

The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule  
for Model Year 2021 – 2026  
Passenger Cars and Light Trucks

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# What do these rules do?

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- ❖ EPA amended CO2 standards for model years 2021 and later
- ❖ NHTSA amended fuel economy standards for model year 2021 and set new fuel economy standards for each model year 2022–2026
- ❖ The standards increase stringency at 1.5 percent per year from 2020 levels
- ❖ Expected to achieve approximately 40.5 miles per gallon industry fleet-wide average in model year 2030

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# How did the agencies decide?

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- ❖ Administrative Procedure Act rulemaking
- ❖ Statutory factors
  - ❖ EPCA: Maximum feasible considering tech feasibility, economic practicability, other motor vehicle standards, need to conserve energy etc
  - ❖ CAA: Greatest degree of emissions reduction, technology / time, cost, energy, safety etc
- ❖ Extensive analysis summarized in 2196 page Regulatory Impact Analysis and 2131 Environmental Impact Statement

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# Some interesting features of the analysis

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- ❖ In a saturated market, how do new vehicle prices affect sales of both new and used vehicles?
- ❖ How do changes to the U.S. vehicle fleet affect traffic safety?
- ❖ Energy Prices are always difficult to forecast; of course, no one anticipated the severe global pandemic.

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# What are the likely impacts?

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- ❖ Car and light truck gasoline consumption forecast to decline from 140 billion gallons annually to about 95 billion gallons, instead of 80 billion under the 2012 rule
- ❖ Required technology costs reduced by \$86 to \$126 billion over the lifetimes of vehicles, compared to 2012 rule
- ❖ New vehicle purchase prices to U.S. consumers forecast to be \$977 to \$1,083 lower than under the 2012 rule
- ❖ Impact on climate “very small”, criteria and air toxic pollutants “too small to observe”
- ❖ 2.7 million additional new vehicles sold because new vehicles are more affordable

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# Safety Benefits

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- ❖ 3,300 fewer crash fatalities
- ❖ 46,000 fewer hospitalizations after serious crashes projected over the lifetimes of vehicles built through 2029
- ❖ 397,000 fewer injuries
- ❖ 1.8 million fewer vehicles damaged in crashes

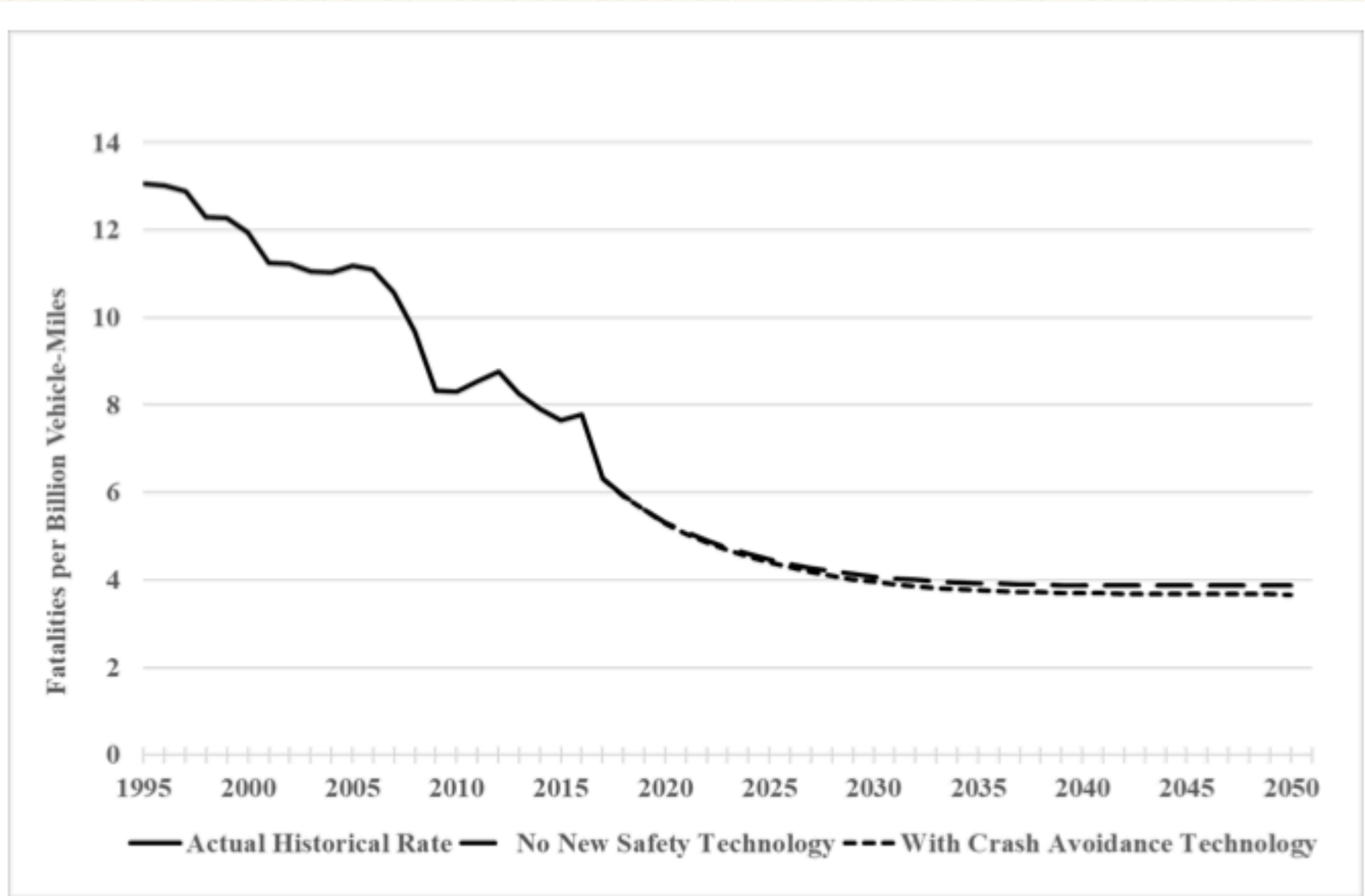


Figure VI-161 – Historical and Projected Fleet-Wide Fatality Rates

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# Categories of Benefits and Costs

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❖ Technology Costs

Retail Fuel Savings

❖ Implicit Opportunity Costs

Rebound Fuel Consumer Surplus

❖ Lost New Vehicle Consumer Surplus

Refueling Time Benefit

❖ Rebound fatality costs

Rebound Fatality Benefit

❖ Rebound non-fatal crash costs

Rebound Non-Fatal Crash Benefit

❖ Reduced Fuel Tax Revenue

Petroleum Market Externality

❖ Congestion Costs

CO2 Damage Reduction Benefit

❖ Noise Costs

NOx Damage Reduction Benefit

❖ Non-Rebound Fatality Costs

VOC Damage Reduction Benefit

❖ Non-Rebound Non-Fatality Crash Costs

PM Damage Reduction Benefit

SO2 Damage Reduction Benefit



Table I-1 – Estimated 1977-2029 Model Year Costs, Benefits, and Net Benefits under the Preferred Alternative, CAFE Standards (Billions of 2018\$)

<b>Cumulative Across MYs 1977-2029</b>				
	<b>Totals</b>		<b>Annualized</b>	
	<b>3% Discount Rate</b>	<b>7% Discount Rate</b>	<b>3% Discount Rate</b>	<b>7% Discount Rate</b>
Costs	-280.4	-199.5	-10.7	-14.4
Benefits	-293.5	-183.5	-11.2	-13.2
<b>Net Benefits</b>	<b>-13.1</b>	<b>16.1</b>	<b>-0.5</b>	<b>1.2</b>

Table I-2 – Estimated 1977-2029 Model Year Costs, Benefits, and Net Benefits under the Preferred Alternative, CO<sub>2</sub> Standards (Billions of 2018\$)

<b>Cumulative Across MYs 1977-2029</b>				
	<b>Totals</b>		<b>Annualized</b>	
	<b>3% Discount Rate</b>	<b>7% Discount Rate</b>	<b>3% Discount Rate</b>	<b>7% Discount Rate</b>
Costs	-258.4	-181.5	-9.9	-13.1
Benefits	-280.5	-175.1	-10.7	-12.6
<b>Net Benefits</b>	<b>-22.0</b>	<b>6.4</b>	<b>-0.8</b>	<b>0.5</b>

# Humility in Regulatory Analyses

- ❖ Regulatory analysis informs *but does not determine* the best policy
- ❖ Predicting the future is really hard
- ❖ Putting numbers on things makes them seem more certain than they are





Watch for:

Litigation

Heavy Duty Truck standards

and the next 5-year set of  
Passenger Vehicle and Light Truck standards