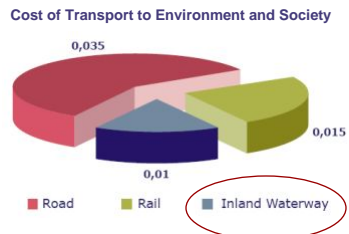


## Waterborne will Win

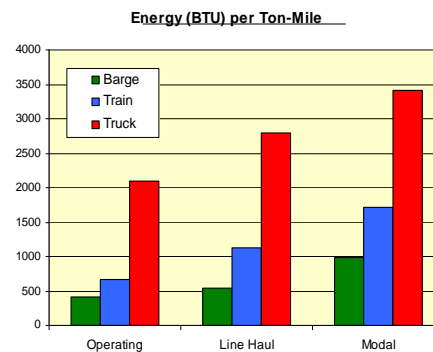
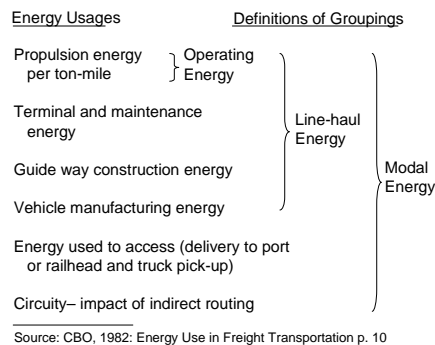


**Factors taken into consideration\*:**

- Noise
- Pollutants
- Climate costs
- Accidents
- Infrastructure
- Congestion

\* Source: EU Energy Commission

## Waterborne Saves Energy



## Waterborne Saves the Environment

Annual Emissions For St. Louis Air Quality Control Region (In Tons)

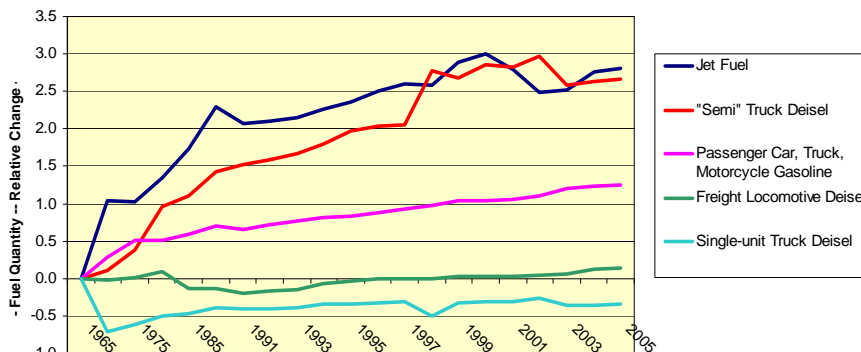
Emission Source	Towboats	Other Transportation	Total Emissions	% Due to Barges
NOx	3,297	105,932	433,637	0.76%
THC	939	198,063	295,124	0.32%
co	2,101	980,944	3,852,753	0.05%
sox	462	7,887	1,234,395	0.04%
Part	198	8,940	354,672	0.06%

NOx - Oxides of Nitrogen  
 THC - Hydrocarbons  
 co - Carbon Monoxide  
 sox - Oxides of Sulfur  
 Part - Particulates

SOURCE: ARMY CORPS OF ENGINEERS, NATIONAL WATERWAYS STUDY 10/

## A Freight Monoculture Vulnerable to Shocks

Big Trucks and Jet Planes Define our Age\*



\* Data is from the Bureau of Transportation Statistics - Table 4-5: Fuel Consumption by Mode of Transportation in Physical Units  
[http://www.bts.gov/publications/national\\_transportation\\_statistics/html/table\\_04\\_05.html](http://www.bts.gov/publications/national_transportation_statistics/html/table_04_05.html)

## A Cautionary Tale: LA & the Inland Empire

*Summary: Truck drayage to cross-dock distribution centers*

*Result:*

- congestion
- pollution
- new legislation will upgrade trucks & working conditions, imperiling the Southern-Cal business model

*Los Angeles lacks a sustainable enviro-economic formula.*



## A Role Model: Inland Waterborne Europe

Port of Basil Switzerland:



<i>Distance:</i>	510 miles and 885 feet above Rotterdam by Rhine
<i>Performance:</i>	104,000 TEU per year, 100% by water



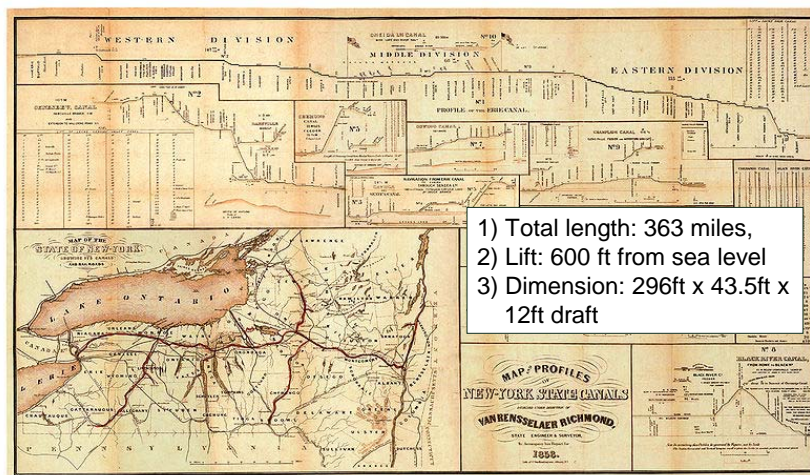
## East Coast Trends

### Hinterland Connections:

- *Halifax: promoting short-sea delivery via the St. Lawrence*
- *Norfolk: integrated barge and rail to Richmond multimodal facilities*
- *Freeport: a transshipment hub for southeast ports*
- *New York: PIDN\* initiative includes express rail and barge*

\* PIDN = Port Inland Distribution Network

## New York Retains an Unmatched Geographical Advantage



### A Role Model: Rotterdam

Barge Connections to Hinterland Ports:



**Goal:** 45% of inland container movements by barge  
**Investment Strategy:** Buy or manage inland hub ports

### A Role Model: Rotterdam

Maasvlakte:  
A Super Port for Super Ships:

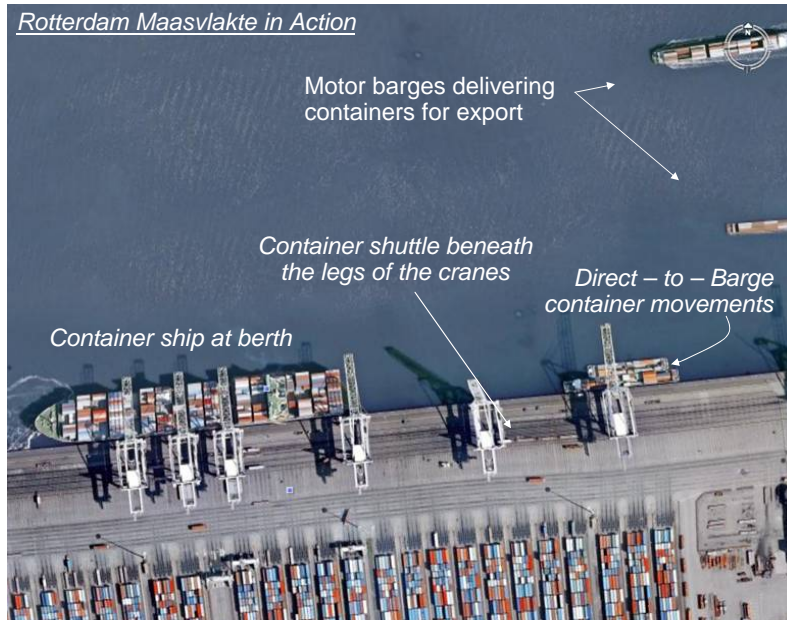


Euromax Container Ports are being built in deeper water, without bridges

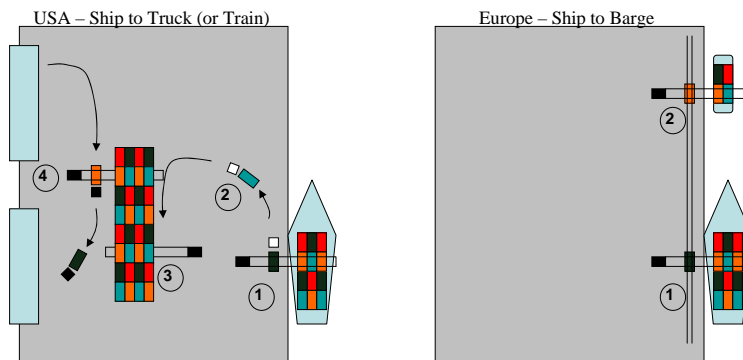


**\$3+ billion investment:** 5-times the capacity of NY/NJ  
Deep water, long berths  
Direct-to-barge container movements

*Rotterdam Maasvlakte in Action*



**The American & European Container Handling Processes**



Process efficiency will be achieved when barges go mainstream.

## New York's Investments



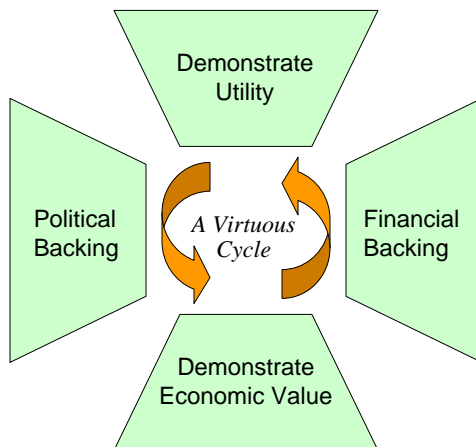
### Post-Panamax Expansion

- \$2.5 billion dredging
- \$3.2 billion Bayonne Bridge Raising or Replacement

### A Better, Cheaper Choice?

- Barge Transshipment in the Upper Bay
- Unrestricted capacity

## The Key to Success is Getting Started\*



### Foster Political Support for the Canal

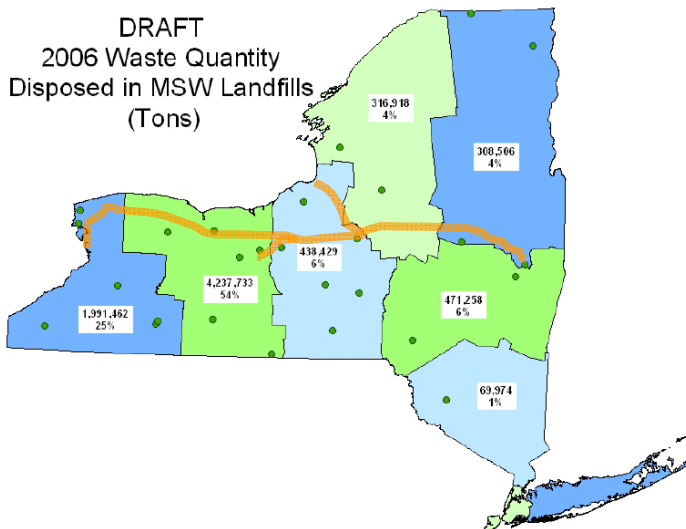
- Solve a big problem to demonstrate utility

### Foster Investor Interest

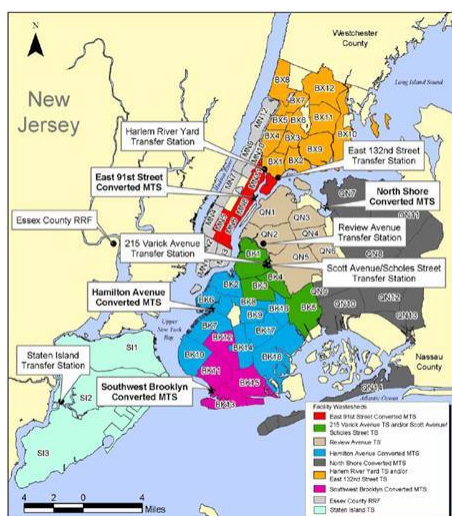
- Demonstrate a high-volume, high-dollar application

\*Mark Twain

### A Highly Controversial Recommendation: Garbage



### NYC Residential Solid Waste: 12,000 Tons per Day



#### Executive Summary:

“In July of 2002, Mayor Bloomberg announced a plan to establish a system that would take advantage of the City’s waterways and existing infrastructure...

...At its heart are the two main principles of the Mayor’s earlier plan: the containerization of waste and the long-distance export of that waste in containers by barge or rail.”



## Is There a Business Case for Barging Waste?

Executive Summary:

Tipping fees at \$30/ton  
=> **\$131 million/year**

Value of Transport at \$40/ton  
=> **\$175 million/year**

- 22-ton, 20'l x 8.5'w x 12h' boxes
- ~ 550 containers/day
  - \$880/box transport value

Using the Connecticut cost model,  
=> *this appears to be economical*



Cory Environmental Transports 600,000 tons of garbage by barge from London – eliminating over 400 truck hauls per day.

## Could We Convince UpState New York?

Three Good Reasons:

1. *Barge Transportation is Benign*
2. *Recycling will be big business soon.*
3. *We should compete for recycling jobs*



## **New York Canal: Modern Freight-Way**

Jeffery Belt, Principal Investigator & , Goodban Belt, LLC, Buffalo, NY, USA

[www.goodbanbelt.com](http://www.goodbanbelt.com)

This study demonstrates the benefits of waterborne freight logistics and makes the case for instituting container-on-barge service on the New York State Canal System.

We summarize numerous studies comparing the energy requirements and environmental externalities of freight transportation modes. Our footnotes provide a roadmap through some of the best prior research that demonstrates the benefits of waterborne logistics.

Since barge traffic on the New York State Canal System declined five decades ago, much has changed in modern logistics. Containerized cargo revolutionized global trade, enabling multi-modal systems that move cargo farther, faster and cheaper but regions that fail to embrace “the box” run the risk of being left behind. We explain why inland multimodal container ports make sense for New York.

Europe provides a role model. The Rhine region is similar to New York. We describe how Europe makes use of inland waterborne containerized freight to strengthen their economies and provide an environmentally sustainable logistics solution.

Using financial analysis, we show that container-on-barge service is feasible in New York, right now. We examine the operating costs of trucks and barges and we develop a system cost model for this service, inclusive of port facilities and barge investments.

**Jeff Belt** is a western New Yorker who has lived in Asia, Europe and in downtown Detroit, alongside North America's busiest inland waterway. He is a businessman obsessed by competitiveness.

In 2009 he examined the feasibility of scheduled freight logistics on the New York Canal in a project for NYSERDA and the NYS DOT. He concluded that the Canal could be the cheapest most sustainable freight mode and that our trading partners in Europe and China have already embraced inland waterborne freight in order to improve competitiveness.