

Interstate Highways: Impact on Industrial Location



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Issues

1. What is the Connection?
2. Local Effects: Business Siting
3. National Scale: Trade Networks
4. Regional Scale: Reorganizing Activities
5. Case Studies of New Interstates
6. Implications

What is the Connection?

What is the effect of highways

- on jobs?
- on sprawl?
- On industry location?

..Variations on the same issue...

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Where is the Development?

- Business attraction is NOT automatic.
- Thousands of miles of interstate highway without ANY business activity at all.



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It all depends...

...on where the highway goes relative to where people want to go
(location of workers, markets and key connections)



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Why? Business Location Factors

Basic Requirements

- Land
 - Infrastructure
 - Labor Force
 - Materials
 - Markets
- } *Premises*
- } *Access*

Other Considerations

- Industry Clusters/Links
- Quality of Life
- Business Climate
- Regulations
- Taxes/Incentives

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What Interstate Highways Provide

From Economic Development point of view...

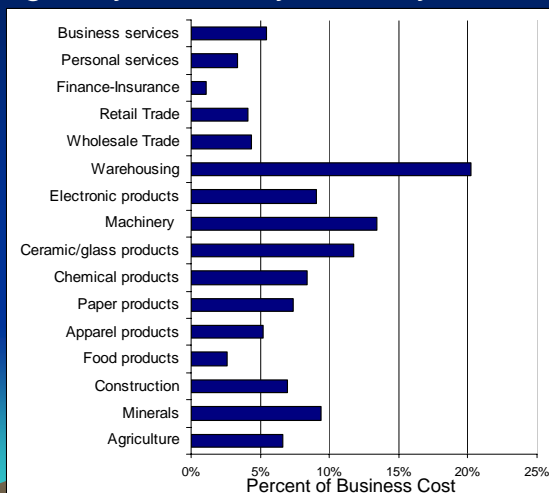
- Faster speed - broader market
- Better schedule predictability for planning
(avoiding intersection delays, slow moving vehicles)
- Greater uniformity of regulations *(weight, size)*
- Connectivity for intermodal & logistics planning

Explains findings by Isserman & Rephan & others that interstates most benefit non-metro areas that are adjacent to metro areas

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Who Cares?

Reliance on highway differs by industry...



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Local Level...Business Siting

What is the effect of highways

- Increasing business – at interchanges and connecting highways?
- Decreasing business – at areas between interchanges?

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Local Level – Interchanges Replace Hwy Strip Development

Local Effect on Former Highway 66 Strip



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Industrial Park Locations

Siting near interchanges to optimize truck (& worker) access



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New Wisconsin Manufacturers

Located along  Interstates  4-lane freeways  other major hwys

New & Expanded Manufacturers, 1990-2001

Freight Flow Volumes, 2002



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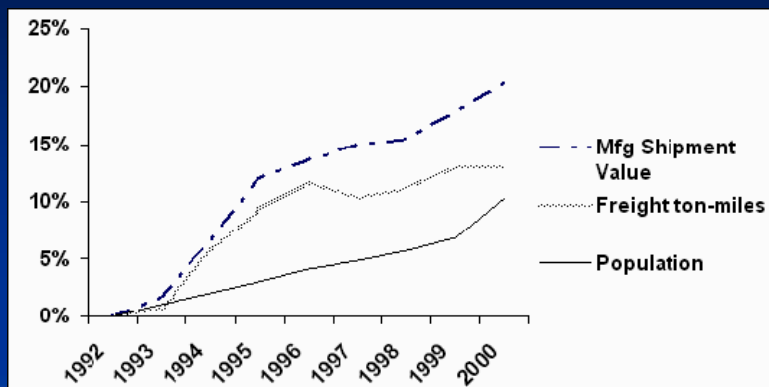
National Scale Network



→ Access to broader markets & locations

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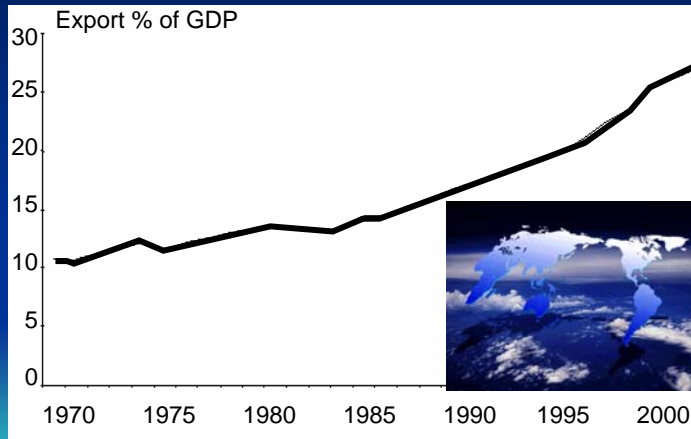
Freight Growth Faster than Population



Source: Ton-Miles: Bureau of Transportation Statistics, *Transportation Statistics Annual Report 2001*;
Population: U.S. Department of Commerce, Census Bureau, *Statistical Abstract of the United States, 2000, table 2*;
Manufacturing: US Census Bureau, *Annual Surveys of Manufactures 2001*.

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International Share is Expanding



Export % of GDP

US Dept of Commerce, BEA

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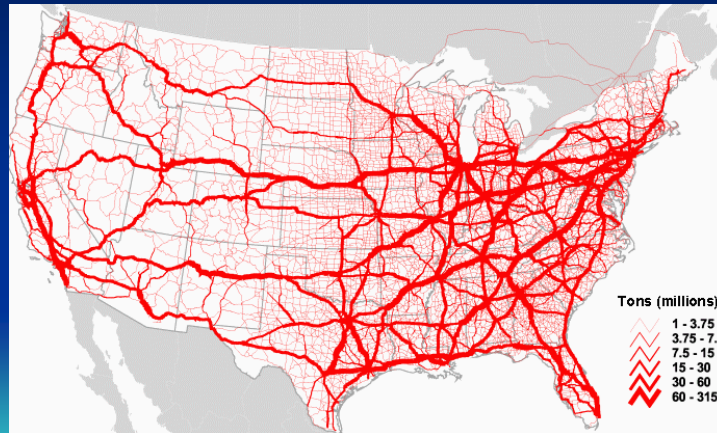
US Evolution of Trade Routes

- Major Seaports are mostly on **East and West** coasts
- Historically, cross-continent rail and road routes are dominated by **East-West flows**



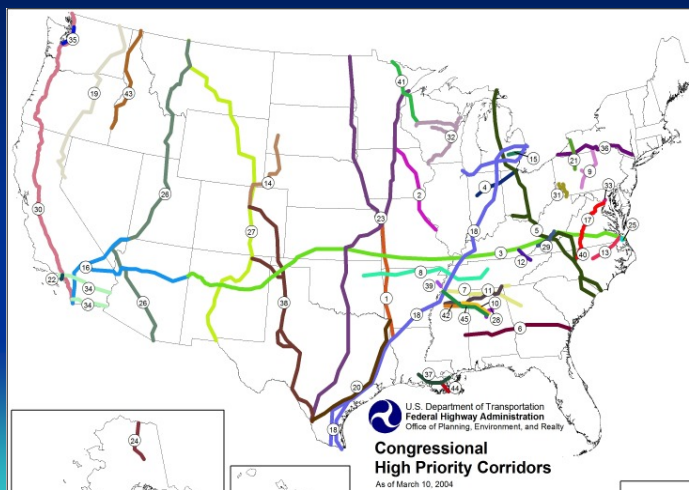
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Truck Freight Volumes are Dominantly East-West



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But...New NAFTA Highways are mostly North-South



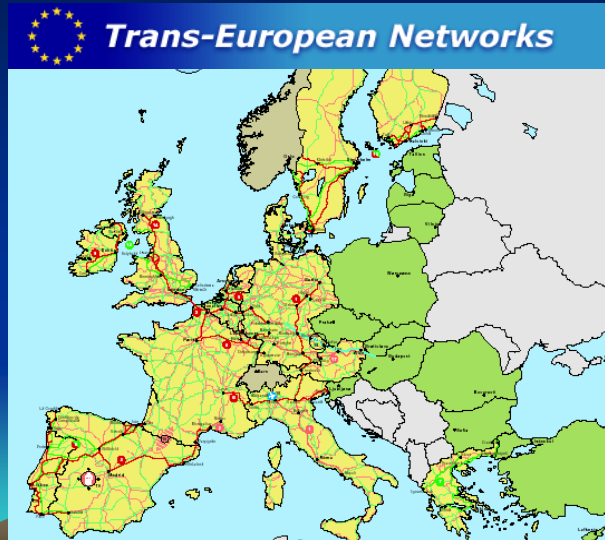
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Integrated Sea-Air-Land Routes



Trans-European Networks

\$100 Billion; 9000 miles



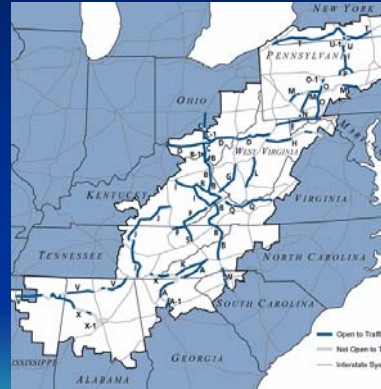
- Priority projects adopted in 1996**
1. High speed rail/combined transport north-south
 2. High speed rail/FRA, (Paris-Brussels-College-Aachen-London)
 3. High speed rail east
 4. High speed rail west
 5. Conventional rail/combined transport Belgium
 6. High speed rail/combined transport France-Italy
 7. Link motorway, Paris and the Egnatia
 8. Multimodal link Portugal-Spain-central Europe
 9. Conventional rail link Cook-Cublin-Belfast-Larne-Stranraer (completed)
 10. Malpensa airport, Milan (completed)
 11. Generalised national link between Denmark and Sweden (completed)
 12. Nordic through rail road
 13. Ireland-United Kingdom/Belfast road link
 14. West coast main line rail
- Priority projects proposed by the European Commission in 2001 (new projects and extensions)**
- New projects**
15. Global navigation and positioning satellite system Galileo
 16. High capacity rail link across the Pyrenees
 17. Eastern European combined transport high speed rail
 18. Cross-border improvement between Wloclawek and Szczecin
 19. High speed rail/interoperability on the Iberian peninsula
 20. Refurbish Baltic rail link between Germany and Denmark
- Extensions**
1. High speed rail/combined transport north-south (Netherlands and Belgium-Madrid)
 2. High speed rail North (Madrid-Barcelona)
 3. High speed rail South (Madrid-Barcelona)
- Legend:**
 - Adopted Project (Red line)
 - Proposed Rail Project (Green line)
 - Adopted Road Project (Blue line)
 - Proposed Road Project (Yellow line)
 - Rail Network in 2010 (Red line)
 - Road Network in 2010 (Blue line)

Appalachian Devel Hwy System

Interstate system largely bypassed Appalachia's rugged terrain.

1964 President's Commission: economic growth in Appalachia would not be possible until the Region's isolation is overcome.

1965 Congress authorized 3,000 mile Appalachian Development Highway System (ADHS) to supplement & connect to the interstate system.



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Regional Scale: Reorganizing Activities

- Supply Chain Corridors
- Intermodal Rail-Sea-Air Ports
- International Trade Gateways
- Intermodal Connections

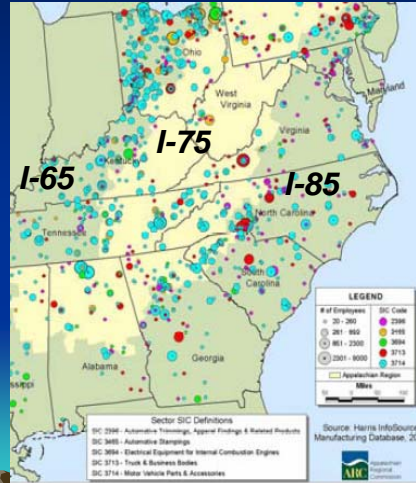
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Supply Chain Corridor

Southern Auto Supply Manufacturers



- I-65**
- Ford
 - GM
 - Nissan
 - Mercedes
- I-75**
- Jeep
 - GM
 - Toyota
- I-85**
- BMW
 - Ford



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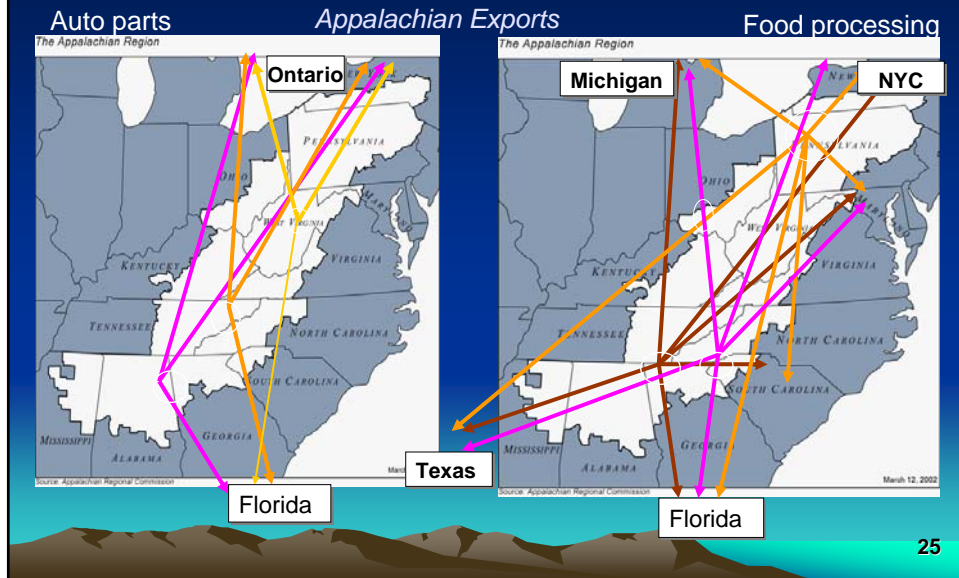
Port and Gateway Connections

Exports from New England by Port of Exit, \$ Billions, 2002

J.F.K. INTL AIRPORT, N.Y.	\$ 32.6
BUFFALO-NIAGARA FALLS, N.Y (LAND)	\$ 10.9
NEW YORK, NY - PORT	\$ 10.6
LOGAN INTL AIRPORT-BOSTON	\$ 4.6
LAREDO, TEXAS (LAND)	\$ 3.4
CHAMPLAIN-ROUSES PT., NY (LAND)	\$ 3.0
NEWARK, NJ - PORT	\$ 2.7
NEWARK INTL AIRPORT	\$ 1.9
NEW ORLEANS INTL AIRPORT	\$ 1.8
DETROIT, MICHIGAN (LAND)	\$ 2.1
ALEXANDRIA BAY, NY (LAND)	\$ 2.1
BALTIMORE, MD - PORT	\$ 2.1
PHILADELPHIA INTL AIRPORT	\$ 1.9
HIGHGATE SPRINGS-ALBURG, VT (LAND)	\$ 1.6
ANCHORAGE INTL AIRPORT	\$ 1.2
NORFOLK, VA - PORT	\$ 1.2
LOS ANGELES/LONG BEACH - PORT	\$ 1.2

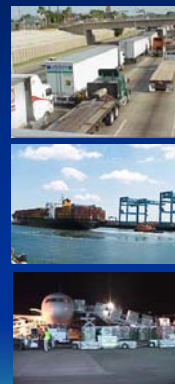
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Port and Gateway Connections



Logistics at Interconnections

- Truck-Land Borders
- Truck-Seaport Interchange
- Truck-Airport Interchange
- Truck-Rail Interchange



Case Studies of New Interstates

Economic Effects of Rural Interstates

- FHWA - Before/after, 8 interstate highways
- New highways facilitated new industrial & warehousing activity where there were *connections with other highway routes* along with labor markets, land, zoning, utilities.
- Economic development success is related to the *access* and *connectivity* improvement.

I-68 (MD)

I-81 (PA)

I-43 (WI)

I-81 (VA)

I-27 (TX)

I-26 (SC)

I-16 (GA)

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I-81 (PA) Case Study

I-84 to New England
I-80 / 380 to New York City

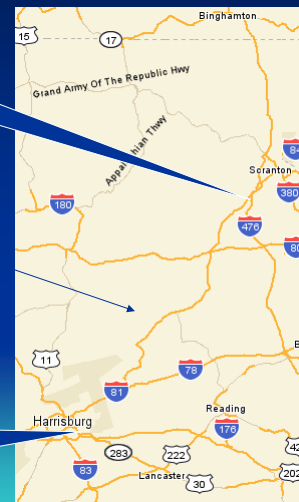
**Scranton Area: Industrial Parks,
Warehouses, Trucking centers**



**Schuylkill County:
Potatoes, Retail
Warehousing, etc.**

**Harrisburg Area: 10m sf Food Distribution
Centers & Warehouses, Industrial Parks**

I-78 to New York City
I-76 (Turnpike) to Philadelphia
I-83 to Baltimore / Washington



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I-43 (WI) Case Study

WI-29 to Minneapolis



Green Bay: I-43 Business Ctr. - Logistics/ warehousing for food & paper industries



Manitowoc: I-43 Industrial Park – small scale mfg.

Sheboygan: recreation & commercial

Milwaukee Area: (nothing)

I-94 to Minneapolis, Chicago



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I-86 (NY) Case Study



- NY-17, Now I-86, Southern Tier Expressway
- Area had been economically distressed and losing jobs
- I-86 designation brought new freight distribution, manufacturing, and traffic-serving businesses.

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Implications

Business Location & Economic Growth have been and will continue to evolve with...

- Interstate network functionality (*reliability & interconnections*)
- Global & regional supply chains (*product flow*)
- Labor markets (*size, skills*)
- Technologies (*transport, information, borders*)



Business Location effects differing by industry

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...On the Web

FHWA Economic Development Highway Studies

www.fhwa.dot.gov/planning/econdev

Library of Links for Economic Impact Studies

www.edrgroup.com/edr1/library

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