February 14, 2003

Dr. Jeffrey Runge
Administrator
National Highway Traffic Safety Administration (NHTSA)
U.S. Department of Transportation
400 Seventh Street, SW
Washington, DC 20590

Re: 49 CFR Parts 533: Docket No. NHTSA-2002-11419; Notice 2: "Light Truck Average Fuel Economy Standards Model Years 2005-07"

Dear Dr. Runge,

Public Citizen is pleased to offer these comments to the National Highway Traffic Safety Administration's (NHTSA's) rulemaking on new Corporate Average Fuel Economy (CAFE) standards for light trucks. Although we are pleased that there is, at long last, a new rule regarding light truck fuel economy, we are troubled by the Administration's very weak proposal. The minimal increases proposed by NHTSA of 21.0 miles per gallon (mpg) in model year (MY) 2005, 21.6 mpg in MY 2006, and 22.2 mpg in MY 2007 – are far from what is possible, or even sufficient, under the statute.

The United States' lessened dependency on the Organization of the Petroleum Exporting Countries (OPEC) in the 1980s was accomplished in part by fuel consumption decreases stemming from the first CAFE standards. NHTSA should view its job as protecting consumers, enhancing safety, preserving the environment, and saving domestic automakers from a looming, self-inflicted disaster at the pump. Industry is notoriously short-term in its thinking, and shortsighted in light of consumer demand. Congress acknowledged this, enacting a mandate over industry's protests, that NHTSA act to conserve fuel and reduce our dependence on foreign oil. Now is the time for NHTSA to set standards to assure that manufacturers create a more fuel efficient light truck fleet, protect public safety and enhance the soundness of the economy.

I. NHTSA's Proposal Enables Industry Backsliding, Ignoring the Statute and Sound Public Policy.

The agency's proposal is shockingly inadequate. First, it fails to set the light truck standard at the maximum feasible level, as required by law. Second, the agency's

proposal of 21 mpg by 2005 barely moves the ball forward at all, as the average year 2000 fuel economy for the so-called "Big Three" domestic manufacturers (General Motors, Daimler/Chrysler and Ford) already was 21 mpg. Third, NHTSA completely underestimates industry capability by relying on manufacturer representations that light truck fuel economy will decrease over the next few years. Fourth, at a minimum, the agency should have proposed a range of possible standard increases (rather than a single number), giving the public the opportunity to comment on what companies could in fact achieve.

It appears that the unfortunate politics of last fall's CAFE legislative battle have carried over to the current NHTSA rulemaking. An early "leaked" release of NHTSA's proposal was used by Administration supporters to give the false impression that the Administration was being hard on Detroit. Yet this agency proposal will not be hard on auto manufacturers. The current proposal will yield an estimated savings of a mere 5.7 billion gallons by 2010 – little more than the savings that would have come from the industry-backed bill sponsored by Representative Tauzin (LA) – a longtime friend of the oil and gas industry.[1]

Indeed, the current proposal is close to an industry dream-come-true. International manufacturers and *Automotive News* agree that the proposed standards will be easily met and that further increases are appropriate.[2] The statute requires NHTSA to set the maximum feasible standard.[3] NHTSA must raise the standard above its current low-ball estimates in order to give manufacturers the incentive to employ potential technologies and meaningfully raise the fuel economy of their fleets.

A. Fuel economy standards for "light trucks" were originally intended to apply to work vehicles, not passenger or family vehicles.

When the original fuel economy standards were created in the 1970s, light trucks were primarily used as work vehicles. Few imagined that these vehicles would grow to be widely employed as passenger cars only three decades later. During the legislative debate that established the first fuel economy standards, even the advocacy groups that were most supportive of meaningful fuel economy standards for passenger vehicles generally left this class of vehicle alone because they served "a legitimate *business* interest."[4]

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[1] Tauzin received more than $113,000 in campaign contributions from the oil and gas industry during the 2002 election cycle, making him the second highest House recipient of contributions from these industries. His support has also increasingly risen over recent years: $48,600 (19th in House) in 1992, $68,900 (12th in House) in 1994, $78,348 (11th in House) in 1996, $73,824 (10th in House) in 1998, and $86,134 (4th in House) in 2000. *See* Center for Responsive Politics website: www.opensecrets.org visited January 13, 2003.

[2] *See* "Industry Must Come Clean and Cooperate on CAFE," *Automotive News*. February 4, 2002; Comments by Association of International Automobile Manufacturers,. Docket Number NHTSA-2002-11419-13.

[3] *See* 49 USC § 329.

[4] *See* Bradsher, Keith, *High and Mighty* 2002, at 26 (emphasis added).

At the time, the Environmental Protection Agency (EPA) was the only government department measuring fuel economy. In designing the new rules, the Department of Transportation (DOT) used EPA data on fuel economy and adopted much of its other language as well, including a definition of light trucks as non-passenger automobiles. Manufacturers also successfully lobbied for DOT's inclusion of utility vehicles in this category.[5]

Little did policymakers know that three decades later light trucks would be a common vehicle of choice for the transport of passengers. Light truck registrations have increased 278 percent since passage of the first light truck fuel economy standards.[6] And this explosion has proven deadly for passengers of these vehicles. During the same time period, deaths of light truck occupants increased 141 percent, compared with a 22 percent decrease in passenger car occupant deaths.[7] Light trucks have been transformed from a work-place necessity to a primary means of passenger transport.

The National Academy of Sciences (NAS) report on fuel economy, cited often in NHTSA's rulemaking, concludes that the car/truck distinction has been "stretched well beyond the original purpose."[8] Public Citizen agrees. NHTSA should update its use of the distinction between passenger and service vehicles by formulating a new regulatory definition that reflects the new reality on the nation's roads, and should set fuel economy standards for passenger-toting SUVs, vans, and pickups at levels similar to those that apply to other passenger vehicles.

In addition, many light trucks now exceed the current regulatory weight ceiling of 8,500 lbs. (gross vehicle weight), yet the rule as currently written totally exempts these vehicles from any obligation to comply with fuel economy standards. Manufacturers need not even report miles-per-gallon or sales total data for these vehicles. To address the new class of "super-sized" luxury vehicles which has mushroomed since the initial fuel economy regulations, NHTSA should seize the opportunity presented by this rulemaking to re-write the definition of light trucks to include these behemoths.

It is indefensible that the most wasteful vehicles on the highway escape any regulatory control, and the existence of this loophole has encouraged manufacturers to add gross vehicle weight to vehicles at the margins of the regulation, with disastrous collateral consequences for the overall compatibility of the vehicle fleet.[9] NHTSA must require that manufacturers, at a minimum, report the sales and fuel economy of these

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[5] *Id.* at 27.

[6] *See* Shelton, Terry S.T. NHTSA Research Note: "Revised Vehicle Miles of Travel for Passenger Cars and Light Trucks, 1975 to 1993; "Registration Data for 1975-2001: Data Source" FHWA and Polk" (provided by a National Center for Statistics Analysis researcher to Public Citizen on Feb. 6, 2003).

[7] *See* NHTSA *2001 Motor Vehicle Crash Data from FARS and GES*, at 18.

[8] *See* "Effectiveness and Impact of Corporate Average Fuel Economy Standards," National Research Council, National Academy of Sciences, 2002, at 111.

[9] For example, the 4-wheel drive gross vehicle weight rating of the Chevrolet Suburban SUV (3/4 Ton) is 8,600 lbs.; as is the Hummer H2's. Ford's 2-wheel-drive Excursion SUV is also just over-the-line, at 8,600 lbs. gross vehicle weight rating.

vehicles, and should take steps to re-write the definition of light truck to encompass these worst highway offenders.

B. NHTSA's proposal backslides by accommodating domestic manufacturers' low projections for future fuel economy levels.

In the late 1990s, a renewed Congressional threat of increased fuel economy and a lifting of the appropriations freeze that had tanked NHTSA's fuel economy program scared manufacturers into offering minimal fuel economy gains, in an attempt to stave off legislative action. After a long decade of inaction, in the fall of 2000, the Big Three manufacturers each vowed to drastically increase their SUV fuel economy levels. The trend started with Ford which, in July of 2000, promised to improve the fuel economy of its SUV fleet by 25 percent over five years. General Motors and Daimler-Chrysler quickly echoed this pledge with promises not to be outdone by Ford.

As the threat of Congressional action receded following a relentless onslaught on the energy bill by automakers and the Union of Auto Workers (UAW) during the 2002 Congressional session, which effectively killed the bill, the Big Three recanted their promises. In recent comments to the agency's docket on fuel economy, each of these manufacturers "clarify" these commitments by backing down from their 2000 promises. Ford, for example, explained that the promise to raise SUV fuel economy 25 percent by 2005 was based on a still-unrealized plan that includes the introduction of a new "magical mystery" SUV and other, now-delayed fuel economy improvements across their fleet.[10] Regardless of their dubious sincerity at the time of their pledge, it is clear that automakers no longer intend to keep their word. This turn of events makes NHTSA's "Job 1" to set maximum feasible fuel economy standards on which the public can rely.

Ford also explained in its comments to the agency's docket that its public estimates about future fuel economy achievements are usually just puffery. Ford suggested that its estimates are routinely far above reality due to the company's longstanding practice of drastically overestimating improvements, and asked NHTSA to accommodate this systemic misrepresentation by "degrading" its new standard:

> At Ford, we have found that our initial estimates of fuel economy improvements are typically 40-60% higher than the improvements that ultimately result on the production vehicles. To account for these risks, Ford degrades the CAFE projections for future model years (2005 and later) by [CONFIDENTIAL] for CAFE planning purposes. *The agency should assume at least the same level of loss from anticipated improvements when basing future light truck standards on analytical projections of fuel economy benefits*.[11]

[10] *See* Ford's Comments to 2002-NTHSA-11419 Docket 5-8-2002, at 2.
[11] *Id.* at 6. (Emphasis added.)

In the same document, Ford explained that the further expansion of the light truck market "could erode" even this extremely conservative estimate even further.[12]

No press conferences or news articles accompanied Ford's "clarification." Consumers are surely unaware that they must reduce Ford's announced estimates by 40 to 60 percent for an accurate picture of the company's progress. In proposing that its "degraded" estimates be made the basis for a standard, however, Ford apparently wants to have it both ways — reaping the public relations benefits of its claimed beneficence before policymakers and consumers, yet low-balling its estimates to NHTSA to avoid being held to its promise. Cross-town hypocrisy is alive and well.

Sadly, Ford's backpedaling provided political cover for the other domestic manufacturers to default on their promises as well. General Motors backed off of its 2000 promise by explaining that its 2000 public announcement employed Ford as a moving target, claiming that it had referred only to "[our] leadership in light truck fuel economy and [our] intent to remain the leader over the next five years."[13] DaimlerChrysler, similarly, stated that its commitment was only to match or exceed the promises of the other full-line manufacturers.[14]

Most amazingly of all, NHTSA treats Ford's deception seriously, using this Janus-faced, "degraded" version of Ford's CAFE estimate as the basis for its potential CAFE achievements for 2005-07. As NHTSA itself states, the numbers developed by NHTSA to estimate the manufacturers' maximum feasible fuel economy standard for model years 2000-07 are based on an analysis of "the manufacturers' current projections and underlying product plans," and consideration of "what, if any, additional actions the manufacturers could take to improve their fuel economy."[15]

Due to auto industry-authored riders on appropriations bills throughout the mid-1990s, which banned funds for work on fuel economy standards, NHTSA's budget and staff support for new rules is totally inadequate. The current, weak proposal is an excellent demonstration that the industry was effective in undermining this important regulatory program, to the detriment of the environment, vehicle safety and consumers' pockets. Their efforts have clearly impeded NHTSA's ability to conduct a reasonably thorough analysis regarding the industry's estimates.

In contrast, during the establishment of the first fuel economy standards in the late 1970s, the agency was able to conduct extensive research into the manufacturer's potential capabilities, basing much of its decisions on subpoenaed data from manufacturing plants across the country. For this reason, Public Citizen believes that until the agency is more adequately funded, the manufacturers' estimates are being given far more weight than they should be. The agency must work to more completely staff

[12] *Id.* at 2.
[13] *See* 49 CFR Parts 533: Docket No. NHTSA-2002-11419; Notice 2: "Light Truck Average Fuel Economy Standards Model Years 2005-07," FR 77015 at 77018.
[14] *Id.* at 77018.
[15] *Id.* at 77017.

this issue and must conduct its own evaluation of the validity and accuracy of these projections, rather than rely upon comments submitted by self-interested industry. It could easily do this by conducting a much fuller investigation, subpoenaing the data it needs, and by hiring contractors to assist in the analysis. The agency should do this before making a final rulemaking decision.

While the industry's overweening influence is clear from the agency's low-ball proposal, it is difficult to assess from any of the public documents provided by NHTSA the real extent to which the agency simply adopted industry's position. The data used by NHTSA to assess manufacturers' potential "maximum feasible" fuel economy remains secret, unavailable for public perusal or critique. Much of the information presented to NHTSA, yet kept confidential, does not refer to particular make/model specifications, but instead details general estimates of costs. Why, then, is this information being kept confidential? The public deserves an answer.

General estimates of the improvements flowing from particular technologies and the potential for each manufacturer to make use of these technologies is not proprietary, and was the subject of a public report published by the NAS just last year. Given the heavy industry influence upon that report, in terms of both the panel's staffing and the unprecedented revision of the NAS results following a secret meeting between the NAS and General Motors, it is inexplicable that NHTSA would entertain manufacturer numbers substantially lower than those contained in the detailed NAS analysis.[16] Further, it is unconscionable that NHTSA would undercut the NAS reports conclusions and fact-finding using data kept secret from the public.

Looking at the agency's estimates for the light truck fuel economy of Ford, General Motors, and Daimler/Chrysler, the effect of the companies' calculated backpedaling is obvious. As is apparent from the table below, the agency's estimates show that General Motors, Daimler/Chrysler and Ford will all have averages in 2005 that are well below their 2000 light truck fuel economy levels. General Motors, in fact, is not estimated to reach its 2000 level even by 2007 – a full three years after the agency's proposed standards will go into effect. Predicting a poor performance in the future allows every company to set an extremely low bar, under the false auspices of setting a meaningful standard sometime in the future. It is shameful that NHTSA is permitting this perversion of the rulemaking process.

[16] Despite a statutory requirement that consumer representatives be included on the NAS panel, the panel was constituted without such representation and with substantial representation by automakers, over the protests of Public Citizen and other groups.

Table 1: Light Truck Fuel Economy Standards, Manufacturer Averages, and NHTSA Estimates for 2001 and 2005-2007[17]

		2000	2005	2006	2007
NHTSA	Agency's 2002 proposed standards	**20.7 (unchanged between 1996-2004)**	**21.0**	**21.6**	**22.2**
	MPG increase from 2000 standard	**--**	**0.3**	**0.9**	**1.5**
General Motors	Light truck fuel economy level	21.0	*18.7*	*18.8 to 20.1*	*19.1 to 20.8*
	MPG increase/decrease from 2000	--	-2.3	-0.9 to -2.2	-1.9 to -0.2
Daimler/ Chrysler	Light truck fuel economy level	21.4	*21.3*	*21.6*	*22.2*
	MPG increase/decrease from 2000	--	-0.1	0.2	0.8
Ford	Fuel economy level	21.0	*20.9*	*21.6*	*22.0*
	MPG increase/decrease from 2000	--	-0.1	0.6	1.0
	MPG Change from 2000 if Ford reaches its 2000 pledge		1.8		

* Italicized figures represent NHTSA's estimates based on manufacturers' projections

If NHTSA were to hold Ford and the other big domestic manufacturers to their 2000 commitments, the agency's estimates, and likely its proposed standard, would be dramatically higher. As shown in the table above, Ford's 2000 promise to improve the fuel economy of its SUVs would have raised its entire light truck fleet 1.8 mpg above its 2000 level by 2005.[18] Instead of being compelled to improve its fuel economy to this level, the agency's estimate holds Ford to a 0.1 mpg *decrease* in light truck fuel economy over the same period. The agency is also forecasting that General Motors and Daimler/Chrysler will experience a decrease in their light truck fleet fuel economy, and pitching its standard recommendations accordingly. This is entirely unacceptable, as NHTSA appears to be colluding in the undermining of its statutory obligation to set the maximum feasible standard rather than exercising independent judgement.

[17] *See* NHTSA's proposals and estimates from "Light Truck Average Fuel Economy Standards Model Years 2005-07," December 16, 2002; 2000 and 2001 figures from *Automotive Fuel Economy Program: Annual Update Calendar Year 2001*, NHTSA, September 2002; Ford's 2000 pledge from Union of Concerned Scientists Web page http://www.ucsusa.org/news.cfm?newsID=303 visited January, 6 2002.
[18] *See* Union of Concerned Scientists Web page at: http://www.ucsusa.org/news.cfm?newsID=303 visited January, 6 2002.

II. The evidence is overwhelming that consumers want better fuel economy in their light trucks.

The light truck consumer market has drastically changed since the original CAFE law was enacted and standards were set in 1975 and 1977. When the original light truck fuel economy loophole was written into the Energy Policy and Conservation Act, the 20 million light trucks on the road accounted for about 18 percent of the registered "passenger vehicles" on the road.[19] At that time, these vehicles were the mechanical workhorses of America, being driven by farmers and small business owners.

In 2001, there were over 79 million registered light trucks in the U.S., making up over 38 percent of all registered passenger vehicles.[20] And the percentage of new light truck registrations is skyrocketing. Since the implementation of the first fuel economy standards, the registration of passenger cars has increased 36 percent while the registration of light trucks has increased 278 percent.[21] While light trucks were only 19 percent of the new vehicles sold in 1975 and only 28 percent in 1987, they now account for over 46 percent of new vehicles sold in the U.S.[22] This increase has largely been due to the industry-spawned popularity of the SUV, which is the most popular light truck on the market; SUV registrations have risen 60.1 percent between 1995 and 1999.[23]

When the first fuel economy regulations were established, legislators and regulators never imagined that light trucks would become such a large part of the vehicle fleet. These vehicles, once driven predominantly by farmers and people living in rural areas, now make up over half of the luxury car market. They are driven primarily by commuters and suburban families and rarely used for their off-road capabilities. Nearly all SUVs and minivans, and roughly three-quarters of all pickups, are used primarily as passenger vehicles.[24]

The agency solicits comments regarding consumers' view of fuel economy and light trucks.[25] Poll after poll shows that, even with extremely low fuel prices, consumers want more fuel efficient and environmentally responsible vehicles, and will even pay a higher price for a more fuel-efficient vehicle. A poll conducted in 2001 for Public Citizen by Lou Harris asked Americans whether they would be willing to pay 3 percent (or about $900 on a $30,000 vehicle) more for their sport utility vehicles in order to solve

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[19] "Passenger vehicle" here includes passenger cars and light trucks. *See* Shelton, Terry S.T. NHTSA Research Note: "Revised Vehicle Miles of Travel for Passenger Cars and Light Trucks, 1975 to 1993; *see also* "Registration Data for 1975-2001: Data Source" FHWA and Polk," Provided by a National Center for Statistics Analysis researcher to Public Citizen on Feb. 6, 2003.

[20] *See* "Registration Data for 1975-2001: Data Source" FHWA and Polk" provided by a National Center for Statistics Analysis researcher to Public Citizen on Feb. 6, 2003.

[21] *Id.*

[22] An, Feng, John DeCicco, and Mark Ross, *Assessing the Fuel Economy Potential of Light-Duty Vehicles*, Society of Automotive Engineers – 2001-01-2482: at 1.

[23] *See* NCSA's *Characteristics of Fatal Rollover Crashes*, DOT HS 809 438. April 2002, at 20.

[24] An, Feng, John DeCicco, and Mark Ross, *Assessing the Fuel Economy Potential of Light-Duty Vehicles*, Society of Automotive Engineers – 2001-01-2482, at 4.

[25] *See* 49 CFR Parts 533: Docket No. NHTSA-2002-11419; Notice 2: "Light Truck Average Fuel Economy Standards Model Years 2005-07,"FR 77015 at 77022.

emissions problems stemming from their use. Sixty-three percent of the owners of SUVs polled answered yes.[26] These data are particularly striking when we consider the marketing research showing that SUV owners tend to be more self-absorbed, self-centered, insecure, and vain than other drivers and that, as a group, SUV owners tend to have less interest in their communities or neighbors than do other populations of drivers.[27]

In a separate Gallup poll a decade ago, 61 percent of Americans favored increasing overall fuel-efficiency requirements to 40 mpg, even if it increased the price of cars.[28] This poll was taken during a time of economic boom without pending international oil conflicts looming on the horizon. Consumers continue to agree that something should be done to increase the fuel economy, in particular, of America's least fuel-efficient vehicles. In a 2003 poll conducted by Harris Interactive for the *Los Angeles Times*, 70 percent of consumers polled agree that "Congress should require SUVs to get better mileage."[29]

A national survey of drivers of pickup trucks, done by the Mellman Group in August 2002, found that 76 percent of pickup drivers favor increasing the fuel economy of pickups. An overwhelming 87 percent surveyed said that they would be willing to pay an additional $500 for a higher-mileage pickup when told that they could expect to save $2,000 worth of gasoline during the life span of their vehicle.[30]

Consumers also support fuel economy increases for political, patriotic, and ideological reasons. In 1990, 93 percent of Americans believed the United States should require cars to get better gas mileage to reduce our dependence on foreign oil,[31] and 61 percent believed that greater conservation of energy supplies was an important piece of the solution to our energy problems.[32] Eighty-one percent of consumers polled by CBS and *The New York Times* in 2001 "[a]pprove of the government requiring car manufacturers to meet higher fuel efficiency standards than they do now."[33]

Sixty-one percent of labor union households agreed that "increasing fuel efficiency is the single most effective action that could reduce national dependence on foreign oil."[34] Furthermore, 75 percent of predominantly Republican and Independent

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[26] Lou Harris, Conducted by Peter Harris Research Group, July 2001.
[27] *See* Bradsher, Keith, *High and Mighty*, 2002, at 101.
[28] Gallup Poll, for CNN/USA Today, Sept. 11-15, 1992.
[29] Alonso-Zaldivar, Ricardo, "On the Road to Smaller, Fuel Efficient, SUVs Consumers, While Still in Love with the Goliaths, are Steering the Marketplace to Roll Out Safer, Less-Wasteful Models, Experts Say," *Los Angeles Times*, Feb. 2, 2003.
[30] The Mellman Group polled 600 pickup truck owners in August of 2002 (two-third were Republicans or independents). *See* Union of Concerned Scientists web site http://www.ucsusa.org/news.cfm?newsID=303 visited January 3, 2003.
[31] Gallup Poll, Conducted for Chicago Council on Foreign Relations, Oct. 23-Nov. 15, 1990.
[32] Gallup Poll, May 7-9, 2001 (61 percent result achieved by adding the percentages of those who responded "More conservation" (47 percent) and those who responded "Both/Equally" (14 percent), referring to both "More conservation" and "More production").
[33] Poll conducted for CBS and *The New York Times*, June 2001.
[34] Mellman Group poll, Oct. 30, 2001.

voters in New Hampshire "favored increasing fuel economy to address global warming, even at an extra cost of $300."[35]

A. Although manufacturers claim consumer choice drives the light truck market, they spend billions each year to both create and enlarge these consumer preferences.

The auto industry spends more per year on advertising than any other industry in the United States, and more than the next three biggest spenders (financial services, telecommunications, and national restaurant chains) combined. SUV advertising, in particular, has grown to exorbitant levels in the past decade, exceeding in percentages even the growth of SUV sales. In 1990, manufacturers spent $172.5 million on SUV advertising, and in 2000 they spent an incredible $1.51 billion. Over the decade, manufacturers spent over $9 billion to advertise the highly profitable SUV.[36]

Manufacturers have a huge financial investment in the attempt to persuade consumers to purchase SUVs. If naked consumer preference is indeed driving the mass influx of SUVs on the roads, why would industry need to spend billions convincing consumers that they need SUVs? Given the cut-rate design that generates the very high profit margins of SUVs, margins that well exceed those of passenger cars, industry has had much to gain by creating and expanding a market for these unsafe, environmentally and socially hostile "cash cows."

The notion that the market for SUVs somehow correlates to a real economic demand would be laughable if it were not a falsehood so frequently rehearsed by automakers. The expensive fantasy packaged up for America by Detroit, in which an overpriced, dangerous "off-road" vehicle is deliberately marketed to suburbanites with little need for these features and little awareness of the safety risks, should be condemned by NHTSA as the public policy nightmare that it truly is. This vehicle is so clearly the product of a manufactured demand, fed by Detroit's fantastical images of trucks marauding through empty mountainscapes, images that bear little to no resemblance to the vehicle's ordinary use. The coddling by the government of these "sacred cows" must stop in the name of consumer safety and environmental sanity.

The fig leaf of consumer preference has hidden the truth for long enough. Historically, automakers have always claimed that their interest in opposing CAFE was their resistance to restrictions upon an allegedly pure "consumer choice." As the first CAFE standards legislation was being introduced in 1974, industry officials balked that the standards would force them to produce only, as Ford claimed, "sub-Pinto sized vehicles."[37] During the same time period, Daimler/Chrysler argued that increased standards would lead to the outlawing of numerous engines and car models, in effect

[35] Zogby International poll, Aug. 1999.
[36] *See* Bradsher, Keith, *High and Mighty* 2002, at 112. Financial analysts estimate profits of $12,000 for Ford's Expedition SUV and $15,000 for the Ford Navigator. *Id.* 84-85.
[37] Ford Motor Company Statement on S. 1903, Hearing on Energy Conservation Working Paper Before the Senate Committee. on Commerce, 93rd Cong. 2nd Session. at 117.

restricting the industry to produce only "sub compact size cars – or even smaller ones."[38] General Motors, calling CAFE "an unjustified interference with individual freedom," claimed that the legislation would place restrictions on larger cars,[39] and would require most sales to be of vehicles "smaller, lighter, and less powerful than today's compact Chevy Nova."[40] Obviously, this nightmarish world devoid of choices for consumers has never materialized.

This theme was revisited as recently as 2002 during the Congressional debates on increased light truck fuel economy legislation. Sen. Trent Lott (R.-Miss.), a mouthpiece for the industry-sponsored opposition to fuel economy increases, painted on the Senate floor an image of "the purple people eater" – a small European vehicle, to scare other Senators away from voting an mpg increase into law. Increasing the standard, Sen. Lott claimed, would create a vehicle fleet that Americans could hardly fit into, made up of "little cars" that, he claimed, people would pick up and set into parking spaces.[41]

In comments to the docket, manufacturers continue to raise the concern that consumer choice will be negatively impacted by increases in fuel economy. This tired canard, recycled from a decades-old fuel economy debate, has been proven wrong for as long as fuel-efficient large cars have been manufactured. In fact, to meet the 1985 statutory standard for car models, 85 percent of fuel economy improvements by manufacturers were achieved through technology – not weight reduction. The weight that was removed was taken out of large behemoths, not small cars, as proportional efficiency dictates.

B. The idea that auto sales reflect "consumer choice" is a joke so long as the manufacturers do not provide consumers with enough information or variety to make informed choices.

Currently consumers are provided, at the point of sale, with labels that explain the highway and city fuel economy estimates for each vehicle. Consumers are not, however, given point-of-sale, in-depth information about the safety hazards of the vehicles that they plan on purchasing. If manufacturers were required to present this information along with the fuel economy information, consumers would be able to make a true choice.

It is apparent, however, that automakers do not want consumers to have easy access to information other than their own advertising. Manufacturers have repeatedly blocked the efforts of the U.S. Congress, of NHTSA, and of consumer advocacy groups to place meaningful safety information on vehicle sale labels. As industry routinely tests

[38] S. 1903, testimony of Alan G. Loofbourrow, Vice President Advance Product and Operations Planning, Chrysler Motors Corporation at 141.
[39] S. 1903, statement of H.L. Duncombe, Jr., Vice President, General Motors Corporation, atp. 195.
[40] Address of E.M. Estes, president, General Motors Corporation, to the Detroit Rotary Club, "Congressional Emission Proposals Endangering Promised Auto Mileage Gains, GM's Estes Warns," *The Oil Daily*, Oct. 3, 1975 at 6, (discussing a possible mandated fuel economy of 28 mpg).
[41] Senate floor debate on the "National Laboratories Partnership Improvement Act of 2001," Mar. 13, 2002, at S1825.

each vehicle for compliance with crash tests and safety standards, requiring manufacturers to include this information for the sake of consumer at the point of sale should be a straightforward measure to ensure "consumer choice" is accurately captured by manufacturers' own decisions. Yet no such information is available.

Currently, consumers savvy enough to navigate NHTSA's on-line information in the New Car Assessment Program (NCAP) are able to view some safety information on the select vehicle models tested each year by the agency. But many consumers have no access to the Internet or are unaware that the information exists. NHTSA's own research shows that only about 1.5 percent of consumers would consider researching auto safety issues by contacting a federal agency, while about half would think to request safety information from auto dealers.[42] If manufacturers were truly concerned about the choices of their consumers and the long-term viability of the automotive marketplace, they would make information about vehicle safety available and obvious at the point of sale.

A real choice for consumers would include a range of vehicles that were not socially and environmentally hostile and that consumed far less fuel than the current light truck fleet. Poll after poll shows that automakers have consistently underestimated the consumer demand for both safety and fuel economy.

III. Improvements in fuel economy will not negatively affect safety, and may enhance overall safety.

It is an oft-cited misconception that fuel economy standard increases have made America's roads less safe. The opposite is in fact true. The agency's minimal light truck fuel economy standards have instead distorted good public policy and market preferences by giving manufacturers a strong incentive to market light trucks and particularly, SUVs. In addition, the current upper limit regarding the applicability of standards (6,000 lbs.) exempts the heaviest "light" trucks from even these minimal standards, creating a perverse incentive for manufacturers to "super-size" their vehicle fleet even further.

It is unsurprising, then, that the light truck fleet has skyrocketed in the past decade (experiencing a 46 percent increase in light truck registrations between 1991 and 1999).[43] This growth of the light truck fleet has resulted in an overall greater divergence in the weights of vehicles on the road and it is *this* divergence that, coupled with the rollover proneness of light trucks, has made the American highways less safe. Several recent studies have concluded that overall the risks imposed by these heavier vehicles on lighter car occupants outweigh the benefits to heavier car occupants, and that *variability of*

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[42] *See* NHTSA, *Status Report for Rollover Prevention and Injury Mitigation*, Docket No. 91-68, 11 (May 1996). The report indicates that a 1995 Customer Satisfaction Survey reflected that less than 50 percent of the people surveyed would go to the auto dealer for information. Seventy-six percent of the people polled considered safety to be an important factor. However, less than 50 percent of the total population polled said they would request information from the dealer. Only 60 out of 4,000 people said they would contact a federal agency for auto safety information.

[43] Jeffrey W. Runge, M.D., NHTSA Administrator, "Meeting the Safety Challenge" at the Automotive News World Congress, Dearborn, Michigan, Jan. 14, 2003.

distribution of weights in the vehicle fleet increases fatalities.[44] Another study demonstrated that shifting the passenger vehicle fleet to include more SUVs in lieu of cars increased the overall number of deaths.[45]

Regardless of the numerous studies proving that weight distribution, rather than downweighting *per se*, affects safety, a misunderstanding about this relationship permeates NHTSA's rulemaking, and the spurious safety arguments put forth by industry in opposing the agency's proposal. Public Citizen will respond to the agency's request for comments on this specific question by illustrating that:

- The National Academy of Sciences (NAS) study, relied on the agency extensively in its rulemaking concluded that there are no negative safety effects when the heaviest vehicles are made lighter;
- The NAS study's historical conclusions about the safety impact of fuel economy rules are founded on problematic data taken from a misleading study by NHTSA researcher Charles Kahane and should not be relied upon for the following reasons:
  - The Kahane study was a hypothetical projection that did not focus on real-world crash data and did not take developments in crash protection into account;
  - Recent research into the confounding causes for occupant fatalities has shown that Kahane's correlation between weight and safety is incorrect; and,
- If concerned about safety, NHTSA should address any problems by implementing rollover protection and aggressivity standards, both of which actions would incur considerable collateral safety benefits for the public.

Finally, Public Citizen will show that while there has been an overall stagnation by manufacturers to improve the fuel economy of their light truck fleet, numerous potential fuel-saving technological advances are available that are safety-neutral. In fact, the NAS study, used by the agency to establish its current proposed standard and oft misquoted by fuel economy improvement opponents, actually concluded that with the use of new technologies, fuel efficiency can be improved "without significantly affecting the safety of motor vehicle travel."[46]

A. The NAS study concluded that safety is not compromised, and would be enhanced, when the heaviest vehicles are made lighter.

As a first principle, we note that safety concerns involving downweighting are irrelevant when discussing a fuel economy rule that applies only to the light truck fleet.

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[44] Greene, David L., "Fuel Economy, Weight and Safety: It's What you Think You Know, That Just Isn't So," Presentation to Automotive Composites Conference, Society of Plastics Engineers, Detroit, Michigan, Sept. 19, 2001, at 12.

[45] Joksch, Hans C., "Vehicle Design versus Aggressivity," April 2002.

[46] *See* "Effectiveness and Impact of Corporate Average Fuel Economy Standards," National Research Council, National Academy of Sciences, 2002, at 70.

NHTSA's proposed rulemaking references the NAS report's conclusion that the downweighting and downsizing in the 1970s and 1980s "probably" resulted in between 1,300 and 2,600 traffic fatalities in 1993.[47] Yet, as shown by the foundational research conducted by the General Accounting Office (GAO) in 1992, "automobile weight reductions since the mid 1970's have had virtually no effect on total highway fatalities" and the decline in average vehicle weight during the 1970s and 1980s "did not have dire consequences for safety."[48]

The NAS also found, as to future fuel economy improvements, that if fuel economy increases do cause the downweighting of vehicles that weigh more than 4,000 lbs. (a category which includes most light trucks), any negative safety impacts would be minimized or even reversed, resulting in safety benefits:

> If an increase in fuel economy is effected by a system that encourages either downweighting or the production and sale of more small cars, some additional traffic fatalities would be expected. *However, the actual effects would be uncertain, and any adverse safety impact could be minimized, or even reversed, if weight and size reductions were limited to heavier vehicles (particularly those over 4,000 lbs.). Larger vehicles would then be less damaging (aggressive) in crashes with all other vehicles and thus pose less risk to other drivers on the road.*[49]

Although the vast majority of light trucks are over 4,000 pounds, this conclusion by the NAS is not mentioned in NHTSA's rulemaking.

Auto industry defenders often argue that fuel economy standards' impact on safety is a matter of "simple physics."[50] Yet researchers looking into aggressivity and compatibility have discovered that the physics of safety are anything but simple. Driver death rates in some passenger cars are far lower than driver death rates in SUVs and other light trucks.[51] A study conducted by Marc Ross and Tom Wenzel found that similarly weighted vehicles have highly disparate safety effects for both their own occupants and other drivers on the road.[52] Furthermore, as Mark Greene and Maryanne Keller, two members of the NAS panel, have pointed out, the factors that confound efforts to isolate the effect of vehicle weight are highly complex and a sound analysis, using historical data, of CAFE's effects on safety, has yet to be done.[53]

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[47] *See* 49 CFR Parts 533: Docket No. NHTSA-2002-11419; Notice 2: "Light Truck Average Fuel Economy Standards Model Years 2005-07,"FR 77015 at 77017.
[48] General Accounting Office, "Have Automobile Weight Reductions Increased Highway Fatalities?" GAO PEMD-92-1, Oct. 1991, at 2 and 23-24.
[49] *See* "Effectiveness and Impact of Corporate Average Fuel Economy Standards," National Research Council, National Academy of Sciences 2002, at 113.
[50] *See* Comments from the Alliance of Automobile Manufacturers, Docket Number, NHTSA-2002-11419.
[51] Insurance Institute for Highway Safety *Status Report*, Vol. 35, No. 7, Oct 19, 2000.
[52] Marc Ross and Tom Wenzel, "An Analysis of Traffic Deaths by Vehicle Type and Model," U.S. Department of Energy LBNL-49675, Washington, DC, Mar.2002.
[53] *See* "Effectiveness and Impact of Corporate Average Fuel Economy Standards" National Research Council, National Academy of Sciences 2002, at 117-124.

Below is a more specific discussion of the relationship between safety and fuel economy.

B. The NAS study's historical conclusions are founded on problematic data taken from the Kahane study and should not be relied upon.

As Public Citizen pointed out in our previous comment, the National Academy of Sciences study "Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards," relies upon inconclusive, outdated research that has been refuted by more recent work and should no longer serveas a basis for discussion of fuel economy and safety. The primary study upon which the NAS panel majority based its conclusions about the weight-safety relationship, by Charles Kahane of NHTSA, is rife with serious problems.

1. The Kahane study employs a hypothetical projection that should not have been used in the place of real-world crash data and has been proven incorrect by another study applying the same hypotheses.

Kahane's conclusions were unfortunately based on hypothetical crash scenarios and the vehicle fleet effects of fuel economy standard increases. While real-world crash data and fleet trend information was available, they were not used. The study instead assumed an utterly unrealistic scenario that conflicts with industry's actual implementation of fuel economy increases to meet the 1985 rule. For example, Kahane assumed that all vehicles would be made lighter by an identical amount (100 lbs.), when in fact, historically, the heaviest vehicles got lighter and the lightest vehicles got heavier between 1975 to 1985 in response to the initial CAFE legislation and rules, to the benefit of safety.

Logic also dictates this result: because downweighting a vehicle is proportionally more cost-effective if the vehicle is heavy to begin with, the behemoths in any fleet are predictably the first targets for weight reductions. Yet NAS panel used this historically baseless hypothetical figure to extrapolate the number of fatalities that have been caused by CAFE increases, ignoring evidence about the actual shift in fleet weights that took place in the 1970s and 1980s.

Kahane's hypothetical, because it made use of crash statistics dating from before 1993, also did not accurately reflect recent advances in occupant protection from new government standards, such as dynamic side impact protections, dual air bags, and head injury protections, and the ever-increasing rate of seatbelt use.[54] Due in large part to these changes, the Kahane hypothetical has since been proven incorrect.

[54] Overall seatbelt use has been rising approximately 2.3 percentage points each year since 1994. In 2002, SUV and van occupants were found to be wearing their belts 78 percent of the time, 8 percentage points more than in 1998. *See* National Center Statistics and Analysis, *Safety Belt and Helmet Use in 2002 – Overall Results*, Sept. 2002, at 3, 8.

In 2002, Honda presented its results of an updated version of the Kahane study, performed by Dynamic Research, Inc. (DRI), to the Senate Commerce Committee. Using more recent safety and vehicle data but applying the Kahane methodology (including the problematic 100 lb. cross fleet weight reduction), researchers found that there was *no likelihood of a net increase in fatalities* if vehicle weight were reduced across today's fleet. The DRI study improved upon the Kahane study by using more recent model years, thus accounting for developments in light truck market share and fleetwide passenger protection enhancements, such as the requirement for passenger-side air bags.[55]

2. Recent research into confounding causes for occupant fatalities has shown that Kahane's correlation between weight and safety is incorrect.

Numerous reports published in the past few years dispute the Kahane findings, primarily by examining the confounding factors of vehicle design, size and weight in an attempt to isolate their impacts on occupant fatalities.

David Greene, a researcher at the Oak Ridge National Laboratory and NAS panelist who dissented from the majority's opinion on the historical safety outcomes, asserted that his research on the vehicle size-weight-safety question has led him to conclude that "the more carefully one controls for confounding factors [such as driver and environmental characteristics], the more the 'weight effect' fades away, or even reverses." Greene points out that injury results measured by dummies in NHTSA crash tests reveal that there can be equivalent safety performances in light trucks and passenger cars. Design, not weight, affects the safety of these vehicles for their occupants. Moreover, Greene found that because braking distances increase with vehicle weight, lighter vehicles may avoid crashes better than heavier ones, something which only the high death rates in these vehicles may reveal.[56]

In a study conducted for NHTSA in 2000, Hans Joksch found that once confounding factors (including the sex and age of driver, blood alcohol level of driver, speed, crashworthiness of vehicle, vehicle weight, etc.) were controlled for, light trucks were far more likely to cause deaths in other vehicles than were other cars *of the same weight.* He showed that:

> [A] car driver's fatality risk in collisions with a sport utility vehicle was 3.4 times as high as in collisions with a car of equal weight, in collision with a van 2.3 times, and in collisions with a pickup truck 1.9 times as high. In front-front collisions, the corresponding factors were 6.4, 4.2, and 3.6.[57]

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[55] R.M. Van Auken, J.W. Zellner, "An Assessment of the Effects of Vehicle Weight on Fatality Risk and Model Year 1985-98 Passenger Cars and 1985-97 Light Trucks," Dynamic Research Incorporated, DRI-TR-02-02, Feb. 2002, at 4.

[56] David L. Greene, " Fuel Economy, Weight, and Safety: 'It's what you think you know that just isn't so,'" Society of Plastics Engineers Automotive Composites Conference, Detroit, Michigan, Sept. 19, 2001).

[57] Joksch, Hans C., *Vehicle Design versus Aggressivity*, National Highway Traffic Safety Administration, April 2000, at v.

Joksch found that, for SUVs and pickups, weight, the high center of force and static and dynamic stiffness all contributed to the aggressivity of these vehicles, with weight correlating the most strongly with SUV aggressivity and static stiffness correlating the most strongly with pickup aggressivity.[58]

Marc Ross, of the University of Michigan, and Tom Wenzel, of Lawrence Berkeley National Laboratory, recently completed a study for the Department of Energy of driver death rates grouped by both vehicle type and model. They found that while the safest mid-size cars were as safe as the safest SUVs, that "SUVs impose a greater risk on drivers of other vehicles than do all types of cars." Pickup trucks, a vehicle category that is on average larger, heavier and stiffer than passenger cars, have a *combined* risk to their drivers and occupants of other vehicles that "is much higher than that for other vehicle types." They conclude that the "argument that the low weight of cars with high fuel economy has resulted in many excess deaths is unfounded."[59] Vehicle and safety design, not weight, is the confounding variable that results in increased passenger fatalities.[60]

The Insurance Institute for Highway Safety has corroborated this finding, explaining that for every million registered cars weighing between 3,500 and 3,900 pounds, 45 deaths occur in vehicles struck by these cars. For every million registered SUVs in the same weight class, 76 deaths occur in vehicles struck by the SUV.[61] Light trucks are so much more aggressive than similarly weighted passenger cars because they have high, incompatibly designed bumpers and high centers of force, which result in high points of impact. NHTSA has determined that large vans and large pickups are over three times more aggressive than passenger cars in all vehicle-to-vehicle crash configurations and that SUVs are over twice as aggressive as passenger cars in such crashes.[62]

Public Citizen understands that NHTSA, as requested by the NAS,[63] plans to update the Kahane study using new data and improved techniques. This is necessary because the misguided findings of the 1997 study are used by the manufacturers to avoid much-needed improvements in fuel economy. Any update must take into account the criticisms we raise above, as well as recommend off-setting crash protection

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[58] *Id.*

[59] Marc Ross and Tom Wenzel, "An Analysis of Traffic Deaths by Vehicle Type and Model," U.S. Department of Energy LBNL-49675, Washington, DC Mar. 2002, at 5-6.

[60] The development of the historic Research Safety Vehicle (RSV) by NHTSA in the 1970s conclusively demonstrated that a lightweight, crash-safe vehicle could protect passengers in high-speed crashes, definitively disaggregating the weight-safety question. The RSV, designed using 1970s technology, weighed only 2,450 lbs., achieved 32 miles to the gallon in 1978 and was able to protect its occupants in a full frontal barrier impact at 50 miles per hour (mph) and in side impact and rollover crashes at 40 mph without significant risk of occupant injury. *See* Minicars Inc., Research Safety Vehicle promotional material (Santa Barbara, CA 1978).

[61] Insurance Institute for Highway Safety, *Status Report*, Vol. 34, No.9, Oct. 30, 1999, at 3.

[62] Summers, Stephen M. and Aloke Prasad and William T. Hollowell, "NHTSA's Research Program for Vehicle Aggressivity and Fleet Compatibility," NHTSA, June 2001.

[63] *See* "Effectiveness and Impact of Corporate Average Fuel Economy Standards," National Research Council, National Academy of Sciences, 2002, at 114.

improvements where these are available, and should strive to offer a realistic picture of the historic and likely future effects of CAFE increases on vehicle weight.

C. International auto manufacturers agree with Public Citizen that vehicle weight and safety will not be negatively impacted by increased CAFE standards.

Scientists and researchers are not alone in asserting that simultaneously improving fuel efficiency and safety is both possible and desirable. International automobile manufacturers acknowledge that improvements to the fuel economy of a manufacturer's vehicle fleet do not have to risk safety. In its comments to NHTSA's February 7, 2002, notice of proposed rulemaking, the Association of International Automobile Manufacturers, INC (AIAM) stated that:

> [I]t is feasible to produce lighter, fuel efficient vehicles that provide high levels of occupant safety. We urge the agency to review and update its analysis of the relationship between vehicle weight and safety. As part of this review, we urge the agency again to attempt to separate analytically the effects of vehicle size and weight. We note that the agency's most recent study involved only 1993 and older vehicles. An updated study would better reflect the current model mix and technology.[64]

The AIAM, which represents 11 member manufacturers and five associates, thus concurs with our analysis of the problematic aspects of the NAS report. Due to the disproportionate share of the light truck fleet in the U.S. dominated by domestic manufacturers (77.6 percent), NHTSA has based its projections for fuel economy increases entirely on the domestic producers' projections. However, statements by the domestic manufacturers, which represent a tariff-protected[65] near-monopoly of the light truck market, should not be the end of the inquiry regarding what is technologically possible or what research could more adequately assess the situation.

Honda, although represented by AIAM, commented individually to NHTSA's previous docket as well, agreeing with the opinion presented by the two dissenting panelists of the NAS report contending that "the data is [sic] insufficient to conclude that safety is necessarily compromised by smaller vehicles." In making its vehicles, Honda employs "sophisticated engineering" and "advanced lightweight materials" to decrease the weight (not size) of its vehicles, thus increasing fuel economy and safety at the same time. Honda also advocates the use of technologies that boost fuel economy without affecting weight, such as "improved engine and transmission technology and more efficient use of space."[66]

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[64] *See* Comments of Association of International Automobile Manufacturers, NHTSA-2002-11419-13.
[65] The tariff on SUVs lasted from the late 1970s until 2001. The tariff on pick up trucks is still in place, grandfathered into the World Trade Organization agreements. *See* Gregg Easterbook, "Axle of Evil: America's Twisted Love Affair with Sociopathic Cars," *The New Republic*, Jan. 20, 2003; s*ee also* Bradsher, Keith, *High and Mighty*, 2002, at 32.
[66] *See* Comments of American Honda Motor Co., Inc., NHTSA-2002-11419-12, at 5.

Honda has shown these technologies to be "feasible," both practically and economically, by creating numerous fleets of vehicles with considerably higher fuel economy levels than the domestic manufacturers. During the 2001 legislative fuel economy debate, Honda submitted a letter to the Senate Committee on Commerce, Science, and Transportation to clarify misleading information presented earlier in the debate by Ford. In the letter, the company details, point-by-point, the inaccuracies of Ford's claim that domestic manufacturers' fuel efficiency levels were comparable to those of the international companies' [*See* attachment 1].[67]

As explained in the Honda letter, Honda's vehicles, on a model-to-model basis, have a "substantially better fuel economy performance than vehicles from Daimler/Chrysler, Ford, and GM" and these efficiencies are largely due to advanced engine technology.[68] Honda's use of technology and smart design to rise above the domestics in its fuel economy levels shows that contemporary technologies are capable of improving fleet-wide fuel economy levels.

D. NHTSA should address any concerns about safety by implementing rollover risk reduction and aggressivity standards.

The major safety hazards of light trucks are their propensity to roll over, the lack of crash protection available when the vehicles do roll over, and their aggressivity in crashes with other vehicles. A speech given by NHTSA Administrator, Dr. Jeffrey Runge, on January 14, 2003, for the Automotive News World Congress, announced NHTSA's commitment to rollover and aggressivity protection as being "top priority."[69] Public Citizen suggests that if NHTSA is concerned about the rising death toll on America's highways that it address these problems by rulemaking this year.

Rollovers are highly survivable crashes, because the forces applied to occupants during the collision are far lower than those experienced in most other types of crashes. This survivability suggests that rollovers are injurious due mainly to poor vehicle design. Safety belts, seat structures and windows are not made to keep occupants in place during a crash, permitting the ejection of occupants into the road and putting them at great peril. For occupants that remain inside the vehicle, vehicle roofs are frequently so flimsy that they crush during the roll into occupants' heads and spines, inflicting very serious, and often fatal, injuries. Roof distortion can also open portals for ejection in a crash, including breaking the windshield.

Many of the "fixes" for the rollover problem were addressed by NHTSA in past announcements, although none of these plans have ever been carried out. In 1994, NHTSA terminated its work on a minimum rollover propensity standard by promising that a series of improvements in rollover crashworthiness and consumer information were

[67] Edward Cohen, Vice President of Government and Industry Relations for Honda, Letter to Senator John Kerry, Dec. 19, 2002.
[68] *Id.*
[69] Jeffrey W. Runge, M.D., NHTSA Administrator, at the Automotive News World Congress "Meeting the Safety Challenge" Dearborn, Michigan, Jan. 14, 2003

forthcoming.[70] Were NHTSA to finally issue these standards as it has already promised, the safety of all vehicles, and in particular the rollover-prone light truck fleet, would dramatically increase.

Aggressive vehicles result from a collection of design shortcuts by the manufacturers, emanating in large part from the loopholes contained in the original fuel economy statute, which must be corrected. These loopholes assure that bulkier vehicles (pushed past the 8,500 lb. standard cut-off), with higher bumpers (to fit the off-road definition of light truck), are incompatible with passenger vehicles and, thus, are very aggressive in crashes. Compatibility and aggressivity standards would greatly reduce the deadly impact of light trucks on other American motorists.

E. Major improvements in fuel economy are possible using currently available technology, without any impact on safety.

Manufacturers had the opportunity to employ fuel economy enhancing technologies during the 15 years that CAFE standards remained stagnant; yet, for the most part, they have not. In fact, they raced backwards, underwriting fuel economy improvements. While light trucks maintained approximately the same fuel economy levels since 1985, the average light truck became 22 percent faster and 17 percent heavier, with an engine that is 61 percent more powerful.[71] Sports-car like acceleration and heavy on-board designer accessories are the focus of promotional efforts by manufacturers selling light trucks for urban and suburban driving.[72] Unfortunately, without federal standards, fuel economy has not been a priority. Increasing the standard beyond NHTSA's very weak proposal would ask manufacturers to act for the greater good, requiring the incorporation of technologies that will provide savings to consumers and protect the environment.

If NHTSA is relying upon automakers for an accurate depiction of future fuel economy, such reliance, by the admission of those manufacturers, is misplaced. Throughout this regulatory docket, the manufacturers repeatedly note that they are unable to predict, even within a wide margin, the fuel economy improvements that they will, in reality, be able to make by a date certain. Why, then, should NHTSA assume that the manufacturers are giving the agency sound estimates now? Instead of relying on industry gamesmenship regarding the basis for a standard, NHTSA should rely upon the

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[70] See 59 F.R. 33254, 33255, June 8, 1994.

[71] David Friedman, et al, *Drilling in Detroit: Tapping Automaker Ingenuity to Build Safe and Efficient Automobiles*, Union of Concerned Scientists, 2001, at 16.

[72] There has actually been a negative collateral safety impact of allowing manufacturers to use engine efficiency improvements for enhancing capacities other than fuel economy. Gregg Easterbrook explains this phenomenon by pointing out the death sentence of the forthcoming Porsche SUV which will accelerate at racetrack speed:

> [E]xcessive acceleration imperils [the light truck driver], because SUVs and pickups are hard to control with the pedal against the floorboard, and when accelerating they are prone to spinning out as a consequence of too much steering input.

See Gregg Easterbook, "Axle of Evil: America's Twisted Love Affair with Sociopathic Cars," *The New Republic*, Jan. 20, 2003, at 30.

technological findings of the NAS and of the Union of Concerned Scientists (UCS), a non-profit acting with the best interests of the public and environment in mind.

Technological advances were and will continue to be one of the critical mechanisms for reducing fuel economy efficiently and safely. A paper presented at the Society of Automotive Engineers concluded that 85 percent of the fuel economy gains made from 1974 to 1991 came from improvements in vehicle technology.[73] The evidence, both in vehicles already on the road and unused technologies, strongly suggests that similar technological leaps are currently available or just around the corner.[74] Furthermore, safety can be improved concurrently with fuel economy without any decrease in performance through the employment of conventional technologies, as shown by a study conducted by John DeCicco, Feng An, and Mark Ross for the Society of Automotive Engineers.[75]

In its Preliminary Economic Analysis (PEA), the agency points out numerous technologies that manufacturers may install in vehicles to increase the fuel economy of the light truck fleet without detracting from safety. Furthermore, the PEA outlines many technologies that are either currently being used by various manufacturers or are slated for inclusion in future light trucks *regardless* of whether or not fuel economy standards are increased.

Without any change to fuel economy standards, NHTSA projects that most model year (MY) 2005-2007 light trucks will employ one or more engine technologies that will reduce engine friction loss, use motor oils that are less viscous and will result in fuel economy improvements, and reduce fuel consumption through the use of overhead valve engines that increase airflow. The agency estimates an impact on fuel economy for these combined technologies of between 1.3 and 5 percent.[76]

Public Citizen is interested in knowing how NHTSA projected its final savings estimates. Almost all of the estimates given by the agency throughout the PEA are lower than estimates provided by the NAS in its detailed investigation of the same technologies. NAS estimates, for example, in this category of technological improvements, show a potential yield of a 4 to 11 percent increase in fuel economy.[77] Manufacturers' numbers, in most cases, were noted by NHTSA (but not quoted in the PEA) as projecting a far lower percentage increase. NHTSA's numbers are, for the most part, a lowered version of the NAS estimates. As suggested above, without the public availability of the manufacturers' estimates, there is no way to determine how heavily the agency's numbers are weighted by the manufacturers' comments.

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[73] Donald Friedman and Keith D. Friedman, "The Relationship between Safety and Fuel Economy," SAE Technical Paper Series 921055, April-May, 1992 at 4.
[74] Union of Concerned Scientists, *Drilling in Detroit*, Cambridge, MA: UCS Publications June 2001.
[75] An, Feng, John DeCicco, and Mark Ross, *Assessing the Fuel Economy Potential of Light-Duty Vehicles*, Society of Automotive Engineers, 2001-01-2482.
[76] *See Preliminary Economic Assessment, Corporate Average Fuel Economy Standards for MY 2005-2007 Light Trucks, December 2002,"* National Highway Traffic Safety Administration, Dec. 8, 2002, at IV-2-3.
[77] *Id.* at IV-2-3.

NHTSA also estimates that many light trucks, even without a new standard, will incorporate cylinder deactivation technology (estimated by NHTSA to have a fuel economy increase of 3 to 6 percent) and five- or six-speed transmissions (which would yield anywhere from a 0 percent to a 3 percent increase). Rolling resistance reduction, which is already being utilized by manufacturers, is estimated to increase fuel consumption by up to 1 percent.[78]

Technologies currently used by some domestic light truck manufacturers, as noted by NHTSA, include variable valve timing that would improve engine efficiency (yielding an estimated 0.5 to 2.0 percent increase in fuel economy) and variable valve lift and timing to optimize engine operating conditions (increasing fuel economy an estimated 1 to 2.5 percent). Fuel saving technologies employed in Japan and Europe include direct injection spark ignition (which NHTSA estimates will save 2.0 to 4.0 percent of fuel consumption), and direct injection diesel, which NHTSA estimates could improve fuel consumption 30 to 40 percent over two-valve spark ignition engines.[79]

In the PEA, NHTSA also discussed additional technologies that are not yet employed by most domestic auto manufacturers. The following technologies, which cannot all be incorporated into the same vehicle, could, in NHTSA's estimate, provide a substantial increase in the overall fuel economy of light trucks:

- Engine accessory improvement, changing mechanically powered components to be electrically powered (this would yield an estimated 0.5 to 2.0 percent increase in fuel economy);
- Engine downsizing and supercharging (this would yield an estimated 0.0 to 6.0 percent increase in fuel economy);
- Intake Valve Throttling (this would yield an estimated 0.5 to 3.0 percent increase in fuel economy);
- Camless Valve Actuation (this would yield an estimated 1.0 to 4.5 percent increase in fuel economy);
- Variable Compression Ratio (this would yield an estimated 2.0 to 6.0 percent increase in fuel economy);
- Aggressive Shift Logic (this would yield an estimated 0.0 to 2.0 percent increase in fuel economy);
- Continually Variable Transmissions (for "conventional" CTVs, this would yield an estimated 3.5 to 7.5 percent increase in fuel economy);
- Automatically Shifted Clutch Transmission (this would yield an estimated 2.0 to 5.0 percent increase in fuel economy);
- Aerodynamic Drag Reduction (this would yield an estimated 0.5 to 2.0 percent increase in fuel economy);
- Forty-two volt electrical systems (this would yield an estimated 0.0 to 1.0 percent increase in fuel economy);

[78] *Id.* at IV-5, IV-9-10, and IV-13.
[79] *Id.* at IV-4-6.

- Integrated Starter/Generator (this would yield an estimated 1.0 to 5.5 percent increase in fuel economy); and
- Electric power steering (this would yield an estimated 1.0 to 2.0 percent increase in fuel economy).[80]

In 2001, the UCS discussed nine[81] of these technologies, noting that they could be integrated into today's vehicle fleets at a price that would easily be made up in savings on fuel costs. The UCS also suggested that the necessary changes to incorporate these technologies would have no negative impact on safety.[82] Technologies currently used in portions of today's fleet described both by NHTSA and the UCS, if adopted fleetwide, could make vehicles far more streamlined, less fuel intensive, and more efficient. The question remains, however, whether or not the agency will set a standard that requires manufacturers to incorporate these fuel economy technologies. Clearly, the NHTSA proposal does not. As the current proposal is written, it would be a giveaway to the manufacturers.

Much more can be done. The UCS designed a Ford Explorer with both increased performance and fuel economy. Incorporating technologies currently used in mass production by at least one company, and basing its design on the current Ford Explorer, the UCS designed a new vehicle that increased the real-world fuel economy of the Explorer by 50 percent while improving zero to sixty performance by 1.7 seconds and saving 4 percent ($1,577 in gasoline costs) over the lifetime cost of the unimproved vehicle. Adding technologies currently entering the market to its design, UCS was able to improve the Explorer's fuel economy by 75 percent, creating a vehicle that would test at 34.1 mpg and save 6 percent ($2,163) in gasoline expenditures over the lifetime cost of the improvements.[83]

Table 2: Union of Concerned Scientists' Greener SUV [84]

	Ford Explorer	USC Exemplar	UCS Exemplar Plus
Curb Weight (lbs)	4146	3525	3525
0-60 Performance (secs)	12.4	10.7	12.2
Fuel Economy (mpg)	19.3	28.4	34.1
Vehicle Price	$ 28,830	$ 29,545	$ 29,765
Lifetime Fuel costs	$ 7,253	$ 4,961	$ 4,155
Total Cost	$ 36,803	$ 34,506	$ 33,920

[80] *Id.* at IV-7-15.
[81] The USC report discusses at length the potential for aerodynamic improvements, rolling resistance improvements, accessory load reduction, variable valve control engines, direct burn gasoline injection engines, five- and six-speed automatic transmissions, optimized shift schedules, continuously variable transmissions, and integrated starter-generators. It also describes mass reduction measures and five-speed motorized gear shift transmissions, which were not discussed in the agency's PEA.
[82] Union of Concerned Scientists, *Drilling in Detroit*, at 18, Appendix B.
[83] Union of Concerned Scientists, "Greener SUVs: A Blueprint for Cleaner, More Efficient Light Trucks," Summary available on the World Wide Web at http://www.ucsusa.org/vehicles/greener.SUVs.html.
[84] Union of Concerned Scientists, *Drilling in Detroit*, Cambridge, MA: UCS Publications June 2001.

IV. Increasing fuel economy standards will positively affect employment in the United States.

The agency requested comments regarding whether future increases in CAFE standards will adversely impact employment.[85] Increases in fuel economy standards will actually boost employment in the United States in the auto industry and beyond. Indeed, new fuel economy standards will produce more of the types of jobs that feed an environmentally sustainable growth pattern. An increase in fuel economy will spur growth in the automotive sector in large-scale re-design and production as well as in the production of new, up-to-date technologies.

As formulated by David Friedman, *et al*, in the UCS report *Drilling in Detroit*, an increased fuel economy standard to 40 mpg by 2012 and 55 by 2020 would create 40,000 new jobs in the automotive sector by 2010, and 104,000 by 2020.[86] Furthermore, an increase of 40 mpg would result in an annual consumer savings at the fuel pump of $16 billion. These saved dollars would inevitably be returned into the economy, boosting employment in other sectors as well – an estimated 72,000 new jobs in 10 years and 244,000 in 20 years.[87]

V. NHTSA should attend to the public outcry for both better light truck fuel economy standards and safety by establishing meaningful fuel economy, rollover crashworthiness and aggressivity standards.

In recent months, public awareness about the safety hazards of SUVs and other light trucks has been on the rise. NHTSA's own Administrator has been bravely and refreshingly forthcoming about the serious hazards inherent in these vehicles, and we applaud his comments as an important step forward.

Voluminous comments have also been submitted to the agency's public docket by consumers pressing for a more meaningful light truck fuel economy standard. As of February 13, 2003, 99 members of the House of Representative were co-signatories of a letter to NHTSA requesting a significant increase in CAFE standards for light trucks. As global insecurity regarding international sources of oil, such as Venezuela and Iraq, becomes increasingly intense, American consumers are becoming ever more wary of fuel-inefficient vehicles. Now is the time for NHTSA to require a meaningful increase in light truck fuel economy, affording manufacturers an opportunity to improve, in one stroke, the fuel economy and the safety of their most gas-guzzling, hazardous vehicles.

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[85] *See* 49 CFR Parts 533: Docket No. NHTSA-2002-11419; Notice 2: "Light Truck Average Fuel Economy Standards Model Years 2005-07," FR 77015 at 77024.

[86] David Friedman, et al, *Drilling in Detroit: Tapping Automaker Ingenuity to Build Safe and Efficient Automobiles*, Union of Concerned Scientists, 2001, at 45.

[87] John Decicco, et al, *Energy Efficiency and Job Creation*, American Council for an Energy-Efficient Economy, 1992.

Public Citizen recommends the agency:

- Establish meaningful light truck fuel economy standards that set the standard at the “maximum feasible” level;
- Publish all non-proprietary information regarding its process for developing the current proposal and final standards;
- Update the Kahane study using new data and improved techniques, including the consideration of any potentially off-setting safety protections;
- Re-write the regulatory definition of “light truck” to include vehicles above 8,500 lbs., which are currently exempt from fuel economy regulations;
- Establish a minimum standard for rollover propensity and implement aggressivity reduction standards;
- Require the publication of safety and crash test information at the point-of-sale;
- Implement dynamic roof crush standards;
- Improve seat structure and safety belt design to protect occupants in rollover crashes; and,
- Issue a rule requiring side impact head protection air bags to prevent ejection in a rollover crash and interior roof injury protection measures, such as protective padding.

Sincerely,
Joan Claybrook
President, Public Citizen

HONDA

HONDA NORTH AMERICA, INC.
955 L'ENFANT PLAZA, S.W., SUITE 5300
WASHINGTON, D.C. 20024 (202) 554-1650

December 19, 2001

Hon. John Kerry
Committee on Commerce, Science and Transportation
United States Senate
SR 254 Russell Senate Office Building
Washington, D.C. 20510-6125

Dear Senator Kerry,

Thank you for the opportunity to testify on fuel efficiency issues before the Senate Committee on Commerce, Science, and Transportation on December 6, 2001. Honda appreciates the opportunity to present information about our company's efforts to improve fuel economy, and we believe the hearing stimulated a good exchange of ideas.

During the hearing, you questioned Honda about the fuel economy of our vehicles compared to other manufacturers on a model-to-model basis. You referenced testimony from Susan Cischke of Ford Motor Co. and a chart submitted by Ford, labeled "Vehicle Fuel Economy Comparison". Unfortunately, Honda had not seen Ford's testimony or their chart prior to the hearing; thus, we were unable to respond at that time. Subsequent to the hearing, we examined Ford's testimony and are now responding to Ford's claims. We respectfully request that this letter and the two attachments be included in the hearing record.

The fuel economy comparisons submitted by Ford is incomplete, misleadingly selective, and in many cases compared apples to oranges. As a result, the data provides no basis for sound analysis:

- Ford only compared mid-size cars - all other car comparisons were excluded. Had they compared the compact car class, the analysis would have shown that the average fuel economy of the Honda Civic is almost 20% higher than the Ford Focus and over 25% higher than the Chevrolet Cavalier.

- The "car" comparison included only 6-cylinder engines. While this appears fair on the surface, it is really an apples and oranges comparison. 6-cylinder engines are standard on the Ford Taurus, Chrysler Concorde, and Chevrolet Impala. 4-cylinder engines are standard on the comparable Honda Accord and Toyota Camry - the 6-cylinder engine is a performance option. This is because the advanced technology on Honda's engines provides very high power output for a given engine size, allowing a 4-cylinder Accord to have similar performance (and much better fuel economy) compared to other manufacturers' 6-cylinder engines. This is demonstrated by the fact that most Accord buyers feel the performance of the 4-cylinder is more than adequate for their needs - only 30% of Accord purchasers opt for the 6-cylinder engine.

- The small SUV comparison excluded the Honda CR-V.

- Ford only compared manual transmission models of small SUVs. Because of the performance characteristics of the engine, the Ford Escape is available with a 4-cylinder engine only with a manual transmission. This engine is so low-performance that Ford does not offer it with an automatic transmission - customers must take a 6-cylinder engine with much lower fuel economy if they want an automatic transmission. By contrast, the 4-cylinder engine on the Honda CR-V is sufficiently powerful that we do not need a 6-cylinder option to support an automatic transmission.

- Ford selected the Honda Passport for comparison with other mid-size SUVs. This is entirely inappropriate. The Passport is a very old design that will cease production after the 2002 model year. Ford excluded the Acura MD-X from the comparison, even though Honda sells over twice as many MD-Xs as Passports. The MD-X is the best fuel economy performer in its class and has significantly better fuel economy than the other models listed by Ford, in addition to substantially more horsepower.

- The minivan comparison is also misleading, although in a less egregious way. The Chevrolet Venture and the Toyota Sienna are significantly smaller than the other minivans. Not only does the Honda Odyssey have substantially more horsepower than the other minivans listed, but it also has better fuel economy than the two other minivans of comparable size, the Ford Windstar and the Chrysler Caravan.

We have appended as Attachment 1 a corrected vehicle comparison. It is based on Ford's "Vehicle FE Comparison", but with the problems listed above corrected and a "horsepower" column added. These comparisons clearly contradict Ford's testimony that: "Contrary to what you may have heard or believe, on an apples-to-apples basis, the fuel efficiency of vehicles from domestic manufactures is comparable to those from the international companies. Looking at today's fuel economy data, on a model-to-model basis, you will see very little difference in the fuel economy performance across the major manufacturers." That statement is simply inaccurate.

Given the variety of vehicles and engines offered by the major manufacturers, any comparison of individual vehicles could be selective and potentially biased. Fortunately, a much better source of data is available. The Fuel Economy Trends report published annually by EPA includes average mpg data for each model. EPA uses confidential production information submitted by each manufacturer to calculate a sales-weighted average fuel economy of the different engine and transmission offerings within each model.

Attachment 2 lists the top mpg vehicles for each vehicle class in which Honda competes, listed in order of decreasing mpg. These are the sales-weighted mpg values from Appendix C of the 2001 FE Trends Report, except that manufacturers other than DC, Ford, GM, Honda, and Toyota have been eliminated. The vehicle classes listed in Attachment 2 are also taken from Appendix C of the 2001 FE Trends Report.

The sales-weighted model data clearly demonstrates that, on a model-to-model basis, Honda's vehicles have substantially better fuel economy performance than vehicles from DC, Ford, and GM. The only apparent exception is the minivan class, where the Honda Odyssey ranks behind the GM Venture. However, as previously explained, the GM Venture is much smaller than the

Odyssey and has much lower horsepower. When size and power are considered, the Odyssey also has significantly better fuel economy performance than its competitors.

Honda's vehicles have better fuel economy primarily due to advanced engine technology. As discussed above, Honda's engines have very high power output. This is accomplished by careful design and use of many incremental technologies in our mass-market engines, such as 4 valves/cylinder, over-head camshafts, lightweight aluminum blocks, reduced engine friction, variable valve timing, and sequential multi-point fuel injection. Honda also pays attention to careful body design, to reduce weight and improve aerodynamics. The net result of these efforts can be seen indirectly in the class-leading fuel economy of our high volume vehicles.

In summary, the comparisons submitted by Ford do not accurately reflect comparable-model fuel economy performance. The Ford summary's omissions and careful selections lead to conclusions that are not supported by accurate and unbiased analysis. We trust that your Committee's examination will include all the relevant data, which shows conclusively that in fact there are very significant differences in fuel economy performance among the major auto manufacturers.

Sincerely,

Edward B. Cohen
Vice President
Government & Industry Relations

Attachments

ATTACHMENT #1

2002 FE Labels

Manufacturer	Carline	Engine	Cyl.	HP	Trans	City	Hwy	City/Hwy		
Compact cars										
Ford	Focus	2.0	4	130	Auto	26	32	28		
DC	Neon	2.0	4	132	Auto	24	31	27		
GM	Cavalier	2.2	4	120	Auto	24	32	27		
GM	Saturn SL	1.9	4	100	Auto	27	37	31		
Honda	Civic	1.7	4	127	Auto	31	38	34		
Toyota	Corolla	1.8	4	125	Auto	30	39	34		
Cars										
Ford	Taurus	3.0	6	155	Auto	20	28	23		
DC	Concorde	2.7	6	200	Auto	20	28	23		
GM	Impala	3.4	6	180	Auto	21	32	25		
Honda	Accord	2.3	4	150	Auto	23	30	25		
Honda	Accord	3.0	6	200	Auto	20	28	23		
Toyota	Camry	2.4	4	157	Auto	23	32	27		
Toyota	Camry	3.0	6	192	Auto	20	27	22		
SUVs										
Ford	Escape 4WD	2.0	4	130	Manual	22	25	23		
Toyota	RAV4 4WD	2.0	4	148	Manual	22	27	24		
Honda	CR-V 4WD	2.4	4	160	Manual	21	25	23		
Ford	Escape 4WD	3.0	6	200	Auto	18	23	20		
GM	Astek 4WD	3.4	6	185	Auto	18	24	20		
Honda	CR-V 4WD	2.4	4	160	Auto	22	26	24		
Ford	Explorer 4WD	4.0	6	210	Auto	16	20	17		
DC	Grand Cherokee 4WD	4.0	6	195	Auto	15	20	17		
GM	Blazer 4WD	4.3	6	190	Auto	15	20	17		
~~Honda~~	~~Passport 4WD~~	~~3.2~~	~~6~~	~~205~~	~~Auto~~	~~16~~	~~20~~	~~18~~		
Honda	Acura MD-X 4WD	3.5	6	240	Auto	17	23	19		
Toyota	4Runner 4WD	3.4	6	190	Auto	16	19	17		
Ford	Expetition 4WD	4.6	8		Auto	14	17	15		
GM	K1500 Suburban 4WD	5.3	8		Auto	13	17	15		
DC	Durango 4WD	4.7	8		Auto	13	18	15		
Toyota	Sequoia 4WD	4.7	8		Auto	14	17	15		
Toyota	Land Cruiser 4WD	4.7	8		Auto	13	16	14		
Small Pickups										
Ford	Ranger 2WD	2.3	4		Manual	24	28	25		
GM	S10 2WD	2.2	4		Manual	22	28	24		
Toyota	Tacoma 2WD	2.4	4		Manual	22	27	24		
Ford	Ranger 2WD	4.0	6		Auto	17	22	19		
DC	Dakota 2WD	3.9	6		Auto	18	29	18		
GM	S10 2WD	4.3	6		Auto	16	22	18		
Toyota	Tacoma 2WD	3.4	6		Auto	17	19	18		
Full Size Pickups										
Ford	F150 2WD	4.6	8		Auto	16	20	18		
DC	Ram 1500 2WD	5.2	8		Auto	14	19	16		
Toyota	Tundra 2WD	4.7	8		Auto	15	18	16		
GM	C1500 Silverado 2WD	4.8	8		Auto	15	20	17		
Minivans									length	width
Ford	Windstar	3.8	6	200	Auto	17	23	19	202	77
DC	Caravan	3.3	6	180	Auto	18	24	20	189/201	79
GM	Venture	3.4	6	185	Auto	19	26	22	187/201	72
Toyota	Sienna	3.0	6	210	Auto	19	24	21	194	73
Honda	Odyssey	3.5	6	240	Auto	18	25	21	201	76

ATTACHMENT #2

EPA 2001 Fuel Economy Trends Report
Model Year 2001 Nameplate Adjusted 55/45 MPG Listing - Appendix C
DC, Ford, GM, Honda, and Toyota Vehicles Only

Subcompact Car		MPG
Honda	Civic HX	38.2
GM	Metro	31.8
GM	Saturn SC	29.8
Toyota	Celica	29.5
Ford	Escort ZX2	28.1

Compact Car		MPG
Toyota	Prius	48.5
Toyota	Echo	35.5
Honda	Civic	33.6
Toyota	Corolla	32.9
GM	Prizm	31.5
GM	Saturn SL	30.2
Ford	Escort	29.3
Ford	Focus	28.1
DC	Neon	26.9
GM	Cavalier	26.3

Midsize Car		MPG
GM	Saturn L 4-cyl *	27.3
Toyota	Camry	25.5
Honda	Accord	24.8
GM	Monte Carlo	24.1
DC	Stratus	23.5
GM	Lumina	23.5
DC	Sebring	23.0
GM	Grand Prix	22.9
GM	Saturn L 6-cyl *	22.4
Ford	Sable	22.1
GM	Intrigue	22.0

Large Cars		MPG
GM	Impala	23.9
Toyota	Avalon	23.8
GM	LeSabre	22.8
GM	Bonneville	22.6
DC	Intrepid	22.4
DC	Concorde	22.2
Ford	Taurus	21.6

* Saturn L 4- and 6-cyl listed separtely - overall mpg unknown

Minivans		MPG
GM	Venture	21.7
Toyota	Sienna	21.1
Honda	Odyssey	20.5
DC	Caravan	20.1
Ford	Windstar	20.0

SUVs - 4WD		MPG
Toyota	RAV4	24.5
Honda	CR-V	23.0
GM	Aztek	20.8
Ford	Escape	20.5

Mid-Size SUVs - 4WD		MPG
Toyota	Highlander	19.8
Honda	Acura MDX	19.3
Honda	Passport	17.9
Toyota	4Runner	17.4
GM	Bravada	17.0
GM	Blazer	16.9
Ford	Explorer	16.9
Nissan	Xterra	16.9
DC	Grand Cherokee	16.8