Workpaper E: Road Price Elasticity Calculations

To obtain VMT reductions we simply use the following formula:

\[ v = \%\Delta c \cdot \varepsilon_{ve} \]  

(1)

Where \( \%\Delta \) is the percent change in per-mile costs \( c \) and \( \varepsilon_{ve} \) denotes the long-term elasticity of VMT with respect to per-mile cost.

We know that the current cost per mile of electricity is current electricity price by electric intensity so we have

\[ c = d \cdot b + \zeta \]  

(2)

Where \( d \) denotes electricity price per kWh, \( b \) is electric intensity, and \( \zeta \) is maintenance per mile.

Assume $0.13 dollars per kWh.

Assume .23 EI in low case;

Assume .27 EI in high case.

Price per mile is $0.0299 and $0.0351, respectively. Add $0.01 per mile for maintenance, to get $0.040 and $0.045

To calculate the change in VMT expected from the two scenarios described above, we conduct the following calculation:

\[ \frac{P_f}{c} \cdot \varepsilon_{ve} = \%\Delta v \]  

(3)

Where \( P_f \) is the price of a per-mile VMT fee.