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Testimony of Dr. David Ellis Research Scientist Infrastructure Investment Analysis Program Texas A&M Transportation Institute before the Select Committee on Transportation Funding, Expenditures and Finance Texas House of Representatives May 6, 2014

Estimate of Additional New Construction and Associated Maintenance Needed per Year Between Now and 2030: Two Scenarios

<u>Variables</u>

- Desired system performance
- Desired system pavement condition
- Population growth
- Vehicle miles traveled
- Fuel efficiency
- Construction cost inflation
- System efficiencies
- Passage of Proposition 1
- Amount of construction financed via tolls and/or public-private partnerships
- Amount of state vs. local effort
- New debt

Estimate of Additional Construction Dollars Needed – Scenario 1

<u>Variables</u>

- Desired system performance maintain current 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 6.9% increase per year (average annual change from 1998-2013)

- System efficiencies 15% of mobility needs can be met through increased system efficiencies and transit
- Passage of Proposition 1 assumes passage
- 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 Prop 12 or Prop 14 debt is issued

Given the above assumptions, our estimate of the amount of new construction dollars required is approximately \$4.0 billion.

Estimate of Additional Construction Dollars Needed – Scenario 2

<u>Variables</u>

- 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 same as above
- Passage of Proposition 1 assumes Prop 1 does not pass
- 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

Given the above assumptions, our estimate of the amount of new construction dollars required is approximately \$7.4 billion annually.

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
- Passage of Proposition 1 helps meet critical funding needs

The Effect of Cost Inflation and the 2030 Report

A \$500 million road construction project:

Built in 2010: \$500 million

Built Now: \$665 million

Built in 2018: \$870 million

Purchasing Power of the Motor Fuels Tax





			Planned		Intermediate	Total Additional	Effective		Additional	
	Beginning		Construction/	Prop. 1	Remaining	Mobility Value	Mobility	3P/Toll	Construction/	FINAL
Year	Balance	Inflation Rate	Maintenance	Transfers	Needed	Needed	Improvements	Projects	Maintenance	Balance
2010	\$162.0		\$3.8		\$158.2					\$158.2
2011	\$133.8	-15.4%	\$4.5		\$129.3					\$129.3
2012	\$121.3	-6.2%	\$5.6		\$115.7					\$115.7
2013	\$122.9	6.2%	\$7.2		\$115.6					\$115.6
2014	\$132.3	14.4%	\$8.4		\$123.9					\$123.9
2015	\$132.4	6.9%	\$7.0	\$1.3	\$122.9	\$6.1	\$0.9	\$1.2	\$4.0	\$118.1
2016	\$126.2	6.9%	\$6.0	\$1.3	\$117.6	\$6.1	\$0.9	\$1.2	\$4.0	\$112.8
2017	\$120.5	6.9%	\$5.6	\$1.3	\$112.4	\$6.1	\$0.9	\$1.2	\$4.0	\$107.6
2018	\$115.0	6.9%	\$5.3	\$1.3	\$107.1	\$6.1	\$0.9	\$1.2	\$4.0	\$102.3
2019	\$109.3	6.9%	\$5.4	\$1.3	\$101.4	\$6.1	\$0.9	\$1.2	\$4.0	\$96.6
2020	\$103.2	6.9%	\$5.4	\$1.3	\$95.2	\$6.1	\$0.9	\$1.2	\$4.0	\$90.4
2021	\$96.6	6.9%	\$5.5	\$1.3	\$88.6	\$6.1	\$0.9	\$1.2	\$4.0	\$83.8
2022	\$89.5	6.9%	\$5.5	\$1.3	\$81.4	\$6.1	\$0.9	\$1.2	\$4.0	\$76.6
2023	\$81.9	6.9%	\$5.6	\$1.3	\$73.8	\$6.1	\$0.9	\$1.2	\$4.0	\$69.0
2024	\$73.7	6.9%	\$5.6	\$1.3	\$65.5	\$6.1	\$0.9	\$1.2	\$4.0	\$60.7
2025	\$64.9	6.9%	\$5.2	\$1.3	\$57.1	\$6.1	\$0.9	\$1.2	\$4.0	\$52.3
2026	\$55.9	6.9%	\$5.3	\$1.3	\$48.0	\$6.1	\$0.9	\$1.2	\$4.0	\$43.2
2027	\$46.2	6.9%	\$5.3	\$1.3	\$38.3	\$6.1	\$0.9	\$1.2	\$4.0	\$33.5
2028	\$35.8	6.9%	\$5.4	\$1.3	\$27.9	\$6.1	\$0.9	\$1.2	\$4.0	\$23.1
2029	\$24.7	6.9%	\$5.4	\$1.3	\$16.7	\$6.1	\$0.9	\$1.2	\$4.0	\$11.9
2030	\$12.7	6.9%	\$5.5	\$1.3	\$4.6	\$6.1	\$0.9	\$1.2	\$4.0	-\$0.2

Estimate of Additional Construction and Maintenance Expenditures to Maintain Current Mobility Levels