Changing Geography of Markets
Warning...

"And should there be a sudden loss of consciousness during this meeting, oxygen masks will drop from the ceiling."
Outline

Changing Directions and Volumes of Freight Flows
- Biofuels and Domestic Energy
- Industry Supply Chain Trends
  - Auto Industry example
- Panama Canal Expansion

Globalization

Challenges for Louisiana
Domestic Oil and Gas Production
The world will continue to consume fuel...
Energy and Transportation

Diesel (July 2012) Retail Price: $3.72/gallon

- Taxes: 13%
- Distribution & Marketing: 12%
- Refining: 15%
- Crude Oil: 60%

Graph showing the trend of US No. 2 Diesel prices from Mar-1994 to Mar-2012.
Price of Fuel and Distribution

$200/ barrel
Current Production and Distribution

Ethanol

Petroleum

State and Local Incentives

- Production Incentives
- Distribution Incentives
  - Clean Fleet
  - Filling Station Locations
U.S. Biofuels Are Not Projected to Reach 36 Billion by 2022 – Cellulosic Challenges?

Source: Annual Energy Outlook, 2010
Rural Development Issues

- Equipment not necessarily compatible
- Transportation Costs may limit effective range (yields per acre, sources, etc.)
- Economic Incentives may work were existing infrastructure can source feedstocks
- Size and density of plants
- Road deficiencies
Industry Supply Chain Trends
Everyone wants stuff!!!

Annually

- Everyone - consumes 50 tons of stuff (2 Trucks)
- 11,000 ton-miles (driving between LA and Charleston 5 times!)
- 9% of US GDP spent on logistics
What the World Eats, Time Magazine
The Revis family-North Carolina

Food expenditure for one week: $341.98
There are many considerations to balancing a Supply Chain

- Safe
- Secure
- Environmental Responsible
- Efficient/Reliable
- Cost effectiveness
- Accessible to various modes and facilities
Wholesaling/Distribution Centers

Employment Density by County

[Map showing the distribution of wholesaling/distribution centers by county across the United States, with different shades indicating varying employment densities.]
Manufacturing Centers

Employment Density by County
Near Shoring

- Supply Chain Costs
- Quality of workmanship
- Intellectual property controls
Example – Structural Change in One Industry
The Rise of Foreign Domestics Lead to the Southern Auto Corridor

U.S. Total Car Sales (Nominal U.S. Dollars)

- Import
- Domestic

Source: Ward’s Automotive Yearbook (Southfield, MI: Annual Issues).

The Big Three vs. Foreign Domestics

U.S. Car Production

- The Big Three
- Foreign Domestics

Source: Ward’s Automotive Yearbook (Southfield, MI: 2009).

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Owned Suppliers</td>
<td>66%</td>
<td>35%</td>
</tr>
<tr>
<td>F-D Suppliers</td>
<td>15%</td>
<td>32%</td>
</tr>
<tr>
<td>Imported Parts</td>
<td>19%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Source: DesRosiers
Geographic Characteristics

- Multistate Corridor – I-65/I-75
- Northern Tier – U.S.
- Southern Tier – Foreign

- Integration with NAFTA Flows
Southern Auto Corridor
OEMs, Tier 1 Suppliers, and States Coded by Supplier Establishments

Over 1,500 Establishments with 200,000+ employees

Share of U.S. Auto Industry 2008

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>26%</td>
</tr>
<tr>
<td>Vehicle GDP</td>
<td>27%</td>
</tr>
<tr>
<td>Parts Suppliers</td>
<td>24%</td>
</tr>
<tr>
<td>Employment</td>
<td>26%</td>
</tr>
<tr>
<td>Sales of New Vehicles</td>
<td>23%</td>
</tr>
</tbody>
</table>

Source: ELM International
80-90% of parts arrive by truck and 70-80% vehicles leave by rail (Vanuono 2004)
Changing Supplier/Automaker Relationship

- Multi-tiered system
  - OEM, Tier 1, Tier 2, Tier 3

- Independent suppliers more integrated in production than in past

- Suppliers Taking on More Responsibilities:
  - Suppliers Handling Logistics:
  - Going Green:
  - Greater Use of 3PLs:
Auto Supplier Location Criteria

Nissan and its US Based Tier One Suppliers
Most Suppliers within One Day Drive
Auto Supplier Location Criteria

- One day delivery drive time to a final assembly plant
- Ideally two final assembly plants located within the one day drive
- Access to four-lane divided highway/interstate or two-lane highways with limited access and few stoplights
- Two route options for inbound and outbound material
- Access to rail (not a requirement for all suppliers)
- Workforce density 100-150 times the number of projected employees
- Educational assets
- Workforce training programs
http://www.wired.com/magazine/2011/05/ff_jobsi85/
Logistics Parks and Economic Development

- What type of facility?
- Trackage and Terminals
- Develop densities
- Need partners

Transport, Talent and Taxation Top Factor List

Site Selection’s October survey of corporate real estate executives reveals which factors on average are most important to them when they are involved in location decision making.

1. Transportation infrastructure
2. Existing work force skills
3. State and local tax scheme
4. Utility infrastructure
5. Land/building prices and supply
6. Ease of permitting and regulatory procedures
7. Flexibility of incentives programs
8. Access to higher education resources
9. Availability of incentives
10. State economic development strategy
Panama Canal Expansion
What Questions Should be Asked...

- Is it needed?
- Does it fundamentally change North American flows?
- Can (will) I get a piece of the pie?
Why Expand the Canal?

- Overall strong growth over past few years
- Seem as critical, but obsolete, bottleneck
- Coastal Competition
- West Coast Uncertainties
- Vessel Economics
Is it Needed?
Panama Canal Expansion Projects

Components of Third Set of Locks Project:

1. Deepening and widening of the Atlantic entrance channel
2. New approach channel for the Atlantic Post-Panamax locks
3. Atlantic Post-Panamax locks with 3 water saving basins per lock chamber
4. Raise the maximum Gatun lake operating water level
5. Widening and deepening of the navigational channel of the Gatun lake and the Culebra Cut
6. New approach channel for the Pacific Post-Panamax locks
7. Pacific Post-Panamax locks with 3 water saving basins per lock chamber
8. Deepening and widening of the Pacific entrance channel
# Transits and Tolls Through the Panama Canal, FY 2007 and FY 2008

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Transits</th>
<th>Tolls (Thousands)</th>
<th>TEUs (Thousands)</th>
<th>Long tons (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container</td>
<td>3,544</td>
<td>3,622</td>
<td>712,507</td>
<td>645,947</td>
</tr>
<tr>
<td>Dry Bulk</td>
<td>2,420</td>
<td>2,406</td>
<td>163,094</td>
<td>147,483</td>
</tr>
<tr>
<td>Refrigerated</td>
<td>2,166</td>
<td>2,188</td>
<td>65,996</td>
<td>56,080</td>
</tr>
<tr>
<td>Tankers</td>
<td>2,066</td>
<td>1,969</td>
<td>137,851</td>
<td>111,530</td>
</tr>
<tr>
<td>General Cargo</td>
<td>766</td>
<td>818</td>
<td>27,272</td>
<td>26,090</td>
</tr>
<tr>
<td>Vehicle Carriers</td>
<td>817</td>
<td>835</td>
<td>122,583</td>
<td>111,584</td>
</tr>
<tr>
<td>Passengers</td>
<td>241</td>
<td>205</td>
<td>31,070</td>
<td>26,235</td>
</tr>
<tr>
<td>Others</td>
<td>1,127</td>
<td>1,190</td>
<td>55,669</td>
<td>57,578</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,147</strong></td>
<td><strong>13,233</strong></td>
<td><strong>1,316,042</strong></td>
<td><strong>1,182,527</strong></td>
</tr>
</tbody>
</table>
Country Flows through the Canal, 2008 (long tons)

<table>
<thead>
<tr>
<th>Country</th>
<th>Origin</th>
<th>Destination</th>
<th>Inter-coastal</th>
<th>Total</th>
<th>Total exc. Intercoastal</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>73,219,464</td>
<td>62,190,326</td>
<td>1,803,753</td>
<td>135,409,790</td>
<td>133,606,037</td>
</tr>
<tr>
<td>People's Republic of China</td>
<td>28,192,062</td>
<td>15,572,161</td>
<td>0</td>
<td>43,764,223</td>
<td>43,764,223</td>
</tr>
<tr>
<td>Chile</td>
<td>13,010,080</td>
<td>13,728,728</td>
<td>0</td>
<td>26,738,808</td>
<td>26,738,808</td>
</tr>
<tr>
<td>Japan</td>
<td>5,884,876</td>
<td>18,811,504</td>
<td>0</td>
<td>24,696,380</td>
<td>24,696,380</td>
</tr>
<tr>
<td>South Korea</td>
<td>8,017,982</td>
<td>9,292,913</td>
<td>0</td>
<td>17,310,895</td>
<td>17,310,895</td>
</tr>
<tr>
<td>Peru</td>
<td>7,118,715</td>
<td>6,972,476</td>
<td>0</td>
<td>14,091,191</td>
<td>14,091,191</td>
</tr>
<tr>
<td>Colombia</td>
<td>9,381,569</td>
<td>4,229,563</td>
<td>58,942</td>
<td>13,611,132</td>
<td>13,552,190</td>
</tr>
<tr>
<td>Ecuador</td>
<td>6,788,875</td>
<td>6,747,003</td>
<td>0</td>
<td>13,535,878</td>
<td>13,535,878</td>
</tr>
<tr>
<td>Panama</td>
<td>3,123,754</td>
<td>9,862,036</td>
<td>164,102</td>
<td>12,985,790</td>
<td>12,821,688</td>
</tr>
<tr>
<td>Mexico</td>
<td>5,469,701</td>
<td>6,478,054</td>
<td>117,588</td>
<td>11,947,755</td>
<td>11,830,167</td>
</tr>
<tr>
<td>Canada</td>
<td>7,140,047</td>
<td>2,734,626</td>
<td>0</td>
<td>9,874,673</td>
<td>9,874,673</td>
</tr>
</tbody>
</table>
Growth of container traffic through the Panama Canal (1998 – 2009 Est.)

Based on the capacity of transiting vessels – Source: ComPair Data - April 2009.
Projections of Vessel Tonnage (FY2009 – FY2014)
Changing Hinterlands?

- Faster Transit
- Economies of Scale
- Anything else?
  - Bulk
  - Exports
  - Container availability
A Muddled Future

North American Logistics
- Tolls versus Rail Rates
- Other Gateways (Canada, California, Suez Canal)
- Eastern Railroad developments

Expectations
- Everyone is focusing on their part
- What if nothing happens?

Policy
- Dredging
- US Chinese Trade Tensions
- Security and Regulatory Oversight
- Economy

Shippers
- Near-Sourcing
- Changing Shipment Strategies
- Intermodal Connectivity
- FDI and Market Shifts
- Pace of US Recovery

Carriers
- Ship Rotations
- Order Books
- Transshipment hubs in region
PANAMA CANAL TRANSIT
Saturday, September 19, 2009

Let it be known to all
Ditch Diggers,
Mosquito Swatters
and Adventure
Lovers, that I have
transited the Panama
Canal on board the
good ship Pacific
Queen.

North-Bound Full Transit

Been There.....
Done That!
Panama Canal Expansion – Answered?

- Is it needed? YES
- Does it fundamentally change North American flows?
  - Bulks – Yes - more volume
  - Containers – Yes, Some growth
  - Ports – Opportunities for Ports
  - Transshipment Opportunities – Yes and No
- Managing Expectations
Globalization and Louisiana
Foreign Direct Investment - Thousand Jobs (2010)

- Transportation needs vary
- Like to locate near “neighbors”
- Tend to use more import sourcing
LATIN AMERICA AND THE CARIBBEAN: SHARE OF SELECTED PARTNERS IN TOTAL TRADE, 2000-2020 A. (PERCENTAGES)

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the United Nations COMTRADE Database and national sources.

A/ Projections from 2011 to 2020 are based on GDP growth rates for the years 2000-2010 in Asia-Pacific, China, the European Union, Latin America and the Caribbean, the United States and the rest of the world. The growth rate of trade is expected to converge with the economies’ long-term growth rate.
Louisiana Shipments by Origin, Trade by Mode, By Value 2001-2011 ($55.1 Billion)
Louisiana Shipments of Origin, Top Five Commodities, 2001-2011 (All modes - $55.1 Billion)
Louisiana Shipments of Origin, Top Five Destinations, 2001-2011 (All modes - $55.1 Billion)
Port Activities – Part of Larger Chain

- 10 days
- 4000 miles
- Marine Terminal
- 2 days
- No miles
- 2 days
- 1500 miles
- 4 hours
- +/- 2 hours
- 20 miles
Louisiana Freight Profile
Total Freight Transportation in Louisiana - 2010

1,022,178 Thousand of Tons

612,482 Current Millions$

Source: Freight Analysis Framework, FHWA
Louisiana’s Trade Partners - 2010

743,467 Thousand of Tons

Source: Freight Analysis Framework, FHWA

447,591 Current Millions$
Comparison of Freight Dependency: US, Southeast, Louisiana (2011)
Industry Share of the Louisiana Economy, 2011

- Agriculture, forestry, fishing, and hunting: 1%
- Mining: 9%
- Utilities: 1%
- Construction: 3%
- Manufacturing: 20%
- Durable goods: 3%
- Nondurable goods: 18%
- Wholesale trade: 3%
- Transportation and warehousing: 3%
- Retail trade: 4%
- Government: 8%
- Services: 27%
- Government: 8%
- Manufacturing: 20%
- Durable goods: 3%
- Nondurable goods: 18%
- Wholesale trade: 3%
- Transportation and warehousing: 3%
- Retail trade: 4%
- Government: 8%
- Services: 27%

The chart shows the distribution of industries in the Louisiana economy for 2011, with manufacturing being the largest sector at 20%.
State Economic Output in Transportation Sectors, 1997-2010

- Warehousing and storage
- Other transportation and support activities
- Pipeline transportation
- Transit and ground passenger transportation
- Truck transportation
- Rail transportation
- Air transportation
Services vs. Goods

The Free Market Celebration of Labor Day

Life Guard on Duty Somewhere in India
Response
DOT’s have two questions they need to answer concerning freight:

1. How do I help my businesses grow

2. How do I offset “through” cargo on my network
What is the value of I-69

- What is value to individual states?
- What is value to region?
- What tools are needed?
  - BCA
  - Data
  - Needs
Example – Choices between Baton Rouge and Lafayette

- Automobile
- Bus
- Rail - Amtrak
- Airplane
- Boat
- Walk
- Horse
- Bicycle
Regional Operations are no laughing matter...

Lost productivity for all involved!!
Planning for Freight - Today

- More modal balance
- Largest trading partners are neighbors
- Mostly Trucks
- Tend to be heavier products
- Rural-urban flows
- Urban-urban flows

Pie chart:
- To-From State: 34%
- Through Freight: 33%
- Within State: 33%

- All Modes
- All cargos
- Discretionary routing
What is the value of I-69

- What is value to individual states?
- What is value to region?
- What tools are needed?
  - BCA
  - Data
  - Needs
Forecast of Transportation for Louisiana 2010-2040 By Weight (in thousand tons)

Source: Freight Analysis Framework, FHWA
Forecast of Transportation for Louisiana 2010-2040 By Value (current millions $)

Source: Freight Analysis Framework, FHWA
Are We Prepared for the future?

Without Planning This Would Have Been a Mess
Needs in Southeast from Latin American Trade (LATTSS)

- **Total 20-YR Needs Estimate**: $92 Billion
  - Latin America: Red
  - Other: Yellow

- **20-YR Highway Needs Estimate**: $67 Billion
  - Latin America: Red
  - Other: Yellow

- **20-YR Port Needs Estimate**: $22 Billion
  - Latin America: Red
  - Other: Yellow

- **20-YR Air Cargo Needs Estimate**: $3.3 Billion
  - Latin America: Red
  - Other: Yellow
And What?

- Will exports go up or down in 10 years?
- Fracking, natural gas?
- Where will people live in ten years?
- Where will the state see more truck traffic?
- Will there be a catastrophic lock failure?
- What if we go to heavier/longer trucks?
- What if the State attracts more manufacturing?
- Truck parking issues?
- What does this cost my economy?
Freight Planning Does Matter

- Do this every day
- Needs to be more than truck counts, axle weight, etc.
- Needs to help make business competitive
- It's only as complicated as we make it
- It is not checking a box

It helps create a future
The Story Matters…
Some Considerations

What do “WE” want

- Relinking Transportation to industrial development
- Perception of value of capital stock
- Economic development = jobs

What must “WE” balance

- Everyone more engaged in parts of the debate
- System’s use not fully understood
- “Others Have It” syndrome
- Scale and Densities
- Aging Infrastructure vs. Capacity
- Manage Expectations
Final Thoughts?

- Louisiana benefits
  - From previous investment in public and private freight infrastructure
  - These facilities connect the State with world markets, generating jobs
- The State – growth is with external markets
- The lack of systems approach
  - May result in congestion and unreliability
  - Will add costs to doing business