

NYMTC's *New* Regional Freight Plan

Report on Progress, and Next Steps



presented to

NYMTC's Freight Transportation Working Group (FTWG)

presented by

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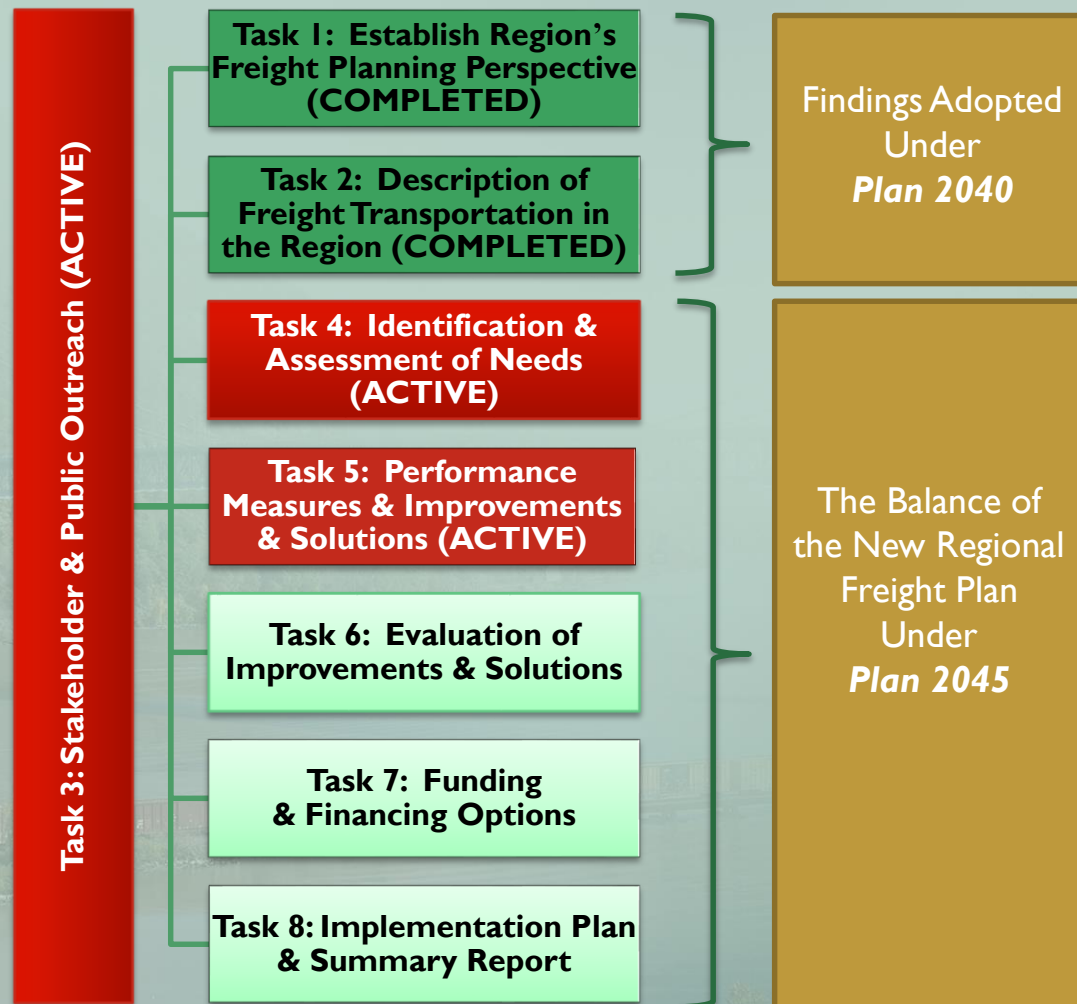
September 29, 2016



Topics to be Covered

- ◆ **Review of Scope**
- ◆ **Update on work underway**
- ◆ **Next Steps**

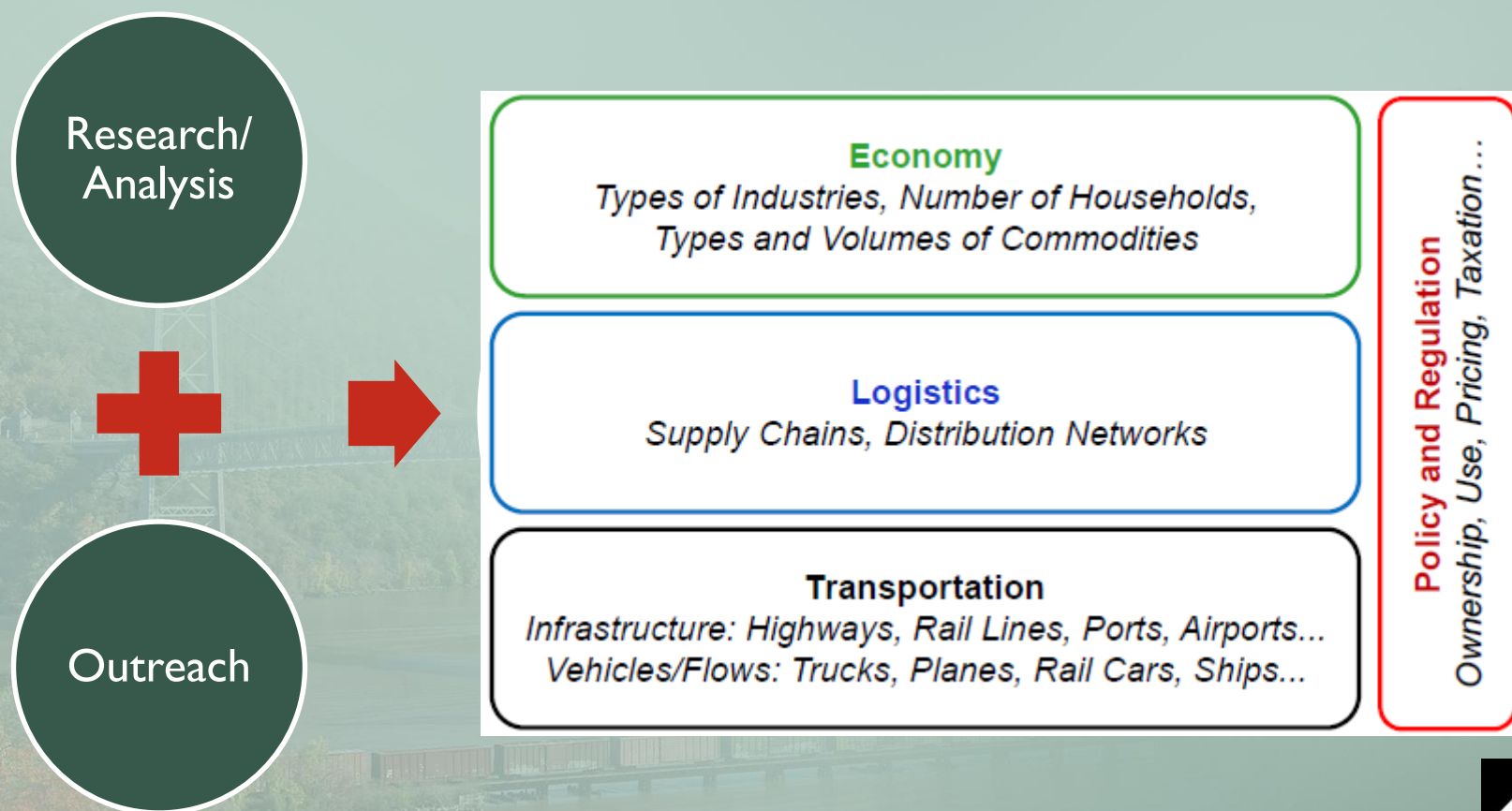
New Regional Freight Plan - Scope of Work



Task 4 – Identification and Assessment of Needs

- ◆ **Profile current and projected structure of NYMTC's freight-generators by sector and in total**
- ◆ **Profile supply chains and trends**
- ◆ **Map supply chains to the region's infrastructure**
- ◆ **Conduct analyses of priority issues:**
 - » **Climate change and disaster vulnerability**
 - » **Environmental justice update**
 - » **Regulatory harmonization**
 - » **First/last mile issues**
 - » **Land use changes and preservation**
- ◆ **Assess and define critical freight needs**

Needs Assessment Approach Overview

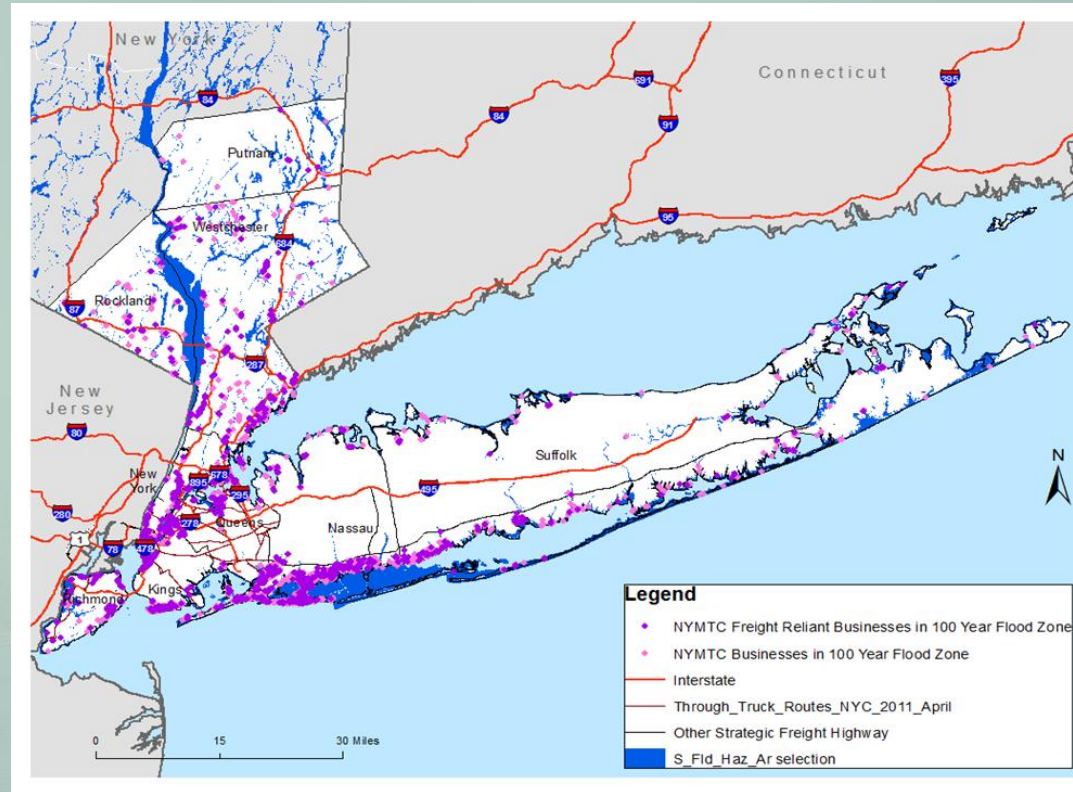


Special Topic Analyses

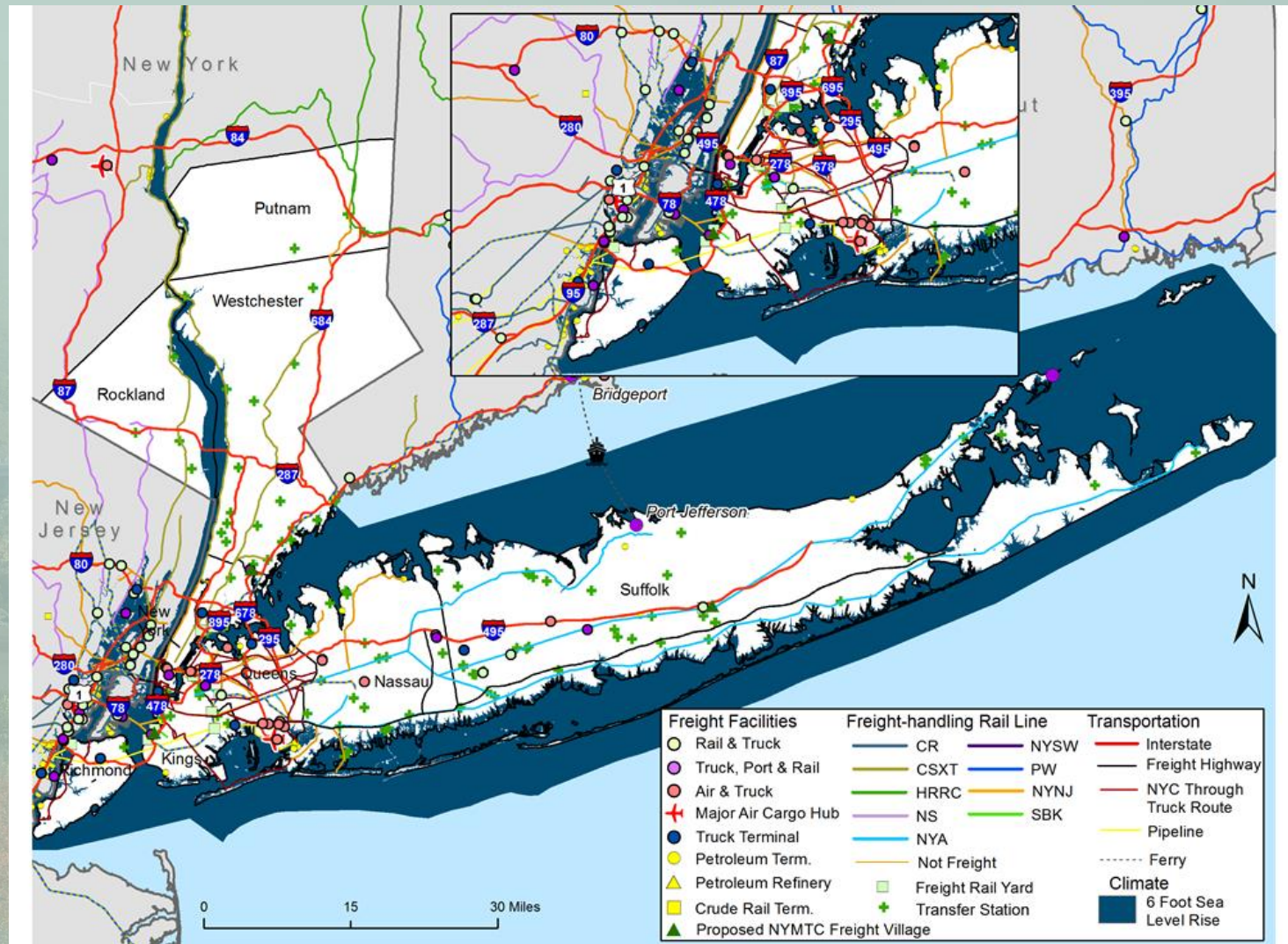
- ◆ **Climate change vulnerability**
- ◆ **Environmental justice assessment**
- ◆ **Land use changes and preservation**
- ◆ **First/last mile issues**
- ◆ **Regulatory harmonization**

Climate Change Vulnerability

- ◆ **4% (8,200) of all business establishments, and 5% (2,500) of freight-generating business establishments in flood zones**
- ◆ **Many rail lines, portions of interstates, NY 27, vulnerable**
- ◆ **Need to fortify roads, rail terminals, marine terminals**

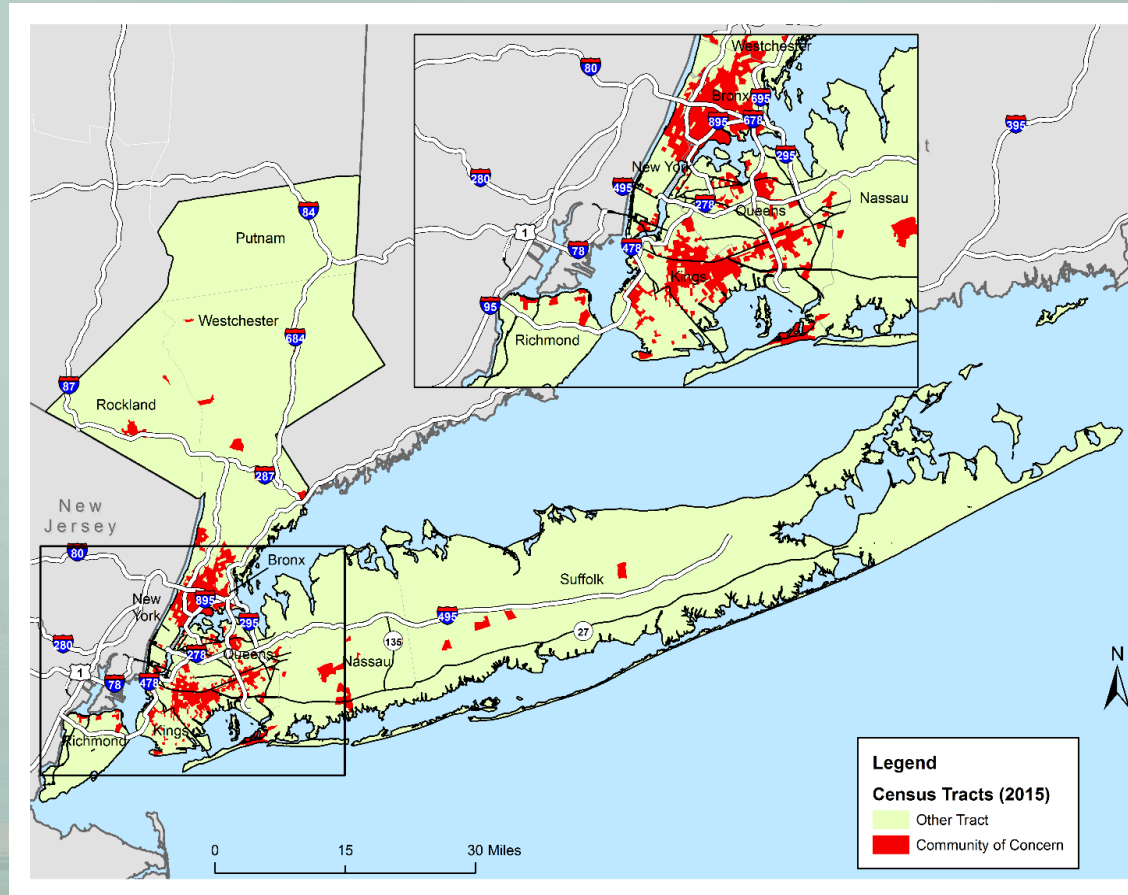


6 Foot Sea Level Rise (Year 2100)



Environmental Justice

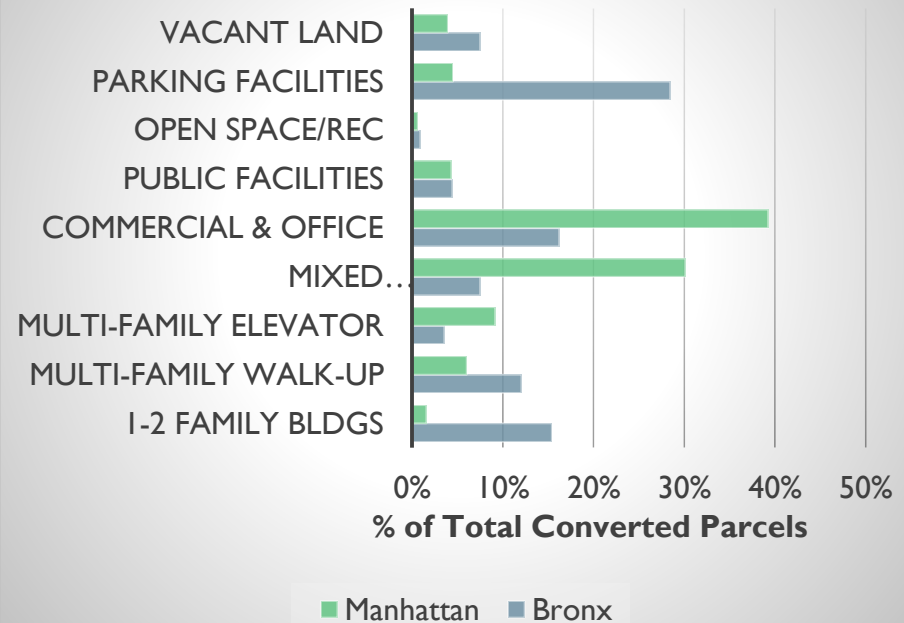
- ◆ **CoCs are Census tracts where 56% or more non-white & at least 15% below the poverty line**
- ◆ **18% of freight-generating business establishments are in a CoC**
- ◆ **Highways, rail lines, terminals, waste xfer stations are in or adjacent to CoCs**



Land Use Preservation

- ◆ In NYC, 4,129 parcels (1,300 acres) changed from industrial to non-industrial, 2006-2016
- ◆ 14% of Truck Terminals & Warehouses Inventory (1999-2000) are no longer used for freight
- ◆ Need to preserve remaining industrial/commercial inventory for present and future needs

Current Land Use of “Flipped” Parcels in Manhattan and Bronx



First/Last Mile

- ◆ **215M tons of freight have last mile in region; 115M tons of freight have first mile in region**
- ◆ **Approx. 30% of end-to-end cost occurs in “last mile”**
- ◆ **Issues:**
 - » **Insufficient available parking/loading**
 - » **E-commerce:**
 - New couriers/methods
 - Multiple deliveries/day
 - » **Congestion and time-of-day issues**
 - » **Geometry and wayfinding**

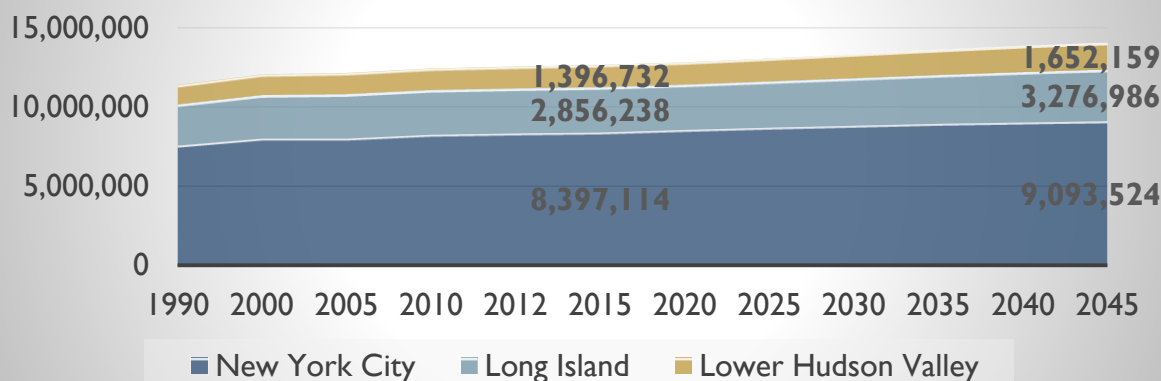


Regulatory Harmonization

- ◆ **Size and weight operations between NY and NJ**
 - » **Time of day crossing GWB**
 - » **Divisible load permits in NYS, but not NYC or NJ**
 - » **OSOW permit types, fees, and fines differ**
- ◆ **65' combination length allowable in NYS vs 55' in NYC**
- ◆ **Institutional disconnect between railroads – interchanges, affects price competition**

Economic Profile – Population and Households

Population, 1990-2045

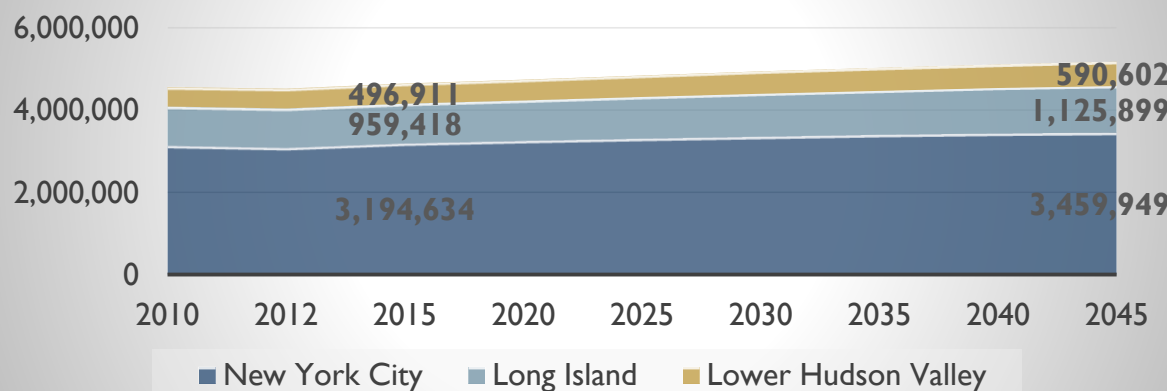


◆ **11% population & households growth, 2015-2045**

◆ **Greatest numeric growth in NYC**

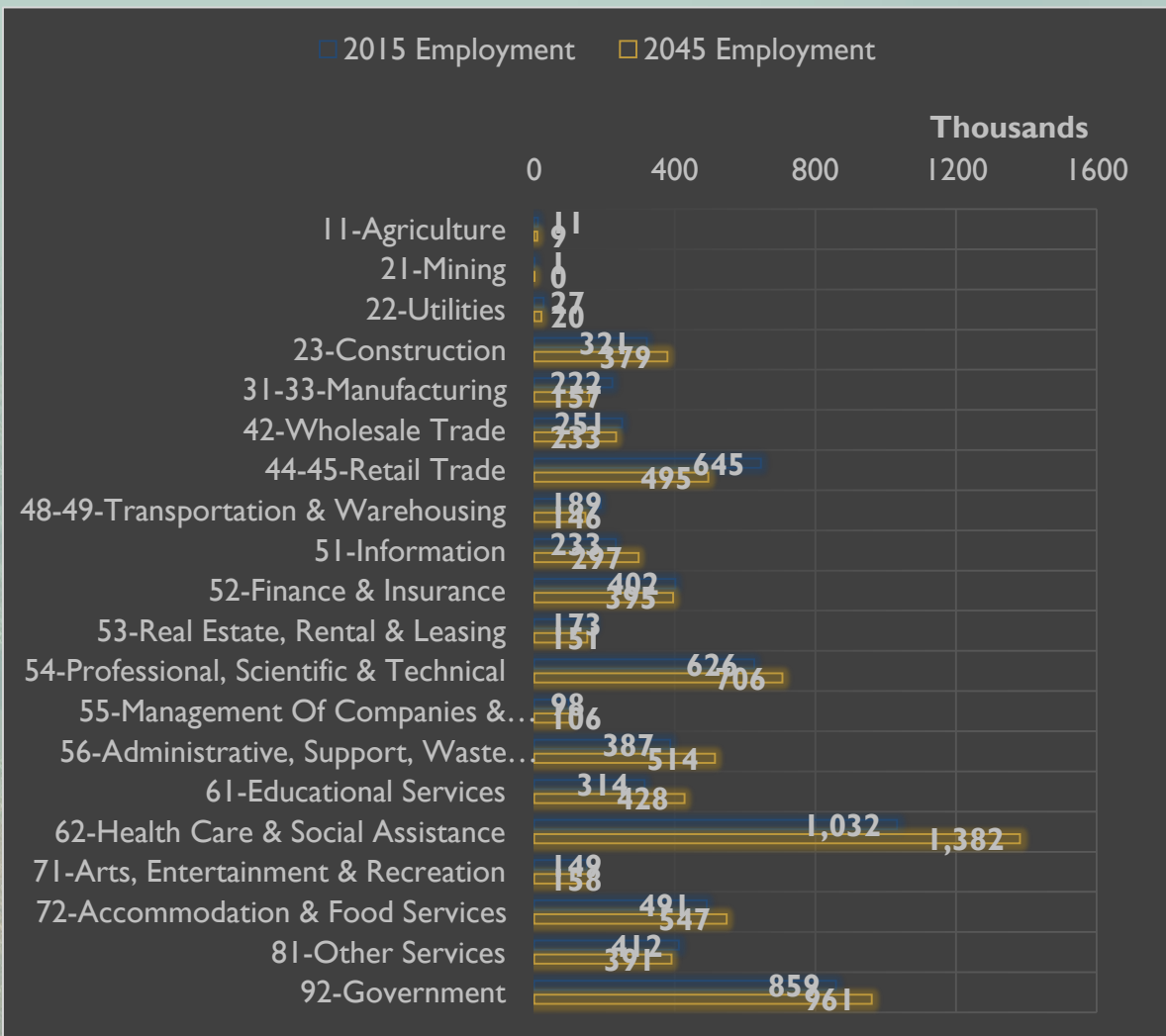
◆ **Greatest rate of growth in MHS & LI**

Households, 1990-2045



Source: NYMTC SED 2050

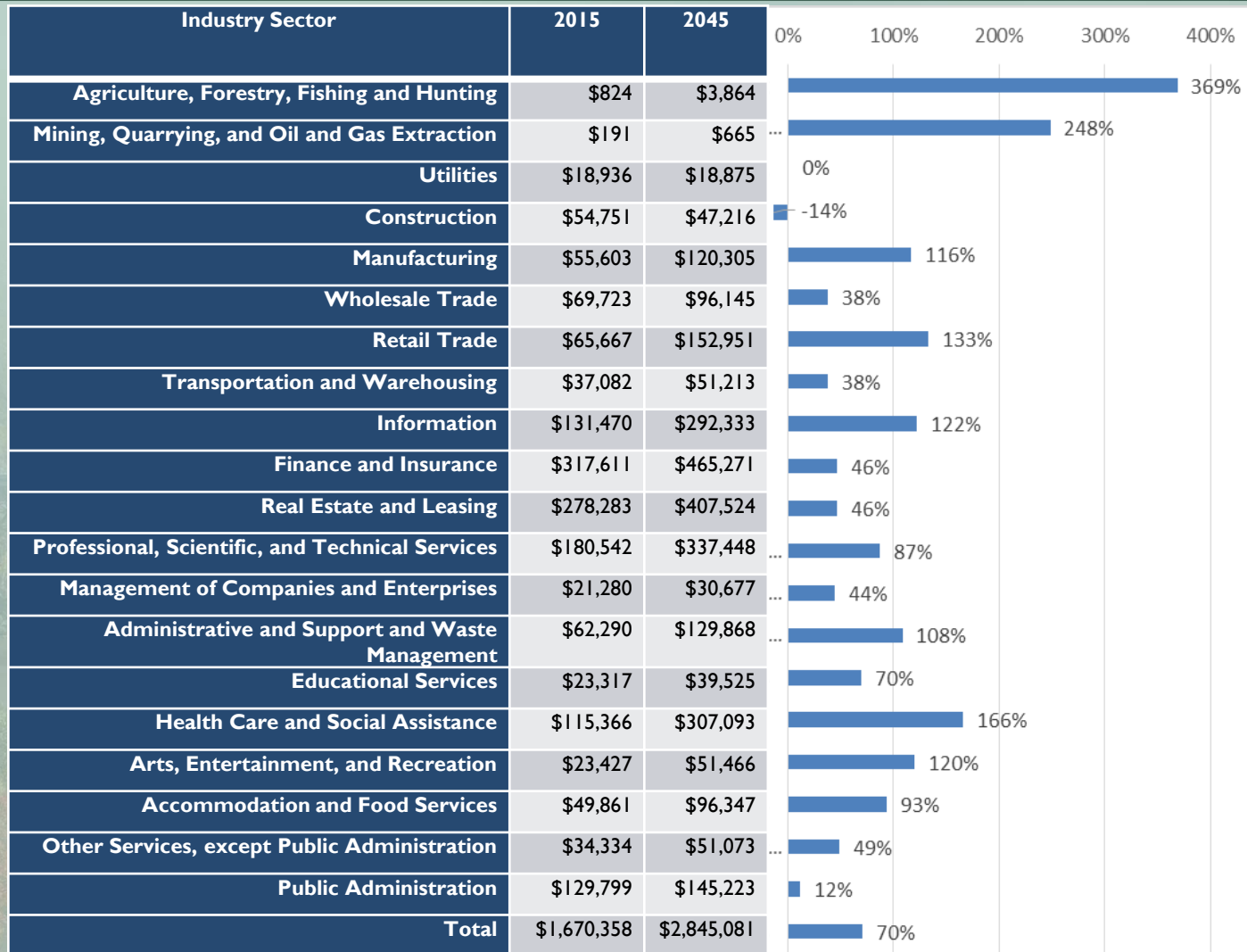
Economic Profile – Employment by Sector



- ◆ **6.8 million in 2015;
7.5 million in 2045**
- ◆ **10% growth, 2015-2045**
- ◆ **Health care sector is
largest, now & future**
- ◆ **Service-providing
sectors compose
growing share (92% in
2015 to 93% in 2045)**



Economic Profile – GDP by Sector

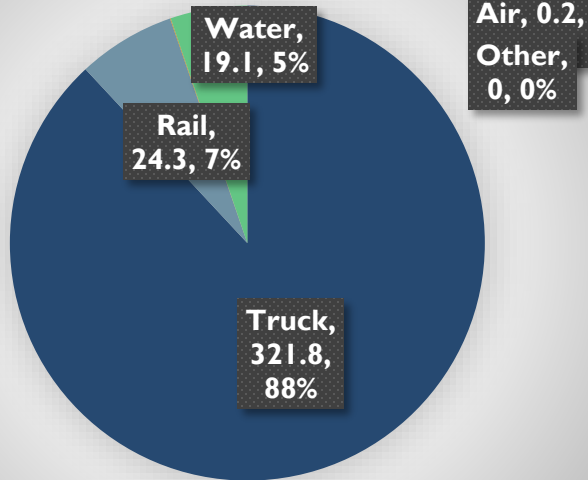


Source: I.H.S. Global Insight

Commodity Flows

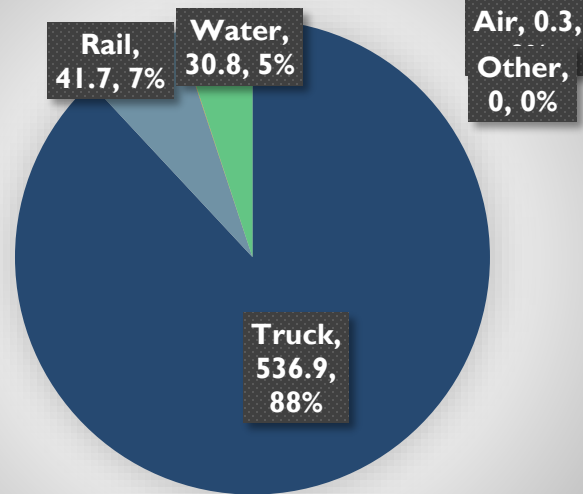
Direction of Movement	2012		2045		Total Growth (2012-2045)
	Tons (in millions)	% of Total	Tons (in millions)	% of Total	
Inbound	174.4	47.7%	274.1	44.9%	57.2%
Outbound	74.2	20.3%	126.0	20.7%	69.8%
Through NYMTC	76.1	20.8%	126.3	20.7%	66.0%
Intra-NYMTC	40.7	11.1%	83.4	13.7%	104.9%
TOTAL	365.3	100.0%	609.7	100.0%	66.9%

2012



Total: 365 million tons

2045



Total: 610 million tons

Logistics Analysis

Industry Sectors			Commodity Flows					
Sector	GRP (2015) Billions of 2015\$	GRP Growth (2015- 2045)	Food	Parcels/ Secondary Freight	Energy Products	Construct- ion Materials	Pharma- ceuticals	Waste
Finance and Insurance	318	46%		X	X	X		X
Real Estate and Leasing	278	46%		X	X	X		X
Professional, Scientific, and Technical Services	181	87%		X	X	X		X
Information	131	122%		X	X	X		X
Wholesale and Retail Trades	135	84%	X	X	X	X	X	X
Health Care	115	166%	X	X	X	X	X	X
Tourism (Arts and Entertainment and Accommodation and Food Services)	131	102%	X	X	X	X		X
Millions of Commodity Tons in 2012)			37.7	50.6	46.2	99.5	0.8	21.7
Growth in Tonnage, 2012-2045			93%	97%	16%	23%	141%	130%

Logistics Analysis

	Food	Parcels/Secondary	Energy Products	Construction Materials	Pharmaceuticals	Waste
Total O/D Tons	37,684,980	50,581,554	46,164,164	99,497,062	821,102	21,724,296
Growth 2012-2045	93%	97%	16%	23%	141%	130%
Direction ■ Inbound ■ Outbound ■ Intraregional						
Origin of Inbound tons	PA (19%); S. Atlantic (18%); NJ (15%)	NYS (43%); NJ (25%); S. Atlantic (10%)	NJ (48%); PA (10%); CT (9%)	PA (27%); NJ (16%); NYS (15%)	NJ (47%); PA (21%); S. Atlantic (10%)	NJ (20%); PA (17%); Canada (15%)
Primary Inbound mode(s)	Truck (96%); Rail (2%); Water (1%)	Truck (98%); Air (1%)	Truck (67%); Water (32%)	Truck (96%); Water (3%); Rail (1%)	Truck (99%); Air (1%)	Truck (99%)
Destination of outbound tons	S. Atlantic (19%); NJ (18%); PA (16%)	PA (34%); NYS (31%); Midwest (8%)	NJ (44%); PA (17%); CT (12%); NYS (12%)	NJ (31%); PA (21%); S. Atlantic (14%)	NJ (21%); S. Atlantic (20%); PA (15%); Midwest (14%)	PA (46%); NJ (14%); S. Atlantic (13%)
Primary Outbound mode(s)	Truck (99%)	Truck (97%); Rail (2%)	Truck (67%); Water (33%)	Truck (100%)	Truck (99%)	Truck (84%); Rail (9%); Water (7%)
Primary intraregional mode(s)	Truck (100%)	Truck (100%)	Truck (76%); Water (24%)	Truck (99%)	Truck (100%)	Truck (100%)
Key Network links	I-95/GWB, I-80, I-78, I-87, I-287, I-295, I-495, I-678, I-278; Rail Trunk Route; PONYNJ	I-87; I-95/GWB; I-295; I-278; I-678; I-495; I-78; I-80; Rail Trunk Route	I-95/GWB; I-278; I-295; I-495; I-684; I-84; East River; Long Is Sd; KVK; Arthur Kill; Hudson River	I-95/GWB, I-80, I-78, I-87, I-287, I-295, I-495, I-278	I-95/GWB, I-80, I-78, I-295, I-495, I-678, I-278; JFK	I-95/GWB, I-80, I-78, I-87; I-295, I-495, I-678, I-278; Rail Trunk Route; NYNJ/NS Lehigh/CSX River; MTS network; PONYNJ

Logistics Analysis

	Food	Parcels/Secondary	Energy Products	Construction Materials	Pharmaceuticals	Waste
Opportunities	Mode shift, perform more distribution from NYMTC region; better-connect regional producers to other markets; Distribute food in aftermath of disasters/events	Most economic growth will be in service providing industries; Rapid e-commerce growth; Rise of non-traditional home delivery	Mainstreaming more green energy sources; Domestic fossil fuel sourcing (price sensitive);	Booming residential construction (esp. NYC); Move more material into the region by rail and water	Health care industry prepared to grow apace aging population; Maintain region's status as a leading research and care center; Be prepared to administer emergency care during and after disasters	Increase recycle-vs-landfill ratio; increasing use of biodegradables in packaging and other waste streams
Needs/Issues	• Manage curb parking/loading in urban areas • Harmonize truck size/weight regulations • Manage demand by time-of-day through off-peak delivery or congestion pricing schemes • Develop more refrigerated warehousing/distribution • Improve rail link to Hunts Point • Improve cross-Hudson rail links • Reduce institutional barriers to seamless rail operations • Reduce locomotive emissions via equipment upgrades and more efficient operation	• Continue to improve truck access to/from JFK • Manage curb parking/loading in urban areas • Improve cross-Hudson rail links • Reduce institutional barriers to seamless rail operations • Identify and develop carload classification and transload yard and intermodal terminal capacity • Reduce locomotive emissions via equipment upgrades and more efficient operation • Explore policies to facilitate non-motorized delivery	• Adopt transportation policies that contribute to reduced fossil fuel consumption • Reduce maritime vessel fuel consumption, GHG, and particulate emissions • Preserve waterfront terminals and neighboring parcels for industrial use • Fortify waterfront terminals and storage facilities from floods and rising seas • Maintain and enforce motor carrier safety regs for hazardous & flammable materials • Improve safety of energy product moves by rail (through moves)	• Harmonize truck size/weight regulations • Manage curb parking/loading in urban areas • Manage demand by time-of-day through off-peak delivery or congestion pricing schemes • Augment freight rail capacity (weight limits, operating windows, etc.) to accommodate more construction material by rail • Improve cross-Hudson rail links • Reduce institutional barriers to seamless rail operations • Preserve waterfront terminals and neighboring parcels for industrial use • Fortify waterfront terminals and storage facilities from floods and rising seas	• Manage demand by time-of-day through off-peak delivery or congestion pricing schemes • Continue to improve truck access to/from JFK • Must maintain reliable travel time on key routes. • Manage curb parking/loading in urban areas • Improve security against theft.	• Identify opportunities to develop local recycling capacity • Improve cross-Hudson rail links to facilitate export of waste by rail • Reduce institutional barriers to seamless rail operations • Reduce locomotive emissions via equipment upgrades and more efficient operation • Preserve waterfront terminals and neighboring parcels for industrial use • Fortify waterfront terminals and storage facilities from floods and rising seas

Needs Assessment

	Short-Term Needs	Mid-Term Needs	Long-Term Needs
Economy		Develop more refrigerated warehousing/distribution	Preserve waterfront terminals and neighboring parcels for industrial use
	Identify opportunities to develop local recycling capacity		Develop freight villages with FTZs
	Expand education/workforce training in logistics/freight, address factors contributing to truck driver shortage	Identify innovative finance schemes	
Logistics	Reduce maritime vessel fuel consumption, GHG, and particulate emissions		
	Improve safety of energy product moves by rail (through moves)		
	Improve security against theft.		
	Truck drivers need safe and secure locations to park and obtain mandated amount of rest. Truck parking supply is not sufficient to meet current demand and projected need.		
Transportation	Improve rail link to Hunts Point	Fortify freight network against flood/inundation risks	
		Improve cross-Hudson rail links	
		Maintain State of Good Repair	
	Must maintain reliable travel time on key routes.	Need to expand 286K rail network	
	Continue to improve truck access to/from JFK		Fortify waterfront terminals and storage facilities from floods and rising seas
	Reduce locomotive emissions via equipment upgrades and more efficient operation		
	Augment freight rail capacity (weight limits, operating windows, etc.) to accommodate more construction material by rail		
Regulation	Reduce institutional barriers to seamless rail operations		
	Manage curb parking/loading in urban areas	Harmonize truck size/weight regulations	
		Manage demand by time-of-day through off-peak delivery or congestion pricing schemes	
	Explore policies to facilitate non-motorized delivery	Revise OSOW fees/fines to capture cost	
	Adopt transportation policies that contribute to reduced fossil fuel consumption		
	Maintain and enforce motor carrier safety regs for hazardous & flammable materials		

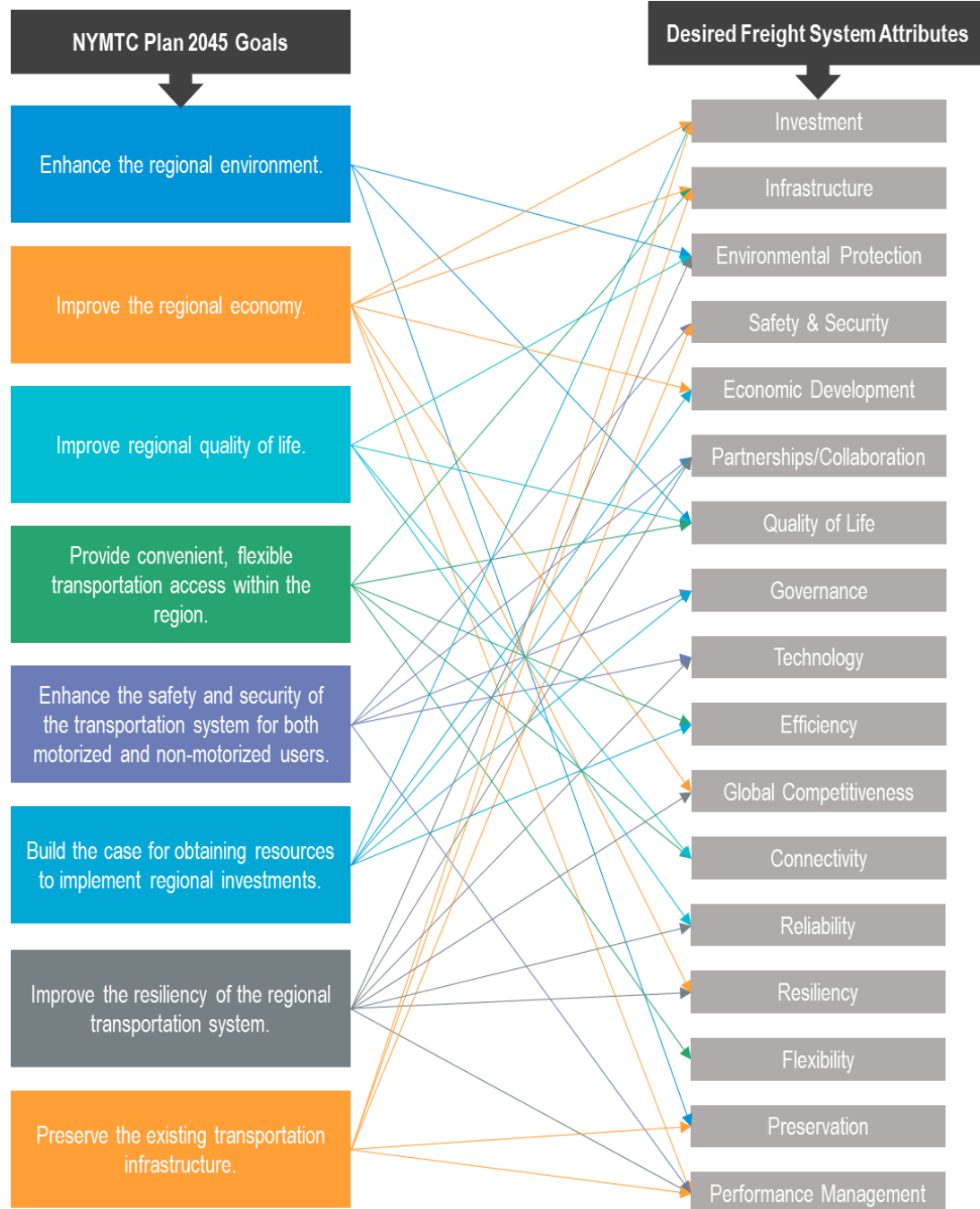
Task 5 – Performance Measures and Identification of Improvements and Solutions

- ◆ **Review and update NYMTC Regional Freight Plan goals and strategies**
- ◆ **Define freight performance metrics**
- ◆ **Identify preliminary list of improvements and solutions**

Goals and Outcomes

- ◆ **Review goals of relevant plans:**
 - » **2004 Regional Freight Plan;**
 - » **2015 Draft National Freight Policy Plan;**
 - » **NYS Freight Plan (forthcoming);**
 - » **Plan 2045, NYMTC's RTP**
- ◆ **Identify common themes**
- ◆ **Develop desired freight outcomes using these themes and needs assessment**

RTP Goals and Freight Needs



Desired Freight Outcomes

Enhance the regional environment.

- Reduce freight's contribution to traffic congestion and pollutants that affect air quality; and
- Reduced greenhouse gas emissions from commercial and service vehicles.

Improve the regional economy.

- A strengthened position of the region as a global and national gateway for goods;
- Goods movement integrated in region's strategic growth;
- Improved efficiency of goods movement in the region; and
- Skilled workforce prepared to meet the needs of freight and logistics industries.

Desired Freight Outcomes (cont.)

Improve regional quality of life

- Increased inter- and intra-regional mobility and accessibility for goods movement;
- Mitigation of negative externalities of freight transportation in the design, construction, and operation of the system;
- Coexistence of pedestrians, bicyclists, motorists, and commercial and service vehicles on roadways; and
- Goods movement supports vibrant communities.

Build the case for obtaining resources to implement regional investments.

- An array of available and competitively-priced modal options and seamless intermodal transfer of goods;
- Efficient, safe, and reliable "last-mile" connections for freight deliveries; and
- Increased reliability for freight trips.

Desired Freight Outcomes (cont.)

Enhance the safety and security of the transportation system for both motorized and non-motorized users.

- Reduced rate of annual injuries and fatalities resulting from truck-involved crashes and rail safety incidents;
- Increased safety and cargo security measures for freight transportation throughout the region;
- Enhanced coordination, data, and information sharing among members and other freight stakeholders; and
- Promotion of safety and security improvements in all aspects of freight transportation planning and implementation.

Build the case for obtaining resources to implement regional investments.

- Coordinated long-term planning for the multimodal freight network, facilities, and terminals;
- A fiscally-constrained list of priority freight projects supporting the region's shared vision;
- An increase in the use of alternative methods of financing transportation investments to supplement existing Federal and State funding sources;
- Obtain a fair share of Federal funds available for freight, proportional to its needs and economic share relative to the nation; and
- Elimination of unfunded mandates

Desired Freight Outcomes (cont.)

Improve the resiliency
of the regional
transportation system.

- Member-defined adaptation measures for critical components of the freight transportation system to accommodate variable and unexpected conditions without catastrophic failure
- Freight transportation assets and freight-generating facilities are fortified from long-term climate change and sea level rise
- Greater resiliency of the regional supply chain by identifying options for goods movement during and after events; and
- Cooperative partnerships with federal, state, local agencies, and other freight stakeholders to adapt the freight transportation system and improve recovery from disruptions.

Preserve the existing
transportation
infrastructure.

- Making the investments necessary to maximize the useful life of existing freight assets and manage these assets in the most cost-effective manner through preventive maintenance;
- Preserve and protect lands zoned for industrial use, to meet present and future needs of the region's economy and quality of life
- Protecting the existing freight network

Discussion

- ◆ **Are these desired outcomes appropriate?**
- ◆ **Suggested changes, additions, or deletions?**

Performance Measures

- ◆ Establishes a benchmark and tracks progress toward achieving goals
- ◆ **USDOT freight performance measures:**
 - » Truck travel time reliability (% reliable)
 - » Miles uncongested (% of interstate highway miles uncongested)
- ◆ **NYMTC Freight Plan Performance Measures:**
 - » Help evaluate projects (Task 6) and
 - » Track ongoing progress toward meeting desired outcomes

Draft Performance Measures

NYMTC Plan 2045 Goal	Desired Freight Outcomes	Draft Freight Performance Measure
Enhance the regional environment.	- Reduced traffic congestion and improved air quality, particularly at major freight hubs and on major freight routes; and - Reduced greenhouse gas emissions from commercial and service vehicles.	- Reduced Emissions – Daily kilograms of on-road, mobile source criteria air pollutants (VOC, NOx, PM, CO) reduced by the latest annual program of CMAQ projects. - Reduced Truck Vehicle-Miles Traveled – Truck VMT reduced by the most recent CMAQ projects. - Annual Hours of Truck Delay – Travel time in units of vehicle-hours of delay reduced by the most recent CMAQ projects..
Improve the regional economy.	- A strengthened position of the region as a global and national gateway; and - Improved efficiency of regional mobility for goods and services.	- Tonnage and Value of Commodities – Change in the tonnage (demand) and value of goods transported throughout the NYMTC region. - Total Freight-Related Employment – Change in the number of persons employed in freight-intensive industries (i.e. manufacturing, transportation, wholesale trade, warehousing/distribution, etc.) across the NYMTC region.
Improve regional quality of life.	- Increased inter- and intra-regional mobility and accessibility; - Mitigation of negative externalities of freight transportation in the design, construction, and operation of the system; and - Coexistence of pedestrians, bicyclists, motorists, and commercial and service vehicles on roadways.	- Percent of Highway Mileage Providing Uncongested Truck Travel – This is the same as the proposed Federal measure and requires average truck speeds. Highway link average truck speeds above a defined threshold would indicate uncongested travel. - Annual Hours of Truck Delay - Travel time above a congestion threshold in units of vehicle-hours of delay.
Provide convenient, flexible transportation access within the region.	- Increased multimodal freight transportation access; and - Increased reliability for freight trips.	Percent of Highway Mileage Providing Reliable Truck Travel - This is the same as the proposed Federal measure and requires average truck travel times. This measure also requires the calculation of an indicator of truck travel time reliability, such as the buffer time index or planning time index, among others. Highway link average truck travel reliability values below a defined threshold would indicate reliable travel.

Draft Performance Measures (cont.)

NYMTC Plan 2045 Goal	Desired Freight Outcomes	Draft Freight Performance Measure
Enhance the safety and security of the transportation system for both motorized and non-motorized users.	• Reduced rate of annual injuries and fatalities resulting from truck and freight rail movements; • Increased safety and security measures for freight transportation throughout the region; • Enhanced coordination, data, and information sharing among members and other freight stakeholders; and	• Truck Crash Rates – Five-year moving average of truck-involved crashes divided by vehicle-miles traveled.
Build the case for obtaining resources to implement regional investments.	• Coordinated long-term planning for the multimodal freight network, facilities, and corridors; • A list of fiscally-constrained priority freight projects supporting the region's shared vision; and • An increase in the use of alternative methods of financing transportation investments to supplement existing Federal and State funding sources.	•
Improve the resiliency of the regional transportation system.	• Establish redundancies across highway, air, rail, and maritime freight routes; • Greater resiliency of the regional supply chain by identifying options for goods movement during and after events; and • Cooperative partnerships with federal, state, local agencies, and other freight stakeholders to adapt the freight transportation system and improve recovery from disruptions.	• Number of Unique Routes into Freight Facilities – The number of unique routes into a multimodal freight facility by mode could be an indicator of redundancy. • Increase in Capacity-Constrained Peak Period Travel – The change in volume-to-capacity (V/C) ratios during a peak period run of the NYMTC travel demand model upon removing critical freight links. This would indicate the degree to which the system is resilient.

Draft Performance Measures (cont.)

NYMTC Plan 2045 Goal	Desired Freight Outcomes	Draft Freight Performance Measure
Preserve the existing transportation infrastructure.	• Making the investments necessary to maximize the useful life of existing freight assets and manage these assets in the most cost-effective manner through preventive maintenance; and • Protecting the existing freight network.	• Pavement Roughness – Percentage of the NYMTC roadway network mileage in good, fair, and poor condition as indicated by the International Roughness Index (IRI). • Pavement Structural Health Index – Percentage of pavement which meet minimum criteria for pavement faulting, rutting and cracking. • Percent of Deck Area on Structurally Deficient Bridges – Bridge deck area on structurally deficient bridges as a percentage of total regional bridge deck area. • Bridge Conditions – Percentage of bridges in good, fair, and poor condition.
Enhance the regional environment.	• Reduced traffic congestion and improved air quality, particularly at major freight hubs and on major freight routes; and • Reduced greenhouse gas emissions from commercial and service vehicles.	• Reduced Emissions – Daily kilograms of on-road, mobile source criteria air pollutants (VOC, NOx, PM, CO) reduced by the latest annual program of CMAQ projects. • Reduced Truck Vehicle-Miles Traveled – Truck VMT reduced by the most recent CMAQ projects. • Annual Hours of Truck Delay – Travel time in units of vehicle-hours of delay reduced by the most recent CMAQ projects..

Next Steps

- ◆ **Task 4: Complete Task 4 documentation**
- ◆ **Task 5: Complete desired outcomes, performance measures, and strategies list, and documentation**
- ◆ **Task 6: Advance evaluation approach**

Comments and Questions

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