AAPA Terminal Management Training Program

Climate Change Policy Implications on Ports and Terminals

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Jacksonville

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Why Do Freight Carbon Emissions Matter?

- 80% reductions in GHG are needed – huge!
- 19% of US transportation GHG is from freight trucks
- Freight GHG is rising much faster than other sources
- Freight will have to contribute to 80% GHG reduction targets
- Reducing freight GHG will be much harder than for utilities, LDVs and other sources
- The supply chain wants to be part of the solution, not the problem

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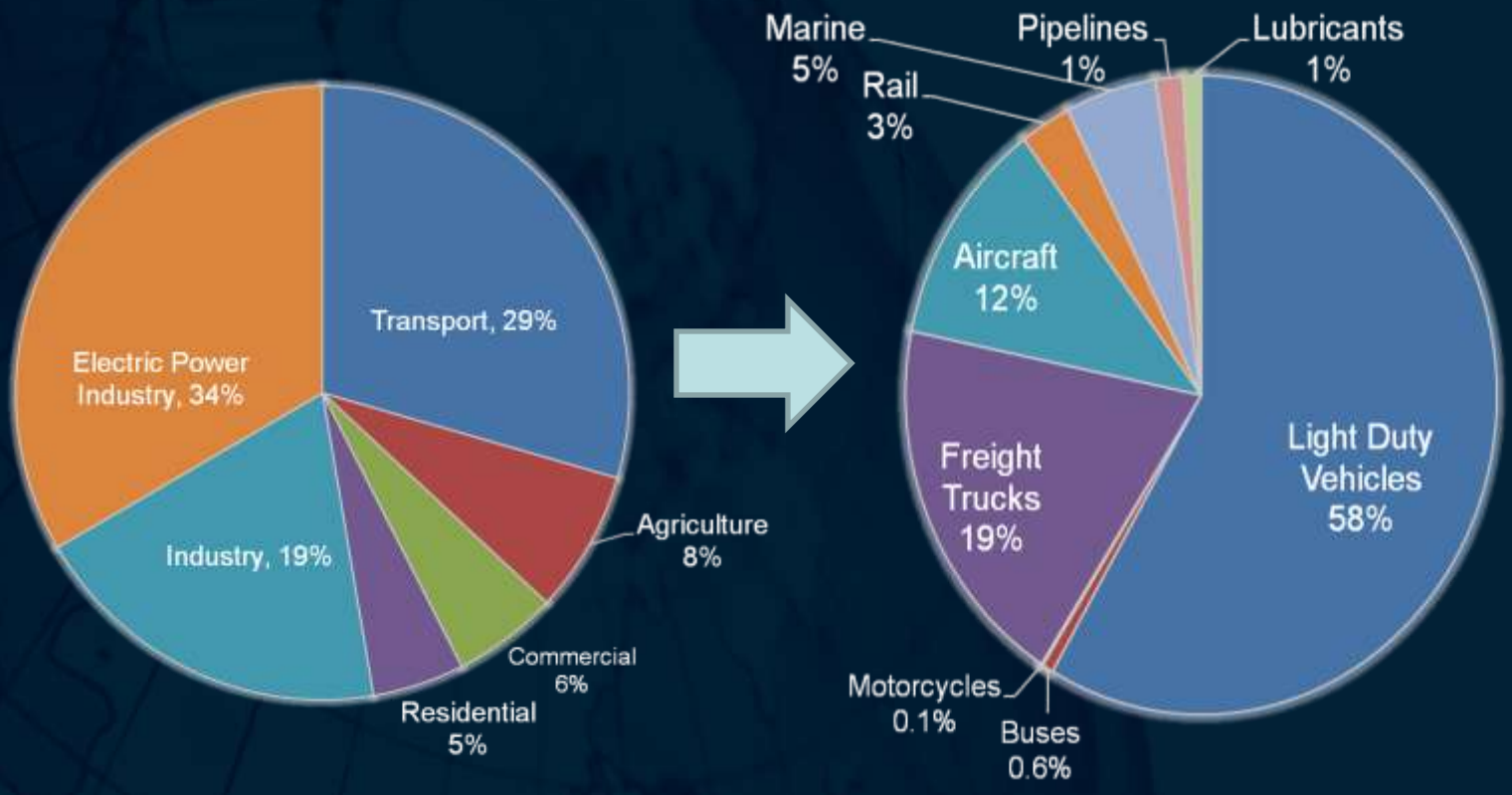
What is Transportation's Share of U.S. GHG?



How can Freight GHG be Reduced?

- Improve freight engine efficiency (Federal rulemaking pending)
- Use low-carbon fuels for freight modes (many options)
- Improve logistics on existing infrastructure (more efficient distribution networks, fewer empty back-hauls, modal options, etc.)
- Improve infrastructure for more efficient freight (accommodate double-stack trains; eliminate freight and truck bottlenecks; add truck only lanes, etc.)

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What Freight GHG Planning Work is Needed?

- Understanding of the supply chain routing criteria
- New models to analyze freight GHG based on supply chains
- New models to analyze freight GHG impacts from infrastructure and policy improvements
- Based on the above, a need for Federal freight strategy
- What role should Ports and terminals play?

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Different Views of GHG Emission Producers

- Supply Chain (e.g. Shippers)
- Transportation Modes (e.g. Carriers)
- Regions (e.g. MPO's, Ports, Terminals and State DOT's)
- Global

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From a Shipper's (BCO) Perspective

- What does a shipper look for in a supply chain?
  - Reliability
  - Efficiency of costs
  - Density and balanced cargo flow
  - Redundancy and contingency
  - Social responsibility

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Supply Chains

- **Why Focus on Supply Chains?**
  - It is how economies and businesses work
  - How decision making is influenced
  - Global with multiple jurisdictions
- **Issues:**
  - Complex Life cycles of Production-Transportation-Consumption
  - Global
  - Dynamic sourcing and distribution
  - $$$$ and reliability
- Legislative
  - Cap & Trade
  - AQ Attainment
  - What next?????

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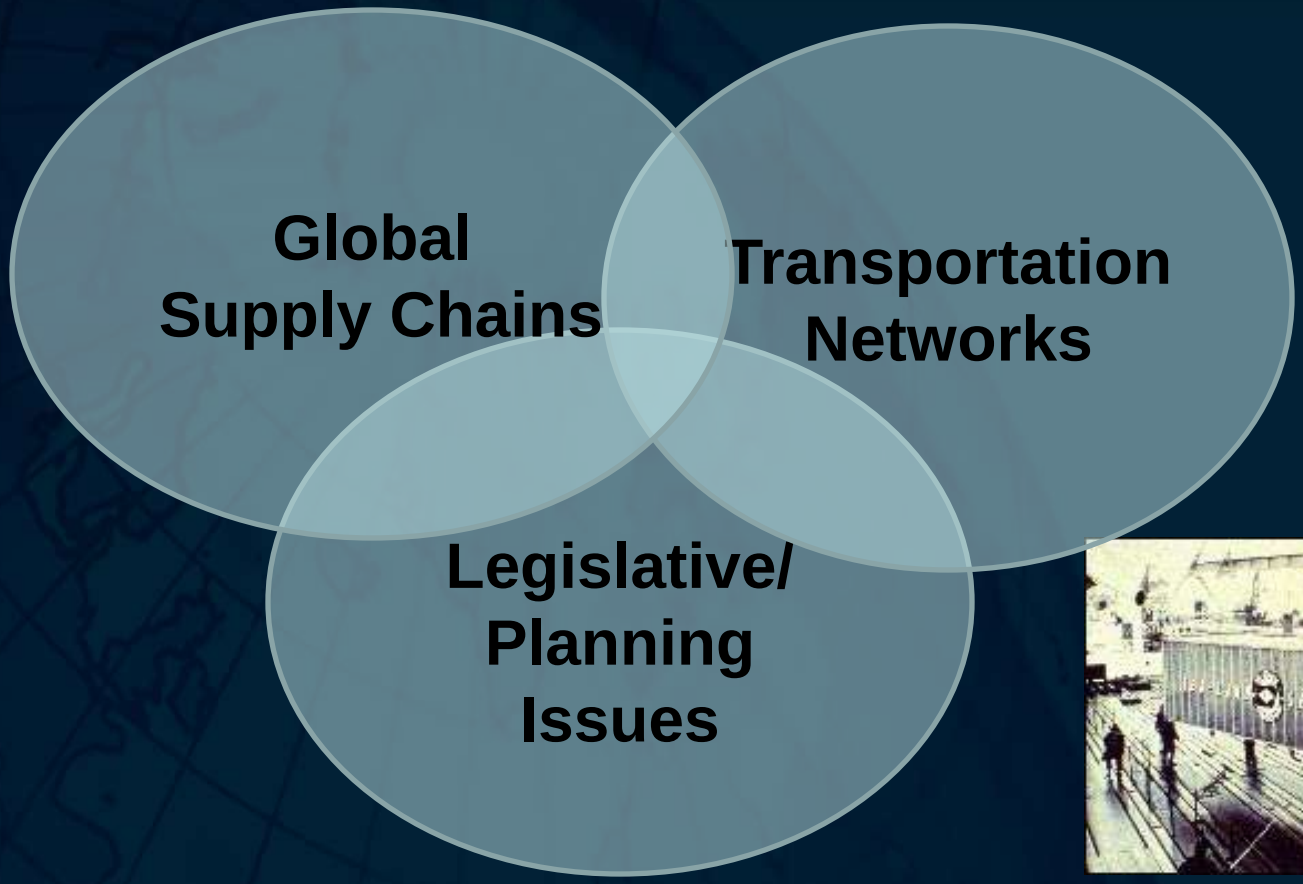
Supply Chain/Transportation Networks



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Supply Chains – Global, Integrated Systems

No such thing as acting locally

- Apparel
- Footwear
- Toys
- Electronics
- Frozen fish fillets

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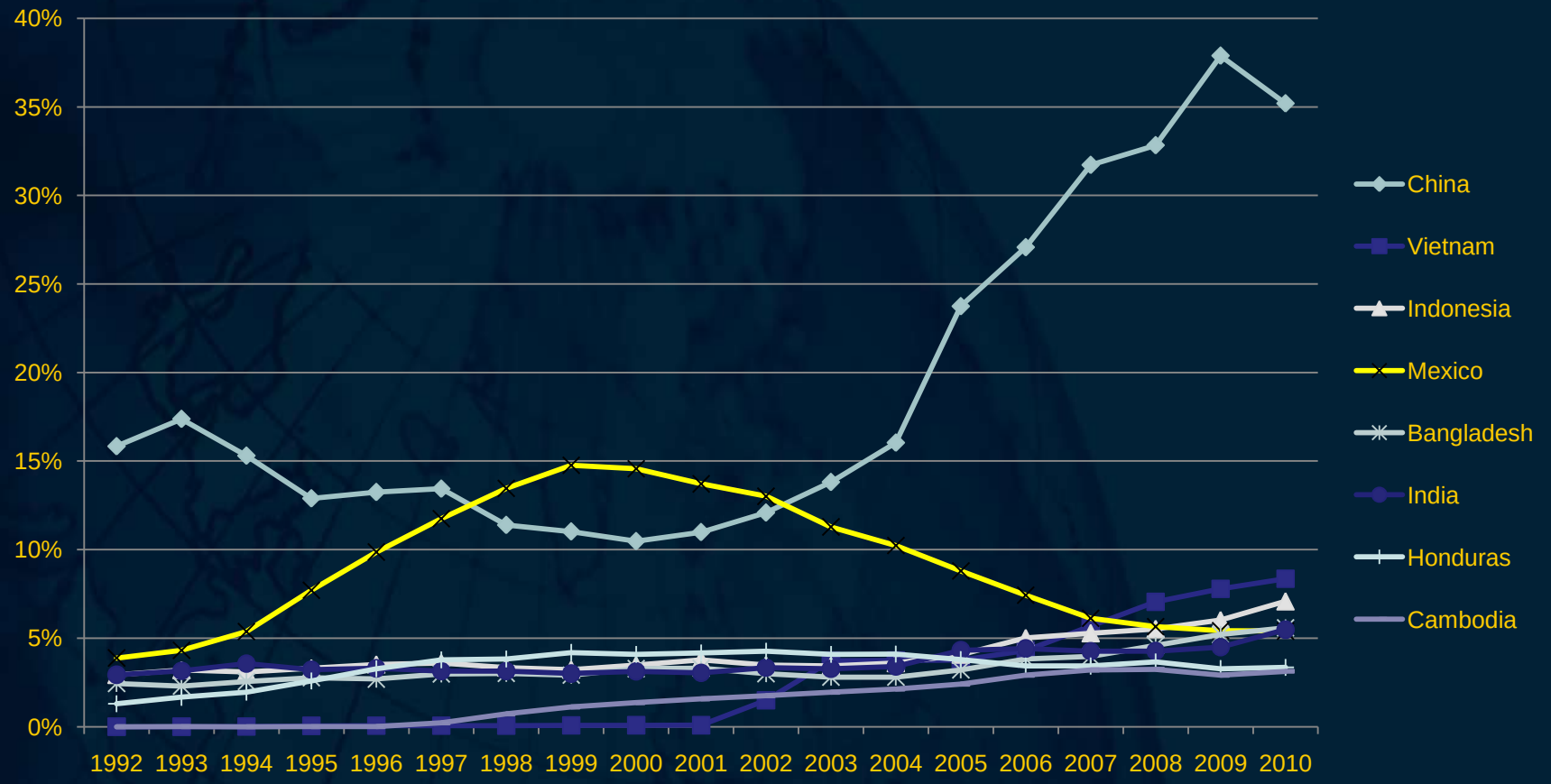
Supply Chains – Dynamic Sourcing

US Apparel Import Value- Market Share



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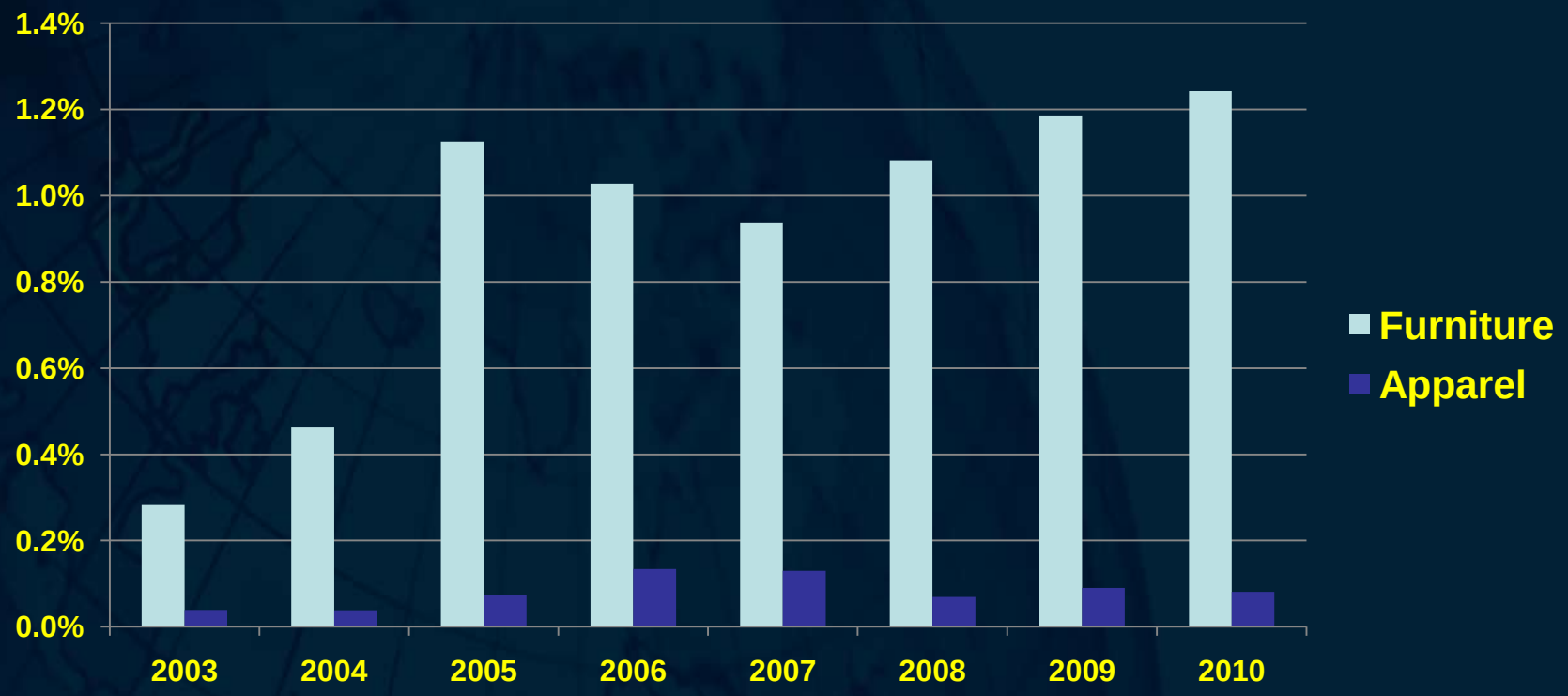
Supply Chains – Dynamic Distribution

The "Big Shipper" Effect

Houston Share of US Imports from Northeast Asia Container Value



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Changing Transportation Networks

Panama Canal Expansion 2014

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Changing Transportation Networks

Eastern Rail Corridors

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Factors Affecting Shipper's Decision Criteria

- Costs
  - Transportation Costs
  - Total Delivered Costs (vs. Landed Costs)
  - Sourcing and manufacturing
  - Inventory costs
  - Environmental costs
- Reliability
  - Speed
  - On time performance
  - Security and Safety
  - Lane & asset capacity
- Density
  - Balanced flow
  - Volume
- Uniform applicability and enforcement of policies

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Alternative Routing Shanghai to Dallas

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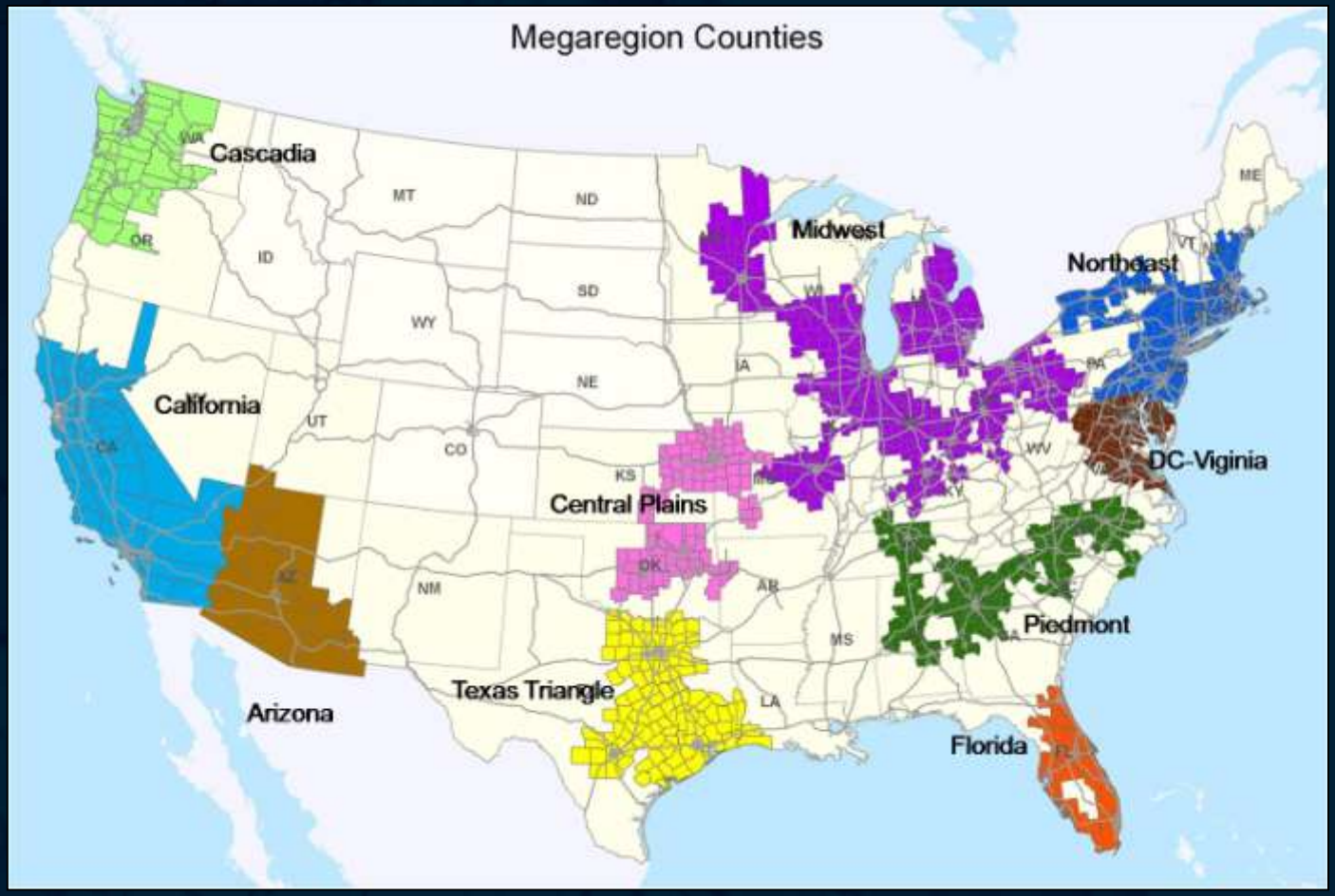
The Mega-region Perspective



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Mega-Regions Freight Impacts

- 66% US International trade concentrated in mega-regions
- 77 % of Domestic trade moved by truck into/out of mega-region
- Mega-regions experience heavier freight traffic on highways (within a mega-region)
  - 60% by Truck
  - 4-5 % by rail
  - 13 % of rail usage in non mega-region areas

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Mega-Region Impacts

- Requires Freight Movement Policy for mega-regions & metropolitan areas
- International trade for mega-regions by 2035
  - 134% increase in export goods; 85% internal to mega-regions
  - 124% increase in import goods; 76% internal to mega-regions
- No national policy or standards on GHG emissions (from a shippers perspective)

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Federal Climate Policies May Take Many Forms

- Legislation
  - Cap and trade bill
  - Energy bill
  - Transportation authorization
- Regulations
  - EPA regulations under Clean Air Act
  - Transportation planning regulations
  - NEPA regulations
- Guidance
  - CEQ guidance on NEPA/climate change
  - USDOT guidance on transportation planning and climate change roles and standards

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U.S. Cap and Trade Legislation

- U.S. Cap-and-trade legislation would likely:
  - stimulate energy efficiency by consumers and businesses
  - stimulate investment in low-carbon technologies
  - reduce GHG emissions
  - raise energy prices
  - raise gas prices
  - generate billions in annual revenue – which could be used for many different purposes
  - create “winners” and “losers” among states and among industries
- U.S. Cap-and-trade legislation could:
  - Generate revenue for transportation infrastructure needs
- Point source vs. supply chain
  - Key to supply chain participants!!!
- Does not match EEU Policy

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Funding: Tiger Grants 2010 ($600M)

- Projects with demonstrable freight component received $316 million (53% of total $$)
- Freight Specific projects received $214.5M (36%)
- 3 of top 5 and 5 of top 10 projects awarded were freight based
- 42 capital grants- 14 were freight specific and additional 8 had freight component

Source: Coalition for America's Gateways and Trade Corridors

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Proposed Federal Planning Requirements

Similar provisions are in many different bills:

- **TARGETS AND STRATEGIES**: States and large MPOs must develop GHG reduction targets and strategies, as part of transportation plans
- **PROGRESS**: States and large MPOs must "demonstrate progress in stabilizing and reducing" GHG emissions
- **METHODOLOGIES**: EPA must issue regulations on transportation GHG goals, standardized models, methodologies, and data collection
- **CERTIFICATION**: US DOT shall not certify state or MPO plans that fail to "develop, submit or publish emission reduction targets and strategies"
- **PERFORMANCE REQUIREMENTS**: US DOT must establish requirements, including performance measures, "to ensure that transportation plans… sufficiently meet the requirements.., including achieving progress towards national transportation-related GHG emissions reduction goals."

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Transportation Planning – Many Issues and Challenges

- GHG planning impacted by both state and federal policies
- State DOTs and MPOs will be affected
- Inventories of transportation GHG required
- GHG reduction targets required
- Ability to predict GHG for different plans and strategies will be needed
- Clean Air Act planning issues will carry over into GHG planning
- Modeling and metrics need to be standardized

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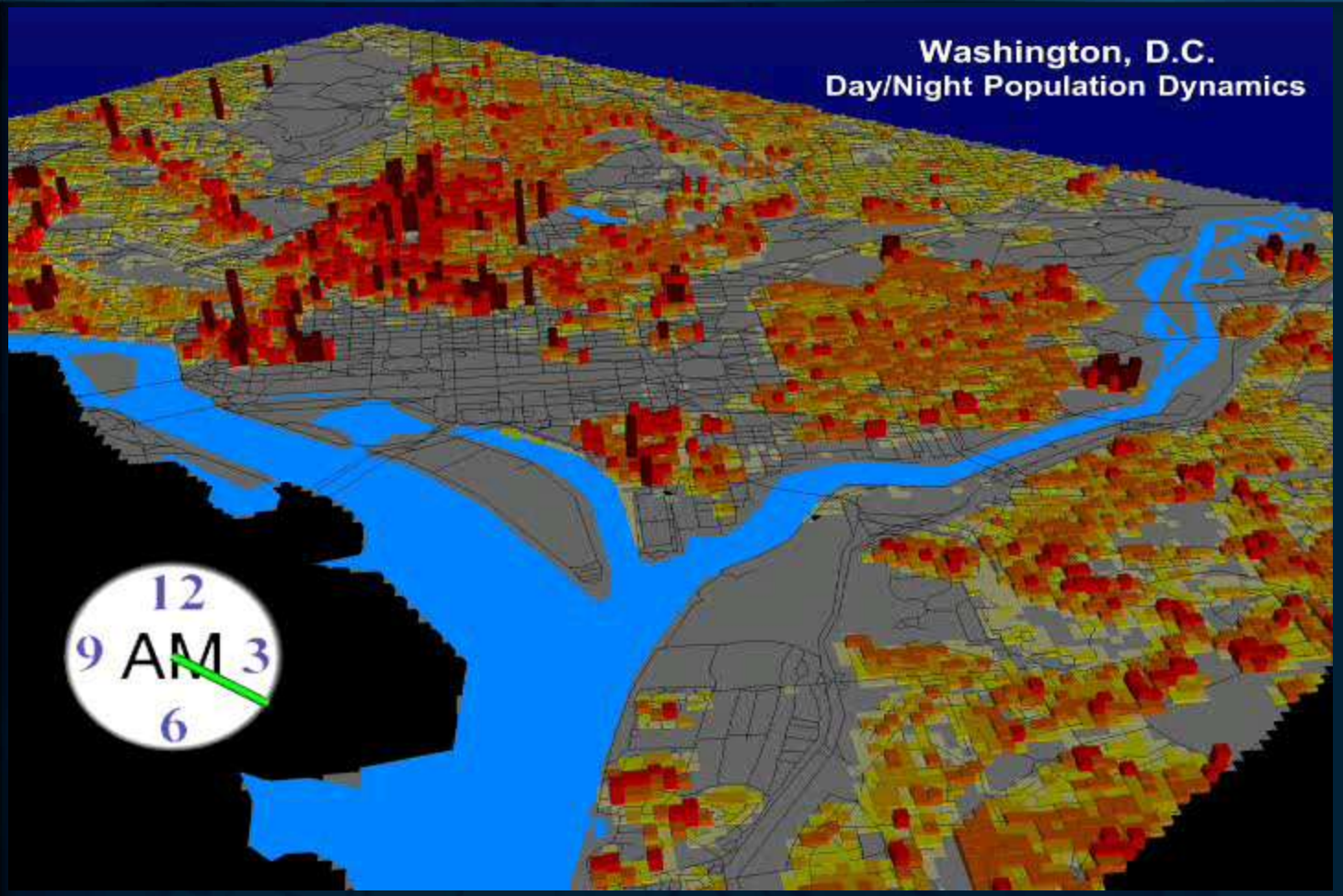
Dynamic Modeling



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State Climate Plans (33 States)

- Focused on major sectors: Electricity, Buildings, Agriculture, Industry, Transportation
- Based on very ambitious GHG targets
- Conducted in limited time frames
- Often relied on “cookbook” analysis
- Transportation stakeholders often excluded or had limited role
- Transportation strategies are highly “aspirational”
- Cost estimates are often weak or lacking altogether
- Some plans have been “officially” adopted, others are just reports

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Canada's Asia Pacific Gateway Strategy

- Canada's National Strategy for Goods Movement tied to Asia
- "a framework for policies, investments and initiatives that seek to make Canada the most competitive exit and entry point in North America"
- Identical strategy for Europe-North American gateway

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What Role for Ports and Terminals?

- Port of LA/LB Truck Licensing program
- Green terminal initiatives
- Alternative technologies for moving containers
  - POLB Maglev
  - NCHRP 34
- National, state and regional policy leaders
- In many cases, ports represent freight to MPO's/State DOT's

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Bottom Line

- Freight is significant driver in regional, state and national economy
- Manufacture's and shippers are changing their sourcing criterion
- Supply chains are dynamic
- Greening of the supply chain is paramount
- Direct economic and operational benefits to the shipper must be realized
- Screaming need for national freight policy that addresses GHG emission standards
- Ports & Terminals are on the front line

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Thank You!!!

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