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U.S. Department of Transportation,  
West Building, Ground Floor, Rm. W12-140  
1200 New Jersey Avenue SE,  
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Consumer Reports Comments on NHTSA's "Corporate Average Fuel Economy  
Standards for Model Years 2024-2026 Passenger Cars and Light Trucks"  
(Docket No. NHTSA-2021-0053)

Submitted via: [www.regulations.gov](http://www.regulations.gov)

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1. Petition Signatures
2. Fact Sheet: Restoring the Benefits of the Obama-Biden Standards
3. Fact Sheet: Vehicle Emissions Standards
4. The Un-SAFE Rule: How a Fuel-Economy Rollback Costs Americans Billions in Fuel Savings and Does Not Improve Safety
5. 2020 Electric Vehicle Survey
6. 2020 Fuel Economy Survey
7. 2019 Fuel Economy Survey
8. Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers
9. Argonne Vehicle TCO Report
10. Consumer Reports comment on the 2018 SAFE rule proposal
11. Consumer Reports comment on the 2021 EPA proposed rule

## 1. Introduction

Consumer Reports (CR) supports NHTSA's efforts to reverse the previous administration's rollback<sup>1</sup> and reinstate strong Corporate Average Fuel Economy (CAFE) standards. However, this proposal does not go far enough to help consumers, and restores less than 2/3 of the consumer savings of the original Obama-Biden standards.

CR strongly supports the Biden administration's stated goal of reducing greenhouse gas emissions from new vehicles by 60%, while achieving 50% electrification by 2030.<sup>2</sup> Achieving this goal would result in over \$1 trillion in consumer savings while reducing emissions by 10 gigatons through 2050.<sup>3</sup> Unfortunately, NHTSA's preferred alternative would leave the US fleet off pace to achieve this important goal.

NHTSA can and must do better to protect consumers, while ensuring equity in the car market. Automakers have proven time and again that they will not deliver the fuel savings that consumers want and need without strong standards in place. According to the latest EPA trends report, automakers only improved their car fleets by 1.4 mpg and their light truck fleets by 0.8 mpg.<sup>4</sup> After accounting for shifts in fleet mix, average fuel economy improved by a mere 0.2 mpg while automakers lobbied for the previous administration to roll back the strong standards that were in place. Consumers and the climate don't have another four years to waste.

Consumer Reports has two key recommendations to improve this rule. Making the following changes will allow consumers to recover most of the savings they would have achieved under the original Obama-Biden standards, saving consumers an additional \$40B through MY2029.<sup>5</sup>

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<sup>1</sup> Consumer Reports, "The Un-SAFE Rule: How a Fuel-Economy Rollback Costs Americans Billions in Fuel Savings and Does Not Improve Safety" August 2019  
<https://advocacy.consumerreports.org/wp-content/uploads/2019/08/The-Un-SAFE-Rule-How-a-Fuel-Economy-Rollback-Costs-Americans-Billions-in-Fuel-Savings-and-Does-Not-Improve-Safety-2.pdf>  
<https://advocacy.consumerreports.org/wp-content/uploads/2019/11/CRs-Updated-Analysis-of-the-UnSAFE-Rule.pdf>

<sup>2</sup> Fact Sheet: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks, August 5, 2021  
<https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/>

<sup>3</sup> Consumer Reports, "Fact Sheet: Vehicle Emissions Standards" March 2021  
<https://advocacy.consumerreports.org/wp-content/uploads/2021/03/Consumer-Reports-Vehicle-Emissions-Standards-Fact-Sheet-3.22.21-FINAL.pdf>

<sup>4</sup> EPA, "The 2020 EPA Automotive Trends Report," January 2021, <https://www.epa.gov/automotive-trends>

<sup>5</sup> See section 4c for details

- 1) In 2024, NHTSA should return to the Obama-Biden levels of stringency. Automakers agreed to these levels of stringency in 2012 and had plans in place to meet these standards as recently as last year. With extra credits earned under the weak SAFE rule, they should easily be able to catch up.
- 2) NHTSA should set the stringency in 2026 at least as strong as their Alternative 3. The US is behind the curve on our climate commitments, and only setting aggressive CAFE targets will allow us to catch up.

Consumer Reports finds that NHTSA's analysis overestimates the costs and underestimates the benefits of the rule.<sup>6</sup> Improving NHTSA's analysis will help to justify standards that are at least as strong as the recommendations made above. Setting truly maximum feasible standards will be a win-win for consumers and the climate.

#### **a. About Consumer Reports**

Consumer Reports (CR) is an independent, nonprofit membership organization that works side by side with consumers to create a fairer, safer, and healthier world. Consumer Reports conducts extensive consumer surveys and research, and buys nearly 70 new vehicles each year to test at our Auto Test Track in Connecticut, to generate independent expert reviews and ratings related to fuel economy, reliability, safety, and other attributes important to consumers. CR represents the interests of consumers and has provided comments on fuel economy-related public dockets for over a decade, including the setting of the 2017-2025 standards in 2012,<sup>7</sup> the Draft Technical Assessment Report in 2016,<sup>8</sup> the final determination in 2017,<sup>9</sup> the Draft

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<sup>6</sup> See sections 4c and 6 of this comment

<sup>7</sup> Consumers Union, Comments for Proposed Rule 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards (Feb. 10, 2012), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0799-9454>.

<sup>8</sup> Consumers Union, Comments on Midterm Evaluation Draft Technical Assessment Report for Model Year 2022–2025 Light Duty Vehicle GHG Emissions and CAFE Standards (Sept. 21, 2016), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-3511>.

<sup>9</sup> U.S. Environmental Protection Agency, Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (Jan. 13, 2017), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-6270>; Consumers Union, 2016 Vehicle Fuel Economy Poll Nationally Representative Telephone Survey (June 20, 2016), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-3511>.

Environmental Impact Statement in 2017,<sup>10</sup> the second final determination in 2018,<sup>11</sup> and the SAFE rule.<sup>12</sup>

## 2. The Consumer Case for Strong Standards

Consumers want better fuel economy for their vehicles, and support stronger standards by a wide margin. Nationally representative surveys have repeatedly demonstrated overwhelming public, bipartisan support for continuing to strengthen federal standards that affect vehicle efficiency. CR's most recent fuel economy survey continues to show this strong interest.<sup>13</sup> Key results include:

- **94%** of consumers consider fuel economy to be important when considering what vehicle to purchase or lease
- **89%** of consumers agree that automakers should continue to improve fuel economy for all vehicle types
- **83%** of consumers expect each new generation of vehicles available on the market to be more fuel-efficient than the last
- **73%** of consumers agree that the U.S. government should continue to increase fuel efficiency standards

Further, when asked what attributes in their current vehicle had the most room for improvement, consumers selected fuel economy 42% of the time, significantly more than any other selection, and 3 times as often as they selected horsepower as shown in Figure 2.1.

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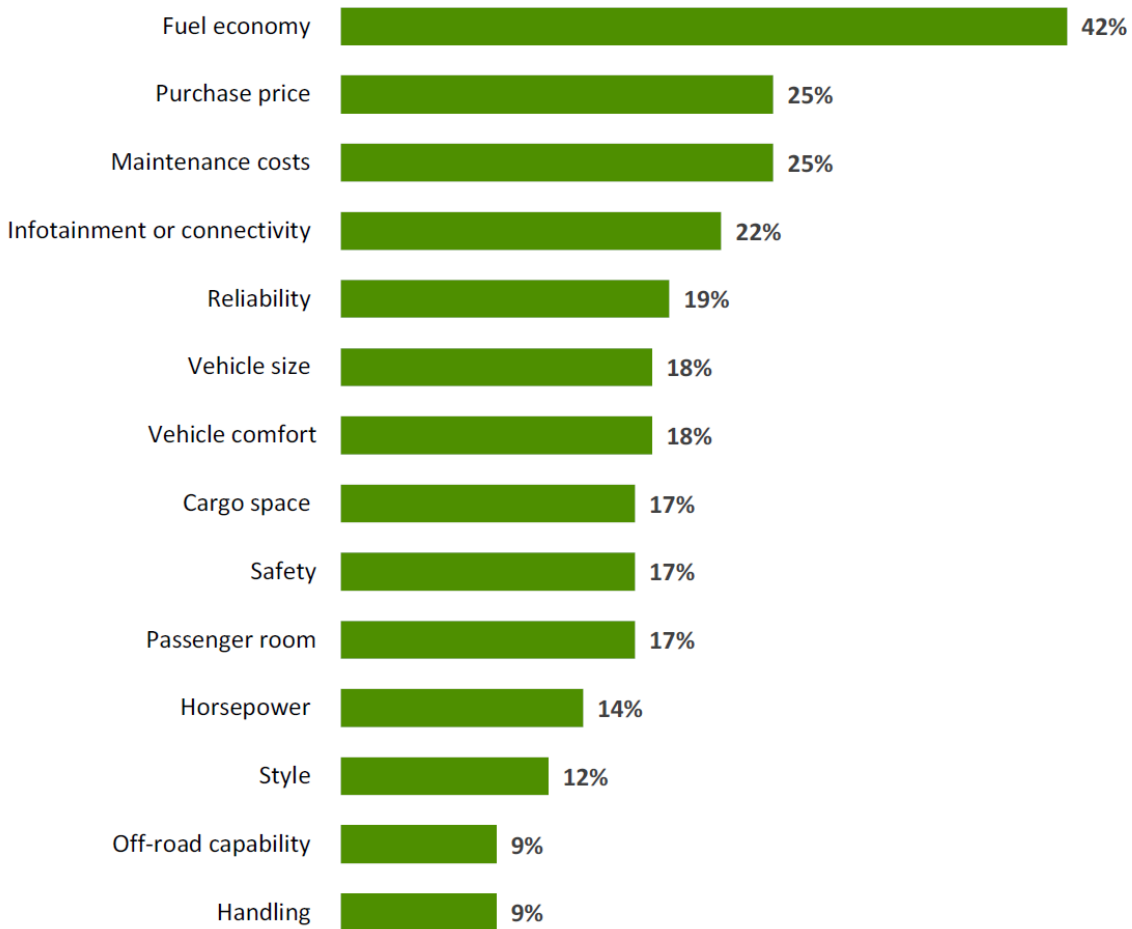
<sup>10</sup> Consumers Union, Comments on EPA's Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (Dec. 23, 2016), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-6028>.

<sup>11</sup> Consumers Union, Comments on EPA's Request for Comment on Reconsideration of the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-Duty Vehicles (Oct. 5, 2017), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2015-0827-9166>.

<sup>12</sup> Consumer Reports, Comments on Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (Oct. 26, 2018), <https://www.regulations.gov/comment/EPA-HQ-OAR-2018-0283-4117>

<sup>13</sup> Consumer Reports, "Consumer Attitudes Towards Fuel Economy: 2020 Survey Report," February 2021. <https://advocacy.consumerreports.org/wp-content/uploads/2021/02/National-Fuel-Economy-Survey-Report-Feb-2021-FINAL.pdf>

Thinking about your current vehicle, which three attributes have the most room for improvement?



**Figure 2.1** - Attributes Consumers Want Improved the Most on Their Current Vehicle

Strong standards are especially important for drivers of larger vehicles who spend the most on fuel. Footprint-based standards adjust stringency based on vehicle size and thus help lift the efficiencies of all vehicles, in all vehicle classes. In Consumer Reports' 2019 Automotive Fuel Economy Survey, drivers of large SUVs and pickups told us they wanted to see their vehicle's fuel economy improved more than 6 times as often as they wanted to see their vehicle's horsepower increased (55% vs. 8%) as shown in Table 2.1.<sup>14</sup> More broadly, these results indicate that the market is currently under supplying fuel economy relative to consumer demand. Strong CAFE standards are vital to

<sup>14</sup> Consumer Reports, "2019 Automotive Fuel Economy Survey Report," August 2019. <https://advocacy.consumerreports.org/wp-content/uploads/2019/08/Consumer-Reports-Fuel-Economy-Survey-Report-2019-1.pdf>

protecting the interests of these consumers who are not currently being sufficiently served by the market.

**Table 2.1 - Consumer Interest in Fuel Economy Improvements by Current Vehicle Type and Efficiency**

Thinking about your current vehicle, which three attributes have the most room for improvement?	Total	Current Car MPG			Current Car Type			
	%	Less Than 20	20 to 29	30 or More	Large SUV or Pickup Truck	Large Car, Midsize SUV, or Minivan	Small SUV or Sports Car	Small or Midsize Car
			%	%	%	%	%	%
<i>Respondents selected UP to three responses</i>								
<b>Fuel economy</b>	37%	53%	38%	20%	55%	40%	43%	30%
<b>Maintenance costs</b>	26%	27%	25%	26%	20%	25%	27%	27%
<b>Purchase price</b>	23%	26%	24%	18%	38%	22%	18%	20%
<b>Infotainment or connectivity</b>	23%	18%	23%	27%	15%	22%	29%	24%
<b>Passenger room</b>	14%	16%	13%	14%	18%	12%	18%	13%
<b>Off-road capability</b>	13%	12%	13%	13%	13%	7%	10%	15%
<b>Reliability</b>	12%	15%	12%	11%	11%	10%	6%	15%
<b>Cargo space</b>	12%	12%	12%	12%	5%	9%	7%	16%
<b>Vehicle comfort</b>	12%	11%	11%	13%	8%	8%	20%	13%
<b>Horsepower</b>	12%	5%	15%	13%	8%	9%	14%	14%
<b>Vehicle size</b>	10%	7%	9%	14%	7%	10%	12%	10%
<b>Safety</b>	8%	7%	8%	9%	4%	9%	7%	9%
<b>Style</b>	7%	7%	8%	5%	6%	8%	5%	6%
<b>Handling</b>	5%	4%	6%	5%	4%	9%	6%	4%
<b>Base: Americans Who Own and Drive a Vehicle</b>	1,011	264	462	285	132	271	108	492

Despite consumers' clear preference for vehicles with lower fuel costs, consumer choices are limited in the market, with 2/3 of car models getting within 5 mpg of the model average and nearly 2/3 (63%) of truck models getting within 3 mpg of the model average.<sup>15</sup> Furthermore, a team of researchers from UC Davis analyzed auto advertisements and found that performance is mentioned three times as frequently as either fuel economy or safety.<sup>16</sup> In 2017, a mere 7% of ads mentioned fuel economy.<sup>17</sup> This is despite the fact that consumers have shown a willingness to pay two to three

<sup>15</sup> Calculated from the EPA's 2018 fuel economy guide. <https://www.fueleconomy.gov/feg/download.shtml>

<sup>16</sup> Gwen Arnold et al. *Content Analysis of Unique Auto Ads in the United States: 2005, 2012, 2015, and 2017* Figure E.1 <https://advocacy.consumerreports.org/wp-content/uploads/2018/10/Final-Report-Auto-Ad-Content-Analysis-080318-1-1-1.pdf>

<sup>17</sup> Gwen Arnold et al. *Content Analysis of Unique Auto Ads in the United States: 2005, 2012, 2015, and 2017* Section 5B <https://advocacy.consumerreports.org/wp-content/uploads/2018/10/Final-Report-Auto-Ad-Content-Analysis-080318-1-1-1.pdf>



times more for improvements in fuel economy and safety than for improvements in acceleration, and their willingness to pay increases with information on fuel economy.<sup>18</sup>

### **a. Consumer Equity Implications of Strong Standards**

New car buyers on average are older, whiter, and wealthier than average,<sup>19</sup> and the decisions they make determine the vehicles available for purchase on the used car market. That means that the preferences of a smaller, less diverse subset of Americans largely drives the market for new cars, even if those vehicles do not match the needs and wants of the 70% of Americans who can't afford, or chose not to enter, the new car market.<sup>20</sup> Strong federal standards are necessary to ensure the needs of all Americans are met by the new car market, even for those who cannot afford to participate in it. In setting these standards, NHTSA should explicitly consider the needs of lower income Americans, who participate mainly in the used car market, and spend a larger portion of their income on fuel. A significant portion of the benefits of strong standards will flow to these consumers, who otherwise have no direct market mechanism by which to influence automaker decisions about what fuel efficiency technology they deploy in vehicles.

### **b. Consumer Petition**

Consumer Reports collected 24,700 signatures of consumers in support of strengthening NHTSA's current proposal for fuel efficiency standards. Those signatures are attached.

Petition Text:

*"We are calling on the Administration to eliminate loopholes for automakers that would undermine our nation's Clean Car Standards. The current preferred proposals don't go far enough to meet the climate challenges we already face, and they leave billions of dollars in consumer savings on the table, as stronger standards could save drivers up to \$88 billion on gas, maintenance, and costs for vehicles purchased in the next 5 years."*

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<sup>18</sup>Christine Kormos & Reuven Sussman, *Auto Buyers' Valuation of Fuel Economy: A Randomized Stated Choice Experiment* (June 12, 2018)

<https://advocacy.consumerreports.org/wp-content/uploads/2018/06/FINAL-Kormos-and-Sussman-2018-%e2%80%93-Auto-buyers-valuation-of-fuel-economy.pdf>

<sup>19</sup> Based on Consumer Reports' analysis of Bureau of Labor Statistics 2019 Consumer Expenditure survey. <https://www.bls.gov/cex/tables.htm>

<sup>20</sup> In 2018 and 2019 used car purchases accounted for 70% of total vehicle US light duty vehicle sales based upon comparing used vehicle sales of around 40,000,000 according to Edmunds 2019 Used Vehicle Report with widely reported new vehicle sales of around 17,000,000 in each year.

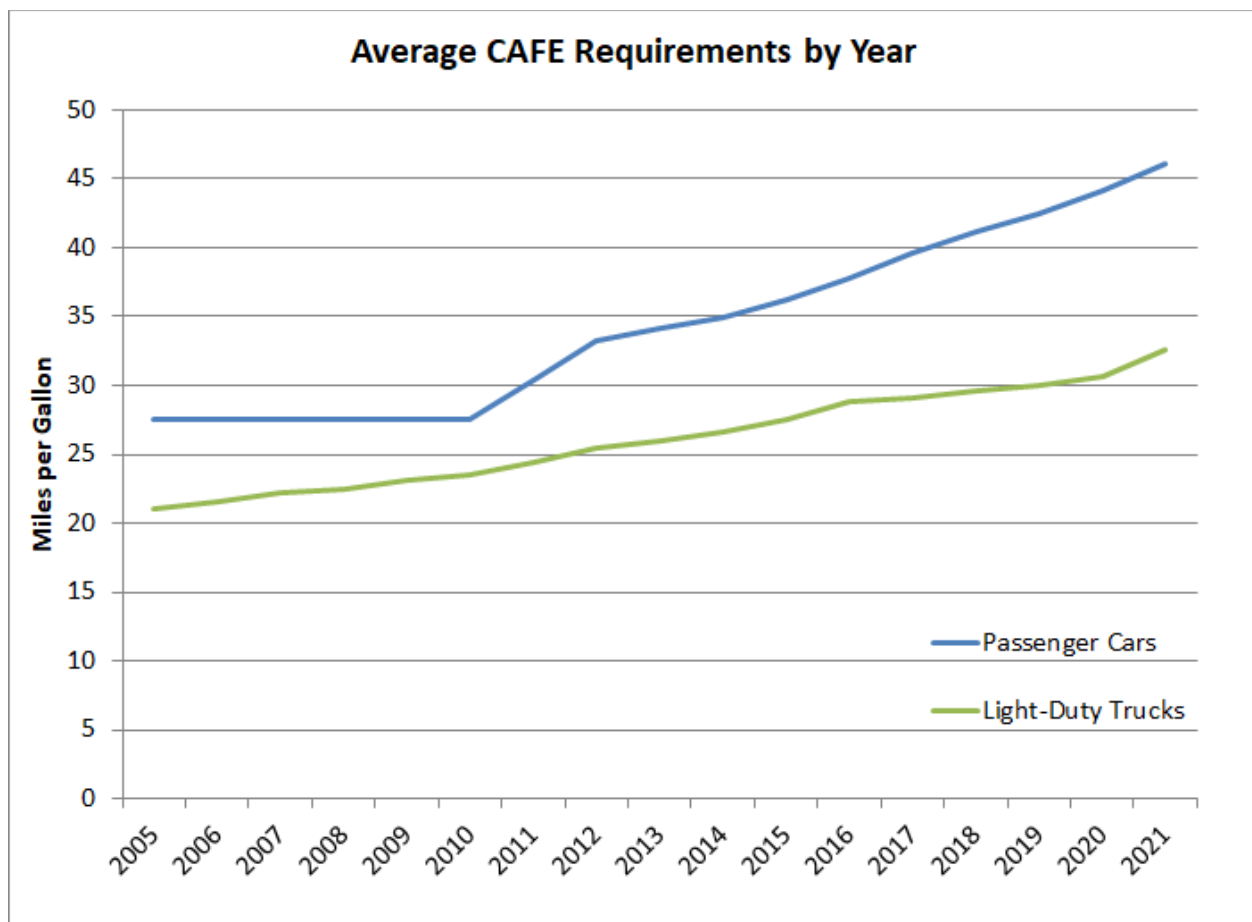
Edmunds, "Used Vehicle Report: the car comeback CY 2019"

<https://static.ed.edmunds-media.com/unversioned/img/industry-center/insights/2019-used-vehicle-report.pdf>

*Automakers already agreed to standards stronger than the current proposal almost a decade ago. The Administration must shift to stronger standards, hold the auto industry accountable, and ensure automakers take responsibility for their role in reducing climate-damaging pollution.”*

### 3. Trends in Vehicle Prices Over Time

Since 2005, Consumer Reports has purchased over 1,000 new vehicles directly from dealers at typical consumer prices. This represents a period with large increases in CAFE standards, after more than a decade of stagnation. Average CAFE requirements for cars and light trucks are shown in Figure 3.1. In order to look at the potential impact of fuel economy standards on vehicle prices, Consumer Reports analyzed the purchase price of all vehicles purchased over this period and adjusted the prices for inflation using the consumer price index.<sup>21</sup>



**Figure 3.1-** Average CAFE requirements by year from 2005 to 2021<sup>22</sup>

<sup>21</sup> Bureau of Labor Statistics, CPI for All Urban Consumers (CPI-U), <https://data.bls.gov/timeseries/CUUR0000SA0>

<sup>22</sup> Alternative Fuels Data Center, “Vehicle Fuel Efficiency (CAFE) Requirements by Year,” <https://afdc.energy.gov/data/10562>

The prices paid by CR for the most popular name plates that are still on the market today were graphed by vehicle class. The results are shown in Figures 3.2-3.8. Note that there is some variability in the prices due to the fact that Consumer Reports purchases vehicles available on a dealer lot, and exact options and trims are not always the same from year to year. In general, CR purchases a popular trim level that is reasonably well-equipped for the class. Vehicles where CR purchased a special model with a different powertrain (diesels or hybrids for example), or much higher trim level than it typically purchases, were not included in the graphs.

Looking at the trends shown in these figures there is very little evidence of any significant systemic upward trend in vehicle prices over the period from 2005 to present. Over this same time period, CAFE standards for cars have increased by 60%, and those for light trucks by nearly 50%. Only two of the seven market segments studied showed any upward trend in prices: full-sized pickup trucks and large SUVs. These two segments also happen to be two segments where automakers are currently booking massive profits.<sup>23</sup> More data will be required to understand how much of the price increases are the result of increases in production cost vs. expansion of profit margins in these related segments. These two segments are also specifically protected by a 25% tariff which reduces competition and protects profit margins.<sup>24</sup> They have also seen a significant evolution over the years from more utilitarian vehicles to more luxurious family vehicles. More analysis will be needed to understand all the factors driving increases in prices of these two segments, but given the negligible changes in prices in all other segments of the market, including other “light truck” segments, i.e. midsize SUVs and minivans, strong CAFE standards are unlikely to be the major driver.

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<sup>23</sup> Trucks.com, “General Motors and Ford Can Juice Profits by Shedding Models,” June 3, 2020, <https://www.trucks.com/2020/06/03/gm-ford-should-shed-models/>

<sup>24</sup> Detroit Free Press, “Trump's trade war could threaten US pickup production and jobs,” July 13, 2018, <https://www.freep.com/story/money/cars/mark-phelan/2018/07/13/tariffs-trump-auto-industry/781508002/>

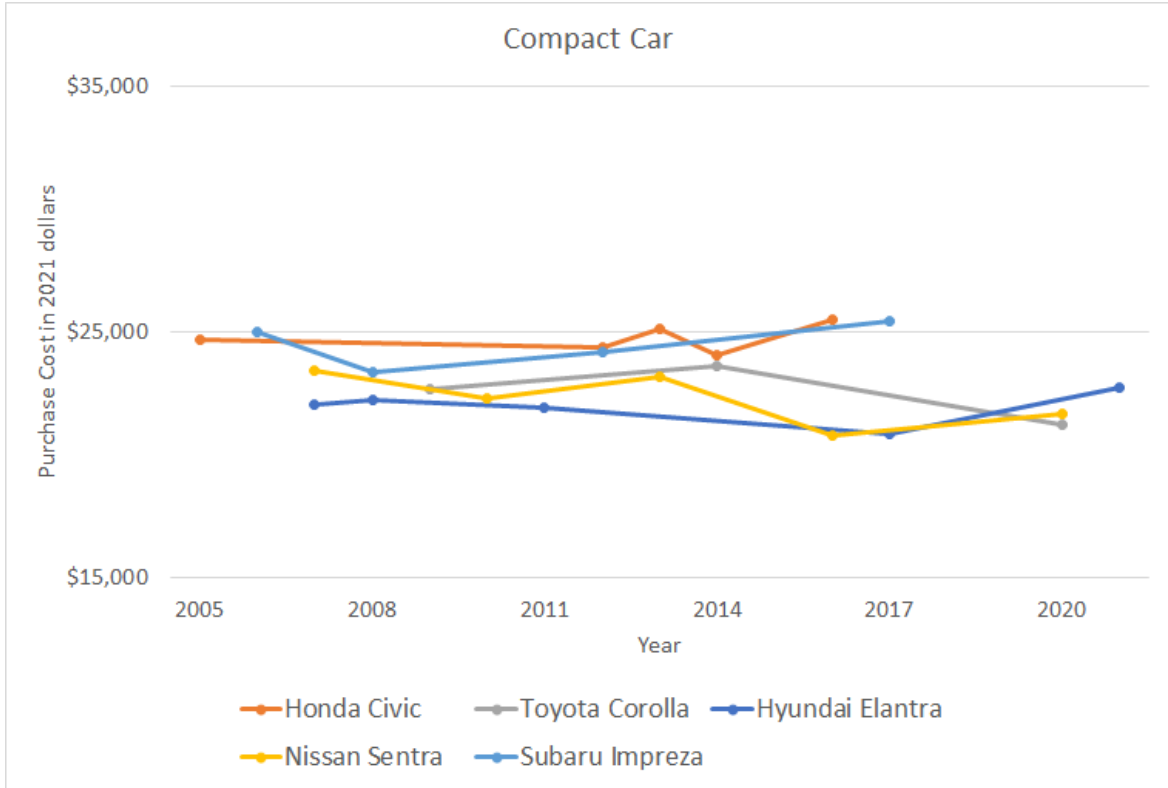


Figure 3.2 - Compact Car Prices Over Time

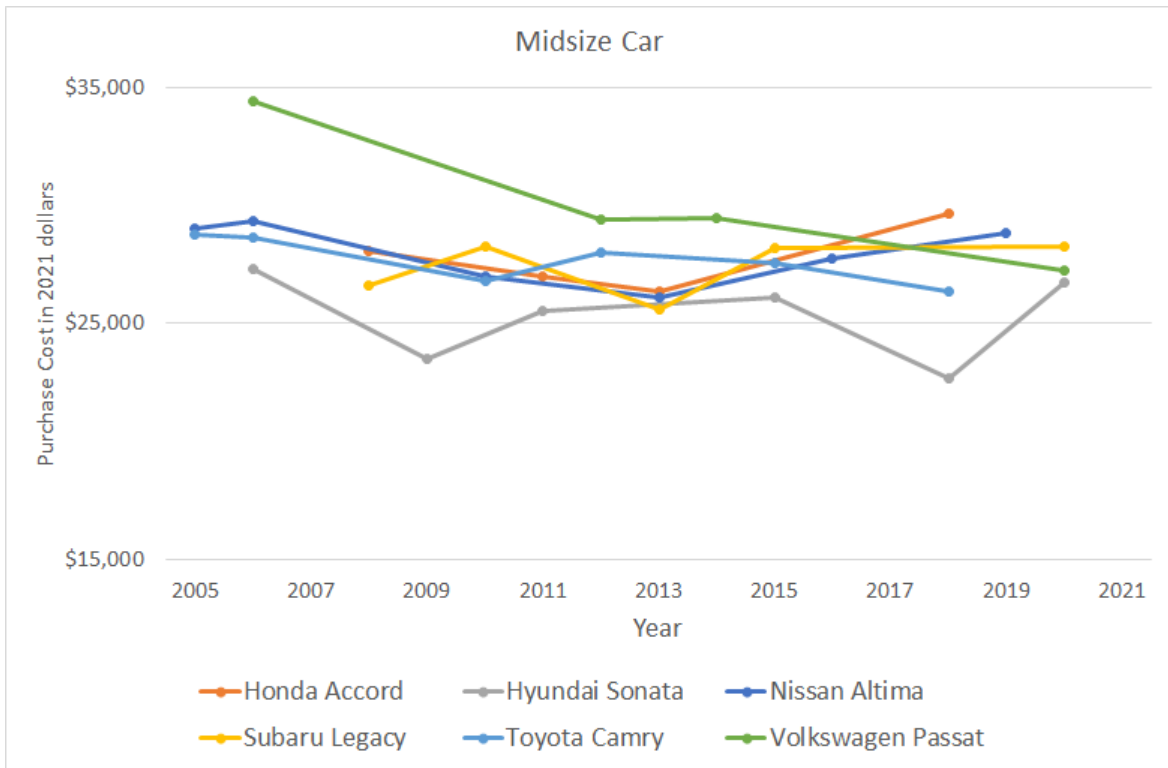
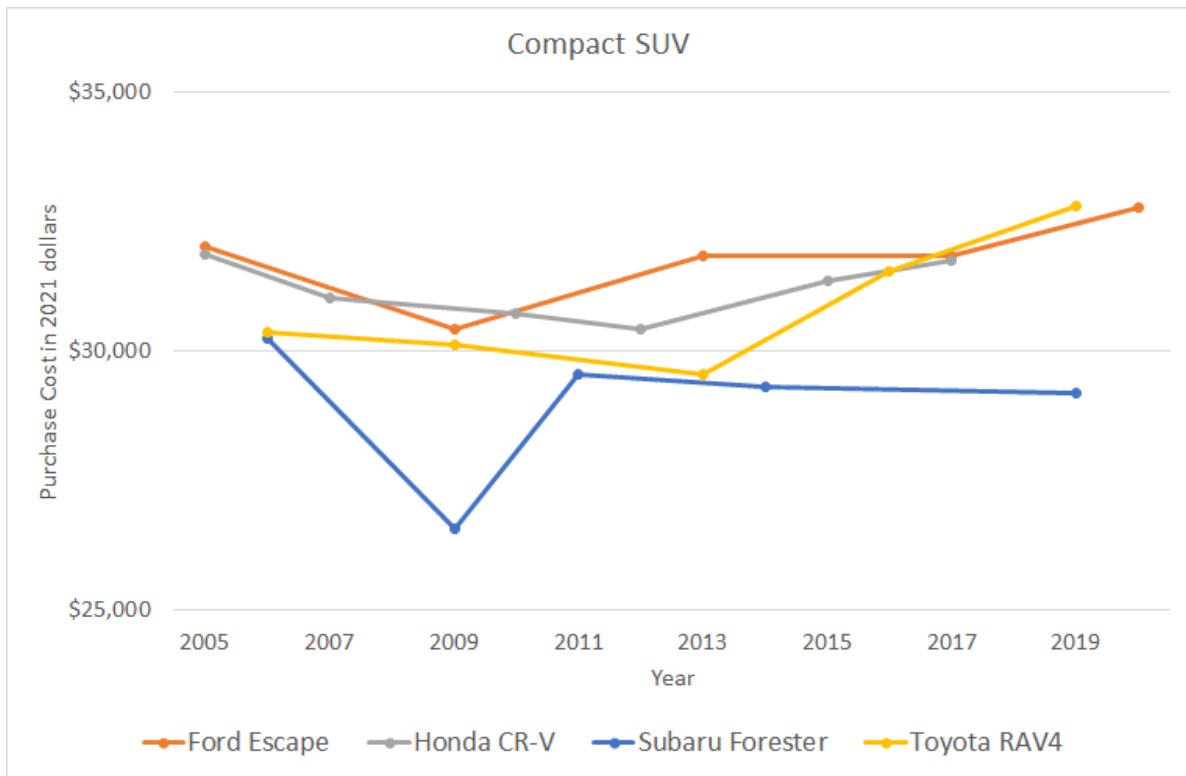
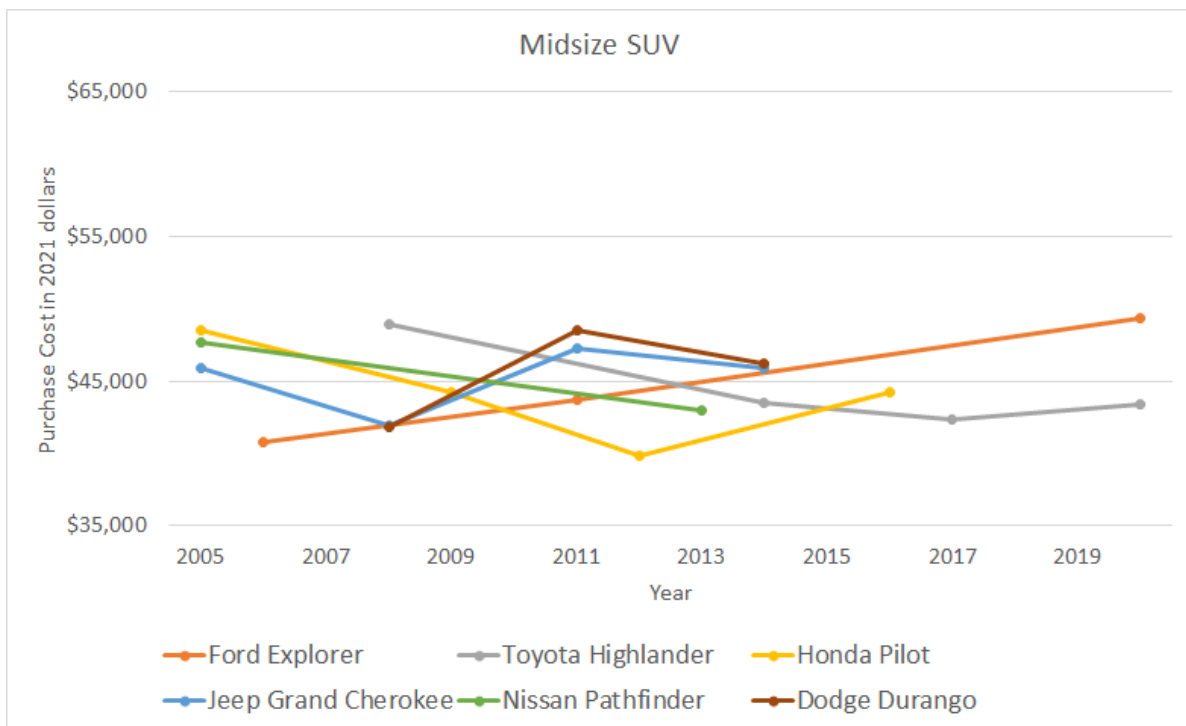


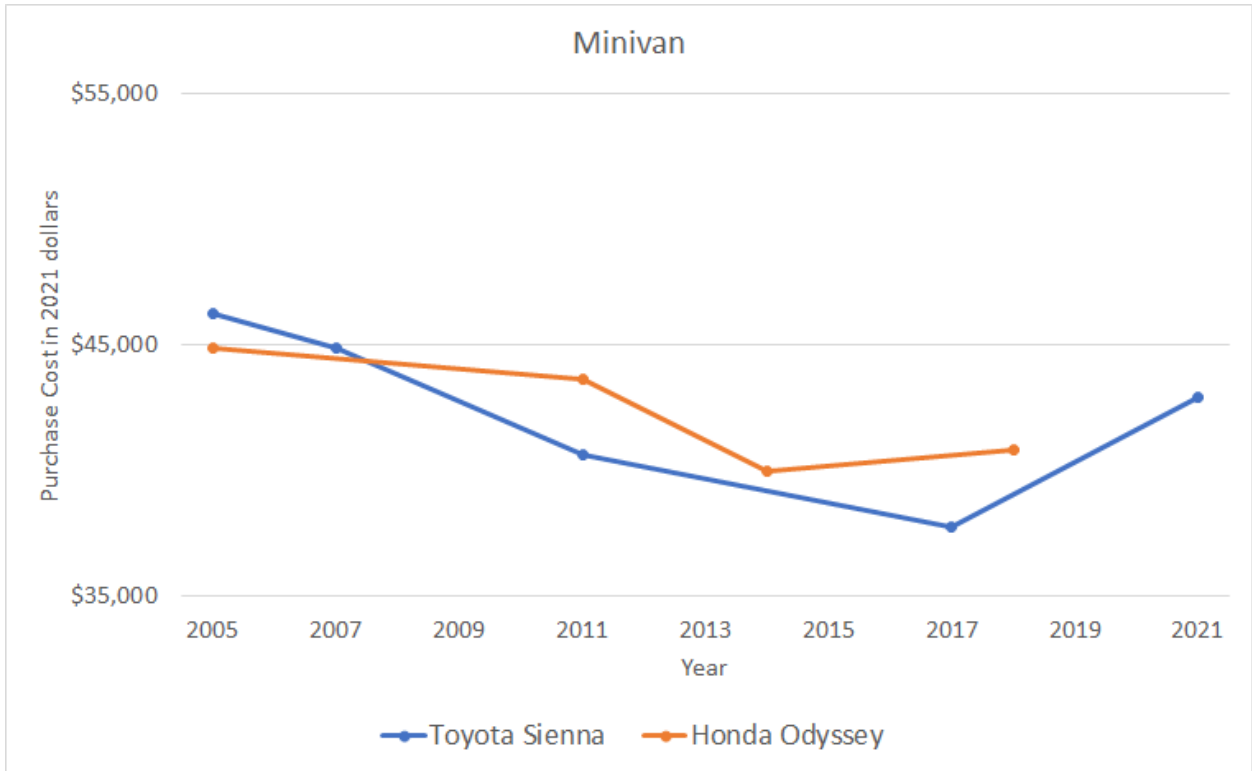
Figure 3.3 - Midsize Car Prices Over Time



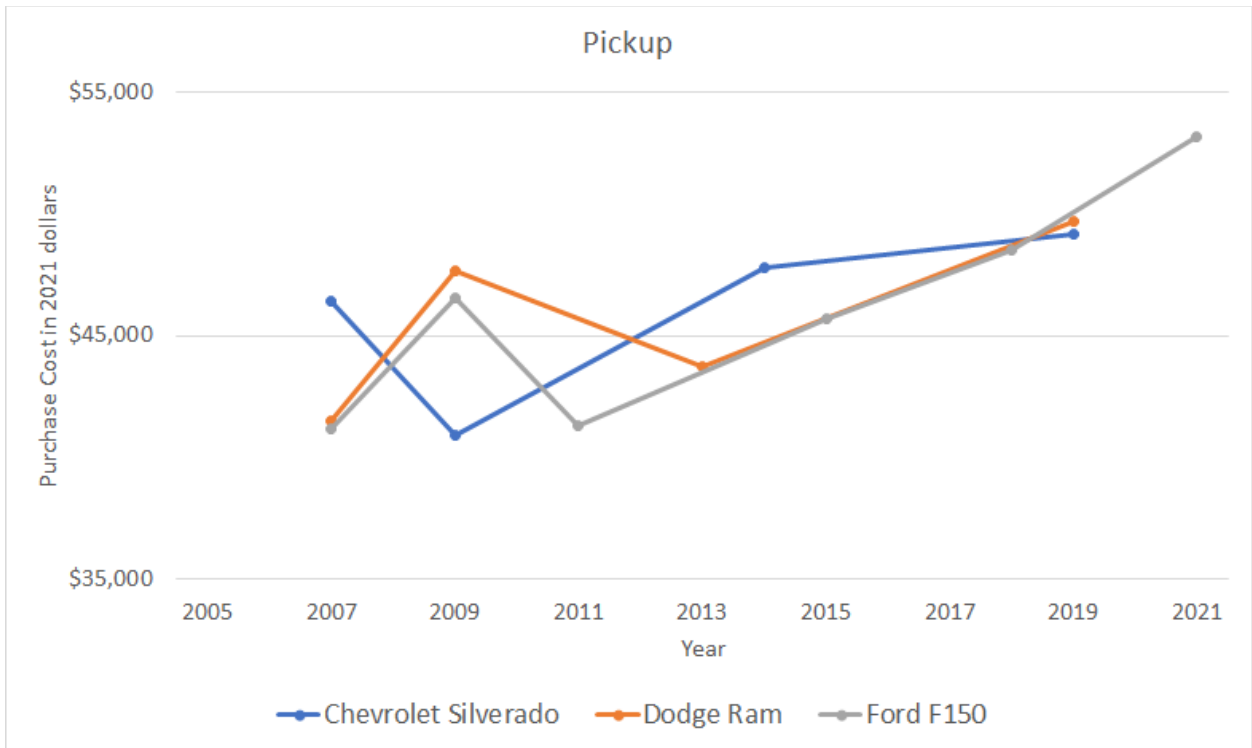
**Figure 3.4 - Compact SUV Prices Over Time**



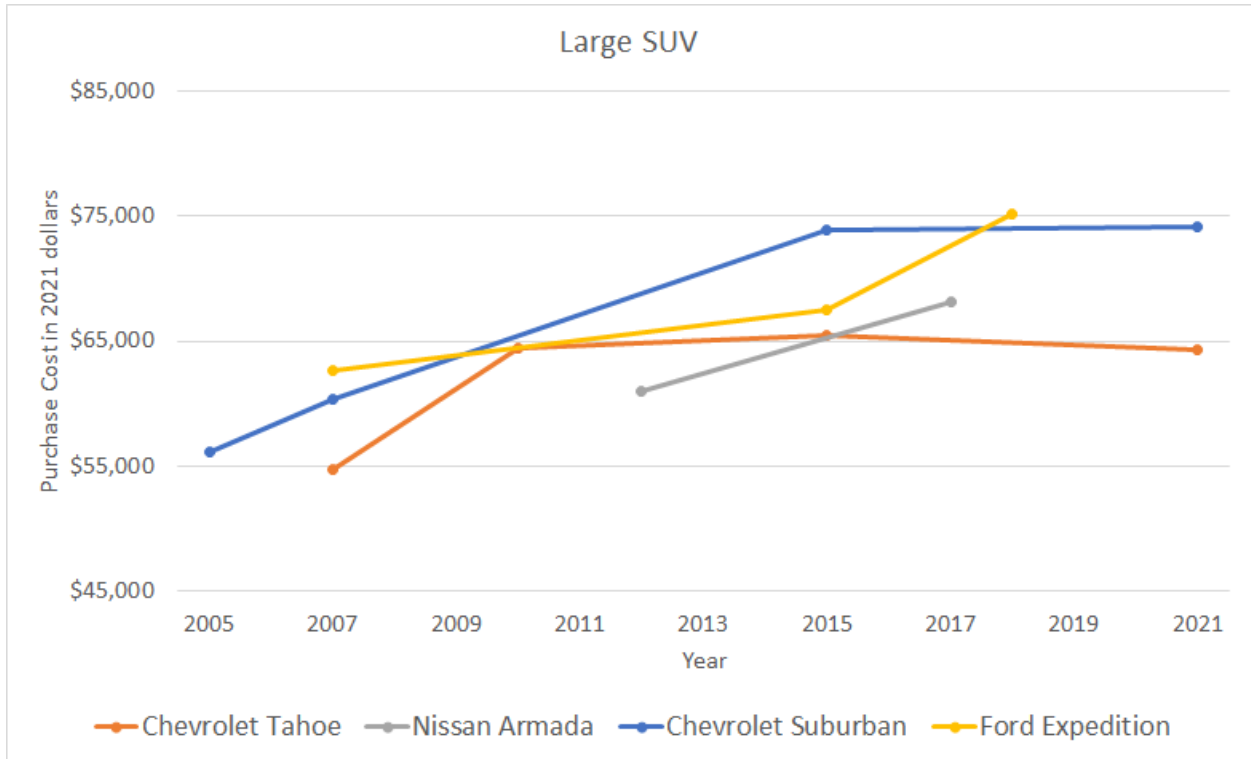
**Figure 3.5 - Midsize SUV Prices Over Time**



**Figure 3.6 - Minivan Prices Over Time**



**Figure 3.7 - Full Size Pickup Prices Over Time**



**Figure 3.8 - Large SUV Prices Over Time**

#### **4. Recommended Improvements to NHTSA’s Preferred Alternative**

Consumer Reports asks NHTSA to strengthen the standards they have proposed. CR estimates that the preferred alternative would restore less than 2/3 of the consumer savings of the original Obama-Biden standards through MY2029. We specifically ask that NHTSA set stringency at the same level as the 2012 Obama-Biden standards in MY2024, and set stringency at the same level as NHTSA’s Alternative 3 in MY2026. Doing so would recover almost all of the lost consumer benefits through MY2029. Further improvements could also be made by limiting credits and flexibilities carried over from the EPA proposal (see attached CR comment on EPA proposal<sup>25</sup> for details).

##### **a. Return to Obama-Biden levels of stringency in MY2024**

NHTSA should return to the stringency of the original 2012 Obama-Biden standards as soon as possible, which is MY2024. Automakers already agreed to this level of stringency, and were planning to achieve it prior to the finalization of the SAFE rule only last year. Between lead time and lower stringency between MY2021 and MY2024, automakers should have no problem returning to their previous plans, if they ever abandoned them in the first place. The ability to bank credits earned over three full model years while standards are weak will provide additional compliance flexibility. This

<sup>25</sup> Attachment #11

approach is also more in line with EPA’s proposal, and will help restore more consumer benefits sooner.

**b. Achieve Alternative 3 levels of stringency in MY2026**

Setting stringency at the level of Alternative 3 in MY2026 will return the US fleet to the trajectory of the 2012 standards. Standards following this trajectory were deemed to be feasible both when the 2012 standards were initially promulgated, and again during the midterm review. Achieving US climate commitments will require strong action, and a more stringent 2026 target will set automakers up for success in achieving President Biden’s longer term targets.<sup>26</sup>

**c. Consumer Reports Modeling of Consumer Savings**

Utilizing CR’s new internal light duty stock model along with technology cost assumptions from the 2016 Draft Technical Assessment Report,<sup>27</sup> CR has estimated the net consumer savings<sup>28</sup> from NHTSA’s alternatives, as well as the proposed changes discussed above relative to the current standards. These results are shown in Table 4.1. Modeling assumptions used for this analysis are consistent with recent past analyses Consumer Reports has released related to light duty vehicle standards.<sup>29</sup>

**Table 4.1 - Consumer Reports Modeling of Consumer Savings**

<b>Scenario</b>	<b>Cumulative Consumer Savings MY21-29</b>
NHTSA Preferred Alternative	\$95B
NHTSA Alternative 3	\$130B
CR Recommended Stringency <sup>30</sup>	\$140B
2012 Obama-Biden Standards	\$150B

<sup>26</sup> Fact Sheet: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks, August 5, 2021  
<https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/>

<sup>27</sup> EPA, CARB, & NHTSA. July 2016. Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025

<sup>28</sup> Net consumer savings includes savings on fuel and maintenance net of increased purchase cost, discounted at 3%

<sup>29</sup> See attachments 2, 3, and 4 for more details on past CR light duty vehicle standards modeling.

<sup>30</sup> Return to 2012 Obama-Biden stringency in 2024 and achieve NHTSA Alt 3 stringency in 2026



## 5. Safety Impacts

Consumer Reports submitted extensive comments on NHTSA's efforts to model safety in the SAFE rule proposal.<sup>31</sup> While Consumer Reports generally supports NHTSA's model development effort around modeling the impact of advanced driver assistance features on new vehicles, the modeling approach used in this proposal still suffers from some important flawed assumptions. NHTSA continues to erroneously attribute safety impacts to mass effects that are not statistically significant. NHTSA incorrectly relies on a sales and scrappage model that greatly underestimates consumers' willingness to pay for improvements in fuel economy.<sup>32</sup> NHTSA also wrongly attributes safety impacts to rebound driving, a voluntary consumer choice, which is inconsistent with current and historical practices at NHTSA, DOT and agencies across the government.

### a. Mass Effects

NHTSA acknowledges that the analysis used to underlie their modeling of mass safety effects results in coefficients are not statistically significant, stating that:

*“None of the estimated effects has 95-percent confidence bounds that exclude zero, and thus are not statistically significant at the 95-percent confidence level. NHTSA has evaluated these results and provided them for the purposes of transparency. Sensitivity analyses have confirmed that the exclusion of these statistically-insignificant results would not affect our policy determination, because the net effects of mass reduction on safety costs are small relative to predominant estimated benefit and cost impacts.”<sup>33</sup>*

Further compounding the uncertainty, NHTSA then multiplies these statistically insignificant coefficients by outputs from a highly uncertain dynamic fleet share model which attempts to make a prediction of changes in the future vehicle sales mix. Even more uncertainty is compounded by model algorithms which attempt to predict which automakers will deploy mass reduction technologies on which vehicles, a challenging task for an algorithm or a human to do accurately. Even if the coefficients were statistically significant, the uncertainty in the outputs from the dynamic fleet share model and the compliance pathways chosen by the CAFE model could tip the direction of the safety model toward either positive or negative with little certainty over which is the more likely outcome. In the end NHTSA's modeling of mass effects multiplies statistically insignificant coefficients by highly uncertain predictions and spits out numbers that are close to zero. While the results of this model are unlikely to materially influence the policy decision, they could be read to establish a precedent that is not in alignment with standard statistical practices. Instead, the data indicate that NHTSA

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<sup>31</sup> See attachment 10 for CR's previous comments on these issues.

<sup>32</sup> See section 6b for more thorough discussion of this topic

<sup>33</sup> Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, NHTSA-2021-0053, Technical Support Document, section 7.1.3

should have concluded that the mass effects on safety were small and statistically indistinguishable from zero and leave it at that.

### **b. Sales and Scrappage Impacts**

Consumer Reports generally supports the approach taken by NHTSA to estimate fatality rates as a function of fleet composition. However, this modeling approach is predicated on a sales and scrappage model that drastically underestimates consumers' willingness to pay (WTP) for fuel economy improvements. Problems with NHTSA's assumptions around consumer WTP are presented in more detail below in section 6b. The sales and scrappage model which combines low consumer willingness to pay with technology costs that appear to be too high<sup>34</sup> leads to modeled results showing a decline in new vehicle sales. However, correcting these assumptions to more reasonable values will flip the sign of the sales model such that stronger standards result in more new vehicle sales and fewer fatalities.

Consumer Reports used its internal stock model to explore the effect of assumptions on consumer willingness to pay on the modeled change in new vehicle sales. Based on a review of the literature presented by NHTSA in section 4.2.1.1 of the technical support document,<sup>35</sup> Consumer Reports finds that a WTP value of 50% of lifetime fuel savings at a 3% discount rate is the minimum value supported by the literature. When using technology costs consistent with the 2016 Draft Technical Assessment Report,<sup>36</sup> CR found that shifting from NHTSA's WTP assumption of 2.5 years of fuel savings to a WTP of 50% of lifetime fuel savings at a 3% discount rate, the sign of the sales effect flipped, resulting in a similar magnitude, positive impact on sales from strong standards. This effect, when fed into NHTSA's safety model, results in a similar reversal of the sign for the safety impact from sales and scrappage.<sup>37</sup>

### **c. Rebound Driving**

Consumer Reports has highlighted the problems of including rebound driving as part of safety evaluations, and why a consumer's choice to drive more or less should not be

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<sup>34</sup> See sections 4c and 6.

<sup>35</sup> Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, NHTSA-2021-0053, Technical Support Document, Section 4.2.1.1

<sup>36</sup> EPA, CARB, &NHTSA. July 2016. Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025

<sup>37</sup> See section 5d for detailed results

associated with fuel economy regulations.<sup>38</sup> NHTSA appears to agree, stating the following:

*“In contrast, increased driving associated with the rebound effect is a consumer choice that reveals the benefit of additional travel. Consumers who choose to drive more have apparently concluded that the utility of additional driving exceeds the additional costs for doing so, including the crash risk that they perceive additional driving involves.”<sup>39</sup>*

However, despite this statement, NHTSA still attributes 10% of the fatality risks of rebound driving to the rule. While NHTSA justifies this assumption based on some discussion of how drivers may internalize safety risks to themselves and others when they get behind the wheel, this does not address the fundamental issue that rebound driving is still a personal consumer choice, and that choice is not directly driven by fuel economy standards.

At its core, rebound driving is about consumers having more money in their pockets. When consumers have more money in their pockets they’re likely to spend most of it. When they do, at least some consumers will spend at least some of that money in ways that involve more driving. It could be to drive to the movies, or order pizza delivery, or to do some online shopping. Given that traffic risk is a function of total driving, and any aggregate increase in consumer spending is likely to come with at least some increase in total VMT, the arguments used by NHTSA could be used to imply that any policy which puts money in consumers pockets will have negative traffic safety impacts.

Further, NHTSA and DOT do not apply rebound driving safety issues to any other policy that would also affect consumers’ driving choice, from increasing vehicle safety to building new roads. It therefore appears arbitrary and capricious to include the issue here, but not in other cases, and should be stricken, consistent with the Administrative Procedures Act.

#### **d. Consumer Reports Modeling of Sales and Safety Impacts**

Consumer Reports has implemented a safety model within our internal stock model that attempts to replicate NHTSA’s modeling approach for estimating fatality rates as a function of sales and scrappage effects. CR’s model does not include mass effects because, as discussed above, they are not statistically significant. We also do not include safety impacts from rebound effects, because they are an independent consumer choice. Consumer Reports used internal combustion engine technology costs consistent with the 2016 Draft Technical Assessment Report,<sup>40</sup> along with internal

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<sup>38</sup> See attachment 10 for more detailed arguments on this point.

<sup>39</sup> Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, NHTSA-2021-0053, NPRM, p.49737

<sup>40</sup> EPA, CARB, & NHTSA. July 2016. Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025

projections of future battery electric vehicle and plug-in hybrid electric vehicle costs consistent with total cost of ownership work published by Consumer Reports<sup>41</sup> and the International Council on Clean Transportation.<sup>42</sup> These cost assumptions lead to average compliance costs estimates<sup>43</sup> that are roughly half of what NHTSA estimates for these scenarios.

For analyzing the proposal we looked at NHTSA’s preferred alternative (Alternative 2) and their Alternative 3. CR also explored NHTSA’s WTP assumption compared to a separate assumption for WTP of 50% of the lifetime fuel savings discounted at 3%, that is more consistent with the literature, as noted above. Results of the safety analysis are shown in Table 5.1. These results show that the net effect of using more appropriate technology costs, and more appropriate assumptions for consumer willingness to pay for improvements in fuel efficiency, result in a change in the sign of the modeled safety impact. This indicates that strong standards are actually likely to improve safety outcomes. However, relative to overall traffic fatalities, the effects of the standard are quite small, even if they are positive.

**Table 5.1 - Estimated Sales and Safety Impacts of the Proposed Rule**

<b>Alternative</b>	<b>WTP assumption</b>	<b>CR Change in Sales</b>	<b>CR Change in Fatalities</b>	<b>NHTSA Changes in Fatalities<sup>44</sup></b>
NHTSA Preferred	2.5 years	-310,000	+340	+1,120
NHTSA Preferred	50% at 3% discount	+500,000	-560	
NHTSA Alt 3	2.5 years	-480,000	+520	+1,680
NHTSA Alt 3	50% at 3% discount	+640,000	-710	

<sup>41</sup> Consumer Reports, “Electric Vehicle Ownership Costs: Today’s Electric Vehicles Offer Big Savings for Consumers” October 2021  
<https://advocacy.consumerreports.org/wp-content/uploads/2020/10/EV-Ownership-Cost-Final-Report-1.pdf>

<sup>42</sup>Lutsey, N. and M. Nicholas, “ Update on electric vehicle costs in the United States through 2030,” ICCT, April 2019. [https://theicct.org/sites/default/files/publications/EV\\_cost\\_2020\\_2030\\_20190401.pdf](https://theicct.org/sites/default/files/publications/EV_cost_2020_2030_20190401.pdf)

<sup>43</sup> Relative to the SAFE rule baseline

<sup>44</sup> This only includes changes for sales and scrappage effects, data from Table III-42, Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, NHTSA-2021-0053, NPRM, p49742

## 6. Model Shortcomings

Consumer Reports recognizes the limited time NHTSA has had to develop the analysis for this proposal, and that NHTSA has consequently relied heavily on the models and assumptions developed to support the SAFE rule. However, the use of some of these models and assumptions results in NHTSA significantly undercounting the consumer benefits from this proposal as shown in section 4c above. Given the short comment period and the overlap between the NHTSA and EPA comment periods, Consumer Reports did not have time to investigate all potential modeling issues. The following sections highlight only some of the potential issues, and provide recommendations on how to improve the analysis to support strong standards.

### a. Overcompliance in the Baseline

NHTSA's modeling shows significant overcompliance in the baseline scenario. This overcompliance reduces the benefits that would otherwise accrue to the alternatives and thus reduces the modeled net benefits. CR did not have time to investigate all potential causes of this overcompliance, but one likely culprit is the application of all technology with a 2.5 year payback period in the baseline. This assumption is discussed in more detail in the next subsection.

### b. Consumer Valuation of Fuel Economy

Consumer Reports and others have contributed significant input into both the previous regulatory record, and legal record around past rulemakings, regarding the treatment of consumer valuation of fuel economy. We continue to stand behind the argument that there is a market failure in the automotive market, and that automakers will not broadly deploy cost-effective fuel savings technologies that consumers want unless driven to do so by regulations.

Consumer Reports has decades of experience doing survey work to understand what consumers want, and we assert that this market failure rests firmly in the hands of automakers.<sup>45</sup> Our data show that consumers do want improved fuel economy, and often are willing to pay for it.<sup>46</sup> While we agree with NHTSA's statement that there isn't a clear consensus in the literature of consumer valuation of fuel economy, the literature

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<sup>45</sup> see section 2 for more detailed data and analysis to support this claim including survey results and analysis of consumer interest and willingness to pay for more efficient vehicles and analysis of automaker behavior.

<sup>46</sup> Christine Kormos & Reuven Sussman, *Auto Buyers' Valuation of Fuel Economy: A Randomized Stated Choice Experiment* (June 12, 2018) <https://advocacy.consumerreports.org/wp-content/uploads/2018/06/FINAL-Kormos-and-Sussman-2018-%e2%80%93-Auto-buyers-valuation-of-fuel-economy.pdf>

review in section 4.2.1.1 shows that a value between 50% and 100% of the discounted lifetime fuel savings is more justifiable than the 2.5 years assumed by NHTSA.<sup>47</sup>

However, this valuation is only on the consumer side. While consumers do indeed strongly value fuel economy, there is no evidence that automakers recognize this value and sufficiently incorporate it into their vehicle design plans, when not driven to do so by regulations. Consumers can't choose to buy more efficient vehicles if automakers do not choose to manufacture them or if manufacturers create unreasonable and unnecessary tradeoffs to get that efficiency. Consumers generally select the general class of vehicle they want and then choose among the available options. In sampling [fueleconomy.gov](https://www.fueleconomy.gov), CR found that in most vehicle classes, beyond a few electric and hybrid options with higher fuel economy, and a few higher performance options with lower fuel economy, most vehicles fall within a fairly narrow range, providing little in the way of true choice as far as fuel economy goes. However, strong standards drive those average fuel economy values gradually higher in all vehicle classes over time, benefiting all consumers. As shown in section 3, the gradual nature of the technology improvements may even be such that most consumers never actually detect any real change in the price of vehicles after accounting for inflation. Thus, for many consumers, the net effect of the standards is that they experience the benefits of efficiency improvements with no noticeable change in vehicle prices.

Consumer Reports recommends that NHTSA appropriately reflect the current market failure in the automotive market in their modeling. Although there is uncertainty in the exact numbers with respect to what, if any, technology automakers will deploy in the absence of standards, and the exact amount of fuel savings consumers value, history, the record and the literature clearly show that these values should be very different. NHTSA should attempt to model automaker behavior based upon their past historical actions with respect to the application of technology within the baseline. NHTSA should also update their consumer valuation of fuel economy assumptions in their sales model to more appropriately match the literature on consumer willingness to pay. Based upon the literature review undertaken by NHTSA, a value of at least 50% at a 3% discount rate is justifiable, while a value as high as 100% may be appropriate.

### **c. Modeling of Off-Cycle Technologies**

NHTSA projects the application of off-cycle technologies through MY2026 for each automaker up to 15 g/mi, regardless of the cost effectiveness of these technologies relative to other compliance options. NHTSA also uses an average cost of \$76 per g/mi improvement in emissions which seems very high.<sup>48</sup> While CR did not have time to do specific analysis of these costs relative to overall compliance costs for the NHTSA program, CR found that under the EPA proposal the use of similar costs for off-cycle

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<sup>47</sup> Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, NHTSA-2021-0053, Technical Support Document, Section 4.2.1.1

<sup>48</sup> Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, NHTSA-2021-0053, Technical Support Document, Table 3-139

technologies resulted in compliance costs for those technologies that were more than three times the average compliance cost of all technology applied to achieve the preferred alternative.<sup>49</sup> This is contrary to NHTSA's statement that "off-cycle technologies are generally more cost-effective than other technologies."<sup>50</sup>

The current assumptions embedded in the model imply that automakers will eschew cheaper technologies to apply more expensive ones, which is not a profit maximizing approach. For automakers attempting to maximize profits, one of the following two statements about off-cycle technologies must be true. Either NHTSA's cost estimates for off-cycle technologies are correct and automakers will choose other technology pathways that avoid expensive off-cycle technologies, or NHTSA is overestimating the true cost to automakers of deploying off-cycle technologies and automakers will deploy them because they are cost effective.

Given the fact that many automakers have deployed a fair amount of off-cycle technologies, the most likely scenario is that NHTSA is overstating the cost of these technologies. Note that the costs associated with off-cycle technologies are approximately eight times the costs of A/C leakage and twenty times the costs of A/C efficiency technologies<sup>51</sup> indicating that it would be completely irrational for any automaker to deploy any off-cycle technologies before maxing out both A/C technology pathways.

#### **d. Use of AEO2021 energy prices**

While the use of energy price data from the DOE's Energy Information Agency's (EIA) Annual Energy Outlook (AEO) in cost-benefit analysis is standard practice, 2020 was an extreme outlier given the COVID-19 pandemic. Because of this, EIA's AEO2021 is heavily influenced by this outlier event which shut down the entire global economy and crashed energy prices. However, energy prices have rebounded sharply as demand has recovered quicker than supply. The result is that current gasoline prices are now much much higher than the AEO projections, and in fact AEO2021 projects that gasoline prices won't even reach their current levels of \$3.19 a gallon<sup>52</sup> until 2044. One possible solution is that NHTSA could instead use energy prices from EIA's AEO2020 which was performed prior to the pandemic. Although the prices projected in AEO2020 are still well below current gasoline prices, they are at least closer. At a minimum NHTSA should acknowledge that the use of these energy price projections developed in the middle of a pandemic causes them to likely underestimate future consumer savings from this rule.

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<sup>49</sup> See section 5b of attached comment on EPA proposal for more detailed analysis of off-cycle technology costs.

<sup>50</sup> Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, NHTSA-2021-0053, Technical Support Document, Section 3.8.1

<sup>51</sup> Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, NHTSA-2021-0053, Technical Support Document, Table 3-139

<sup>52</sup> Current national average gasoline price in the US as of 9/21/21 according to AAA  
<https://gasprices.aaa.com/>

## 7. Conclusions

NHTSA's proposal is a good start, but is not *the maximum feasible*, and NHTSA can and should go further to protect consumers and reduce emissions. Consumer Reports recommends that NHTSA adopt stringency levels that return to the stringency levels of the 2012 Obama Biden standards in MY2024 and continue at least on the trajectory of those standards through MY2026. Consumer Reports concludes that these improvements are justifiable and necessary to protect consumers and the climate.

Respectfully Submitted,

Christopher Harto  
Senior Policy Analyst, Consumer Reports