APPENDIX C. Rebound Analysis

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The rebound effect is the idea that the demand for driving is a function of the operating costs of the vehicle being driven. Where the demand for driving (or vehicle miles traveled (VMT)) is a function of many factors including income, fuel prices, the costs of owning and operating a vehicle, the distance between a person's home and job, desired discretionary driving, transit options, the time it takes to travel, and many other factors. Rebound is the elasticity that specifically refers to effects on the change of travel that comes from changes in the factors influencing driving. For example, when auto operating costs increase, such as when fuel prices increase, driving becomes more expensive and people drive less. Conversely, if fuel prices decrease people may drive more. In this staff report we will only refer to the rebound associated with changes in the costs of driving from more fuel efficient vehicles, as this is an issue many of the MPOs have cited as a significant factor in why they cannot achieve higher SB 375 GHG emissions reduction targets.

To address this issue CARB staff are using analyses CARB completed for the development of the Advanced Clean Car Regulation (2011)[1] and work done by U.S. EPA for the Midterm Review (2016).[2] These analyses revealed that while increasing fuel efficiency (which makes it less expensive to drive) had an impact on VMT, the impact was minimal at less than one percent increase in overall fleet-wide VMT. U.S. EPA's analysis also included a panel of three economists to peer review the data, methods and conclusions. The researchers for the U.S. EPA analysis go even further in their conclusions and say that there is evidence to suggest that the impacts on VMT of fuel efficiency is not statistically significant, and is potentially near zero.

[1] "Appendix T LEV III Mobile Source Emissions Inventory: Technical Support Document" https://www.arb.ca.gov/regact/2012/leviiighg2012/levappt.pdf and "Appendix S LEV III Economic Analysis: Technical Support Document" https://www.arb.ca.gov/regact/2012/leviiighg2012/levapps.pdf

[2] "The Rebound Effect from Fuel Efficiency Standards: Measurement and Projection to 2035" EPA-420-R-15-012 (July 2015), and "Peer Review for the Report "The Rebound Effect from Fuel Efficiency Standards: Measurement and Projection to 2035"" EPA-420-R-15-013 (July 2015)