified as **Advanced Industries**

Ball and Roller Bearing Manufacturing

Abrasive product MFG ↓

Ferrous metal foundries ↑

All other forging, stamping, & sintering, & crown & closure MFG ↑

Machine shops ↑

Ball & roller bearing MFG ↑

Special tool, die, jig, & fixture MFG ↑

Other engine eqpt. MFG ↑

Speed changer, industrial high-speed drive, & gear MFG, & mechanical power trans. eqpt. ↑

Fluid power process machinery ↓

Motor & generator MFG ↑

Employment (2014): 3,043
 Establishments (2013): 6
 Ann. Growth (10-14): 3.5%

Ball and Roller Bearing Manufacturing

Market Opportunities →
 → Supplier Opportunities

Ball & roller bearing MFG ↑

Other industrial machinery MFG ↑

Rolling mill and other metalworking machinery MFG ↓

Metal cutting and forming machine tool MFG ↓

Speed changer, industrial HSD, & gear MFG, & mechanical power trans. eqpt. ↑

Material handling eqpt. MFG ↓

Air & gas compressor MFG ↑

Power-driven hand tool MFG ↑

Packaging machinery MFG ↑

Fluid power process machinery ↓

Motor & generator MFG ↑

Value Chain Company Lists

- Inventory of regional companies
 - Core and linked industries
- Listing includes:
 - Company name
 - Web address
 - County, city, state
 - Primary NAICS industry
 - Activity description

Company Name	County	City	State	NAICS	NAICS Description	Description of Activities	Electric Power Generation, Transmission and Distribution	Primary Battery Manufacturing	Turbine and Generator Manufacturing
3D Systems Corp.	York	Rock Hill	South Carolina	511210	Applications softw	Software publish			
3M Co.	Catawba	Conover	North Carolina	326113	Acrylic film and ur	Coated polyethyle		Backward	
A.B. Carter Inc.	Gaston	Gastonia	North Carolina	333249	Anodizing equipm	Textile machinery			
A.W. Bohanan Co	Gaston	Dallas	North Carolina	332710	Chemical milling	Industrial machine			
Aaa Cooper Transportation Co. Inc.	Mecklenburg	Charlotte	North Carolina	484121	Bulk mail truck tra	General freight tru			
Aardvark Graphix & sign Works	Rowan	Salisbury	North Carolina	499950	Billboards manufa	Interior and exteri			
Abb Inc.	Mecklenburg	Huntersville	North Carolina	331491	Aircraft and autom	Nonferrous metal		Backward	
Absolutely Signs	Iredell	Mooreville	North Carolina	339950	Billboards manufa	Interior and exteri			
Accenture	Mecklenburg	Charlotte	North Carolina	541614	Customs consultin	Process & logistics			
Accruepartners	Mecklenburg	Charlotte	North Carolina	561311	Babysitting burea	Staffing & executiv			
Accuma Corporation	Iredell	Statesville	North Carolina	32619	Other Plastics Pro	Product Manufactur		Backward	
Accurate Staffing Consultants Inc.	Mecklenburg	Charlotte	North Carolina	561311	Babysitting burea	Temporary & perm			
ACI Worldwide Inc.	Mecklenburg	Charlotte	North Carolina	541511	Applications softw	Software develop			
Actavis Mid Atlantic Lilac	Lincoln	Lincolnton	North Carolina	325412	Adrenal medicinal	Creams, ointments			
Actega WIT, Inc.	Lincoln	Lincolnton	North Carolina	3259	Other Chemical Pr	Waterbase inks, co			
Acutorque Controls Inc	Anson	Polkton	North Carolina	333995	Actuators, fluid pd	Valve actuators for			Backwa
Adams Electric Co. Inc.	Mecklenburg	Charlotte	North Carolina	238210	Airport runway lig	Electrical contract	Backward		
Adecco Staffing	Mecklenburg	Charlotte	North Carolina	561311	Babysitting burea	Temporary employ			
Adecco Staffing	Gaston	Gastonia	North Carolina	561311	Babysitting burea	Temporary employ			
Adecco Staffing	Mecklenburg	Charlotte	North Carolina	561311	Babysitting burea	Temporary employ			
Adecco Staffing	Catawba	Hickory	North Carolina	561311	Babysitting burea	Temporary employ			
Advance Machining Co Of Gastonia Inc.	Gaston	Gastonia	North Carolina	333514	Cutting dies, meta	Tool and die job sh		Forward	
Advanced Imaging Systems Inc.	Mecklenburg	Pineville	North Carolina	518210	Application hostin	Scanning services,			
Advanced Machine And Fabrication	Lincoln	Denver	North Carolina	332710	Chemical milling	Machine shop			
Aep Industries Inc.	Mecklenburg	Matthews	North Carolina	326113	Acrylic film and ur	Polyethylene & str		Backward	
Aerotek, Inc.	Mecklenburg	Charlotte	North Carolina	561311	Babysitting burea	Engineering, environ			
Affinia Group Inc.	Gaston	Gastonia	North Carolina	336310	Assembly line reb	Automotive filters			
Afl Telecommunications LLC	Union	Monroe	North Carolina	238210	Airport runway lig	Electrical contract	Backward		
Agdata	Mecklenburg	Charlotte	North Carolina	541611	Administrative ma	General managem			

*Over 900 companies in this database

Focusing Our Value Chain Analysis

Key Manufacturing Cluster	Selected Core Industry
Energy	<ul style="list-style-type: none">• Motor and generator manufacturing (NAICS 335312)• Primary battery manufacturing (NAICS 335912)• Turbine and turbine generator set units manufacturing (NAICS 333611)• Electric power generation, transmission, and distribution (NAICS 2211)
Transportation equipment	<ul style="list-style-type: none">• Heavy duty truck manufacturing (NAICS 33612)
Aerospace and defense	<ul style="list-style-type: none">• Aircraft parts and auxiliary equipment manufacturing (NAICS 336413)
Precision metalworking	<ul style="list-style-type: none">• Ball and roller bearing manufacturing (NAICS 332991)
Distribution and logistics	<ul style="list-style-type: none">• Truck Transportation (NAICS 484)

Centralina: Ball & Roller Bearing Manufacturing

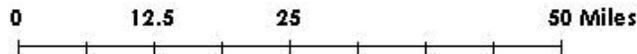
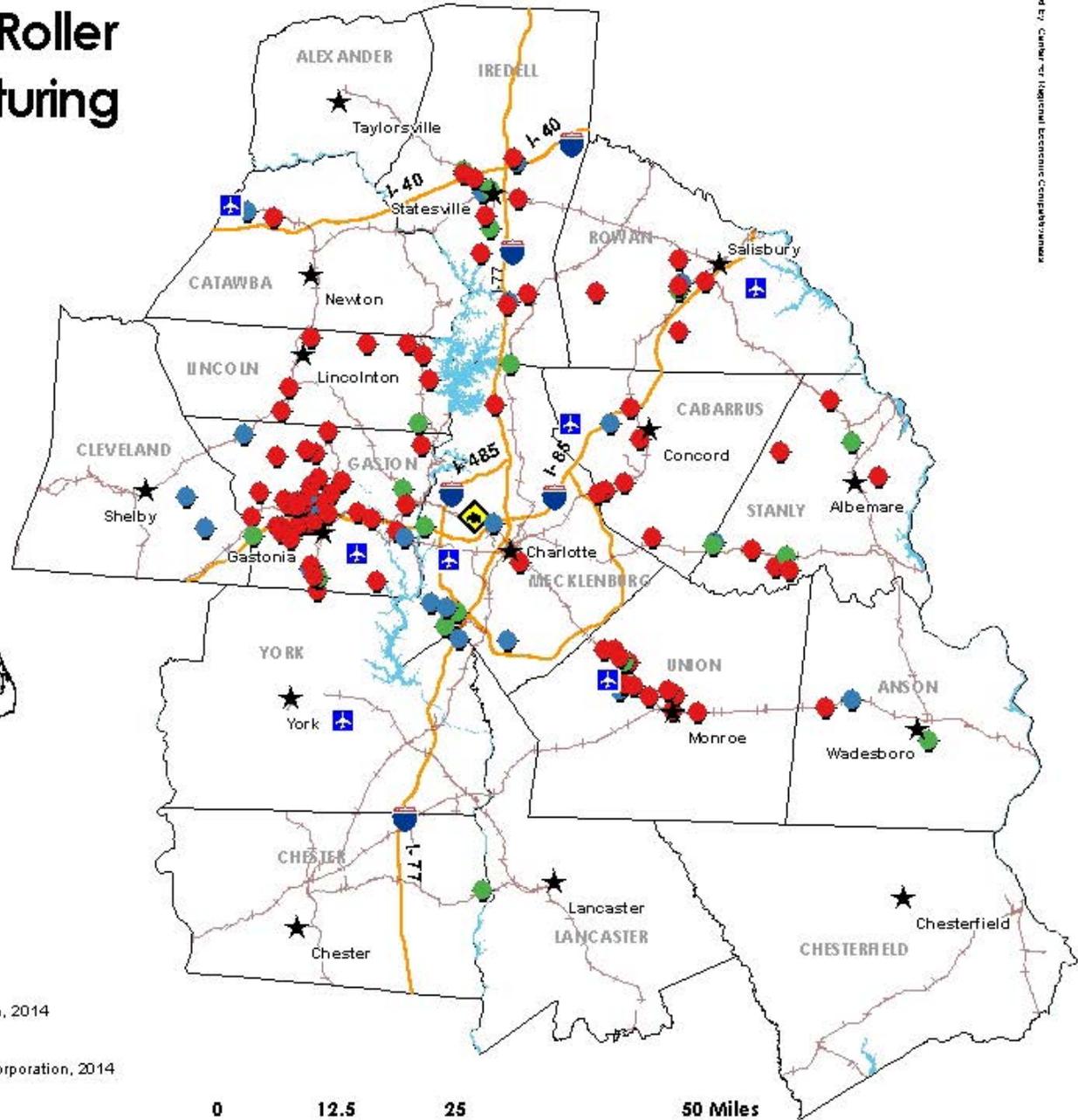
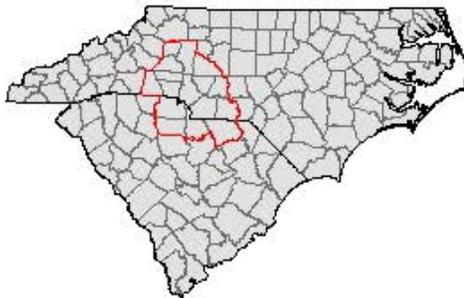
★ County Seats

Linkages

- Backward
- Both
- Forward

Infrastructure

- ✈ Airports
- 📦 Inland Ports
- 🚂 Freight Rail
- 🛣 Interstate Highways



Source(s):
 Anson County Economic Development Office, 2014
 Charlotte Chamber of Commerce, 2014
 E4 Carolinas
 Gaston County Economic Development Commission, 2014
 Investing in Manufacturing Partnership, 2014
 Lincoln Economic Development Association, 2014
 Mooresville South Iredell Economic Development Corporation, 2014
 Rowan Works, 2014
 Stanly Economic Development Commission 2014
 Statesville Regional Development, 2014
 U.S. Census, 2014



MICHAEL GALLIS

Manufacturing Ecosystem

in the

Greater Charlotte Regional Freight Network

A presentation for

CCOG

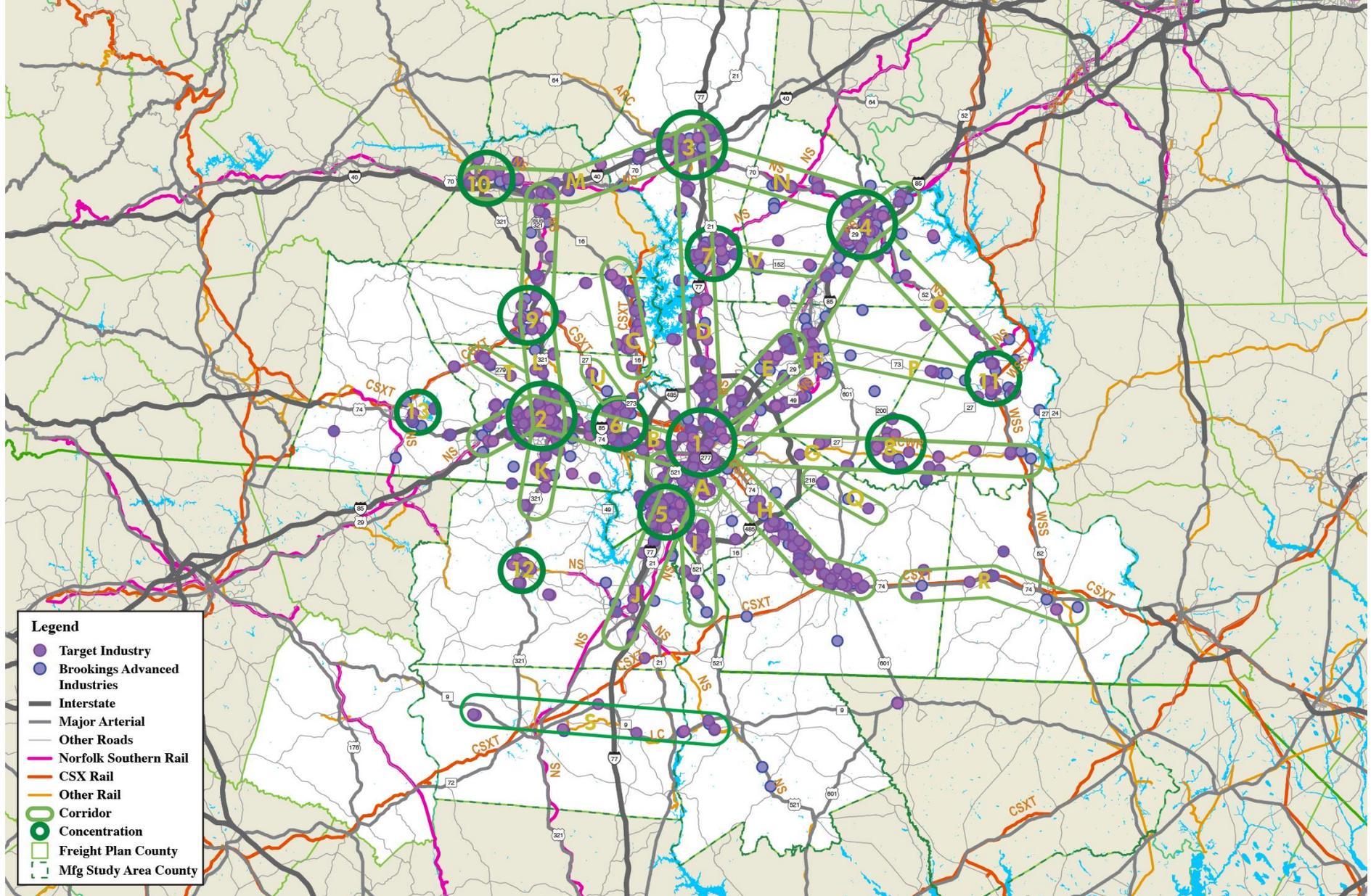
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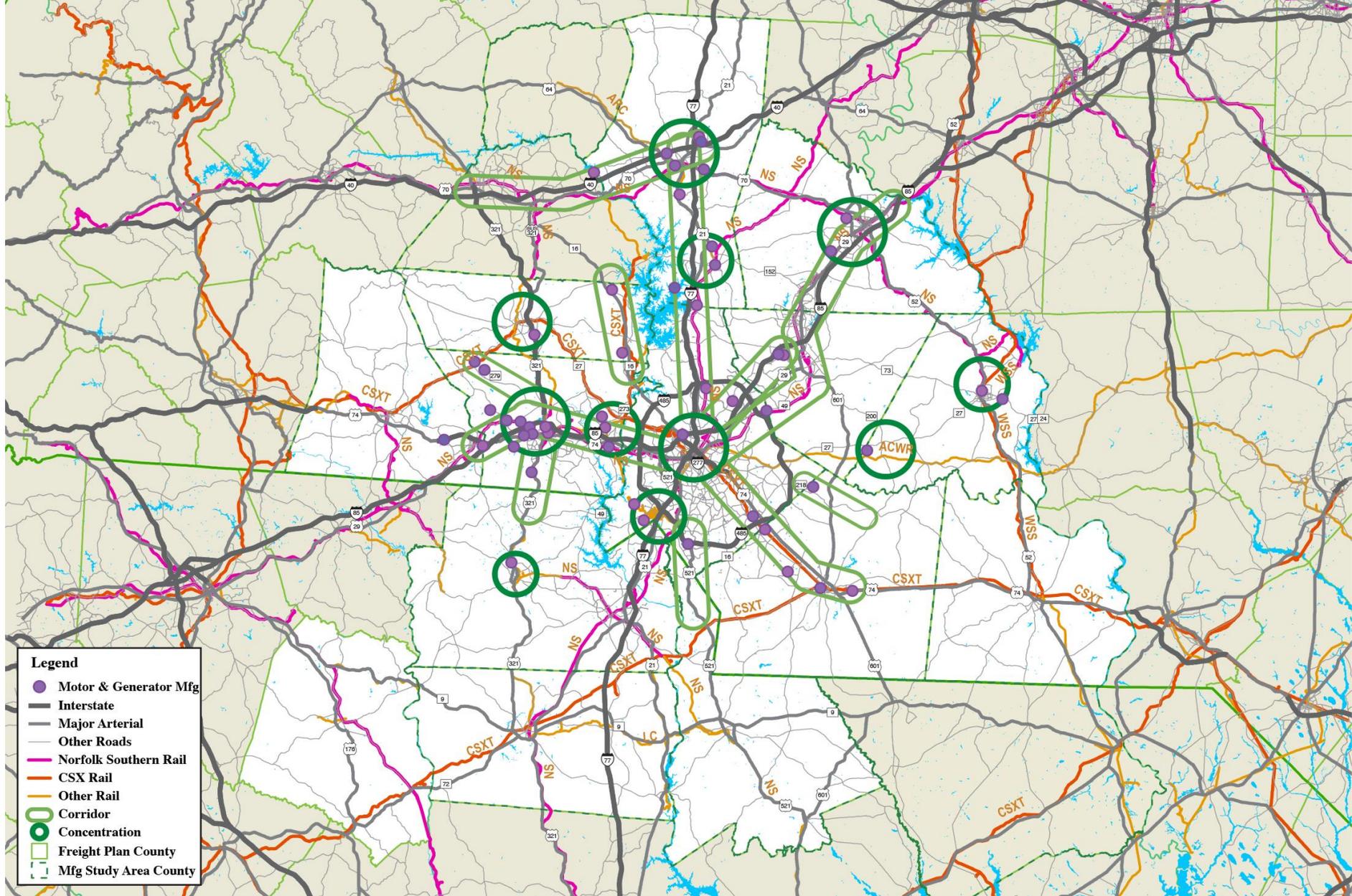
Michael Gallis & Associates

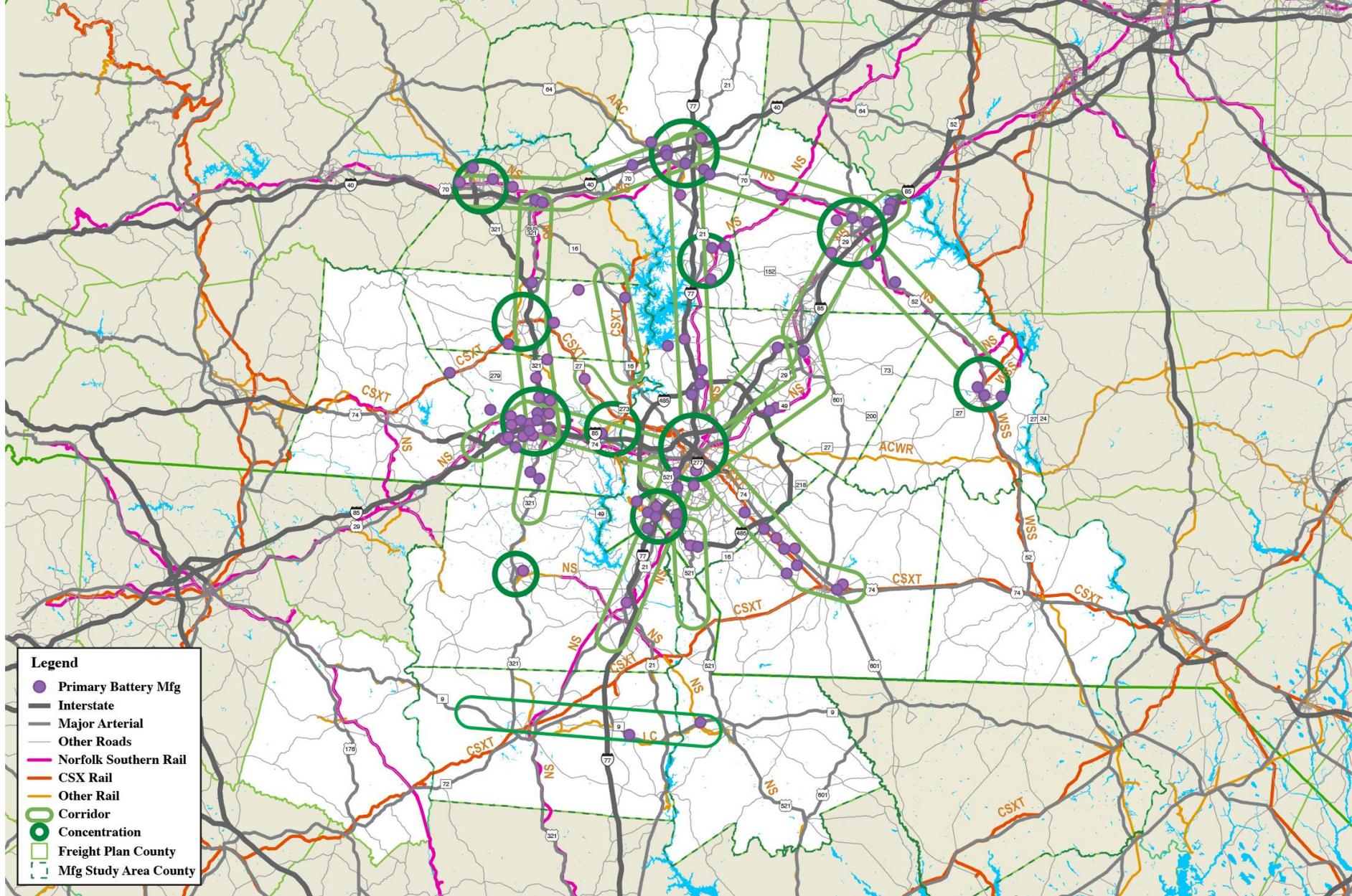
May 19, 2016

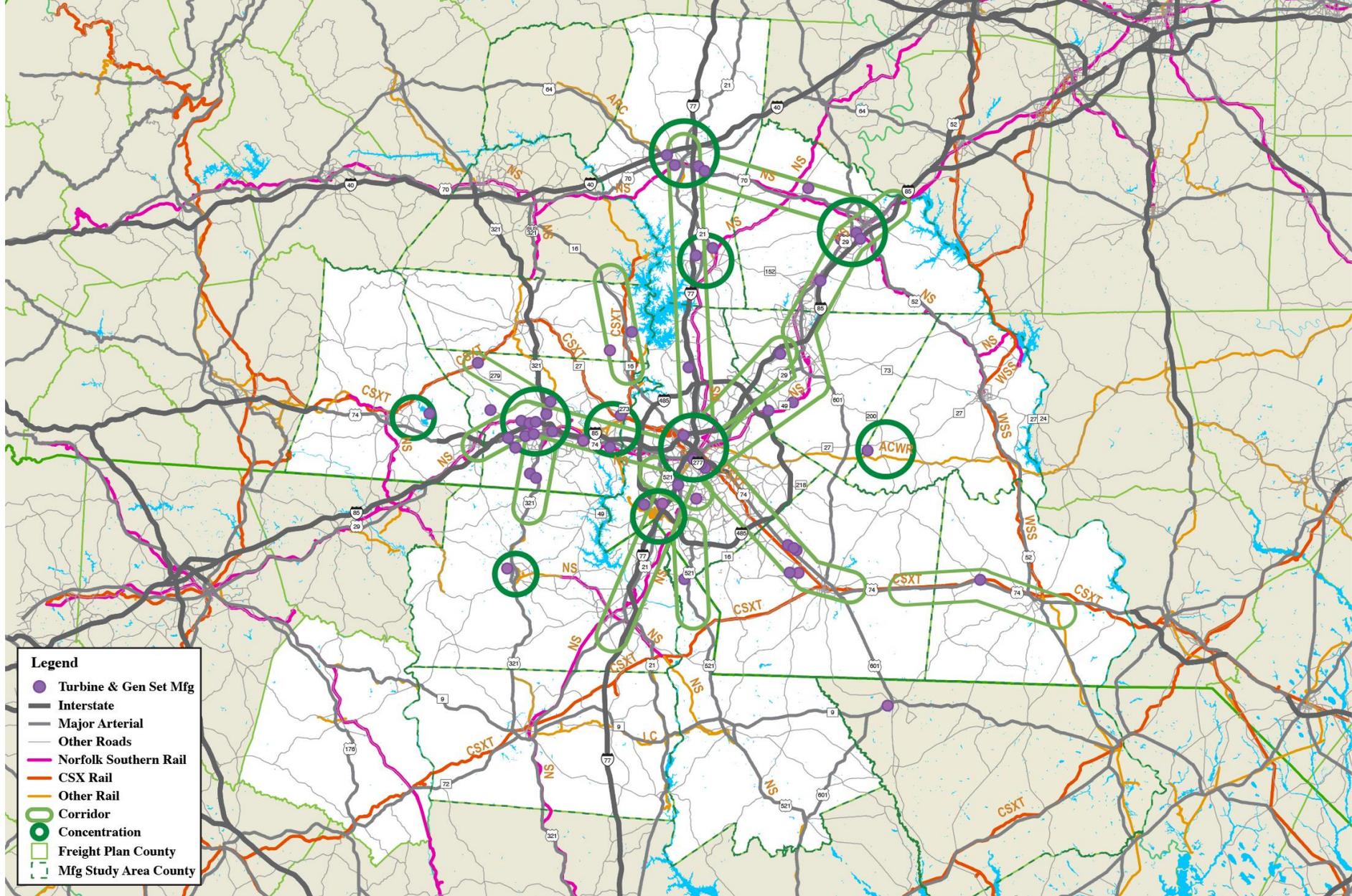
Growing the Regional Economy

- Identify the primary corridors and concentrations of eight key industries
- Describe the relationship between key industries and the freight network
- Coordinate investments in infrastructure with economic development goals
- Facilitate the growth of the manufacturing ecosystem









- Legend**
- Turbine & Gen Set Mfg
 - Interstate
 - Major Arterial
 - Other Roads
 - Norfolk Southern Rail
 - CSX Rail
 - Other Rail
 - Corridor
 - Concentration
 - Freight Plan County
 - Mfg Study Area County

MICHAEL GALLIS & ASSOCIATES

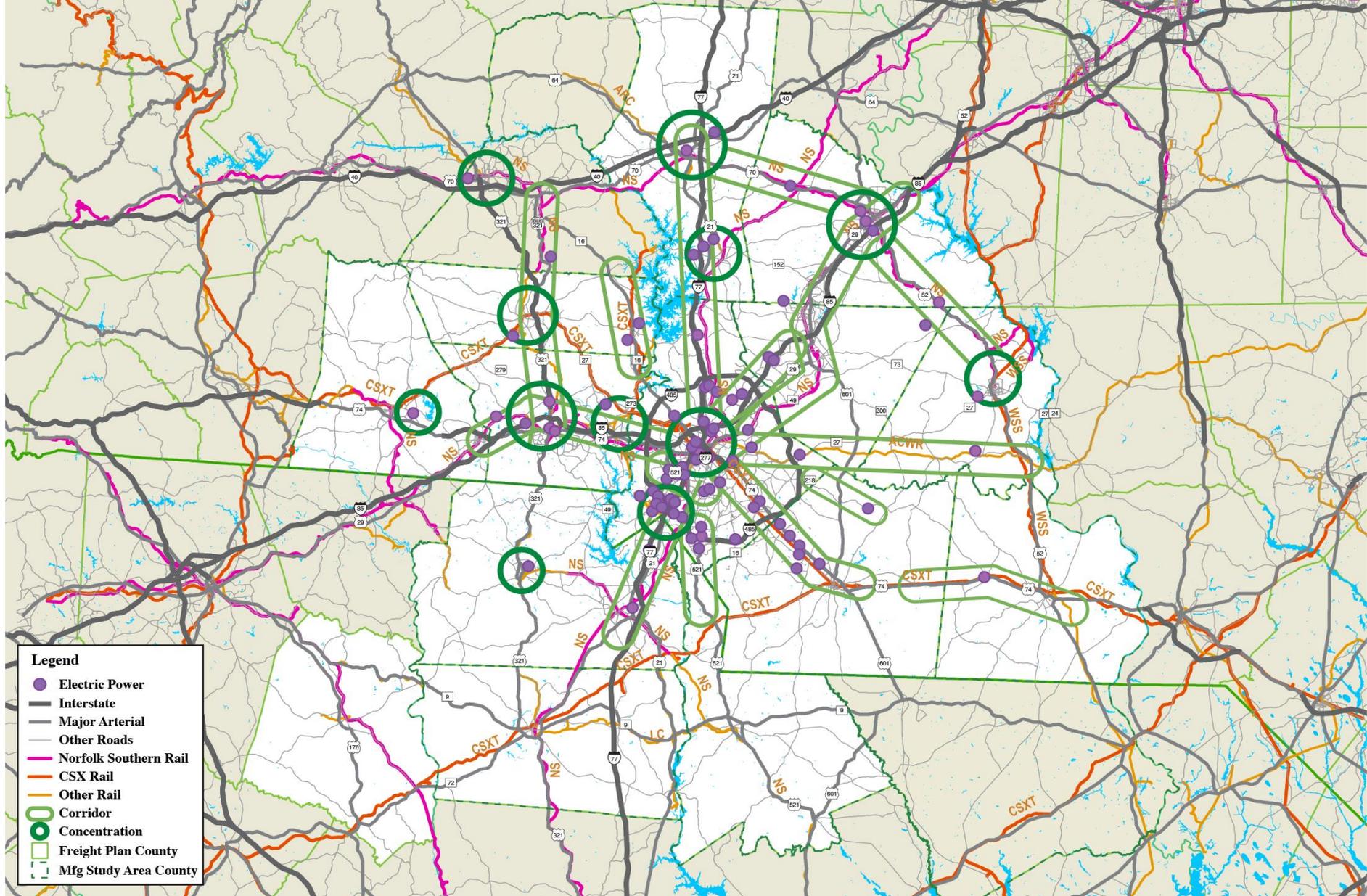


Greater Charlotte Regional Freight Mobility Plan

**Turbine & Turbine Generator Set Units Manufacturing
Corridors and Concentrations**



05/18/16
V1.6



- Legend**
- Electric Power
 - Interstate
 - Major Arterial
 - Other Roads
 - Norfolk Southern Rail
 - CSX Rail
 - Other Rail
 - Corridor
 - Concentration
 - Freight Plan County
 - Mfg Study Area County

MICHAEL GALLIS & ASSOCIATES

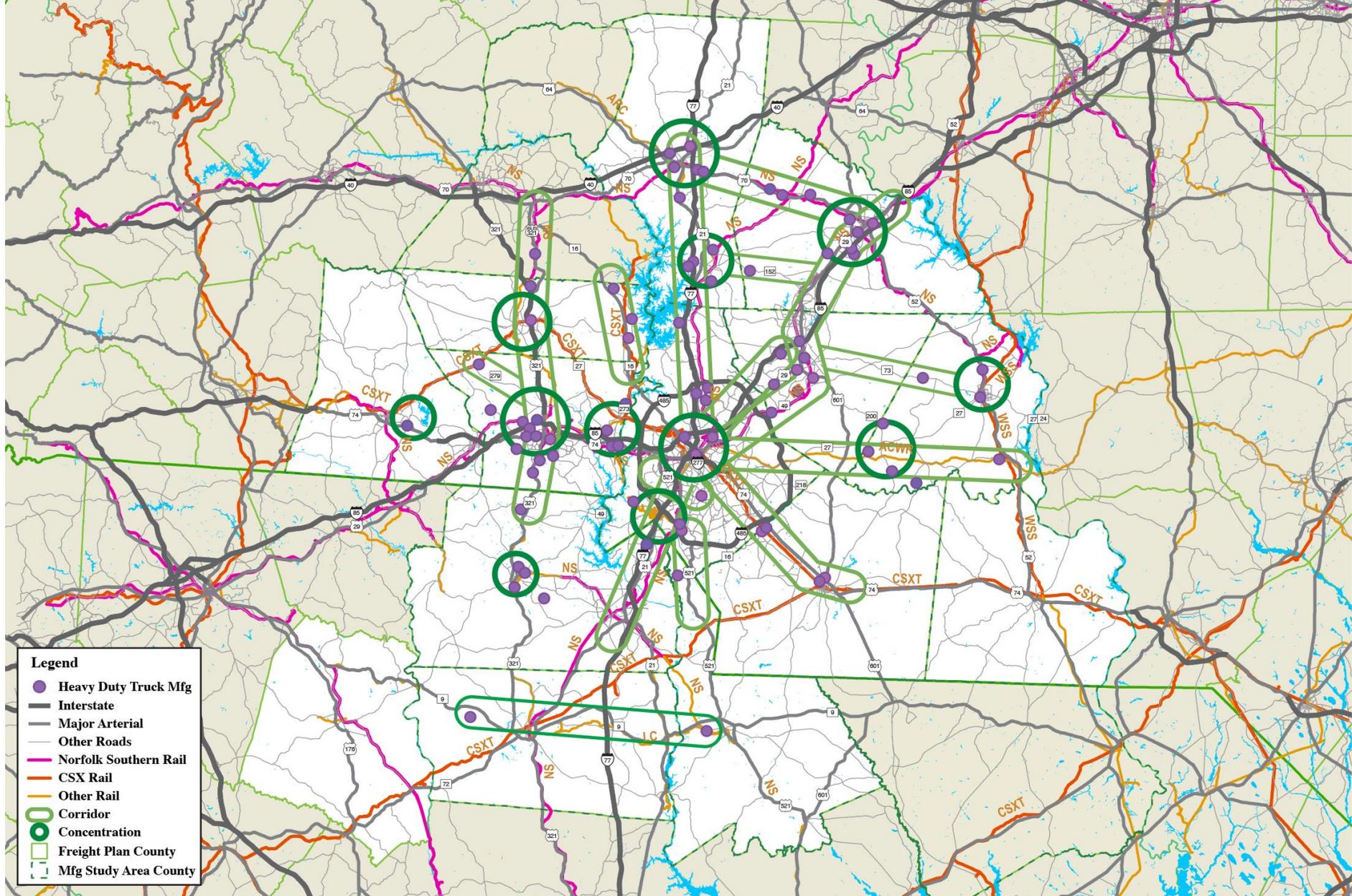


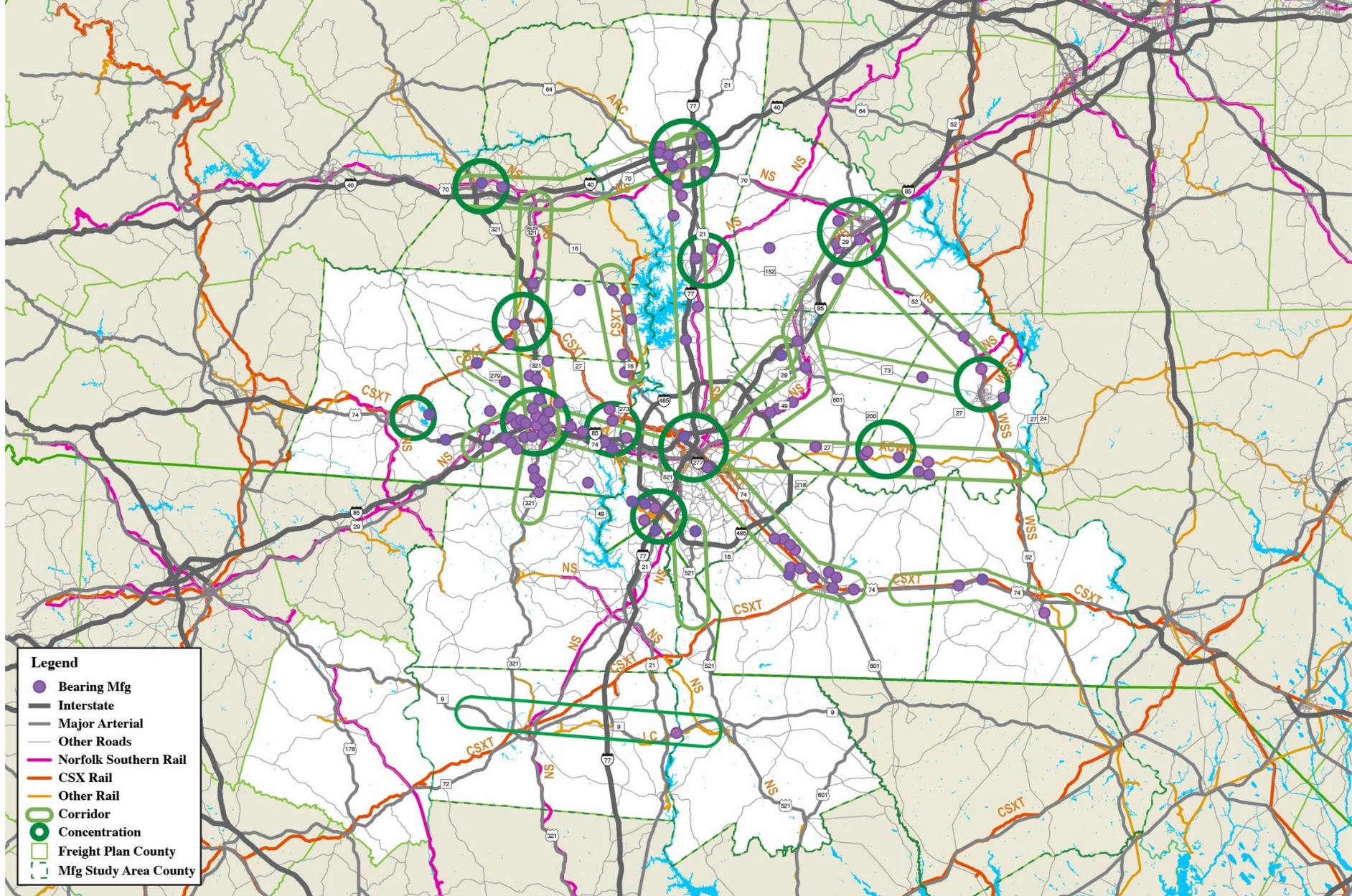
Greater Charlotte Regional Freight Mobility Plan

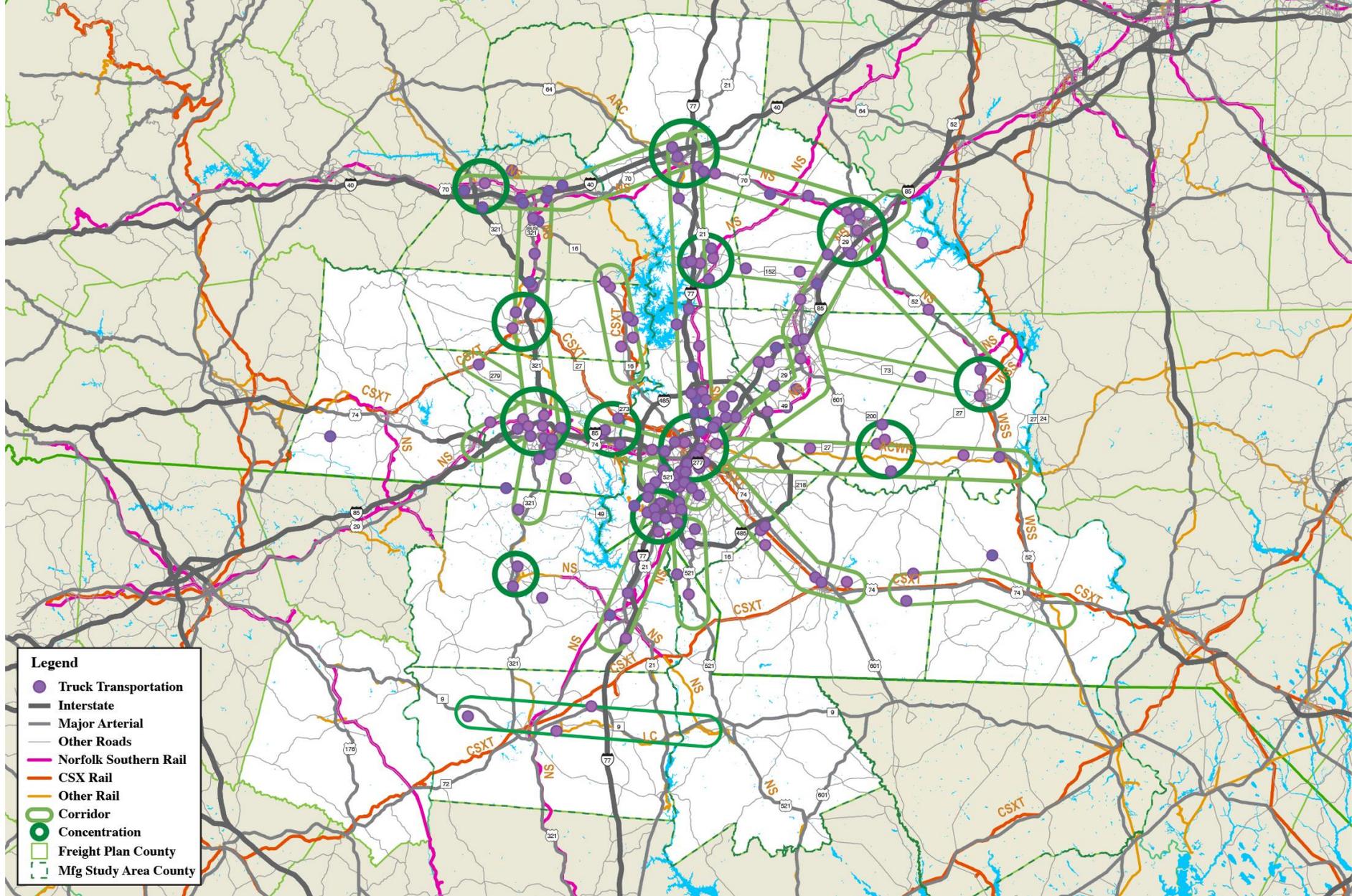
**Electric Power Generation, Transmission, & Distribution
Corridors and Concentrations**

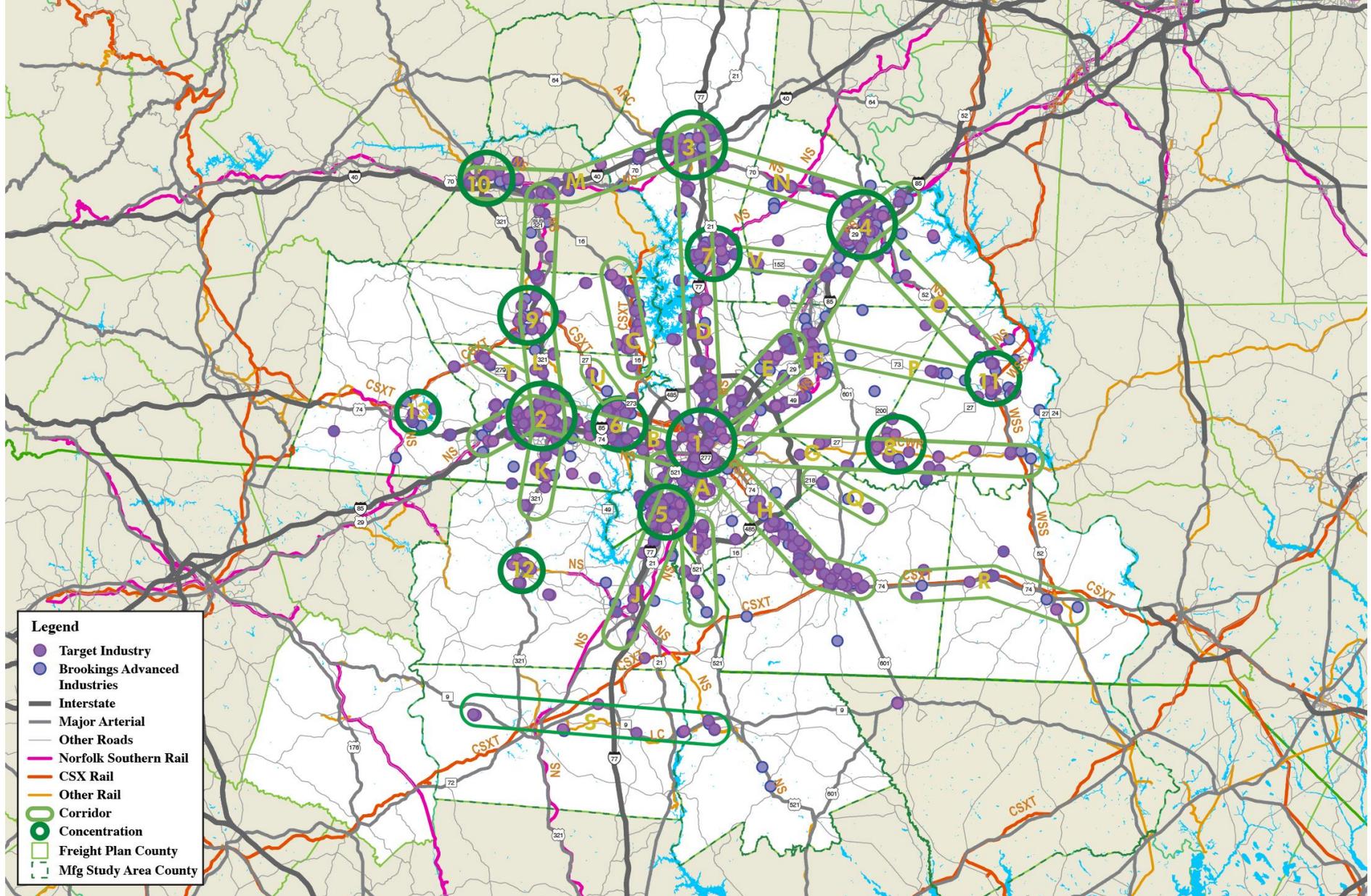


05/17/16
V1.5









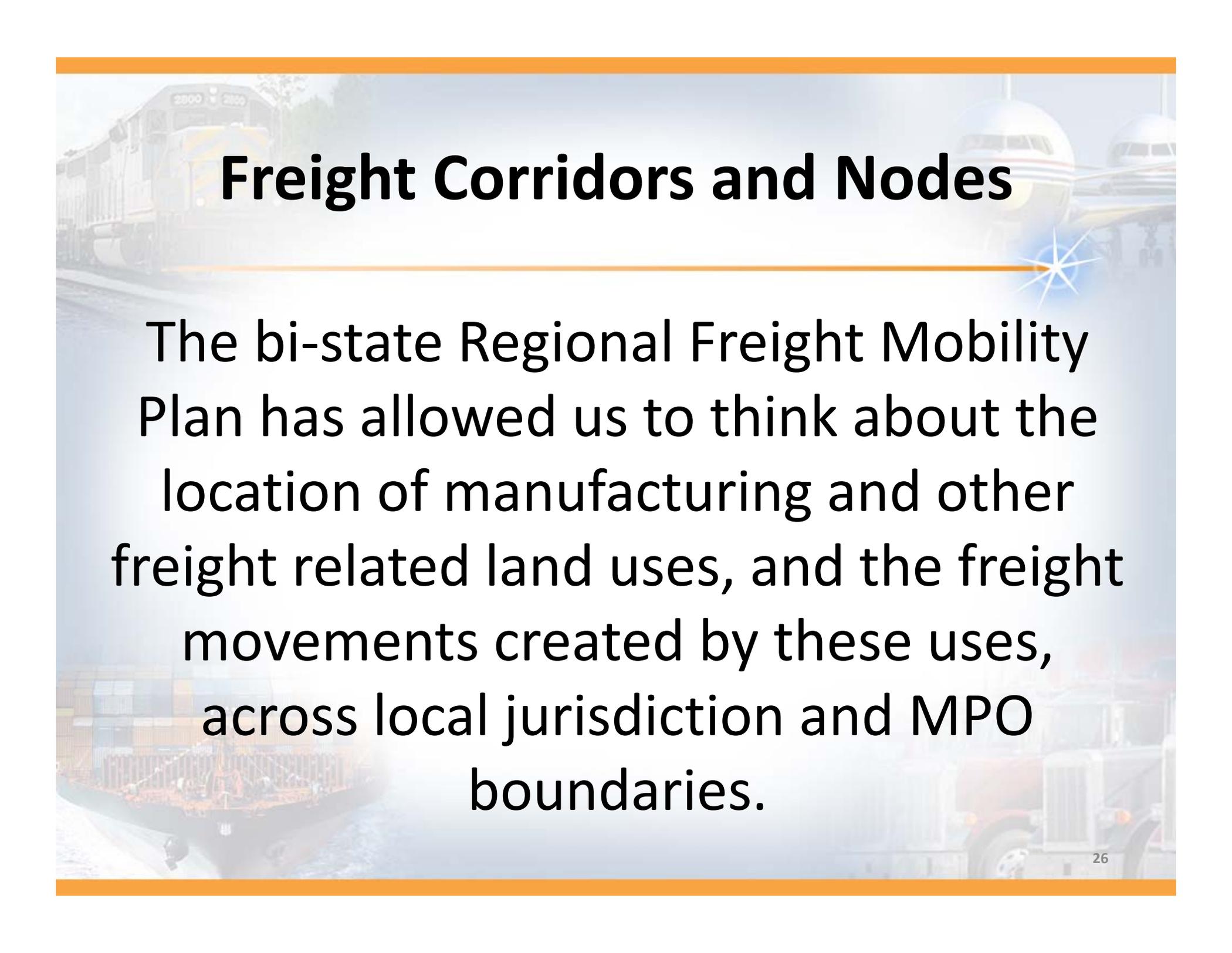
Conclusions

- The manufacturing ecosystem is a continuous pattern across political jurisdictions
- The freight system is also a continuous pattern across political jurisdictions
- Strengthening both will require a coordinated regional strategy and action

The background of the slide is a composite image. On the left, a train with a yellow and black locomotive is moving. On the right, two commercial airplanes are parked on a tarmac. At the bottom, a cargo ship is shown with a semi-truck on its deck. The entire image is overlaid with a light blue gradient and a horizontal orange line.

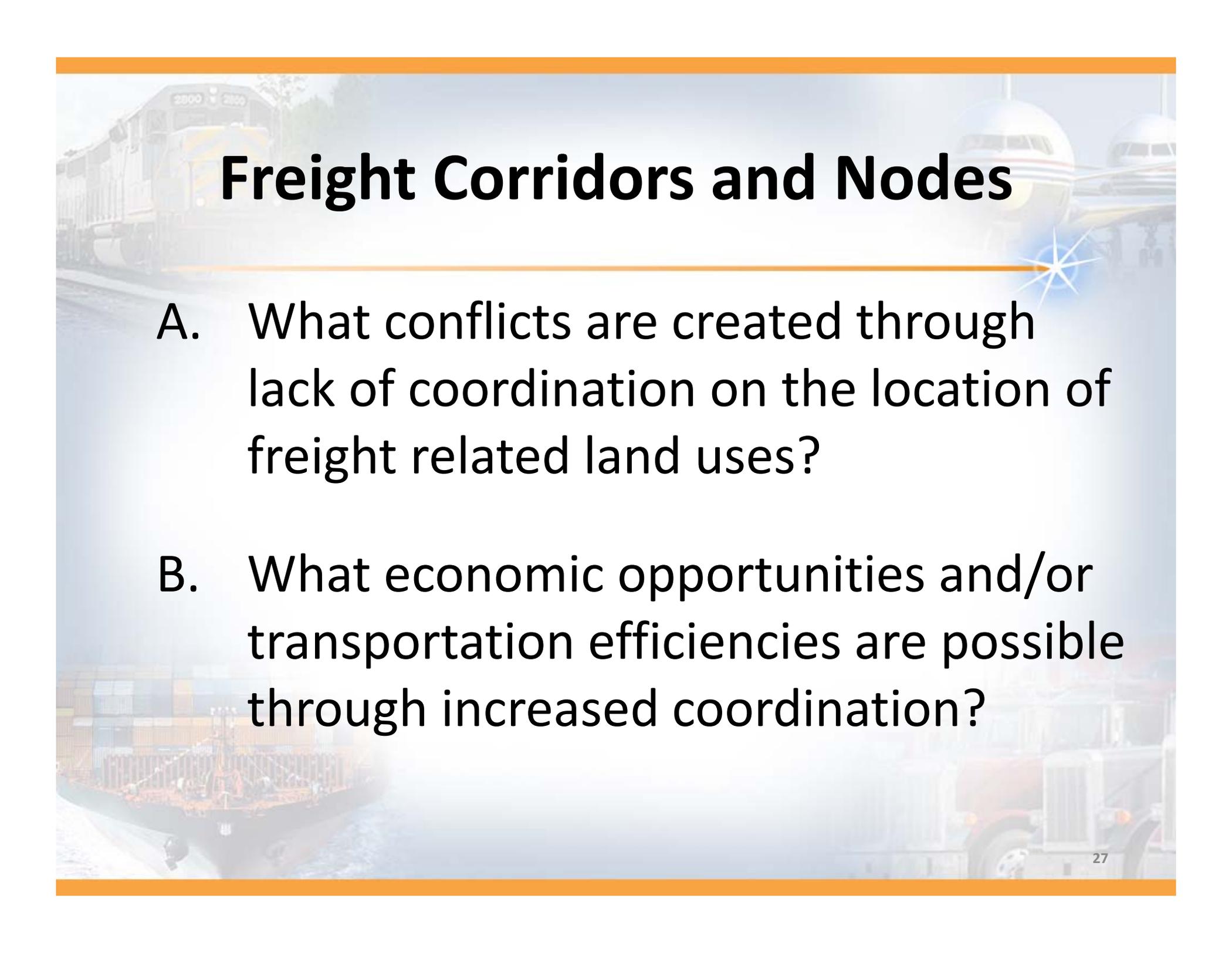
Michelle Nance, Centralina COG

TABLE DISCUSSION AND REPORT OUT



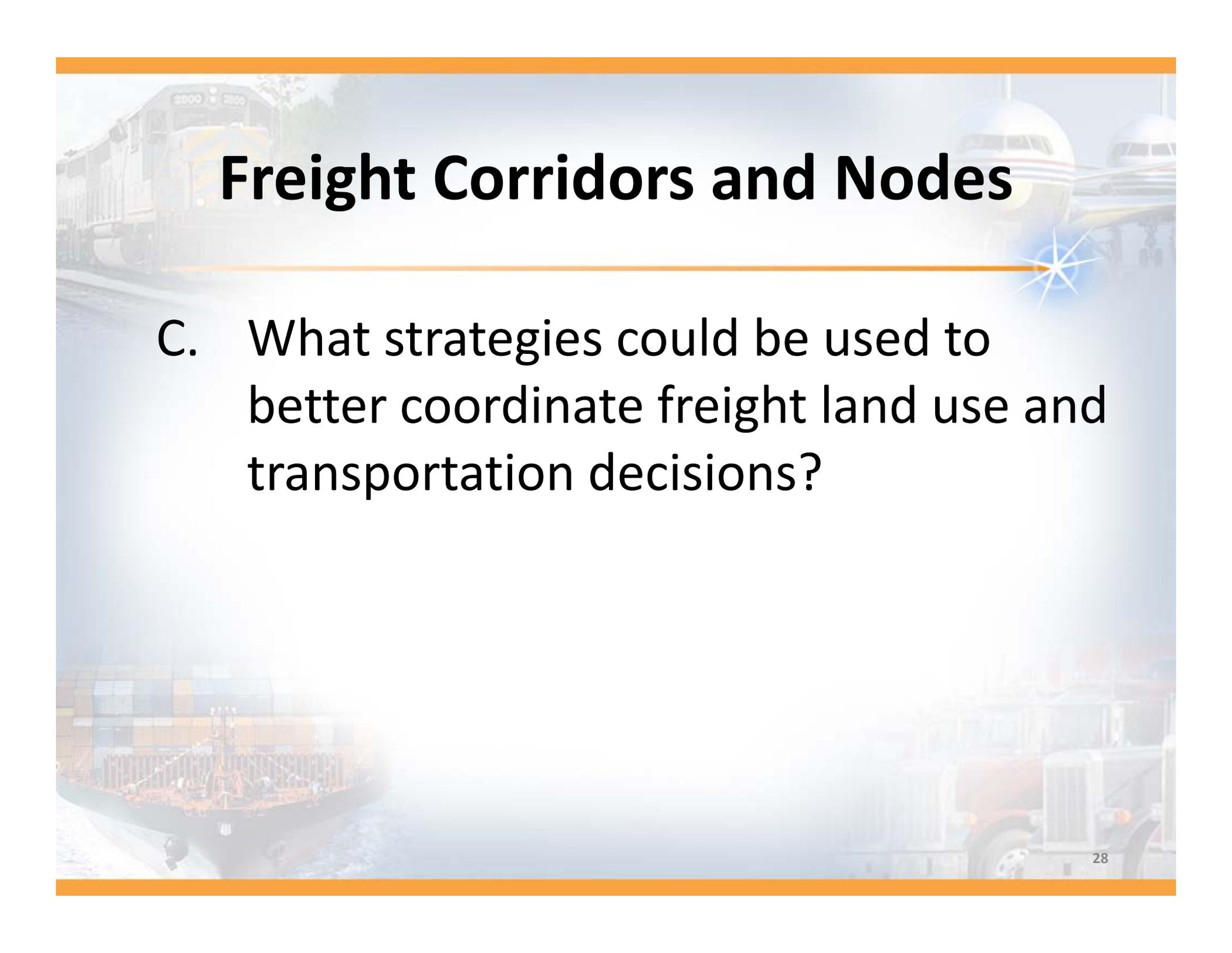
Freight Corridors and Nodes

The bi-state Regional Freight Mobility Plan has allowed us to think about the location of manufacturing and other freight related land uses, and the freight movements created by these uses, across local jurisdiction and MPO boundaries.



Freight Corridors and Nodes

- A. What conflicts are created through lack of coordination on the location of freight related land uses?
- B. What economic opportunities and/or transportation efficiencies are possible through increased coordination?



Freight Corridors and Nodes

- C. What strategies could be used to better coordinate freight land use and transportation decisions?

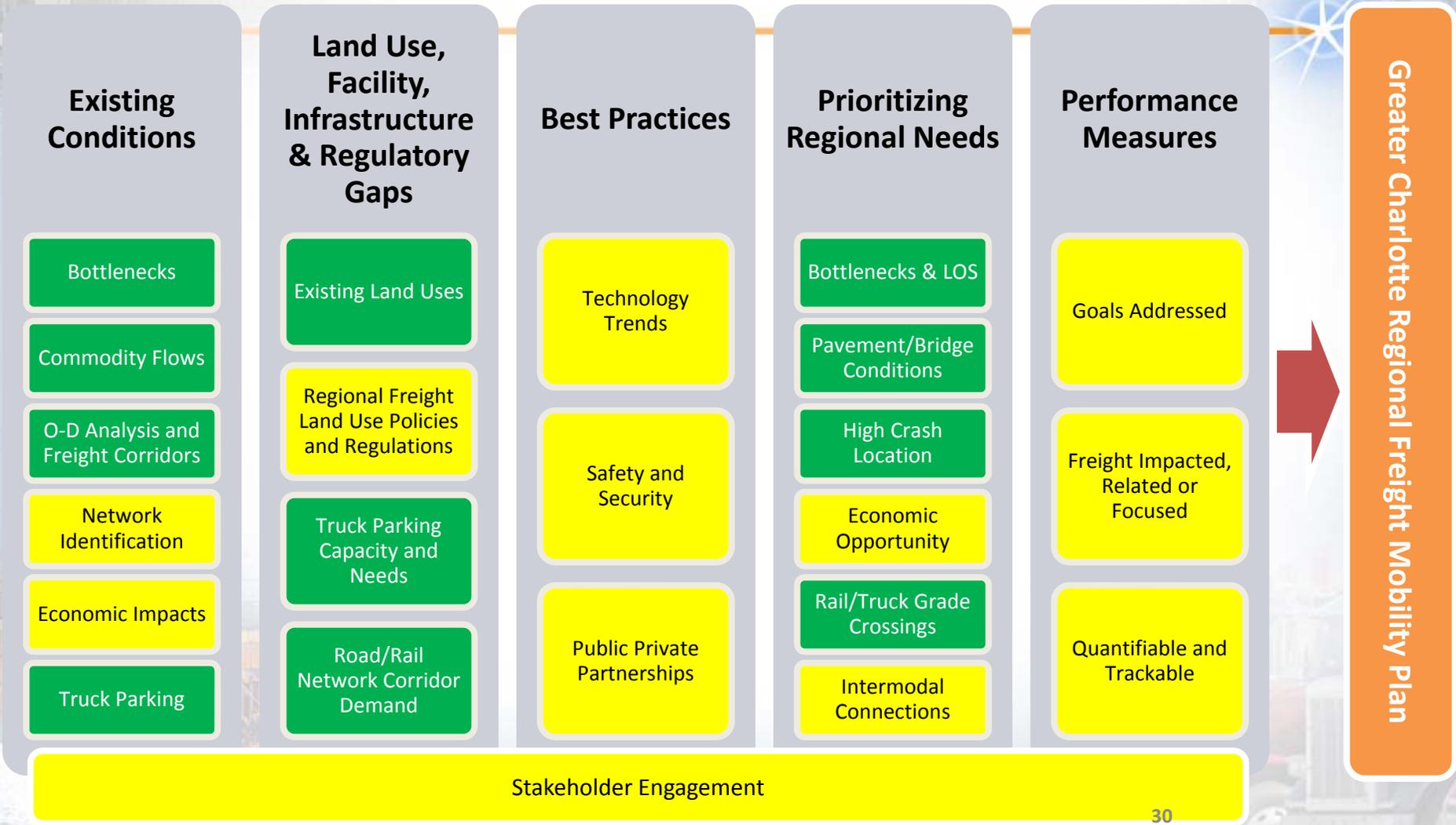


Pat Anater, CDM Smith

LOCALLY-ADOPTED POLICIES ON FREIGHT RELATED LAND USES

Plan Development Process

■ Complete
■ Working

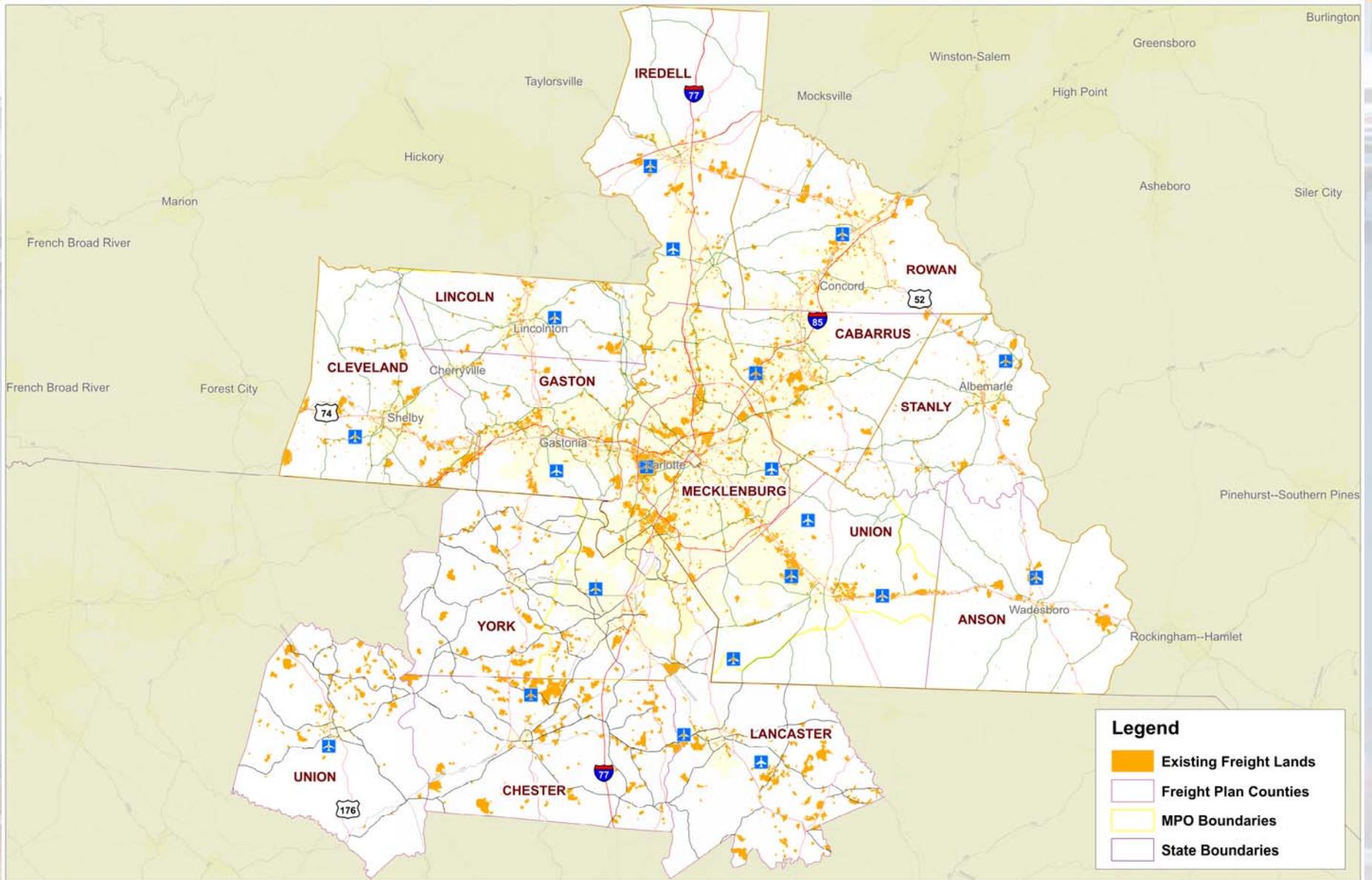


Land Use Analysis Process

- Source: CommunityVIZ
- Identification of Existing Freight Lands
- Identification of Vacant Undeveloped Lands
- Identification of Undeveloped Freight Lands
- Identification of Potential Freight Development Lands
- Look at large freight clusters of existing and potential freight lands
- Look at these freight clusters along the freight network

Land Use Analysis Definitions

- **Vacant Undeveloped Lands**—Includes ALL Vacant land for the study area which have the potential to be re-zoned to freight related use if necessary.
- **Undeveloped Freight Lands**—Existing Freight Lands which do not have a permanent structure on the parcel. These parcels are already zoned for freight related uses and would not require any zoning changes to accommodate freight uses.
- **Potential Freight Development Lands**—Includes vacant land located adjacent to the freight roadway and rail network which is vacant land zoned for either freight related uses or other non-freight related uses.



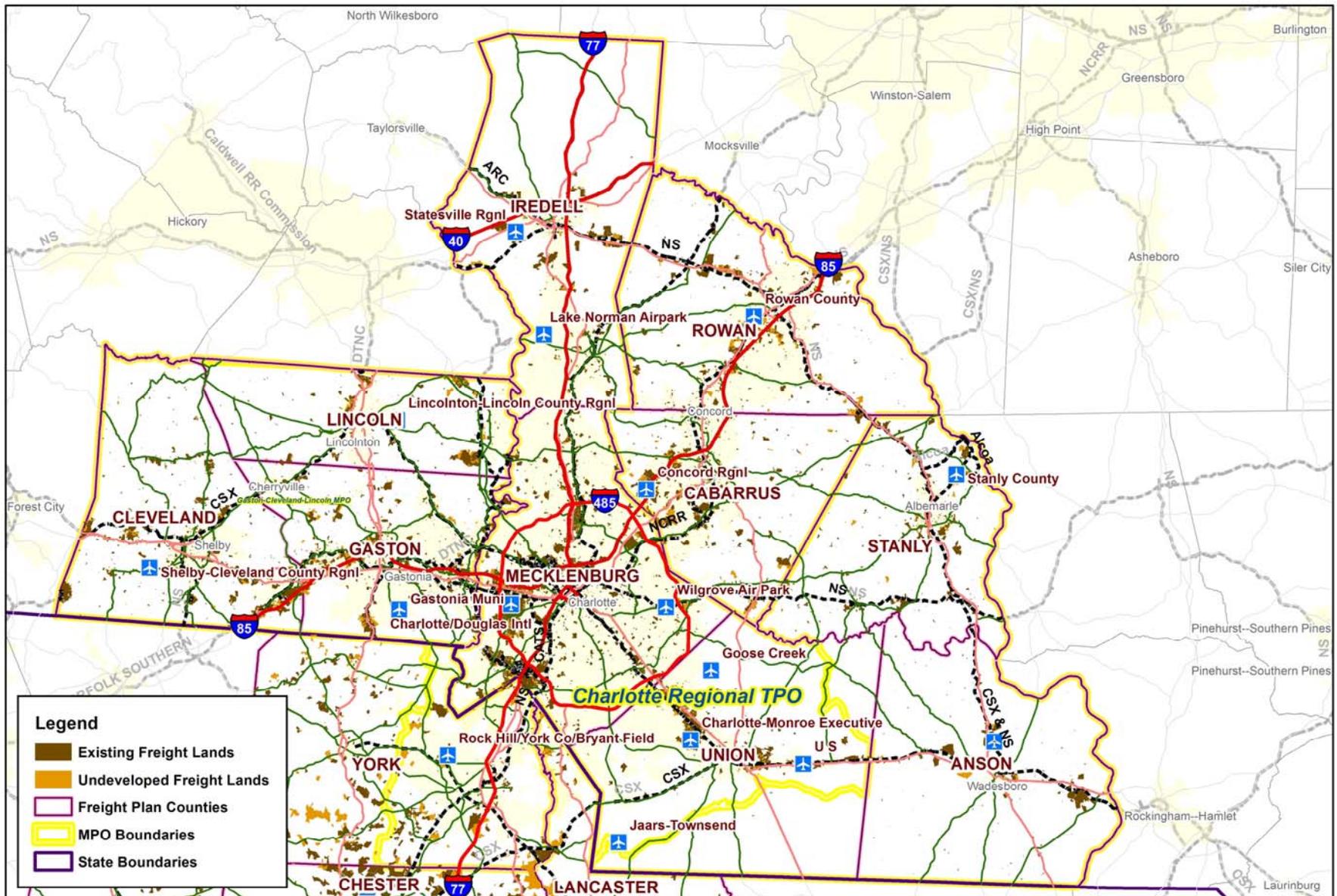
Legend

- Existing Freight Lands
- Freight Plan Counties
- MPO Boundaries
- State Boundaries



Greater Charlotte Regional Freight Mobility Plan
Existing Freight Development Lands in
Centralina COG Region

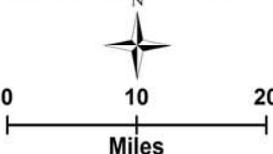




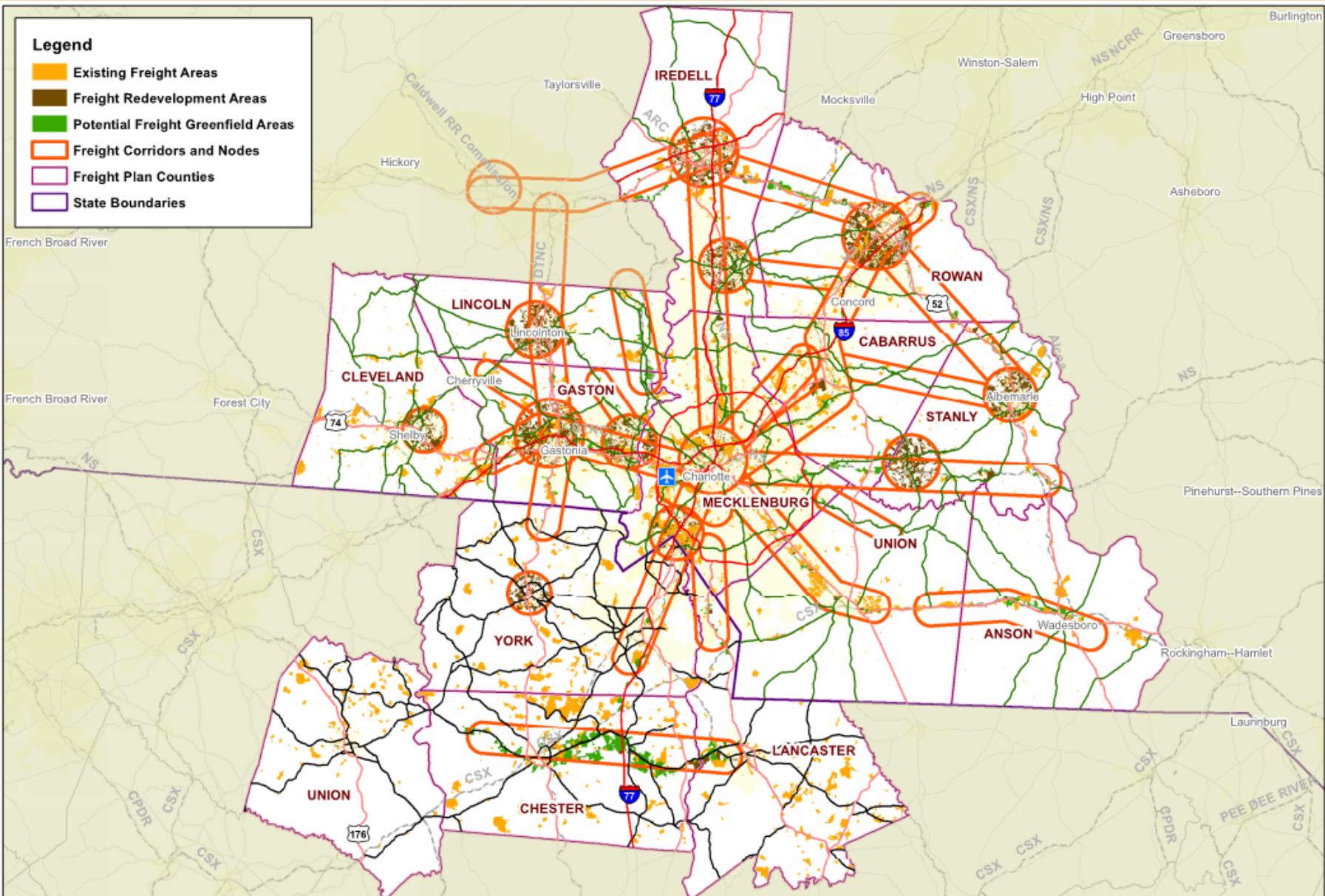


Legend

- Vacant Undeveloped Lands
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- MPO Boundaries
- State Boundaries

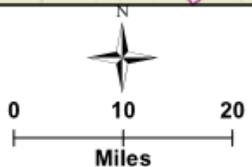


Greater Charlotte Regional Freight Mobility Plan
Vacant Undeveloped Lands in
Charlotte Regional TPO



Legend

- Existing Freight Areas
- Freight Redevelopment Areas
- Potential Freight Greenfield Areas
- Freight Corridors and Nodes
- Freight Plan Counties
- State Boundaries



Greater Charlotte Regional Freight Mobility Plan
Freight Redevelopment and Potential Greenfield
Areas Within Freight Corridors and Nodes
in Centralina COG Region

Freight Land Use for Study Area

Category	Acreage	
Total Existing Freight Acreage in Study Area	337,451	8% of all acres
Existing Freight Acreage in Clusters and Corridors	46,223	13.7% of all existing freight acres
Undeveloped/Underutilized Freight Acreage in Clusters and Corridors	12,765	27.6% increase in freight acres
Vacant Acreage within Clusters and Corridors	102,989	Some of which could be useful for freight development
Total Acreage for Potential Freight Use within Clusters and Corridors	115,754	If all Vacant land is used for freight use—highly unlikely and not recommended.



Michelle Nance, Centralina COG

TABLE DISCUSSION AND REPORT OUT



Locally-Adopted Policies on Freight Land Use

The location of freight related land uses plays an important role in the efficiency of the freight transportation system.



Locally-Adopted Policies on Freight Land Use

- A. What are the key drivers in determining where freight related uses locate?

- B. What are the competing pressures for development with freight interests?
Where within the region?

The background of the slide is a collage of transportation-related images. On the left, a freight train with a locomotive numbered 2800 is visible. On the right, the nose and tail of a large commercial airplane are shown. At the bottom, a cargo ship is seen from an aerial perspective, and a semi-truck is partially visible on the right side. The text is overlaid on this background.

Locally-Adopted Policies on Freight Land Use

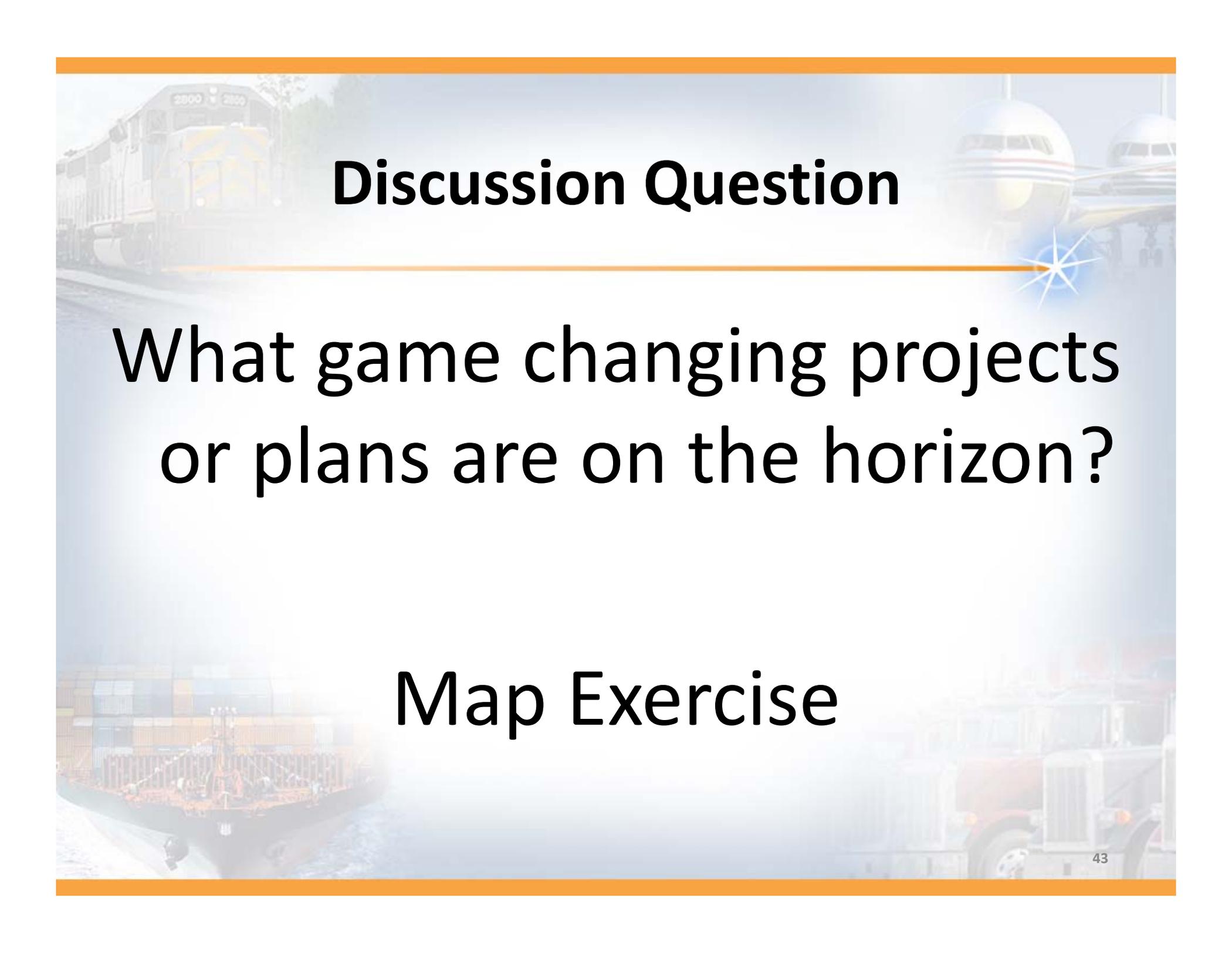
C. What coordination activities are currently taking place between LU planners and the MPOs on future freight locations? Between land use planners and economic developers?



Locally-Adopted Policies on Freight Land Use

- D. What key groups play a role in determining freight industry location?

- E. What steps should occur to increase coordination?



Discussion Question

What game changing projects or plans are on the horizon?

Map Exercise



Jim Prosser, Centralina COG

WRAP UP & NEXT STEPS



How To Stay Up-to-date

- Attend Freight Steering Committee Meetings
- Check our website www.centralina.org for new information

Thank You!

We are excited to work with each of you and get your input on the region's first Freight Mobility Plan to ensure that our region will continue to be economically competitive and a great place to live and work.

For more information, contact:

Jessica Hill, Centralina COG - 704-348-2731 or jhill@centralina.org.

Jennifer Humphreys, CDM Smith - 843 972-4543 or humphreysjh@cdmsmith.com