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Testimony of  
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before the  
House Committee on Transportation, Subcommittee on Long-term Infrastructure Planning

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**Discussion about Future Funding Needs: Estimate of Additional New Construction and Associated Maintenance Needed per Year Between Now and 2030: Two Scenarios**

A report published in 2011 by the Texas 2030 Committee, *It's About Time: Investing in Transportation to Keep Texas Economically Competitive*, provided an assessment of the state's infrastructure and mobility needs. The Texas A&M Transportation Institute (TTI) has developed the following two sample funding scenarios in order to meet the needs identified in the report. The scenarios below consider a number of different assumptions about the future such as:

- Desired system performance
- Desired system pavement condition
- Population growth
- Vehicle miles traveled
- Fuel efficiency
- Construction cost inflation
- System efficiencies
- Transfers from the Economic Stabilization Fund
- Amount of construction financed via tolls and/or public-private partnerships
- Amount of state vs. local effort
- New debt
- Annual Energy Sector Needs

**Estimate of Additional Annual Construction and Maintenance Dollars Needed – Scenario 1**

Scenario 1 is the baseline scenario and, as such, represents the most likely estimated need in order to maintain mobility levels experienced in 2010. This scenario yields an estimate of approximately \$5.7 billion in new construction and maintenance dollars, using the following assumptions:

- Desired system performance – 2010 mobility levels
- Desired system pavement condition – maintain current system pavement condition
- Population growth – State Data Center 1.0 migration scenario (assumes net migration rates experienced in Texas from 2000-2010)
- Vehicle Miles Traveled – average change over past 10 years in per capita VMT is maintained
- Fuel efficiency – average rate of increase over the past 10 years is maintained
- Construction cost inflation – 5% increase per year (average annual change from 1998- 2013)
- System efficiencies – 10% of mobility needs can be met through increased system efficiencies and transit
- Transfers from the Economic Stabilization Fund
- Amount of construction financed via tolls and/or public-private partnerships – 10 percent of construction will be met through state-constructed toll roads, 10 percent will be met through public private partnerships
- Amount of state vs. local effort – 40 percent of mobility needs will be met by local governments, RMAs, and toll authorities
- New debt – no new Proposition 12 or Proposition 14 debt is issued
- State portion of energy sector needs- \$1 billion

If the proposed Proposition 7 passes in November, this number would be reduced to as estimated \$4.3 billion using the same assumptions.

### **Estimate of Additional Annual Construction and Maintenance Dollars Needed – Scenario 2**

Scenario 2 considers the same variables with the exceptions that it assumes there are no new toll roads constructed and no new public-private partnership construction. The effect of these assumptions is that an estimated \$7.4 billion in new construction and maintenance expenditures is required to maintain 2010 mobility levels.

If the proposed Proposition 7 passes in November, this number would be reduced to an estimated \$5.5 billion utilizing the same assumptions.

#### Variables

- Desired system performance – same as above
- Desired system pavement condition – same as above
- Population growth – same as above
- Vehicle Miles Traveled – same as above
- Fuel efficiency – same as above
- Construction cost inflation – same as above
- System efficiencies – 10% of mobility needs can be met through increased system efficiencies and transit
- Transfers from the Economic Stabilization Fund

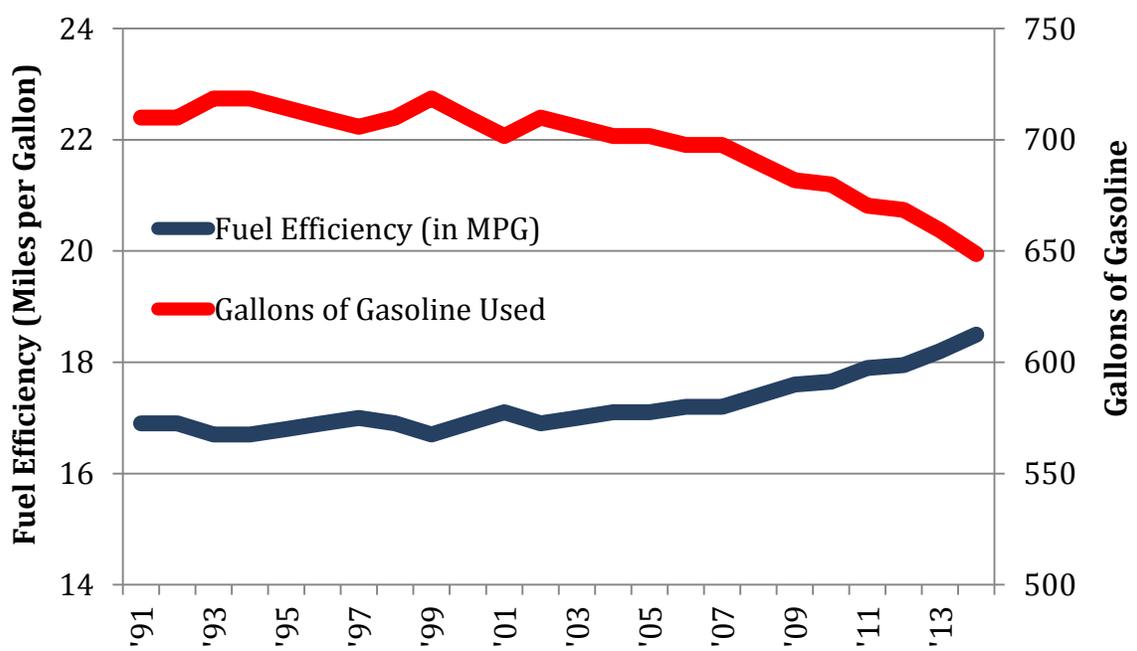
- Amount of construction financed via tolls and/or public-private partnerships – assumes no tolls, no public-private partnerships
- Amount of state vs. local effort – same as above
- New debt – same as above
- State portion of energy sector needs- \$1 billion

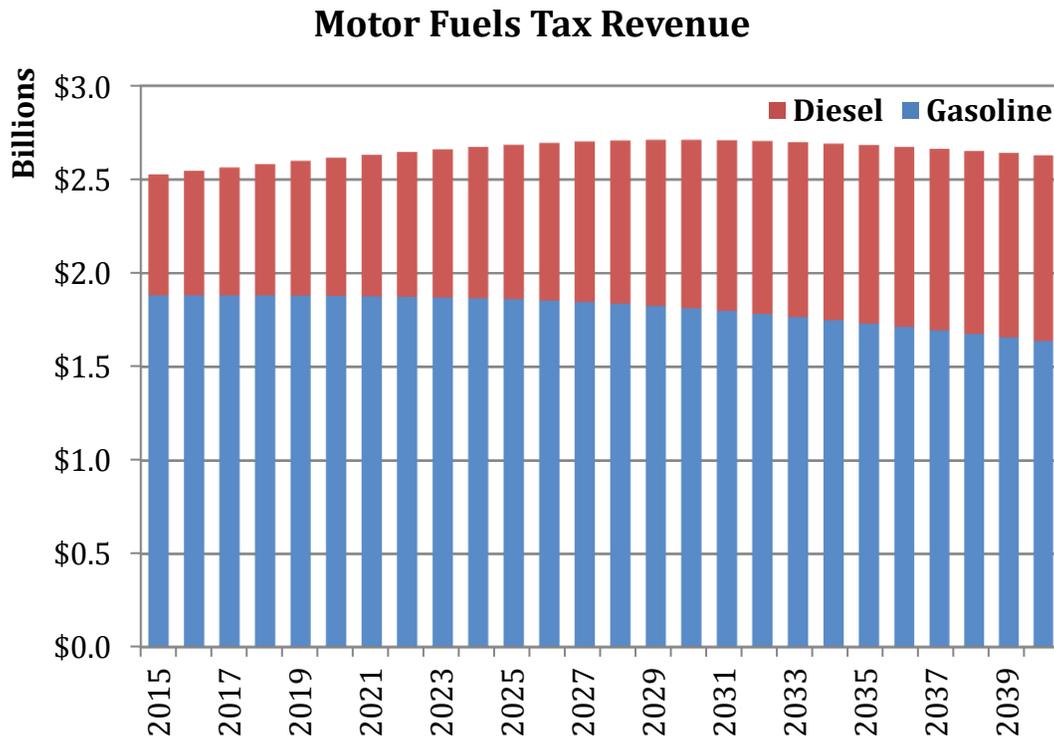
Major Factors in Variability of the Estimates

- Construction cost inflation – variability can be significant; primary cost inputs are commoditized
- Fuel efficiency – deterioration in purchasing power of the fuel tax has been significant
- Vehicle Miles Traveled and System Efficiency – technology trends can have significant positive effects

Note: The following charts show the effect of increased fuel efficiency and inflation on the cost of roadway construction.

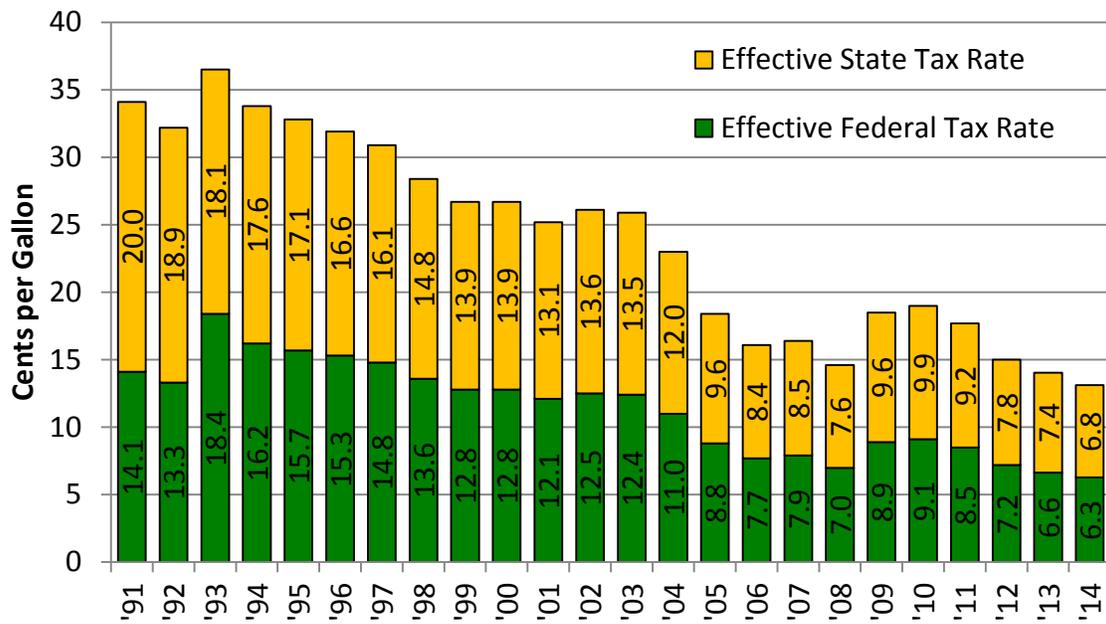
**Downside of Increased Fuel Efficiency**





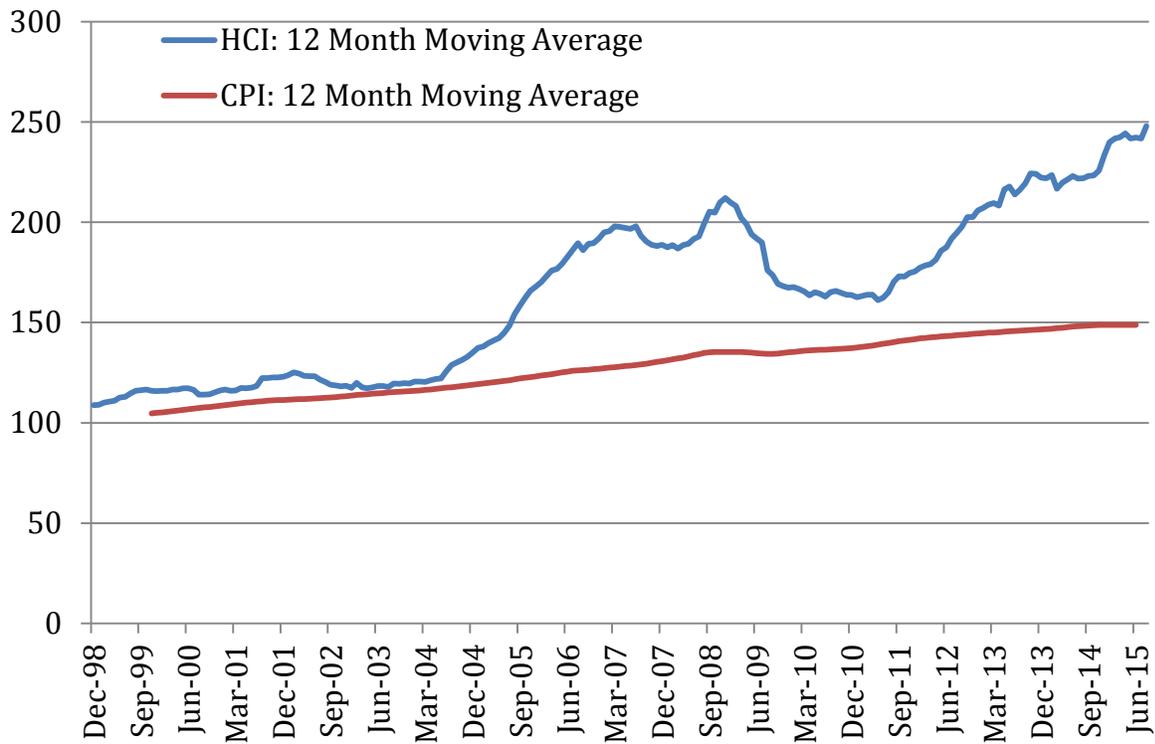
This projection assumes the State Data Center 1.0 population migration scenario and the TRENDS model low fuel efficiency scenario. This projection assumes revenues from the gasoline tax could begin to decline in 2018 and total fuel tax revenue (gasoline and diesel) could begin to decline in 2031. Again, these forecasts are highly dependent on variables such as population growth, fuel efficiency, vehicle miles traveled, and overall economic conditions.

## Purchasing Power of the Gasoline Tax



The following data shows the increases in the highway construction cost index versus the general consumer price index and the effects of inflation of the cost of a highway construction project.

## Highway Cost Index vs. Consumer Price Index



## The Effect of Cost Inflation and the 2030 Report

A \$500 million road construction project:

Built in 2010: \$500 million

Built Now: \$750 million

Built in 2019: \$923 million