Freight Trends, Issues, and Data Needs

presented to

Conference on Data Needs in the Changing World of Logistics and Freight Transportation
Saratoga Springs, NY

presented by

Lance R. Grenzeback
Cambridge Systematics, Inc.

November 14, 2001
Presentation

■ Trends
  • Freight Volumes
  • Economy and Logistics
  • Transportation Infrastructure and Services
  • Public Policy

■ Impacts and Issues
  • International Freight Gateways
  • Metropolitan Freight Centers
  • National Trade Areas and Freight Lanes
Domestic Freight Tons and Value, 1998
Freight Moving Into, Out Of, and Within the U.S.

Total Tons = 9.8 Billion
Total Value = $9.1 Trillion

Source: FHWA Freight Analysis Framework Project
Reebie Associates 1998 data (1st Approximation)
WEFA economic data and forecasts
Truck-Freight Flows, 1998
All Commodities; All Truck Types; Highway-Freight Density in Tons

Source: FHWA Freight Analysis Framework Project
Reebie Associates 1998 data (1st Approximation)
WEFA economic data and forecasts
U.S. Economy and Trade

Gross Domestic Product Growth Has Averaged 3.2 Percent per Year; Trade Is Now 27 Percent of GDP
Freight Tonnage Growth by Region, 2000-2020
Tons, All Modes, All Commodities

West Region
100%

South Region
89%

Central Region
89%

Northeast Region
79%

Source: FHWA Freight Analysis Framework Project
Reebie Associates 1998 data (1st Approximation)
WEFA economic data and forecasts
Truck-Freight Growth, 2000-2020
Highway Links with Highest Growth Rates
Highway-Freight Density in Tons

Source: FHWA Freight Analysis Framework Project
Reebie Associates 1998 data (1st Approximation)
WEFA economic data and forecasts
**Business Logistics**

Evolving from Push to Pull Logistics Systems

- **Supplier** → **Supplier**
- **3PL**
- **Supplier** → **Supplier**
- **Supplier** → **Supplier**
- **Supplier**

**Design** → **Manufacturer** → **Marketer**

- **Distributor**
- **Customer**

"PUSH" METHODS OF CONTROL (relative importance)

- Inventory
- Transport System
- Information System

"PULL" METHODS OF CONTROL (relative importance)

- Returns/recycled products
- Point-of-sale data

Slide 8
Defense Logistics
The Army’s Goal Is To Reduce Deployment Time by 80 Percent

Combat power ~ 6 Divisions (~ 2 Corps)
Gulf War: 180 Days

Combat power ~ 5 Divisions
Current Target: 75 Days

Chief of Staff’s Goal: 30 Days

Source: Adapted from briefing by William Lucas, MTMC, to TRB Annual Meeting, Jan. ‘00
Economic Deregulation

Freight Transportation Industry Has Undergone a Major Restructuring in Organization and Services

- Aviation Deregulation Act of 1978
- Motor Carrier Act of 1980
- Staggers Rail Act of 1980
- Ocean Shipping Act of 1984
- Ocean Shipping Reform Act of 1998
Total Logistics Expenditures and GDP
After a Long Improvement, Total Logistics Expenditures Have Stalled at About 10 Percent of Gross Domestic Product

Source: Cass/ProLogis 10th Annual State of Logistics Report, 1998
Vehicle Miles of Travel and Road Miles
Vehicle Travel Grew by 72 Percent, Road Miles by 1 Percent between 1980 and 1998

Source: Federal Highway Administration, Highway Statistics
Public and Private Transportation Perspectives
State and MPO Focus Is Regional and Local; Private Sector Focus Is Increasingly National and Global
Truck, Rail, and Marine Fatalities

Fatality Rates Are Declining; But Absolute Numbers Are Not Declining Significantly
Environmental Accountability
Increasing Regulation of Diesel Particulate Emissions
Community and Land Use Impacts
Increasing Cost and Complexity of Expanding Marine, Rail, Truck, and Air Terminals
Freight System Impacts and Issues

- International Freight Gateways
- Metropolitan Freight Centers
- National Trade Areas and Trade Lanes
International Freight Gateways
Exports and Imports in Tons, 1998

Source: FHWA Freight Analysis Framework Project
Reebie Associates 1998 data (1st Approximation)
WEFA economic data and forecasts

Slide 18
US/Canada Truck-Freight Flows Through Buffalo
All Commodities; Highway Freight Density in Tons

Source: FHWA Freight Analysis Framework Project
Reebie Associates 1998 data (1st Approximation)
on freight movements through Erie and Niagara counties; and WEFA economic data and forecasts
Intermodal Terminals
Volumes Forecast to Double or Triple; Quadruple at Airports
Freight System Impacts and Issues

- International Freight Gateways
- Metropolitan Freight Centers
- National Trade Areas and Trade Lanes
Manufacturing Centers
Employment Density by County
Wholesaling/Distribution Centers

Employment Density by County
Population Centers
Population Density by County
Metropolitan Freight Centers
Freight System Impacts and Issues

- International Freight Gateways
- Metropolitan Freight Centers
- National Trade Areas and Trade Lanes
National Trade Areas

[Map showing national trade areas with major cities such as Charlotte, Cleveland, Boston, and more, connected by overlapping circles to indicate trade areas.]
Short-Haul Truck Freight-Sheds
Trips under 500 miles; All Commodities; Highway-Freight Density in Tons

Source: FHWA Freight Analysis Framework Project
Reebe Associates 1998 data (1st Approximation)
WEFA economic data and forecasts
Long-Haul Truck Freight-Lanes
Trips over 500 miles; All Commodities; Highway-Freight Density in Tons

Source: FHWA Freight Analysis Framework Project
Reebie Associates 1998 data (1st Approximation)
WEFA economic data and forecasts
Freight Performance Measures

- Trip Performance
- Vehicle Performance
- Infrastructure Performance