Urban Truck Ports

Unlocking the Benefits of High-efficiency Truck Operations

SSTI Community of Practice Meeting
October 9, 2014
Salt Lake City, UT

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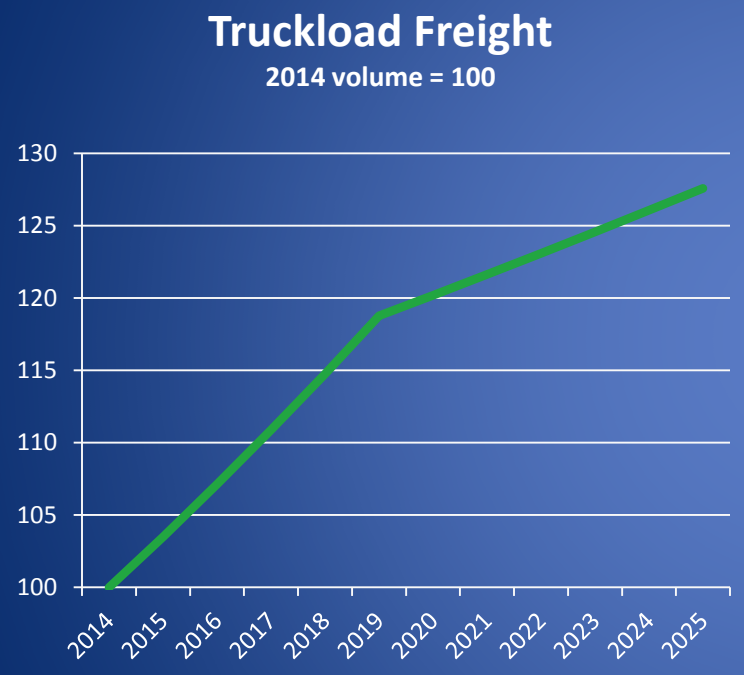
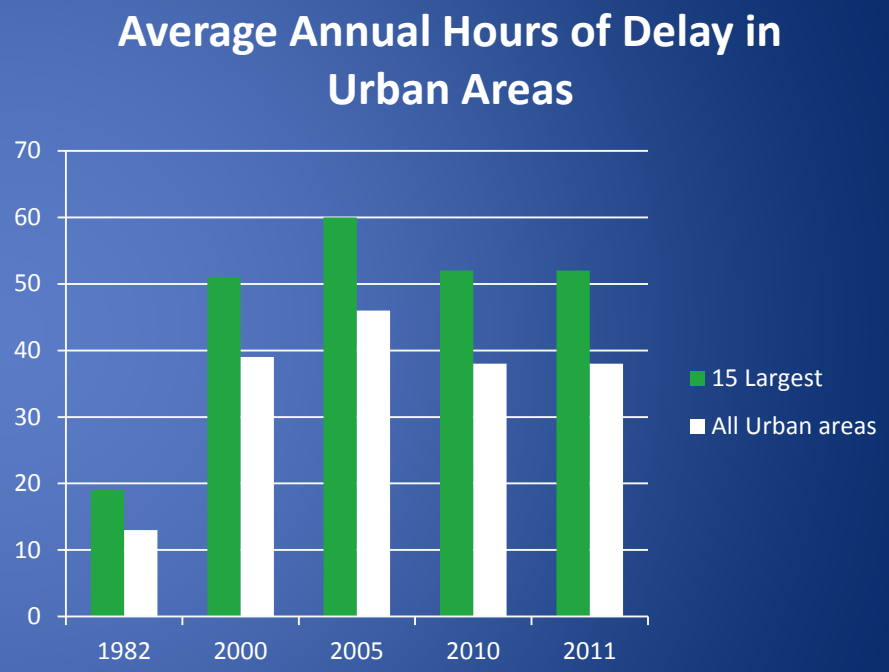
The Truck Freight Challenge

Increasing truck freight



Source: *ATA U.S. Freight Transportation Forecast to 2025*

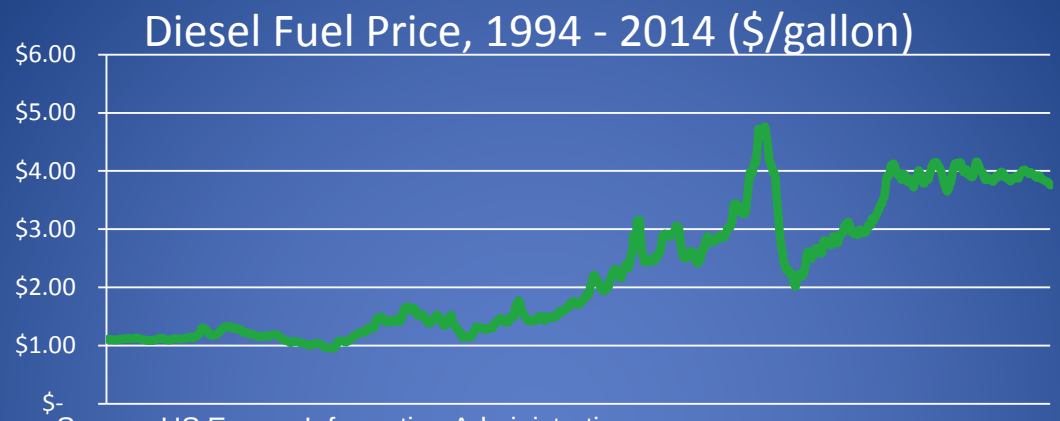
Worsening congestion



Source: 2012 *Urban Mobility Report, Texas Transportation Institute*

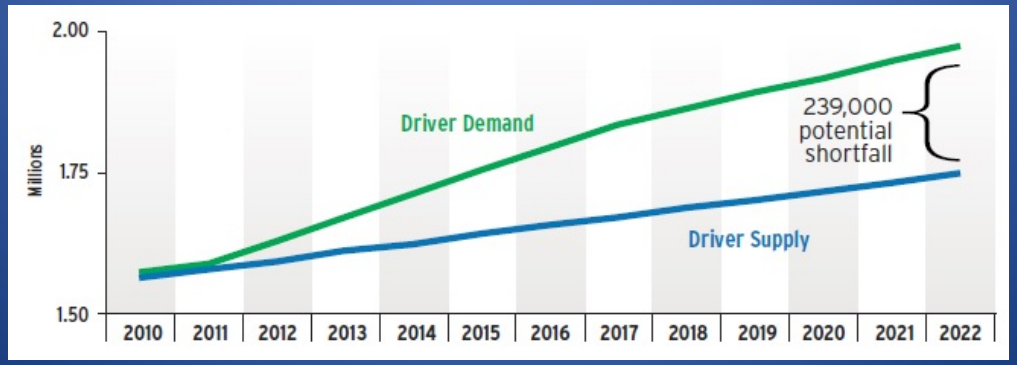
The Truck Freight Challenge

Rising fuel costs



Source: US Energy Information Administration

Labor supply shortage



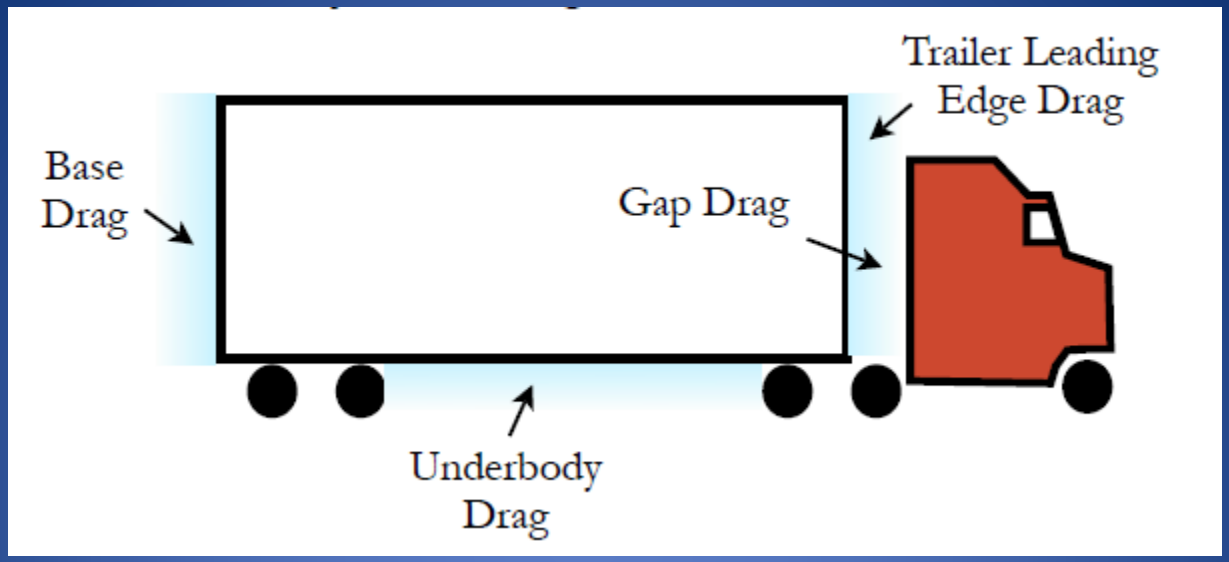
Source: American Trucking Associations

Urban Truck Port Network (UTPN): Part of the Solution?

A network of strategically located facilities outside key urban bottlenecks to:

- Segment the duty cycle: transfer freight between local and long-distance trucks
- Dis/assemble long-combination vehicles
- Spur innovation in fuel efficient technology and operations
- Promote off-peak delivery

Technology for the Rural Duty Cycle

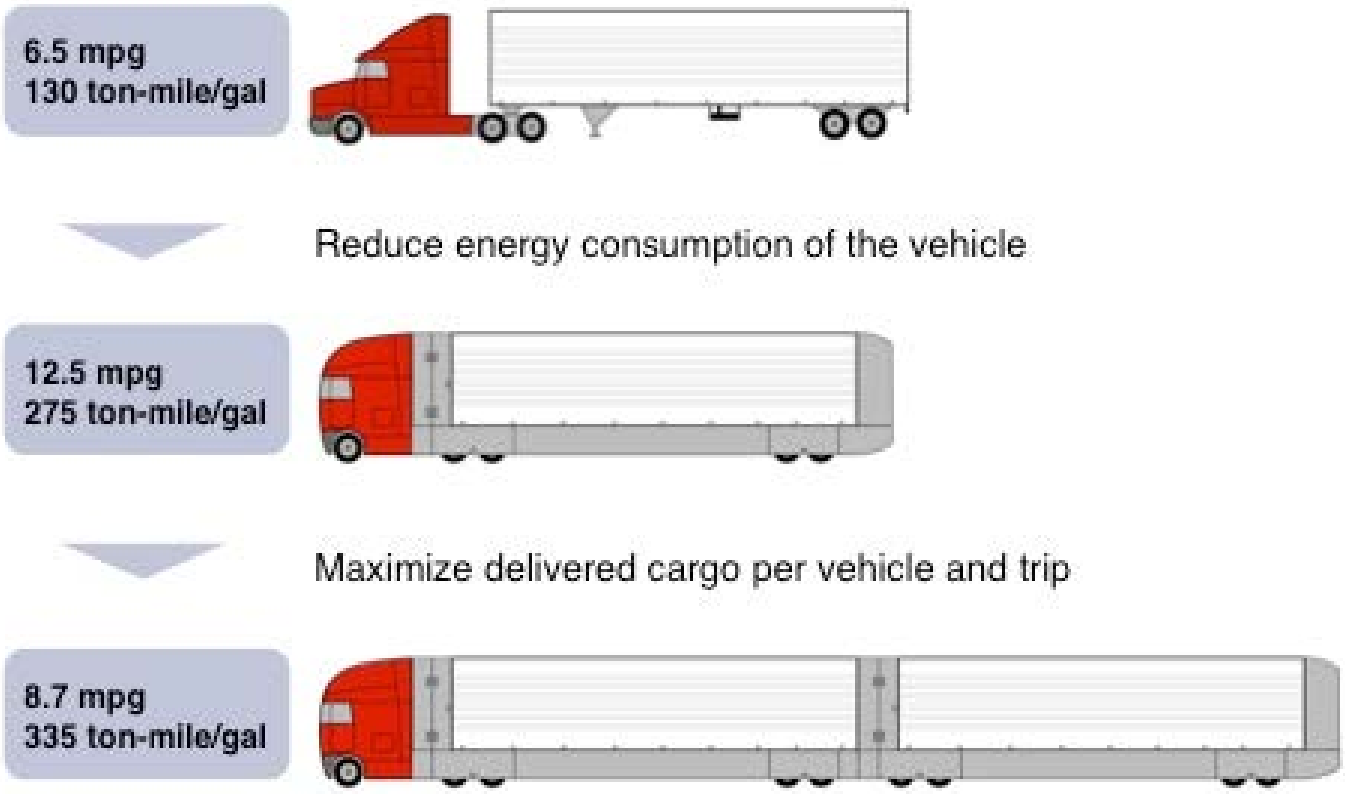


Gap Seal

Full Skirt

Rear Drag Device

Long Combination Vehicles (LCVs)

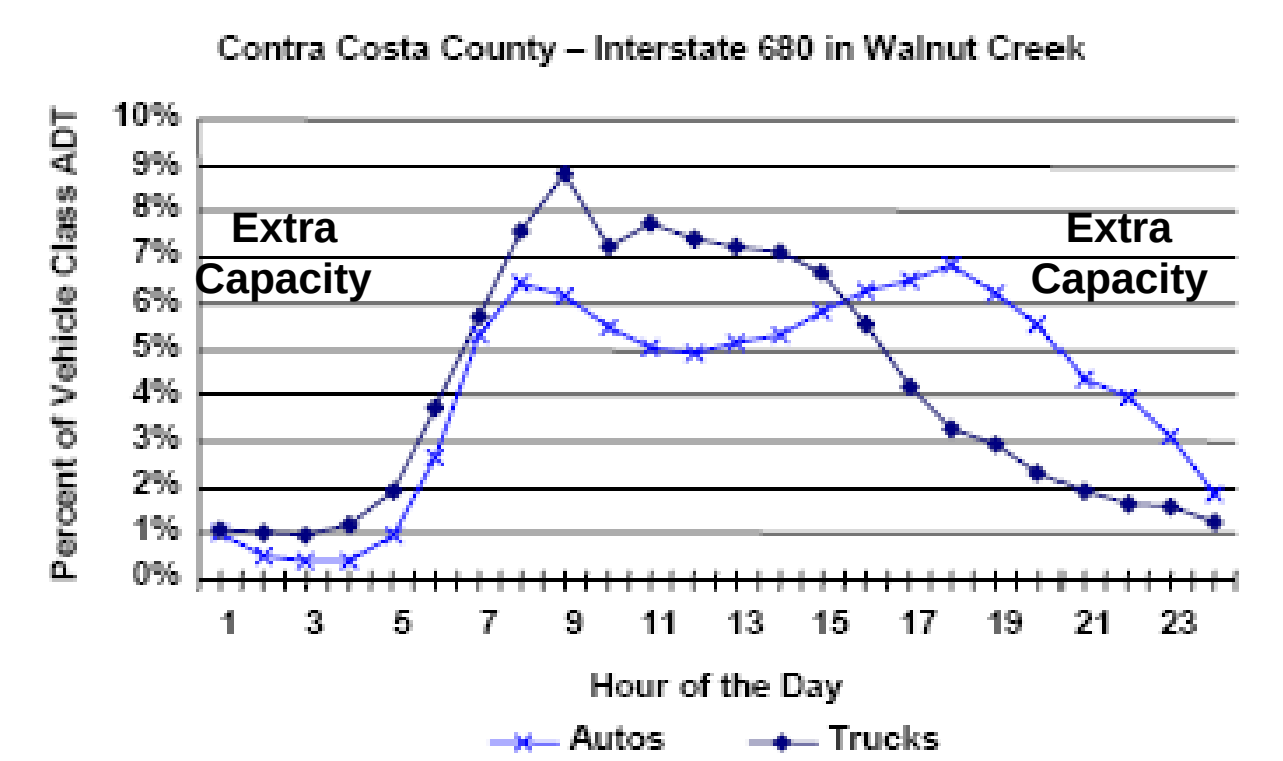


Source: RMI Analysis, NPTC, *2008 Benchmarking Survey*

Technology for the Urban Duty Cycle

- Braking allows for hybrids with significant fuel savings
- Better low-speed torque reduces effect on congestion
- Quieter and less polluting
- Better visibility and shorter wheel base for increased safety
- Lower weight reduces damage to surface streets

Why Truckers Drive Through Congestion



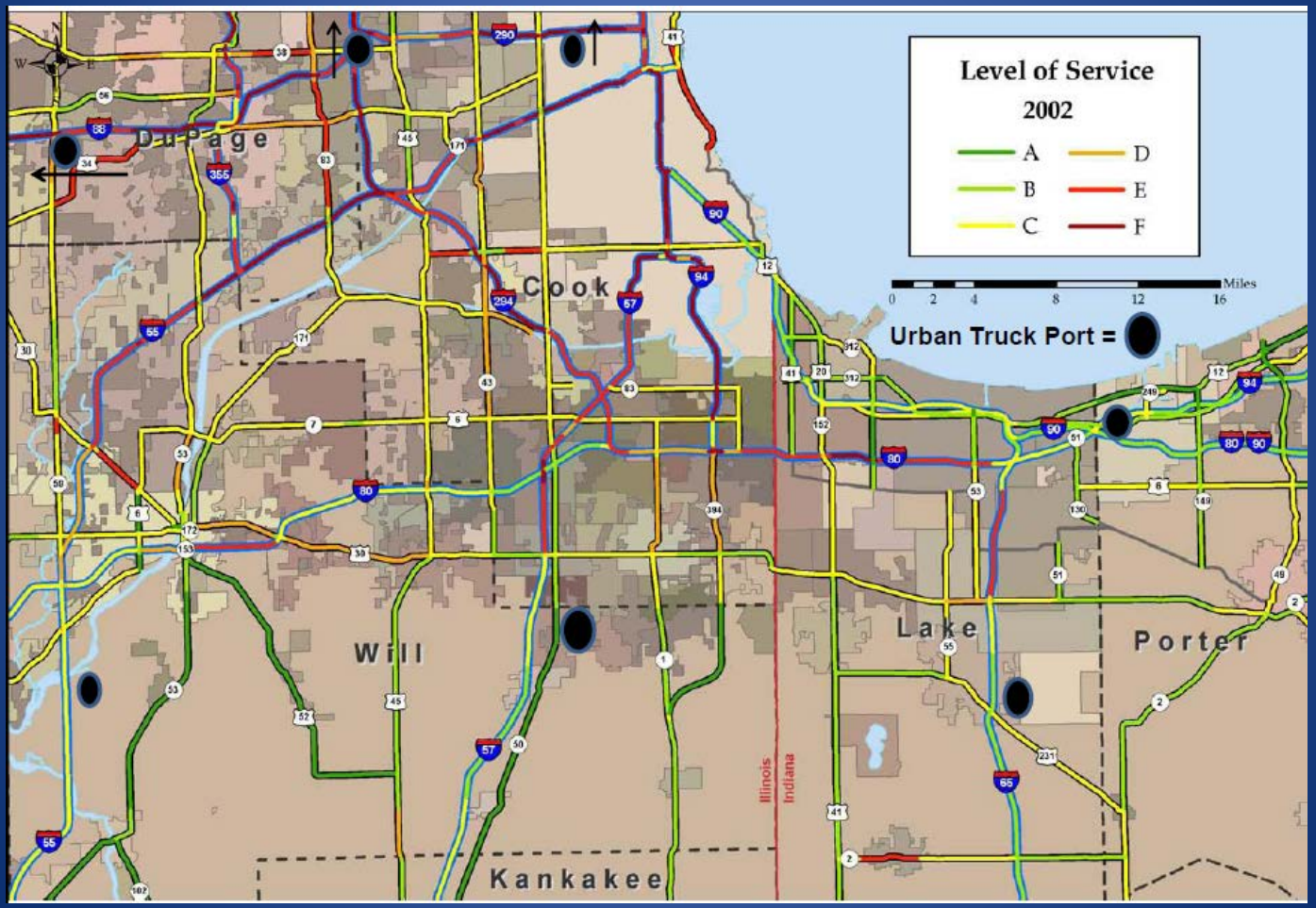
Source: Caltrans 2001-02 Weigh-In-Motion Data.

Off-Peak Delivery

- Truckers prefer less congested conditions but cannot avoid them due to appointments and hours of service (HOS)
- Much truckload freight is going to large facilities that are open 24 hours a day
- Value of off-peak delivery systems has been demonstrated:
  - Port of LA/Long Beach has moved 40 percent of container pick-ups to off-peak hours
  - NYC off-peak pilot program recently completed received great reviews from truckers and their customers

Urban Port Sites

Congestion Levels and Urban Truck Port Locations for Chicago



Benefits of an Urban Truck Port Network

- Cuts congestion
  - Reduces fuel consumption, air pollution, and CO_2 emissions
  - Reduces the need for new infrastructure
- Improves safety
  - Reduces hours of service (HOS) violations and driver turnover
- Sets the stage for innovation
  - Improves ROI for fuel efficiency technologies on long-distance trucks
  - Allows for the use of new fuel and vehicle technologies for short-haul trucks
  - Reduces barriers to LCV use
- Reduces shipping costs
  - Lowers fuel costs
  - Improves travel-time reliability

Implementation

Why the industry won't do it alone:

- Trucking is a low margin, highly competitive industry
- Truckers are very conservative about new technology
- There is little incentive:
  - Labor is paid by the mile
  - HOS are not enforced in urban areas (e.g. waiting time is not counted)
  - Costs of urban travel (e.g. air pollution, congestion, road damage) are not fully paid by the industry

Getting Started

We are near a tipping point

- Intermodal is gaining, but there is only so much capacity
- Congestion costs are growing
- Industry is asking for more infrastructure and offering to pay

Infrastructure and operating costs could be paid for by:

- Public sector
  - Tolling peak-period traffic and/or through trips
  - Increased State or Federal fuel tax with refunds for trucks that use truck ports to facilitate off-peak deliveries.
- Private sector
  - Fees for cargo storage, handling, and fuel at the truck port.

Getting Started

USDA grant

- Explore how the truck port concept could help farmers access regional markets and improve access to fresh produce in urban areas
- SSTI working with Center for Integrated Ag. Systems and others at UW-Madison
- Partnering with agricultural shippers and logistics professionals
- Engaging public and private sector stakeholders
- Meeting in Chicago – Spring 2015
- Develop pilot project

Comments/Questions

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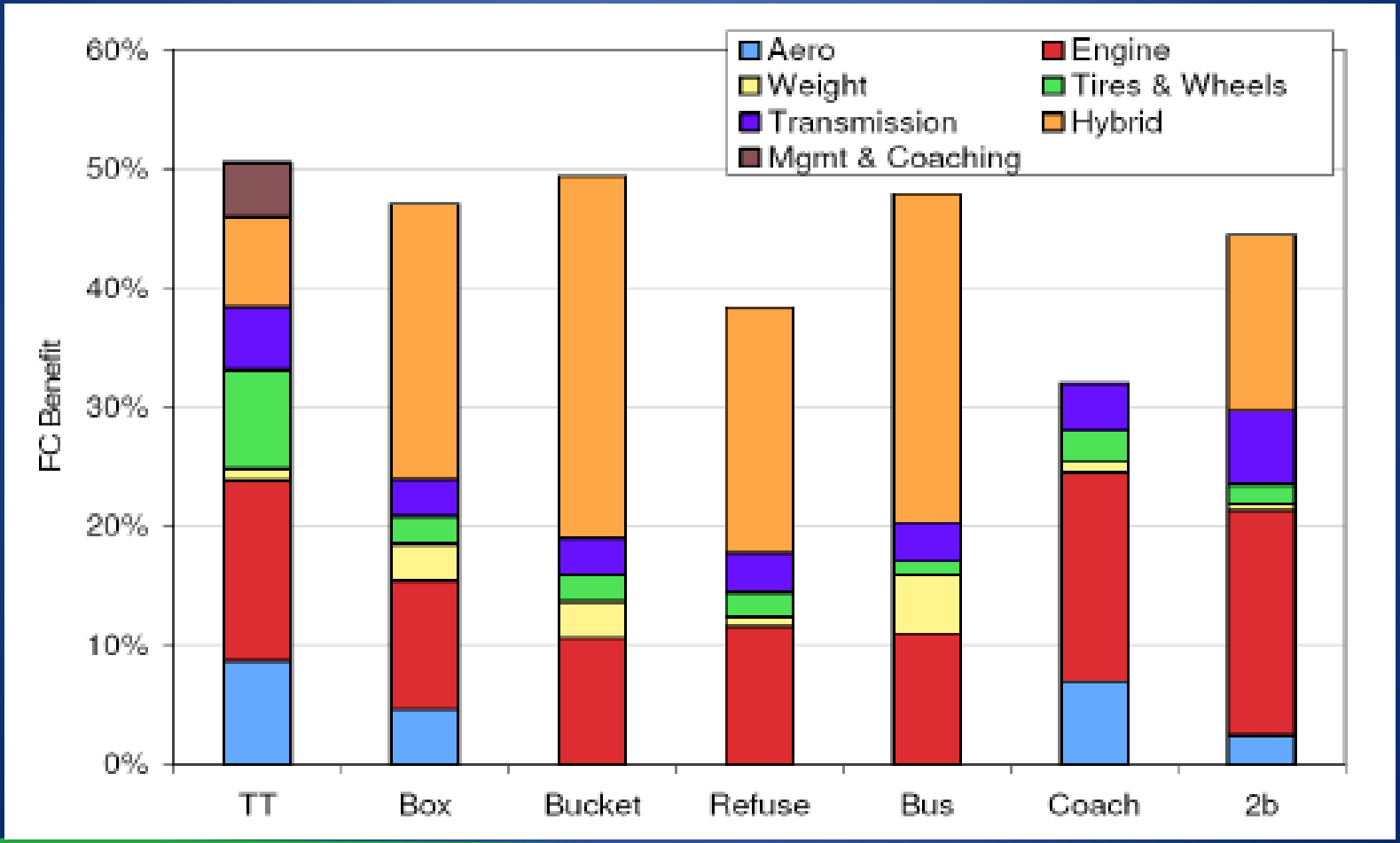
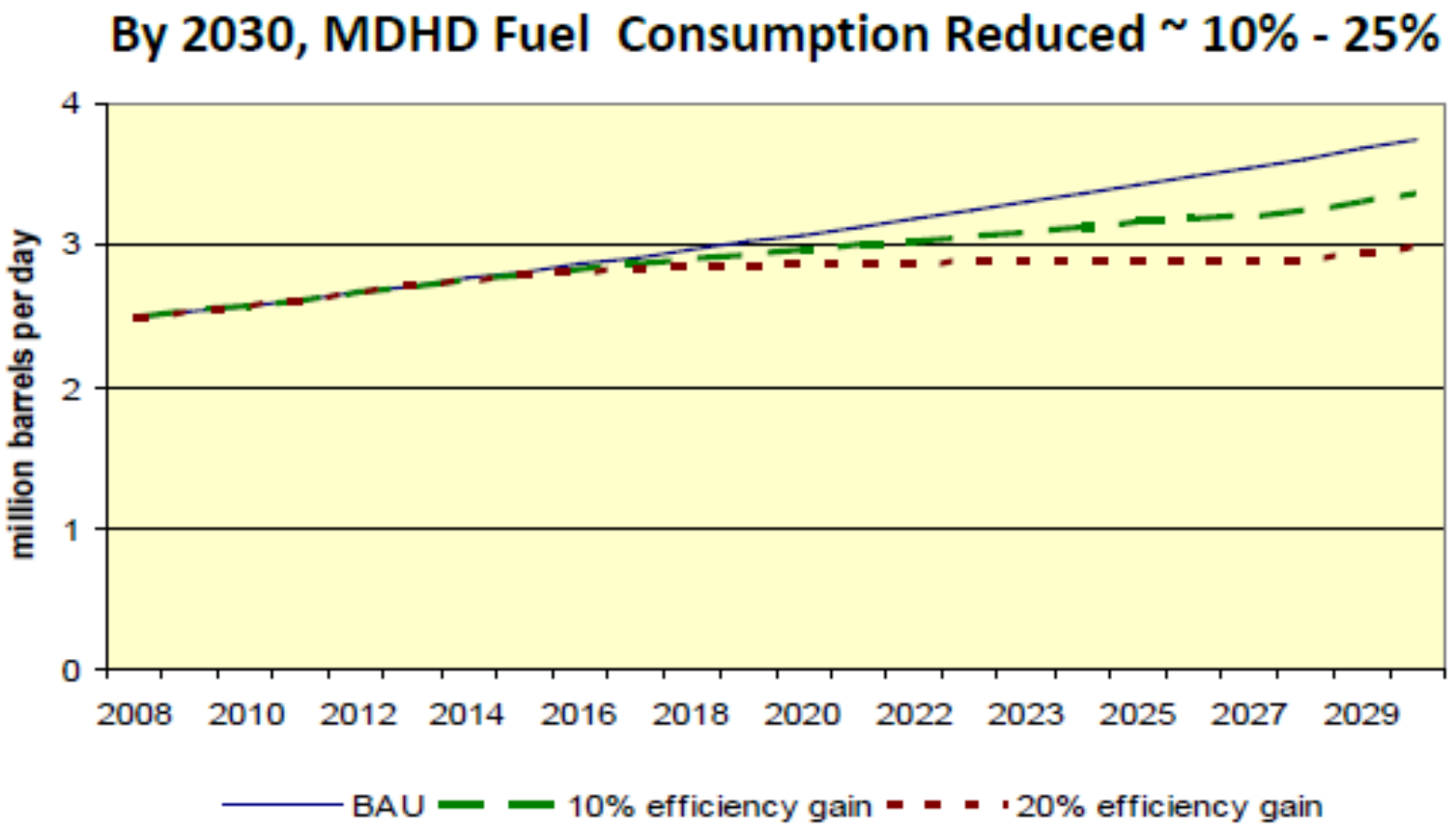
Extra Slides

Benefits of Available/Near-Term Technologies by Type of Trucks The Challenge of Increasing Tractor-Trailer Fuel Economy (FC)



MDHD PETROLEUM CONSUMPTION, 2008-2030

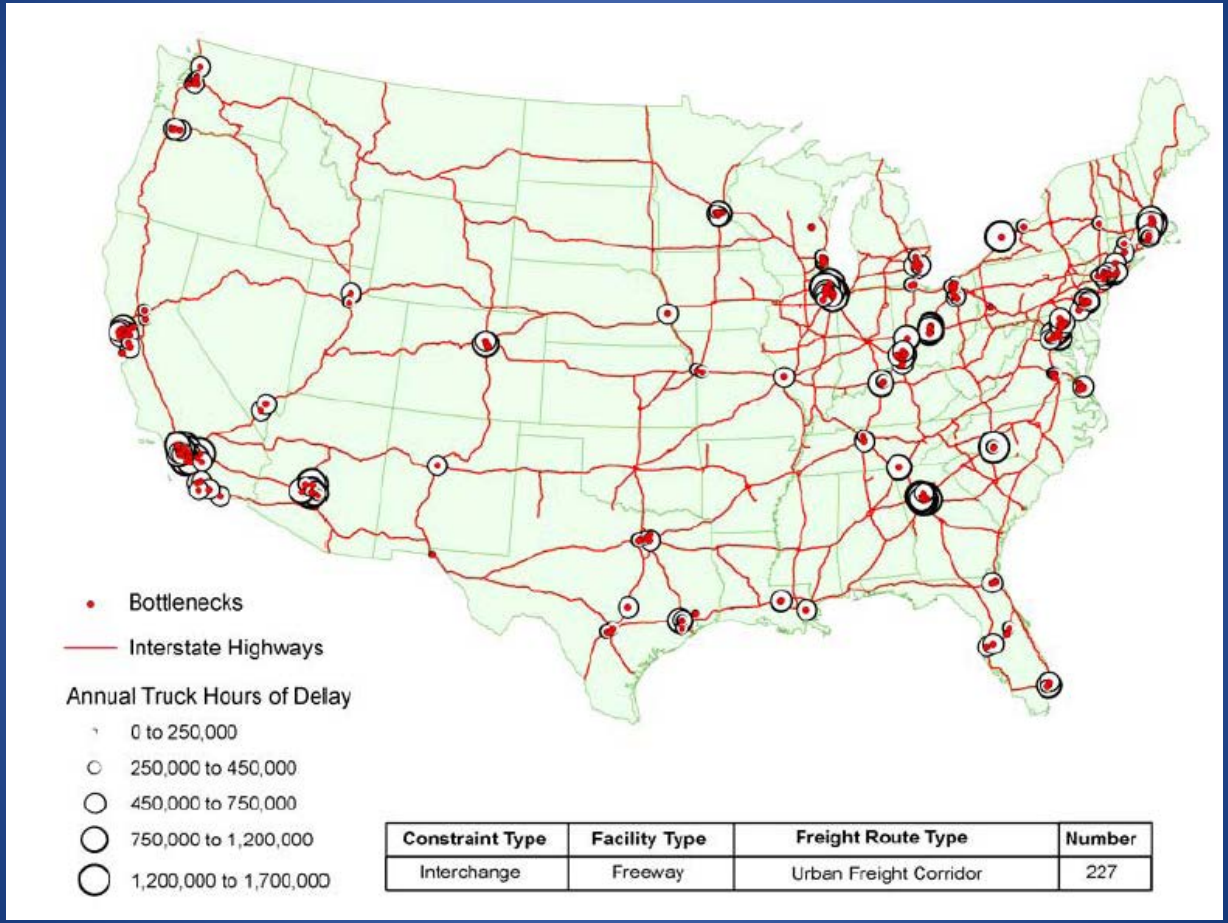


TECHNOLOGIES & COSTS FOR REDUCING FUEL CONSUMPTION

Fuel Consumption Reduction Potential for Typical New Vehicles in 2015-2020 & Effectiveness Comparisons for 7 Vehicle Configurations

Vehicle Class	Fuel Consumption Reduction, Percent	Midrange Capital Cost, Dollars	Cost Effectiveness Metric		
			Dollars per percent fuel saved	Dollars per gallon saved per year	Breakeven fuel price, [a] dollars per gallon
Tractor-Trailer	51	$84,600	$1,670	$7.70	$1.10
Class 6 Box Truck	47	$43,120	$920	$29.30	$4.20
Class 6 Bucket Truck	50	$49,870	$1,010	$37.80	$5.40
Class 2b Pickup	45	$14,710	$330	$33.70	$4.80
Refuse Truck	38	$50,800	$1,320	$18.90	$2.70
Transit Bus	48	$250,400	$5,230	$48.00	$6.80
Motor Coach	32	$36,350	$1,140	$11.60	$1.70

Major US Freight Bottlenecks



Constraint Type	Facility Type	Freight Route Type	Number
Interchange	Freeway	Urban Freight Corridor	227

An Example: Chicago

- Contains six of the twenty-five worst bottlenecks in the US, generating $556 million in truck delay costs annually.

- In metropolitan Chicago, fully two-thirds of the need for new roads in the next twenty years will be due to increased truck traffic.