



Addressing Traffic Congestion Through Better Management and Operations

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**U.S. Department of
Transportation**

Jeff Lindley
*Associate Administrator, Office of Operations
Federal Highway Administration
U.S. Department of Transportation*

Agenda

- Background - The Congestion Problem
- Addressing the Problem
- 7 Example Strategies
- Closing / Questions



Crisis of Congestion

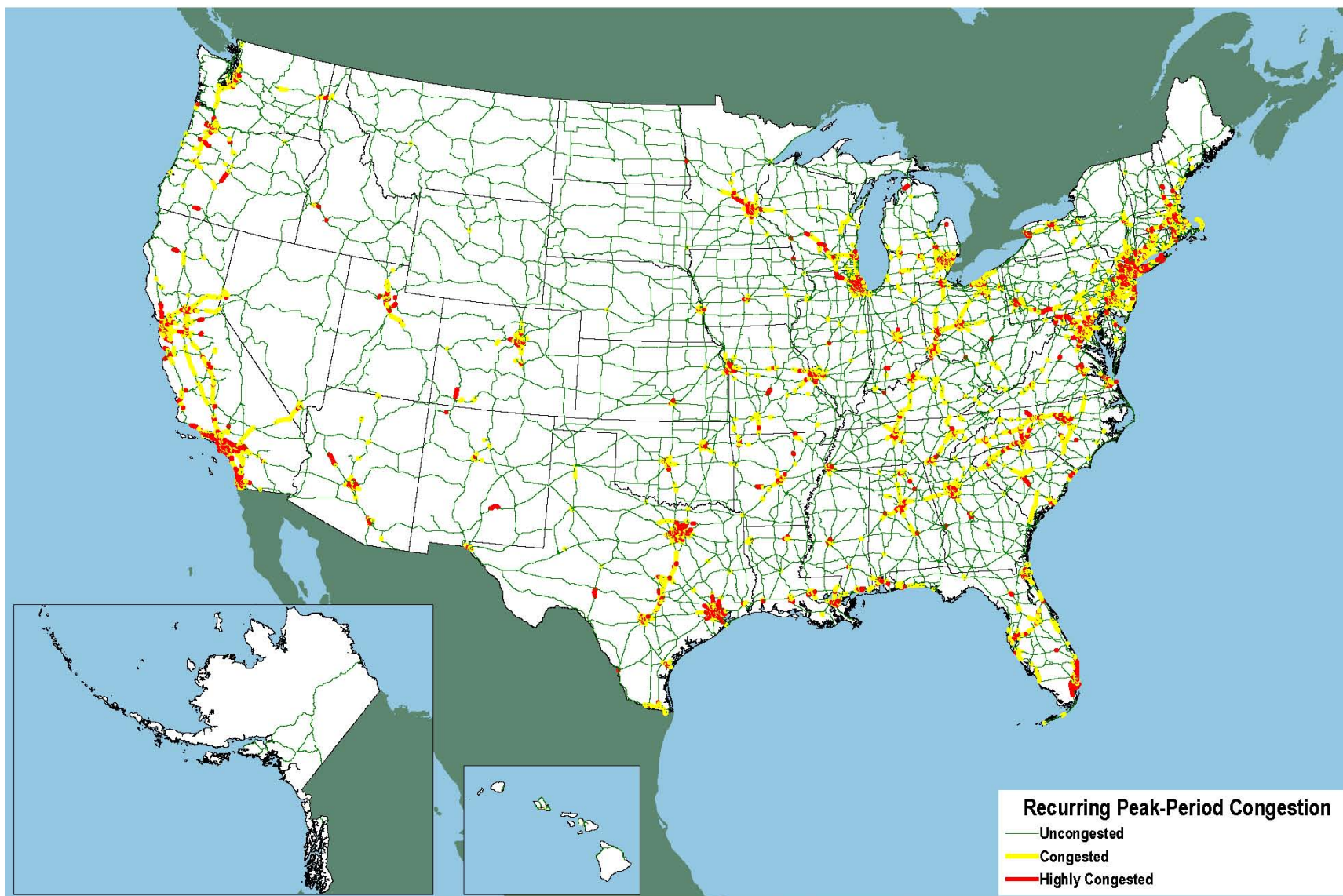
A Tax on the Nation

- **Commuting costs:** Each motorist stuck in traffic wastes on average 38 hours and 26 gallons of fuel every year – at a cost of \$710* per person annually
- **Quality of life:** Reduced air quality, less time with family and friends.
- **Productivity:** Delays to trucks and unreliability of delivery times increase costs for businesses and reduce economic competitiveness.

*Texas Transportation Institute, *2007 Urban Mobility Report*



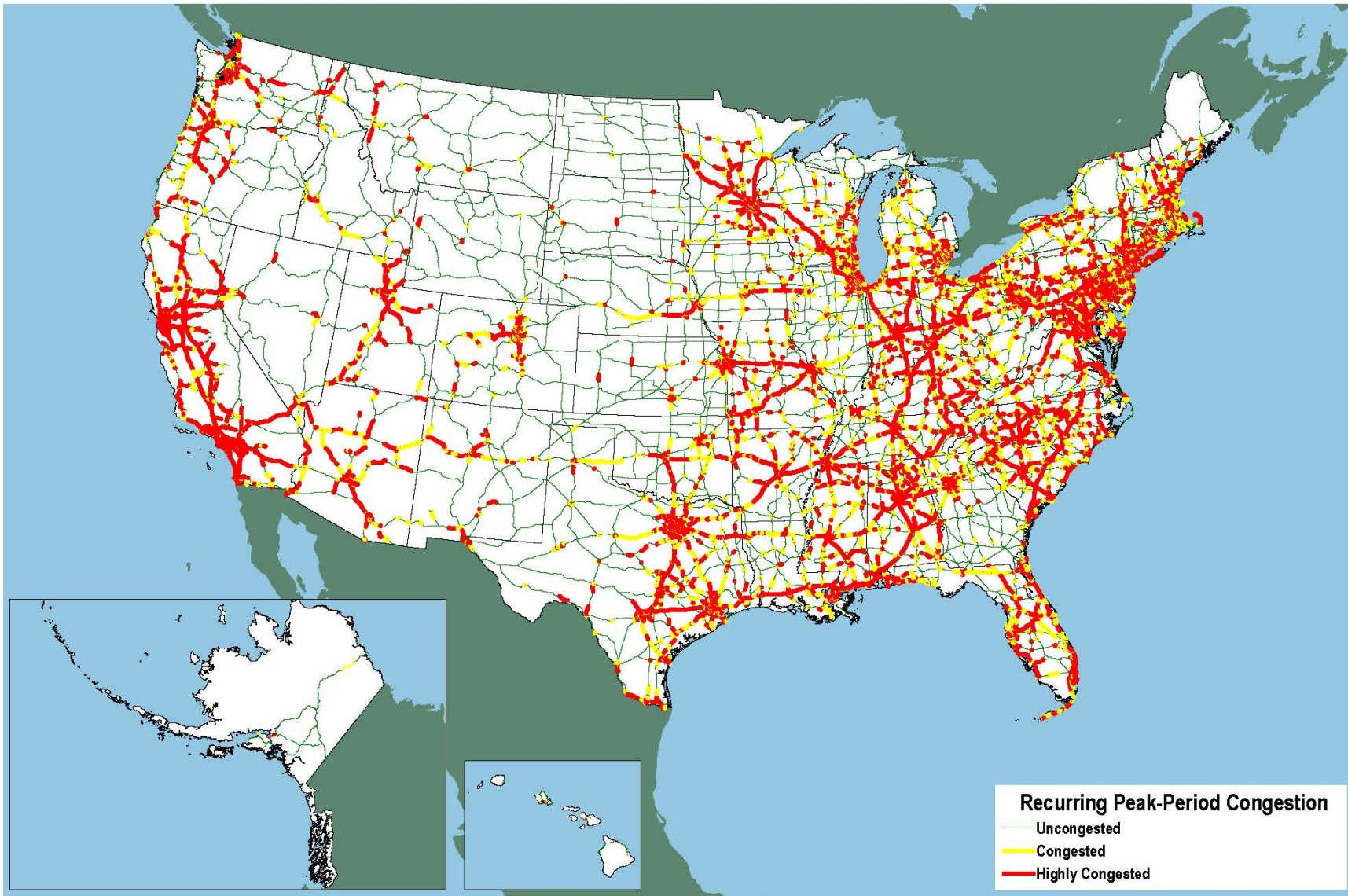
Peak-Period Congestion on the National Highway System: 2002



Note: Highly congested segments are stop-and-go conditions with volume/service flow ratios greater than 0.95. Congested segments have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95.

Source: U. S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System, and Office of Freight Management and Operations, Freight Analysis Framework, version 2.2, 2007

Peak-Period Congestion on the National Highway System: 2035



Note: Highly congested segments are stop-and-go conditions with volume/service flow ratios greater than 0.95. Congested segments have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95.

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Congestion is fundamentally caused by imbalances between transportation system supply and demand – and neither are constant



Solving the Congestion Problem

- Shape Demand
- Invest in New Physical Capacity
- Bring Supply and Demand into Alignment -- Congestion Pricing
- Operate System at Peak Performance
- Improve the Reliability of Freight Movements



7 Example Strategies

- Adaptive Traffic Signal Control
- Active Transportation and Demand Management
- Traffic Incident Management
- Real-Time Traveler Information
- Congestion Pricing
- C-TIP
- Intellidrivesm



Improving Traffic Signal Timing

- Of 330,000 traffic signals in USA, about 75 percent could operate more efficiently – National Report Card score of “D”.
- Low cost approach to congestion reduction – BCRs as high as 40:1.
- Adaptive Control Strategies – use sensor data to continuously evaluate performance and update traffic signal timing



Active Transportation and Demand Management (ATDM)

- Dynamically managing & controlling traffic based on prevailing conditions
 - Manage & operate in real-time, on corridor basis
 - Distribute current roadway & traveler information
 - Deploy range of operational strategies & control plans
 - Use of integrated systems & coordinated response



Examples of ATDM Applications

- Integrated corridor management
- Speed harmonization
- Temporary hard shoulder use
- Dynamic signing/rerouting
- Adaptive ramp metering/junction control



Traffic Incident Management

- Reduce response and clearance times, while improving responder safety
- Set performance measures / goals
- Advance move-it laws / quick clearance policy agreements
- Promote full function service patrols
- Improve responder communications / coordination



Real-Time Traveler Information

- 511
- Real Time System Management Information Program
 - Capability of monitoring, in real-time, traffic and travel conditions on major highways and sharing information with travelers
 - SAFETEA-LU Section 1201 directs implementation in all States. Publication of final regulations imminent
- Travel Times on Dynamic Message Signs
 - 42 cities nationwide
 - 32 of the 40 largest urban areas

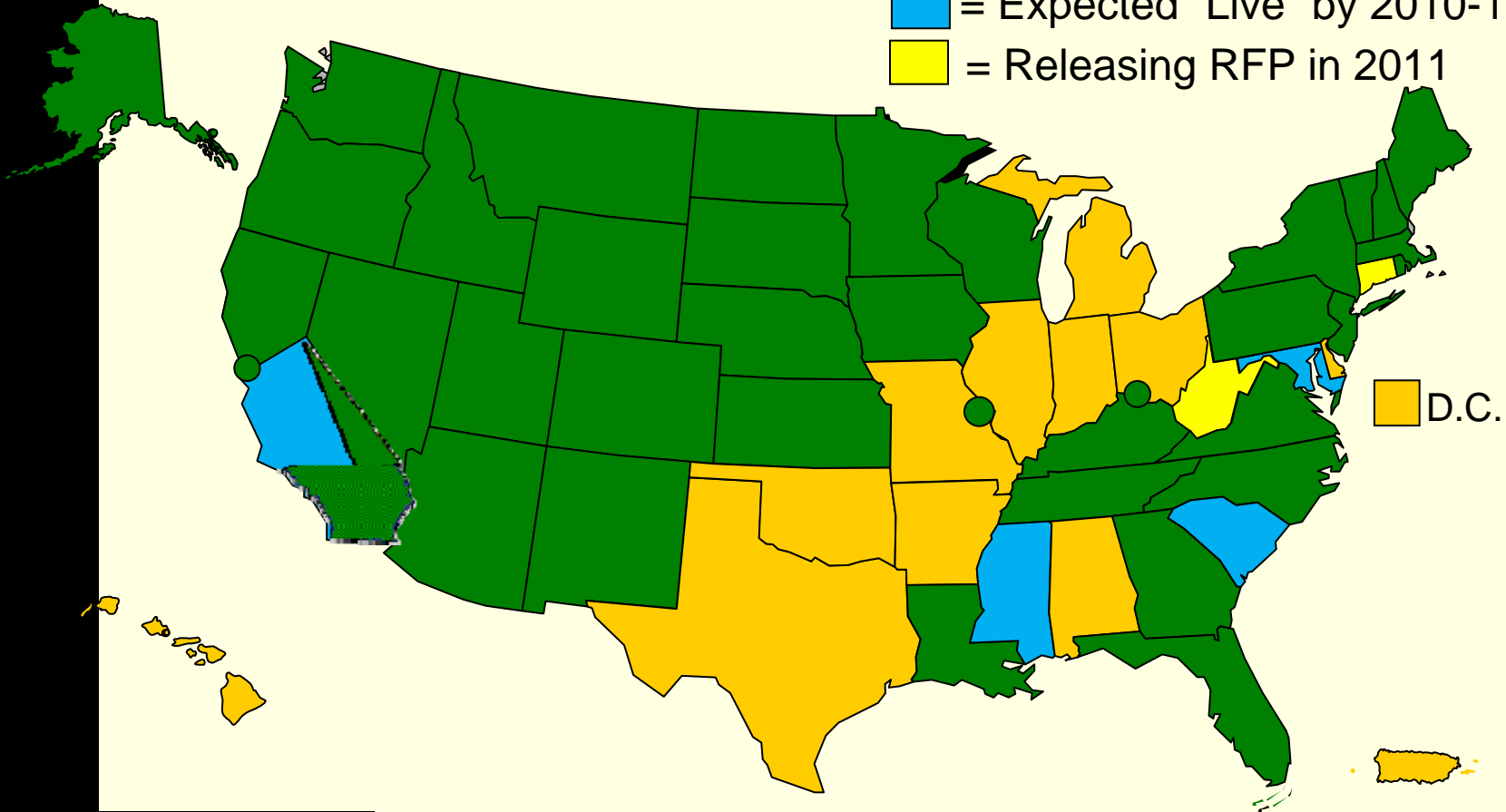


511 Deployment Status

as of September 2010

Accessible by 66% of Population

- = 511 Operational ("Live")
- = Expected "Live" by 2010-11
- = Releasing RFP in 2011



Accessible by 70% of Population in 2011



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Travel Time Displays

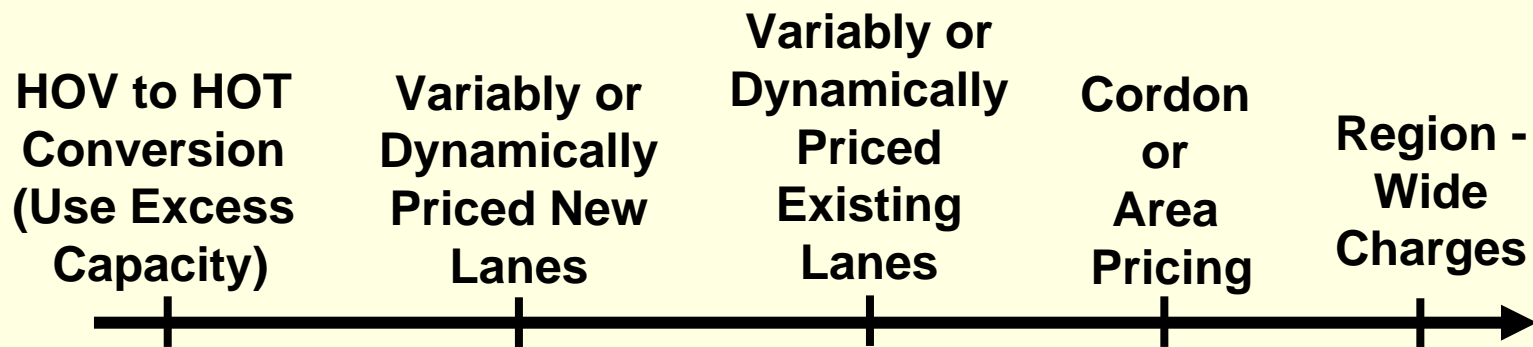


Bring Supply and Demand into Alignment - Congestion Pricing

- Failure to properly price travel on highways is a root cause of congestion.
 - The price of highway travel (gas taxes, registration fees, etc.) bears little or no relationship to the cost of congestion.
 - Unlike other public utilities, the public expectation is that the “service” is free or does not change with changes in demand.
- Rationing transportation services via pricing is more efficient than rationing by delay.



Road Pricing Continuum



Urban and CRD Partnerships



Improving the Reliability of Freight Movements

- Make travel smoother for all vehicles
- Focus on improving intermodal connections
- Focus on freight specific investments (e.g. dedicated truck lanes) in key corridors
- Focus on providing information of particular interest to motor carriers (e.g. truck parking)



Cross-Town Improvement Project

- Innovative traffic reduction strategy being developed and tested in Kansas City
- Information shared among truckers & railroads to maximize revenue-generating trips and eliminate unproductive truck trips through urban environment
- Real-time information available to assist in route selection



Intellidrivesm

- Connected transportation environment among vehicles, infrastructure and portable devices
- Suite of applications that help improve safety, mobility and environmental performance without causing driver distraction issues



For More Information

- Visit

- www.ops.fhwa.dot.gov/



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