

Responding to the Changing Transportation Landscape

presented to

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presented by

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Transportation leadership you can trust.

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How is the Transportation Landscape Changing?

- You don't need me to tell you – you're transportation professionals!
- Back to the future, ahead to the past

Florida Issues, Massachusetts Solutions

- **FL issue: Growth**
 - **MA solution: Shrinking population, no available land anyway**
- **FL issue: Congestion**
 - **MA solution: The Big Dig**
- **FL issue: Weather**
 - **MA solution: Global warming**
- **FL issue: Hanging chads**
 - **MA solution: Only one political party**

Current Transportation Research...

- ...is a few years behind the problems of today (ahead to the past).
 - Developing research programs
 - Getting funding in place
 - Grant application, award process
 - Doing the research

...all take time!

Strategic Highway Research Program (SHRP2)

- Established under SAFETEA-LU (2006)
- Four focus areas:
 - Safety
 - Renewal
 - Reliability (congestion)
 - Capacity

A Few Current Transportation Planning Issues

- **Congestion**
- **Road pricing**
- **Climate change**
- **Freight movement and trucks**
- **Alternative land development patterns**

Congestion Relief

- **Strategies**

- Road pricing
- Demand management (back to the future?)
- Capacity increases
- System optimization

- **Analytical tools**

- Integrated demand and supply models (traffic microsimulation, dynamic assignment models)
- Sensitivity to demand management actions

Road Pricing

- **Strategies**

- Toll roads
- Congestion pricing
- HOT lanes
- Cordon pricing

- **Analytical tools**

- Traveler value of time distribution
- Consideration of reliability
- Traffic microsimulation
- Time of day choice (for congestion pricing)

Climate Change

- The theme for the 2009 TRB Annual Meeting
- Issues
 - How to analyze policies/actions to combat global warming
 - The effects of global warming on the transportation system

“Every mode of transportation in the U.S. will be affected as the climate warms, but potentially the greatest impact will be flooding of roads, railways, transit systems, and airport runways in coastal areas because of rising sea levels and surges brought on by storms.” – Climate Change and Its Impact on U.S. Transportation, In Focus, The National Academies, Vol. 8/No. 1, Winter/Spring 2008

Climate Change

- **Strategies**

- Pricing
- Changes in vehicle/fuel types
- Land use changes
- Restrictions on auto use (back to the future?)
- Use of non-motorized modes

- **Analytical tools**

- Activity based models
- Sensitivity to demand management actions
- Traveler response to conditions not currently experienced
- Completeness of modeling context

Freight Movement and Trucks

- **Strategies**

- **Truck only lanes**
- **TOT lanes**
- **Restrictions on use**

- **Analytical tools**

- **Improved truck and freight models (urban and statewide)**

Alternative Land Development Patterns

- **Strategies**

- Effects of accessibility changes on development patterns
- Transit oriented development (back to the future?)
- Effects of transit investment on land use

- **Analytical tools**

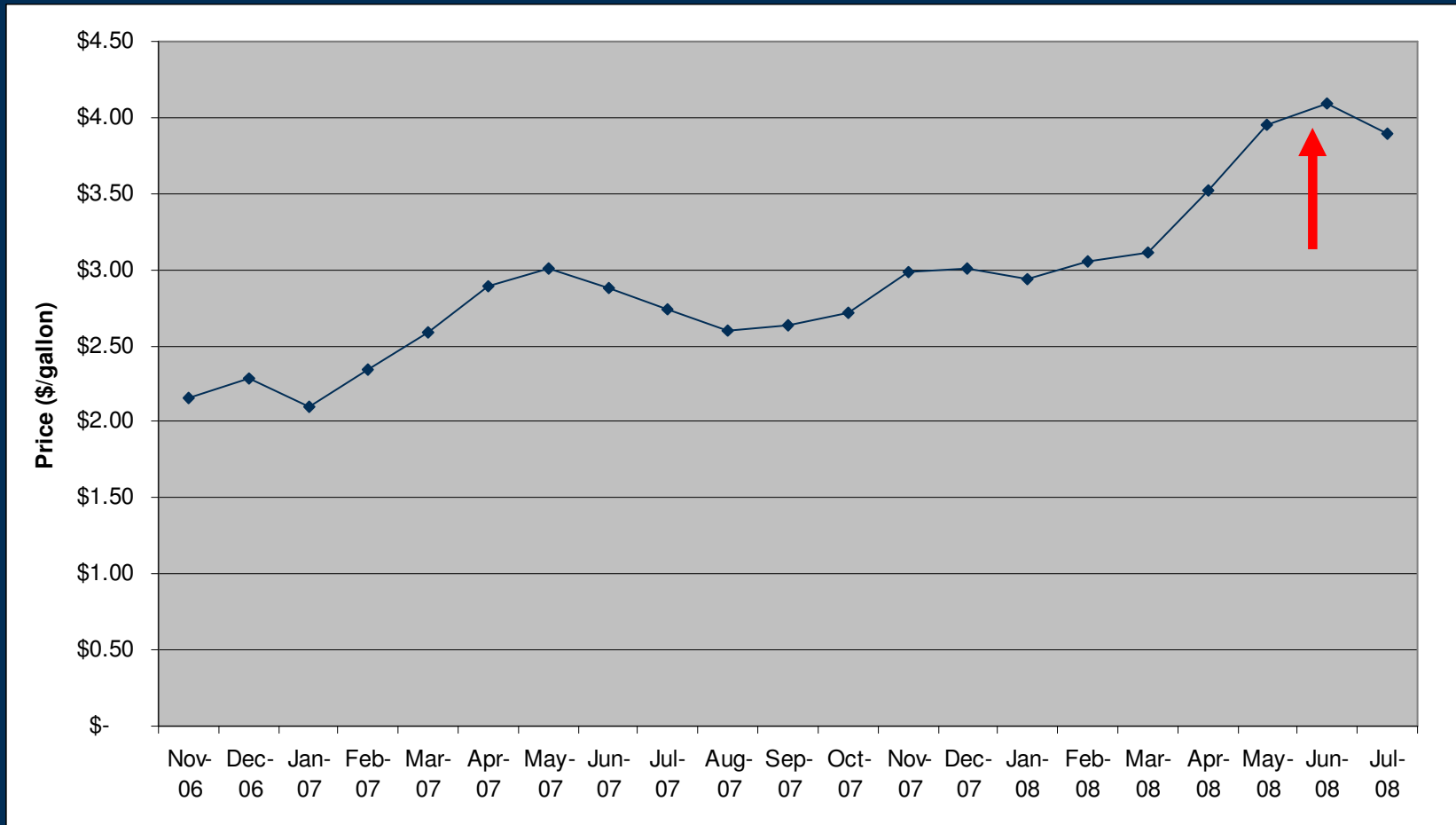
- Integrated land use and transportation models

So, what about those gas prices?

People Who Have Talked with Me about Gas Prices Recently

- My wife
- My mother
- My clients
- My neighbors
- Kasey Cursey

Gasoline Prices – Route 16, Medford, Mass.



Some random thoughts on gas prices...

- **Some people are happy that gas prices are high!**
 - **Because people are driving less, which reduces congestion and is better for the environment**
 - **On the other hand, they would rather that the extra money did not go to the oil companies**
- **Gas station markups are about the same on a cents per gallon basis as when gas prices were near \$1.00/gallon**
 - **So markups on a percentage basis are much lower**
 - **Credit card costs to the retailer are on a percentage basis**

Effects of Gas Price Increases

- How much less are people driving?

“Vehicle miles traveled measured 708 billion in the United States during the first quarter of 2008, a decrease of 2.3% compared to the same period last year.” - Farmers Insurance quarterly update

The American Public Transportation Association's June 2 news release reported that transit ridership (boardings) was up 3.3% for the first quarter [of 2008], compared with last year.

But all other things are not equal from 2007 to 2008!

How Can We Determine the Specific Effects of Gasoline Price Changes?

- **We can't**
 - **Detailed travel surveys done every 5-10 years**
 - **Difficult (impossible?) to separate other effects on travel behavior**
 - **Some changes in behavior are short term...**
 - **Mode shifts**
 - **Destination shifts**
 - **Foregone travel and trip chaining**
 - **...and some are longer term**
 - **Change job or residence location**
 - **Changes in auto ownership**

How Can We Determine the Specific Effects of Gasoline Price Changes? (continued)

- **We can't**
 - **Lag time between price increases and behavior changes unknown**
 - **Current analytical tools are based on smaller values of auto operating costs**

How Can We Determine the Specific Effects of Gasoline Price Changes?

- What do we need to do to be able to estimate the effects?
 - Collect more data! (and more frequently)
 - Continue to monitor the longer term effects of recent price increases (ahead to the past)
 - Develop analytical tools that are based on higher prices
- There is still one big issue, though...

Even if we can accurately estimate the sensitivity of travel demand to gas prices, we don't know what future gas prices will be!

So How Do I Come up with Conclusions for a Presentation That Is All Over the Place?

- **This is a great time to be an older transportation planner – we've seen some of this stuff before!**
- **Sorry, we don't know what the gas prices will be in 2030 (or next month)**