



U.S. Section PIANC Annual Meeting

Intermodal Congestion: A Case Study



Baltimore, MD

20 October 2004



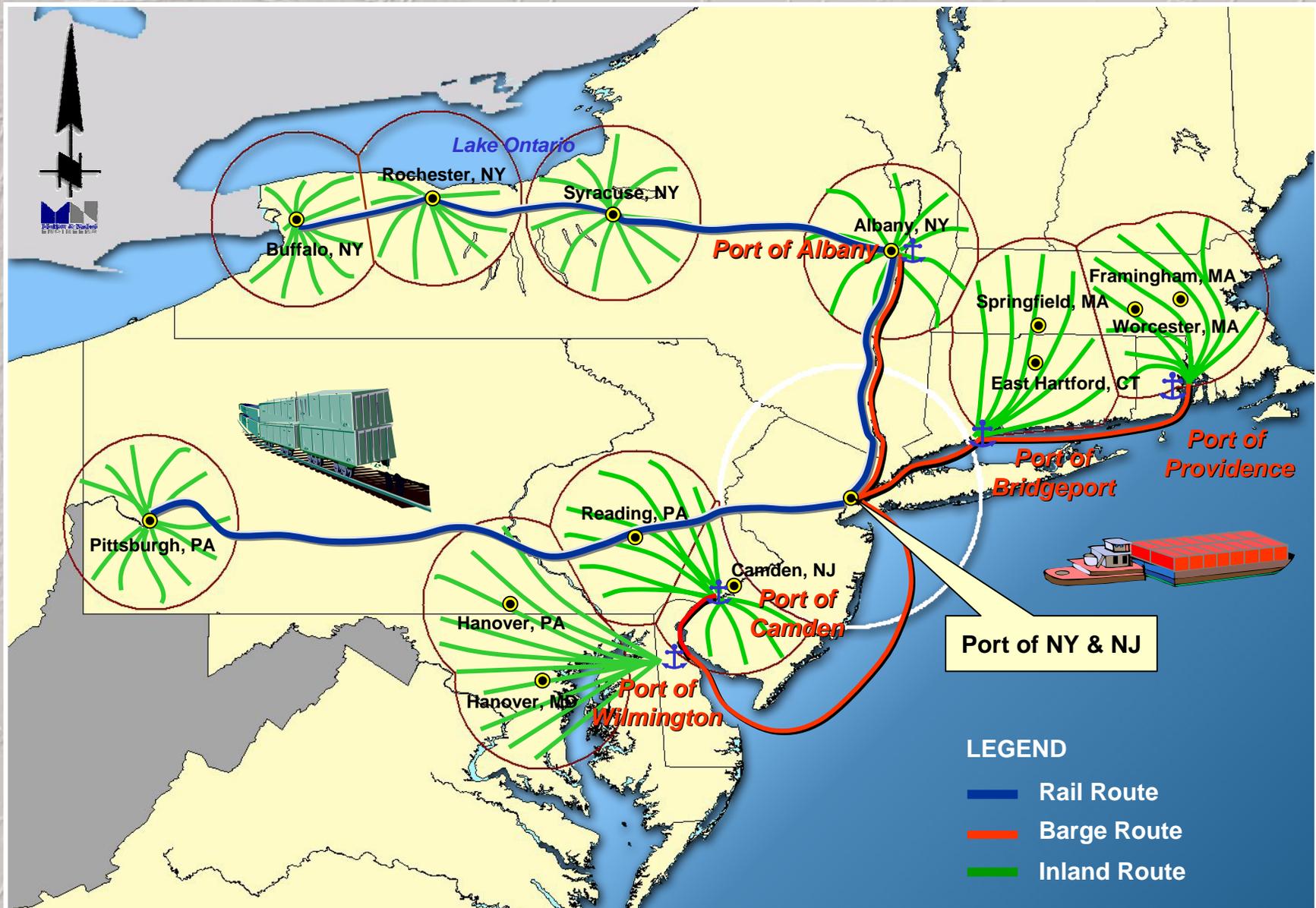
Towards Sustainable Port Growth



- Rapid growth has led to congestion and stress on the intermodal system
- Terminal delays, rail service problems, highway congestion, and growing community concerns about port impact on quality of life
- Busiest container ports are evaluating and trying a variety of approaches
 - Extended gate hours
 - Shuttle trains
 - Virtual container yards
 - Enhanced on-dock rail
 - Agile port concepts

Case Study: PANYNJ Port Inland Distribution Network (PIDN)

PIDN Rail and Barge Network

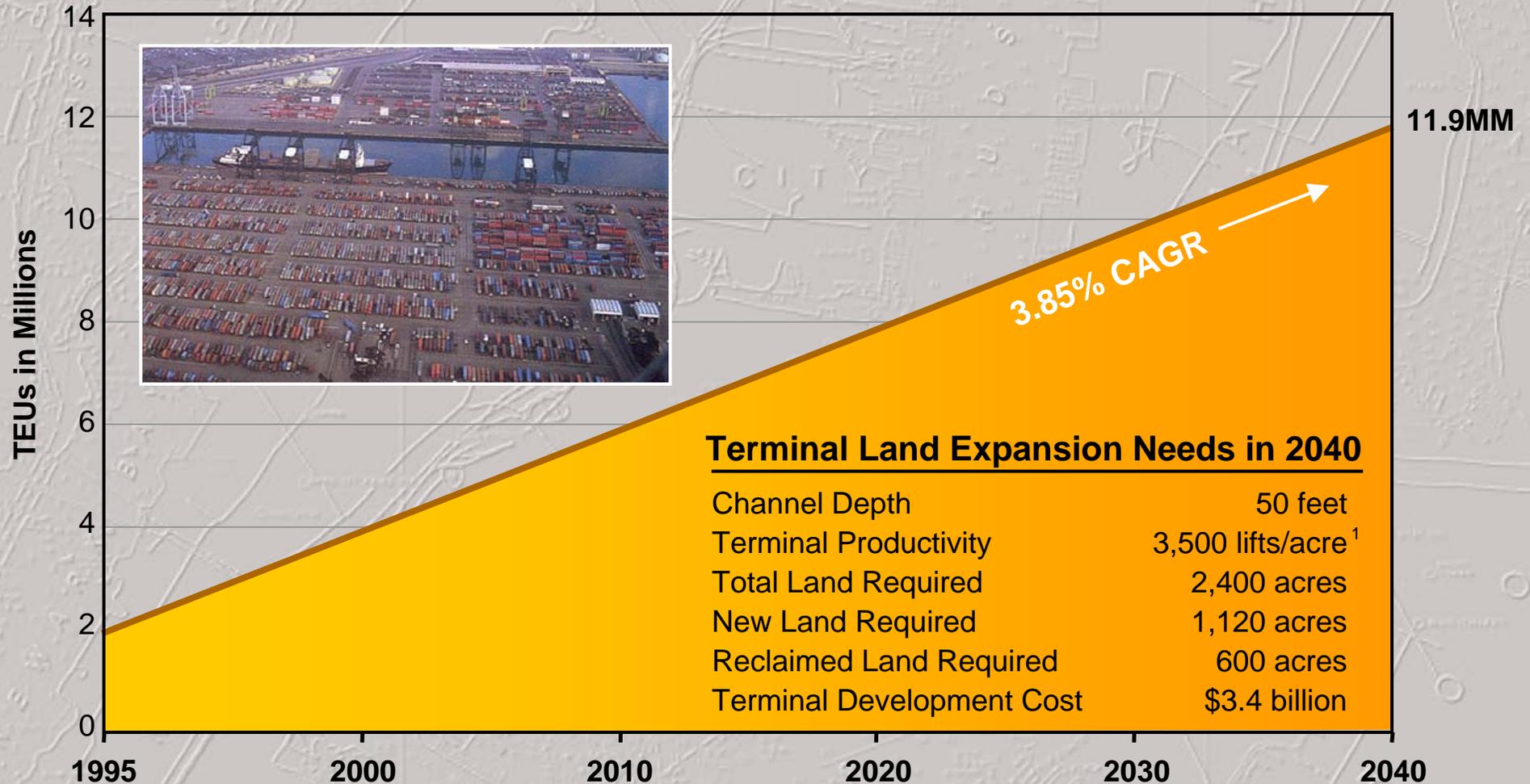


Port Development & Investment Plan, 2000-2040



Objective: Container Growth Compatible with Environmental & Community Values

Forecasted Growth of Container Traffic



Note: 1) Increased from current 1,500 Lifts per Acre

PIDN Overview



Moving some container distribution from truck to barge can:

- **Relieve pressure on congested terminal gates, local and regional highways**
- **Provide emissions and energy conservation benefits**
- **Make scarce terminal acreage more productive by reducing dwell and improving turnover**
- **Provide economic development opportunities in the vicinity of regional ports**

PIDN Feasibility Issues

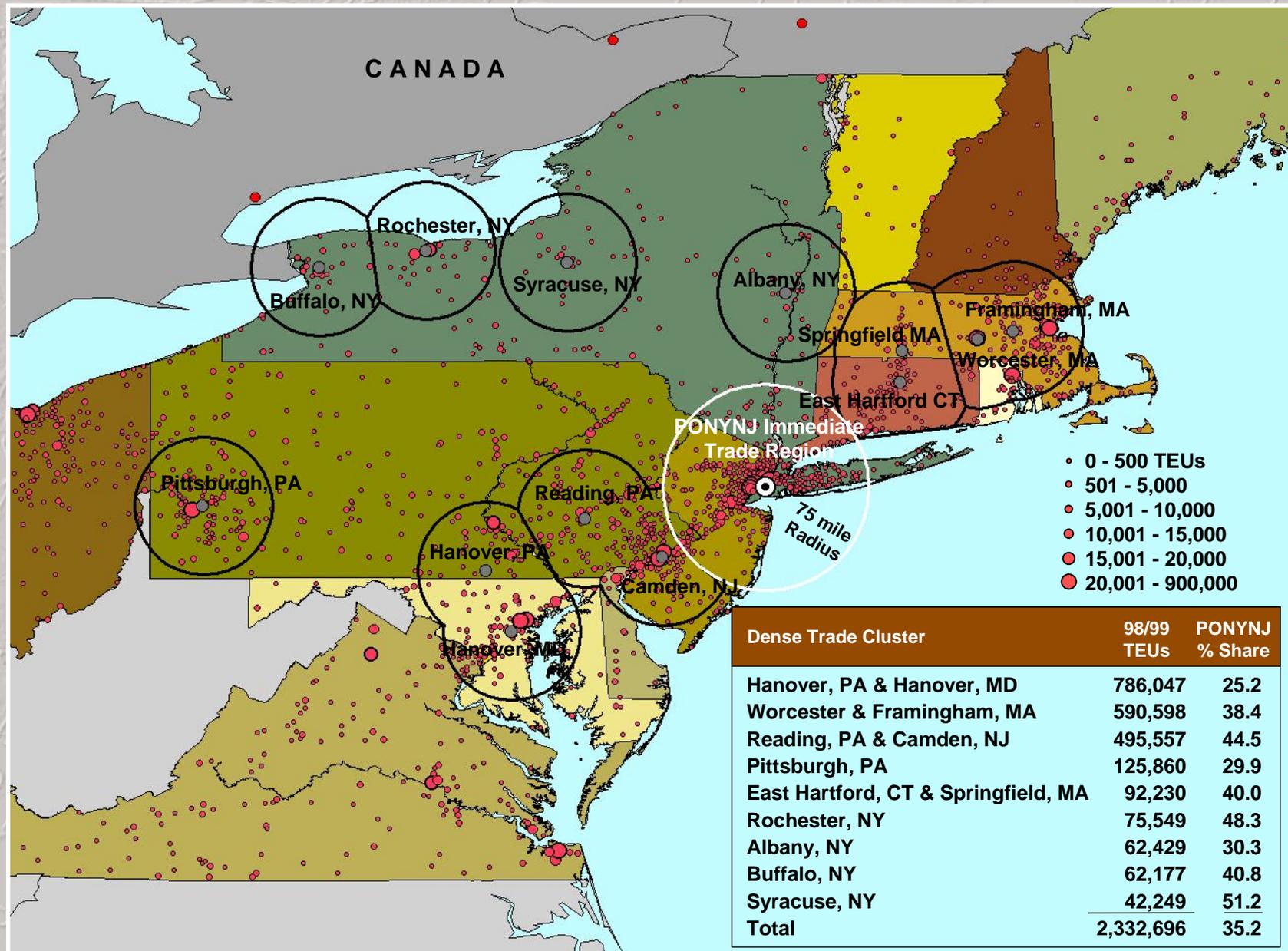


Product Development Required an Understanding of...

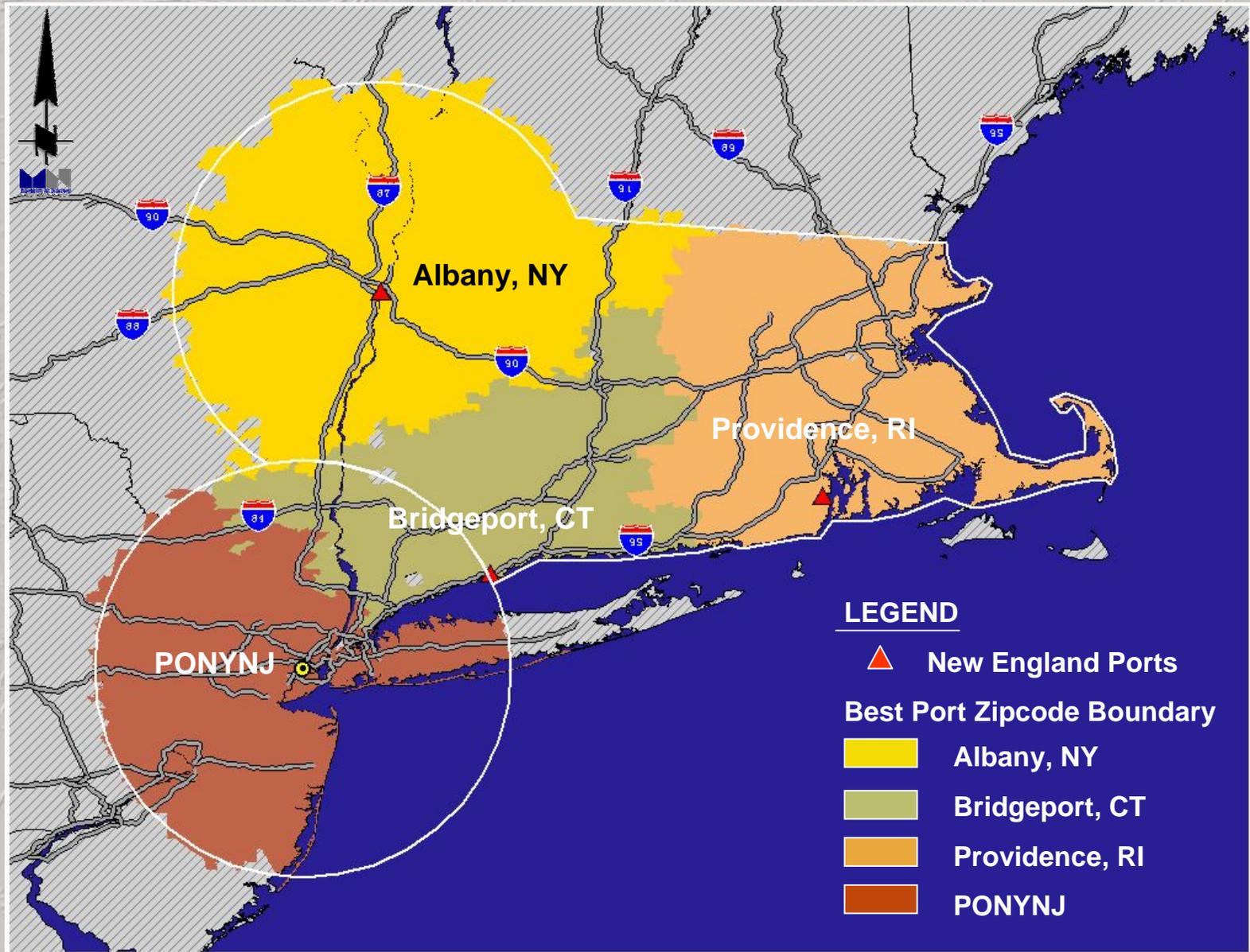
- **Market Size and Product Acceptance**
- **The Economics of Barge and Rail Transportation**
- **Physical Facilities Availability**
- **Public and Private Roles in a PIDN Partnership**

Dense Trade Clusters

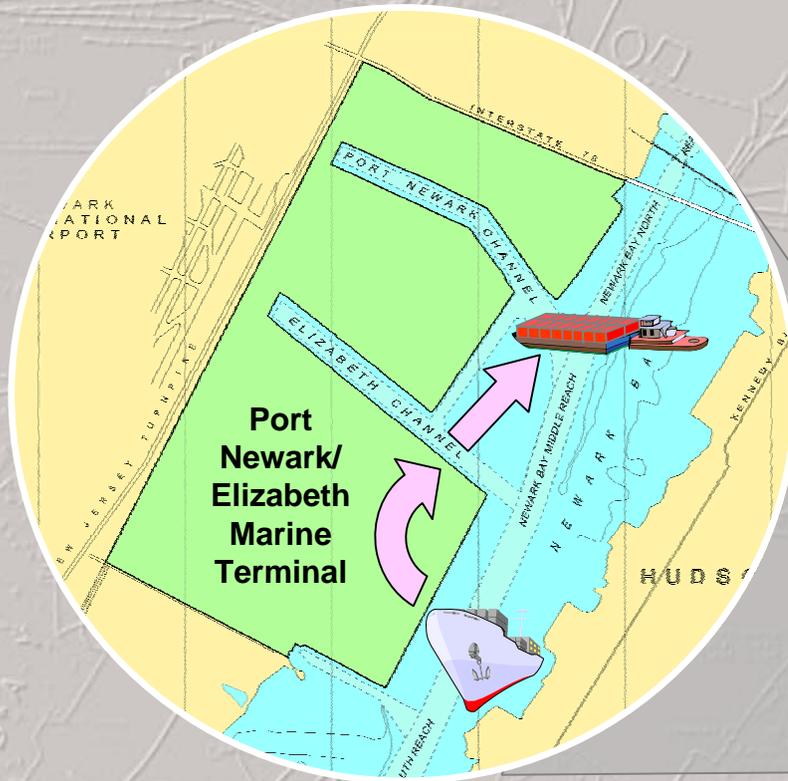
The 13 State Market Was Found to be Composed of Nine Dense Trade Clusters



Competitive Market Areas



Logistics Benefits to PIDN Users



**Mainline Ship to Barge or Rail Transshipment
within PONYNJ Hub Terminal**

- Avoid truck gate delays, congestion and costs
- Reduced assessment and royalty charges
- Accelerated yard turnover / terminal utilization

Logistics Benefits to PIDN Users



**Regularly Scheduled Delivery
to Feeder Terminal**

- No chassis required on barge
- No empty return required
- No over-the-road weight restrictions
- Location at center of market, close to customers

Logistics Benefits to PIDN Users

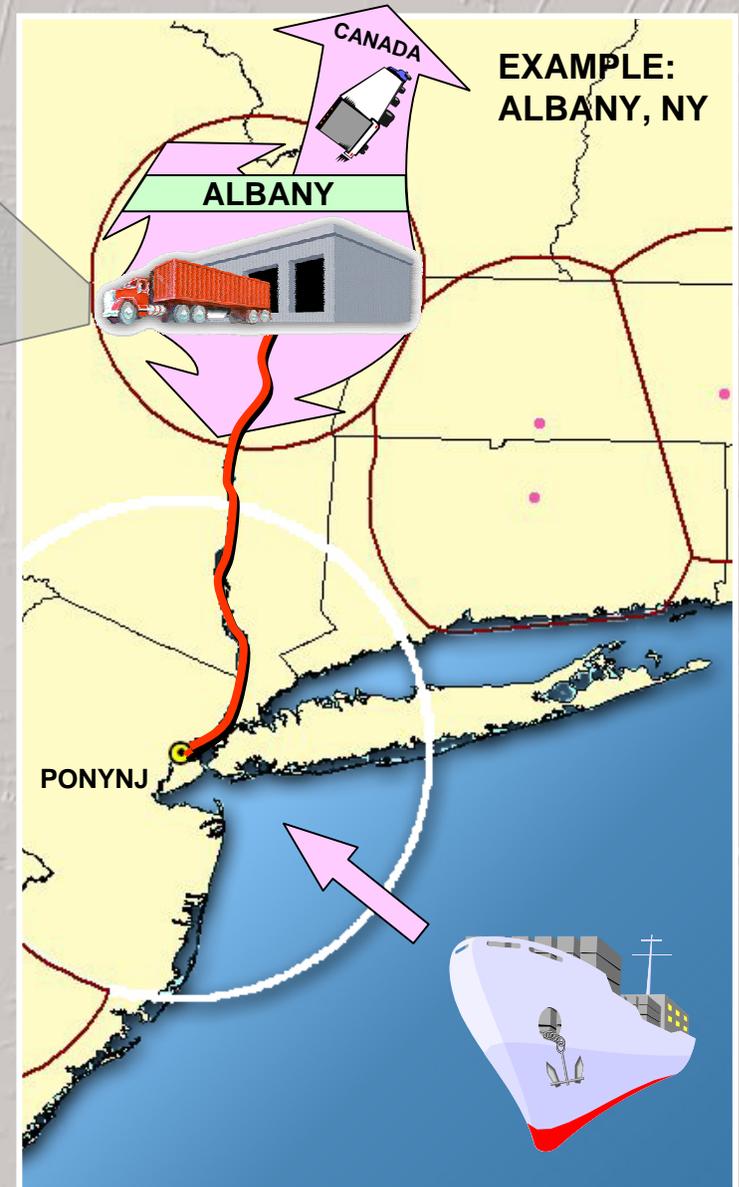


On-Dock Warehousing

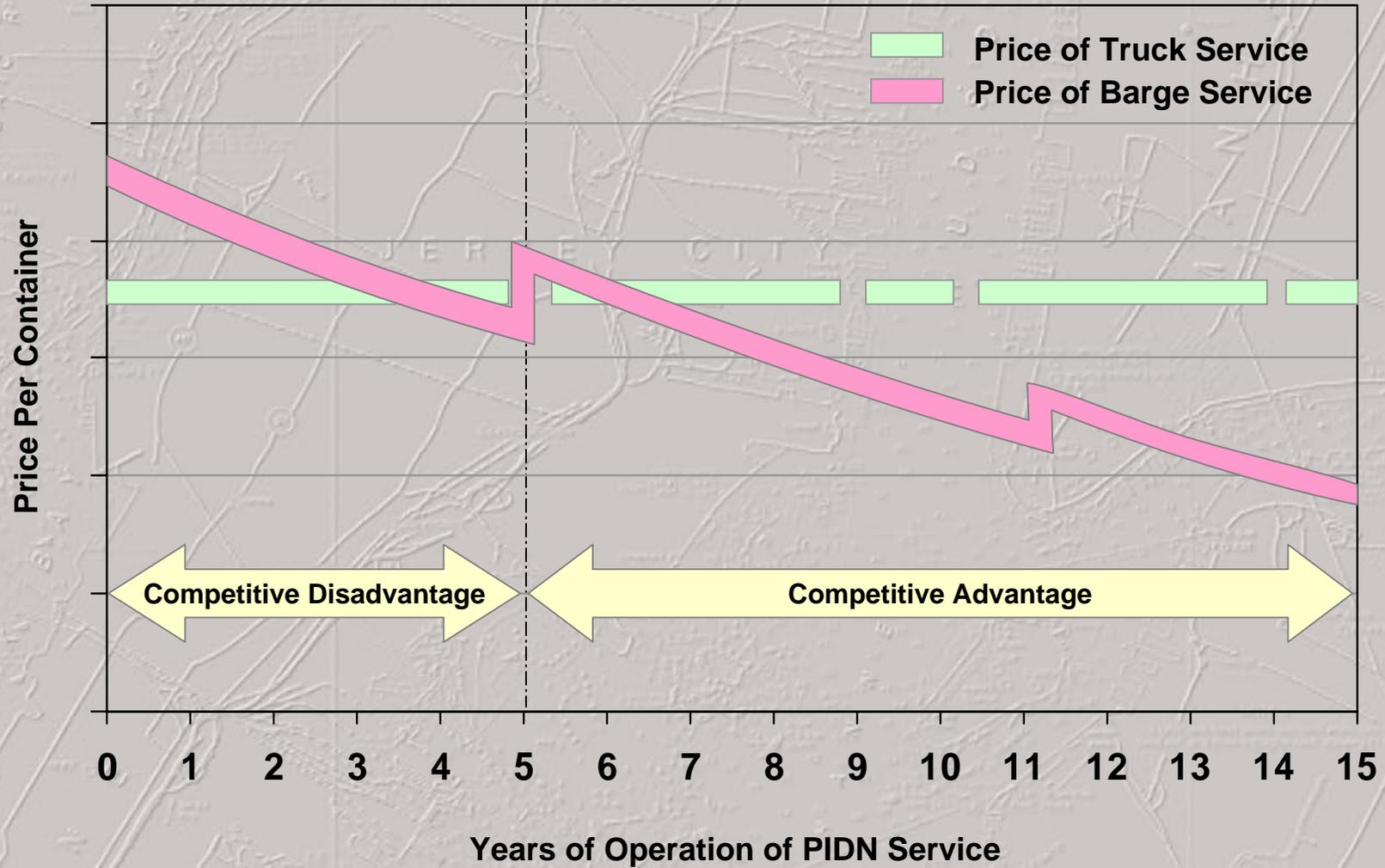
- Barge to warehouse delivery inside gate (eliminates local truck dray costs)
- Full service container terminal (empty storage, repositioning management and local delivery chassis management) and customs clearance available
- Enables growth of distribution center, value-added, trans-loading, Just-in-time

Local Delivery

- Short distance to customers' premises
- Local trucking available



Barge Economics

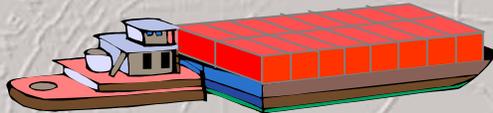


PONYNJ to Albany – LO/LO Economics



Savings of 22% or More in Transit Cost Per Box Realized Using LO/LO Barge

136 miles by barge
from PONYNJ



LO/LO Barge - Cost Per Container

ILA Unit Assessment	25
Barge Transit & Stevedoring	495
Loaded Delivery	
Empty Return	
Local Trucking Delivery (incl)	
TOTAL	\$520
Chassis Benefit	-80
NET COST w/ Empty Return	\$440



164 miles by truck
from PONYNJ

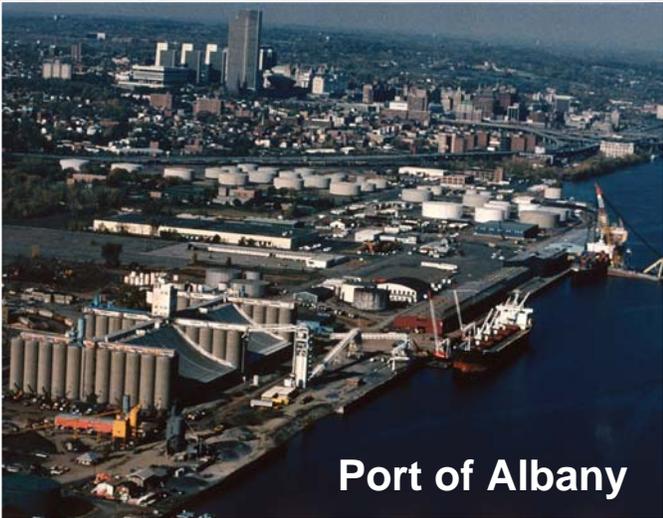
Truck - Cost Per Container

ILA Unit Assessment	\$ 130
ILA Tonnage Assessment	
Truck to Albany	535
TOTAL	\$665

**Albany
Savings = 22% plus**

Based on Albany Door Rate Effective 3/1/04

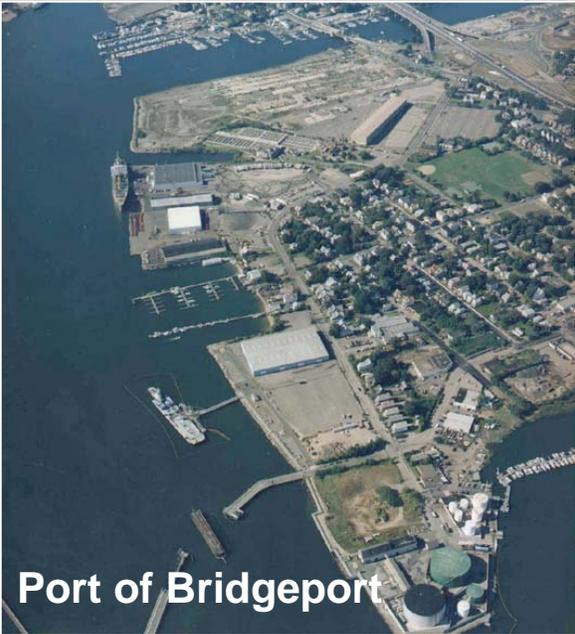
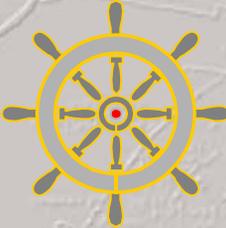
Barge Route Feeder Ports



Port of Albany



Port of Providence



Port of Bridgeport



Port of Camden

Feeder Port Infrastructure Needs

Infrastructure investment requirements vary by location. Start-up investments for Albany shown as an example

Crane	\$2,400,000
Fencing	120,000
Paving	0
Lighting	300,000
Security	70,000
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TOTAL	\$2,890,000

(Equipment provided by Terminal Operator)



PIDN Start-up Strategy



Clear implementation steps have been, or are being, worked out with the feeder ports

Regional Port:

- Secures funding to assure 2 years of operations
- Contracts with experienced barge operator for start-up

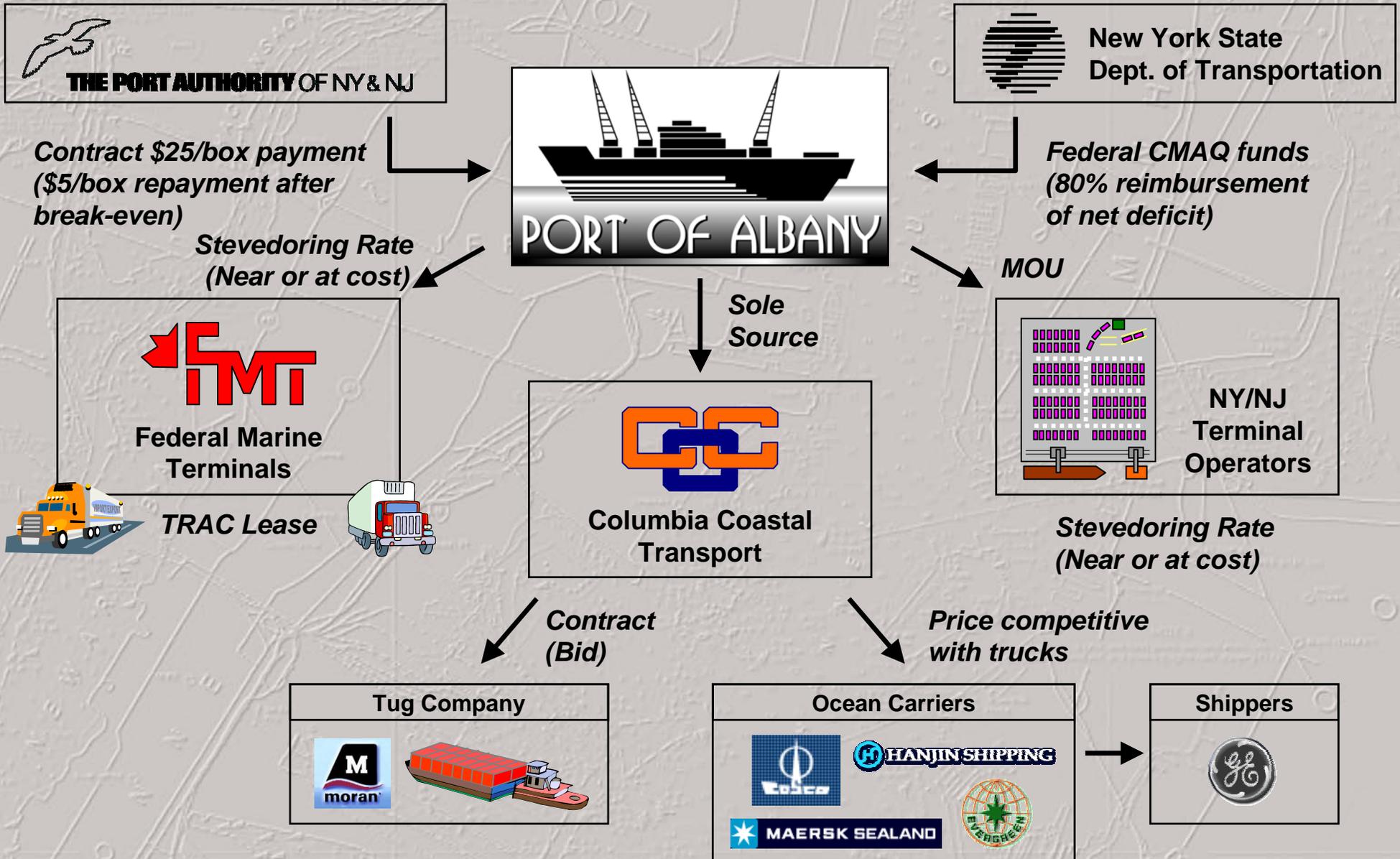
PANYNJ:

- Assists in start-up with per-box service payments, with repayment when service breaks even

PANYNJ & Regional Ports:

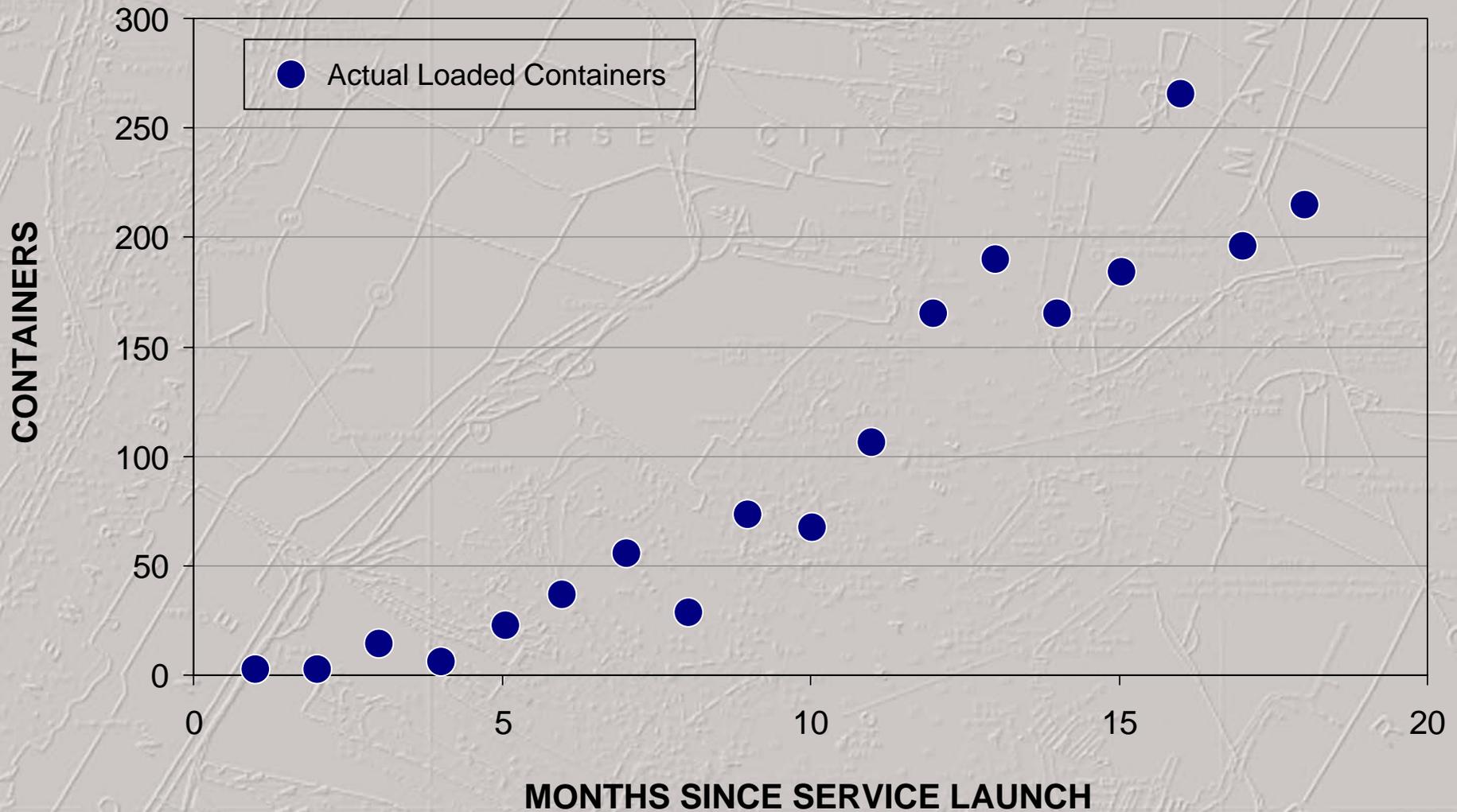
- Conduct joint marketing, service management oversight, and pursue Federal funding options

Albany Business Arrangement



Albany Implementation – One Year Later

Ramp up of volume has been slower than anticipated



Albany Implementation – Lessons Learned

Albany implementation results have identified some of the barriers to success that must be overcome

- **Must compete on price with truck alternatives – *on their terms***
- **Remove costs from the system to enhance viability**
 - **HMT**
 - **Lift costs**
- **“Critical Mass”, “Network Economies” are crucial – must have equipment at feeder port**
 - **Carrier boxes, per diem arrangement**
 - **Chassis pool**
 - **Free time for empties**
 - **Match loads to use empties**
- **Need to communicate at a high level. Not all savings are recognized by all in decision chain**

Albany Implementation – Lessons Learned (cont'd)

Albany implementation results have identified some of the barriers to success that must be overcome

- Identify and exploit market niches, e.g., fumigation of logs, heavy cargo, transload silicon
- Knowledgeable, flexible, persistent intermodal operator is critical.
Information – knowledge – relationships.
- System optimization through advanced information systems, e.g., “virtual container yard.”
- Crucial role of trucking industry
- Need for targeted, predictable, reliable government policy in support of cross-jurisdictional implementation



Silicon transloader

Development Benefits to Public

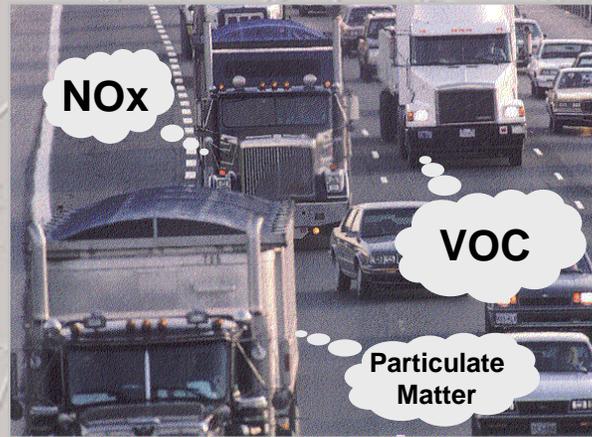
CONGESTION MITIGATION & HIGHWAY CONSTRUCTION COST AVOIDANCE



Highway Capacity
Construction
Cost Savings

\$110 Million

AIR QUALITY IMPROVEMENT FROM REDUCED FUEL EMISSIONS



2020 Net Reductions

Nitrogen Oxides = 350 tons

Reduced Energy Use = 15M gal. of fuel

DISTRIBUTION CENTER JOBS & TAXES



Jobs, Sales, Taxes from
New Distribution
Warehousing Activities

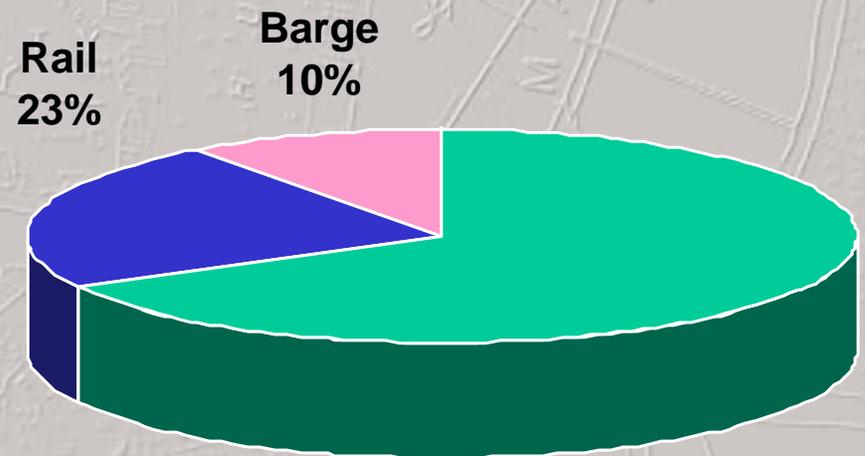
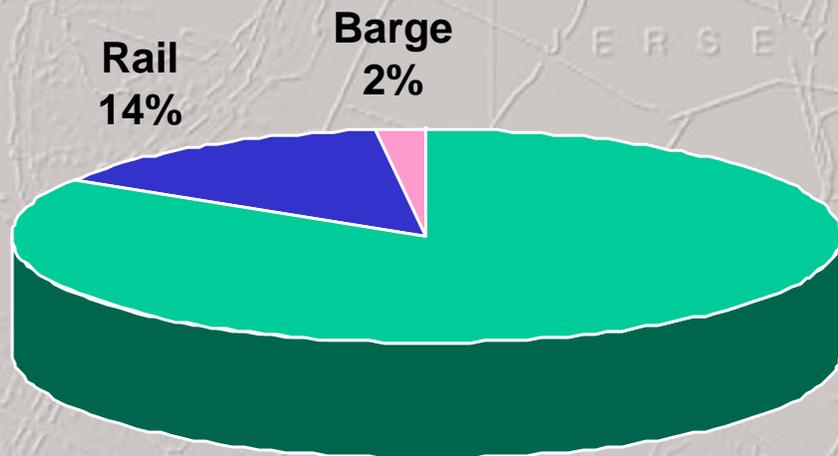
\$76 Million

PIDN Impact on Modal Split

PONYNJ MODAL SPLIT CHANGES DUE TO PIDN

2001

2020



Source: Moffatt & Nichol, based on adjusted PIERS data

Public/Private Partnership

FEDERAL GOVERNMENT

PARTICIPATION

- Start-up Assistance
- Capital Grants
- Long Term Financing

BENEFIT

- Reduced Interstate Congestion and Equivalent Capacity
- Emissions Reductions
- MTS Development and Transportation Alternatives

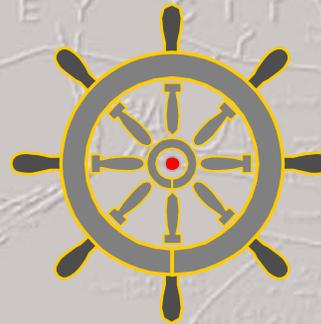
REGIONAL PORT / STATE GOVERNMENT

PARTICIPATION

- Start-up Assistance
- Infrastructure Investment

BENEFIT

- Regional/Local Economic Development
- New Port Business and Associated Revenues



PIDN

CARRIERS / TRUCKERS / SHIPPERS

PARTICIPATION

- Willingness to Try New Mode/System

BENEFIT

- New Transportation and Logistics Alternatives
- Increased Efficiency, Lower Cost, More Reliability

HUB PORT (PANYNJ)

PARTICIPATION

- Concept Development and Planning
- Possible Start-up Service Payment

BENEFIT

- Improved Throughput and Increased Lease Revenues
- Deferred Capital Need for Terminal Expansion