The Honorable Christine Todd Whitman
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code 1100
Washington, DC 20460

Norman Y. Mineta
U.S. Secretary of Transportation
U.S. Department of Transportation
400 Seventh Street, SW
Washington, DC 20590

June 7, 2002

Re: Petition for rulemaking to amend testing and calculation procedures and/or correction factors for fuel economy information purposes

Dear Governor Whitman and Secretary Mineta:

Pursuant to the Right to Petition Government clause contained in the First Amendment of the US Constitution, the Administrative Procedure Act, the Clean Air Act and the implementing regulations of the U.S. Environmental Protection Agency (EPA), Bluewater Network (petitioner) hereby files the following petition for your consideration.

The fuel economy values that the EPA relays to the public and that the Department of Transportation (DOT) relays to Congress are not reflective of the fuel economy that American drivers are actually achieving on the road. Despite the fact that these figures portray an increasingly bleak picture of declining average fuel economy, America's cars and light-duty trucks are in fact achieving significantly poorer fuel economy.

In today's environment of mounting evidence of global warming, concern about the security implications of our increasing dependence on foreign oil, and relatively high gasoline prices, consumers and policy makers are increasingly taking fuel economy into account. It is vital that they be provided with accurate information on which to base these decisions that so critically impact our environment.

311 California, Suite 510 ~ San Francisco, CA 94104
T: 415.544-0790
BLUEWATER NETWORK
www.bluewaternetwork.org ~ bluewater@bluewaternetwork.org
F: 415.544.0796

We therefore petition EPA and DOT to take regulatory action to revise the test procedures, calculation methods and/or correction factors employed in the calculations used to determine the fuel economy information relayed to consumers and policy makers so that they more accurately reflect the actual, real-world fuel economy that vehicles are achieving on the road.

We further petition DOT to utilize the resulting more accurate fuel economy information in its annual updates to Congress on the automotive fuel economy program.

Concerns Related to Fuel Economy

Increasing concern about global warming, rising US petroleum consumption, and soaring oil prices have led consumers as well as policy makers to take a renewed interest in fuel economy.

A primary reason is the significant contribution that passenger vehicles in the US are making to global warming. Cars and light-duty trucks in the US are responsible for nearly 20 percent of annual US emissions of carbon dioxide (CO_2), or approximately five percent of global CO_2 emissions, and are projected to grow significantly in the future.[1] According to the Energy Information Administration (EIA), CO_2 emissions from transportation are growing faster than any other end-use sector.[2]

Another cause for concern about fuel economy is our increasingly unsustainable consumption of petroleum. Presently, the US consumes nearly 20 million barrels of petroleum per day. EIA projects that consumption will increase by 6.3 million barrels per day between 1999 and 2020, or 32.3 percent, with most of the increase (5.6 million barrels per day, or 89 percent) occurring in the transportation sector.[3] Light vehicles currently account for approximately 40 percent of all US petroleum consumption.[4]

Moreover, a growing proportion of petroleum consumed in the US is imported, much of it from the politically volatile Middle East. In 2000, imports hit an all-time high of 56 percent, and are projected to reach 64 percent by 2020.[5] Increased dependence on foreign oil makes the nation increasingly vulnerable to supply and price shocks, and has therefore become a major national security concern.

The recent rise in oil prices is yet another reason why fuel economy is again in the spotlight. The price of gasoline has soared in the past two years, rising by 70 percent from February 1999 ($0.95 per gallon) to May 2001 ($1.74), and has fluctuated unpredictably. The EIA projects that oil prices will remain above 1998 levels.[6]

---

[1] National Research Council. *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*. July 2001.
[2] Energy Information Administration (EIA), *Annual Energy Outlook 2001*.
[3] Ibid.
[4] EIA. *Annual Energy Review 2000*; EIA. *Annual Energy Outlook 2001*; EPA. *Light-Duty Automotive Technology and Fuel Economy Trends: 1975-2000.*
[5] National Research Council; Energy Information Administration. *Annual Energy Outlook 2001*.
[6] EIA, *Annual Energy Outlook 2001*.

The On-Road Shortfall

Since the CAFE program's inception in the mid-1970s, motorists complained that actual in-use fuel economy was significantly lower than the fuel economy figures reported by EPA.[7] In 1985, EPA adopted correction factors to adjust the fuel economy values derived from the city and highway test procedures, intending to account for differences between real-world driving and controlled laboratory conditions and to provide more accurate information to prospective car buyers.[8] The correction factors reduce the laboratory test results for the city test by 10 percent, and the highway test by 22 percent.[9]

However, drivers today continue to complain that they are not achieving the fuel economy displayed on the window sticker when they purchased their vehicle or published in EPA's annual *Fuel Economy Guide.*

A 1993 study by Mintz *et al* analyzed the shortfall experience of all household vehicles on the road in 1985 and found that the shortfall was significantly greater than the 15 percent correction factor EPA extrapolated to adjust the combined (55 percent city/45 percent highway) fuel economy value – 18.7 percent for automobiles and 20.1 percent for light trucks.[10]

In its *Annual Energy Outlook 2000*, the EIA indicates that the difference between the EPA's combined fuel economy ratings and actual on-road fuel economy was 14.5 percent for cars and 19.3 percent for light trucks in 2000. Furthermore, it is likely that the shortfall will continue to rise over time. The EIA projects that it will grow to 16.2 percent for cars and 20.9 percent for light trucks by 2020.[11] A 1989 study projected that the shortfall will be as high as 29.7 percent by 2010.[12]

Several recent studies highlight the shortfall as a significant problem that needs to be addressed. For example, the National Research Council's recent report to Congress, which assessed the effectiveness of CAFE standards, underscores that:

> Most drivers experience lower fuel economy than suggested by EPA's results. It should be noted that the test driving cycles were derived from traffic pattern observations made many years ago, which may not be representative now. A review of the validity of the test cycles for today's patterns would seem appropriate.[13]

---

[7] Mintz, Marianne, Anant D. Vyas, and Lester A. Conley, "Differences Between EPA-Test and In-Use Fuel Economy: Are the Correction Factors Correct?" Transportation Research Record 1416 (1993), 124-130; EPA. *Passenger Car Fuel Economy: EPA and Road.*
[8] Mintz *et al.*
[9] 40 C.F.R. 600.209.
[10] Mintz *et al.*
[11] EIA. *Assumptions to the Annual Energy Outlook 2000 With Projections to 2020*: Transportation Demand Module. DOE/EIA-0554. January 2000.
[12] Fred Westbrook and Patterson, Phil. "Changing Driving Patterns and Their Effect on Fuel Economy." Presented at the 1989 SAE Government/Industry Meeting, Washington, DC. May 1989.
[13] National Research Council.

EIA recently stated that:

> Because the adjustment uses factors based on technology features and driving conditions that pertained to vehicles used in the early 1980s, it may be inappropriate for evaluating vehicles used today. For example, increased urbanization, higher speed limits in nonurban areas, and increased traffic congestion in recent years could mean that the difference between the EPA fuel economy ratings and actual on-road fuel economy has increased to the point that current adjustment procedures are no longer adequate… [T]he current method for estimating fuel economy may have to be further adjusted to take account of changes in driving conditions… that have taken place in recent years."[14]

We recognize that EPA has made an effort recently to redress this problem, by providing adjusted fuel economy values in its annual *Light-Duty Automotive Technology and Fuel Economy Trends* beginning with its 2001 issue. However, these adjusted figures are presented alongside the unadjusted laboratory data, and the report is inconsistent in which set of numbers it cites in the text, which could cause users of the report considerable confusion. Moreover, the adjusted values continue to overstate actual on-road fuel economy, as they remain based on city and highway test procedures deduced from traffic measurements made some 30 to 40 years ago[15] and correction factors based on surveys of in-use fuel economy conducted in the late 1970s and early 1980s.[16]

Changes in Driving Conditions

Three primary variables that underlie EPA's test procedures and calculation methods -- the level of urban congestion, the percentage of driving done in urban areas, and average highway speeds -- have undergone significantly changes since these procedures and methods were designed.

Increasing Urban Congestion

Traffic congestion is growing in urban areas around the country. The number of urban lane miles increased by 34.5 percent between 1980 and 1999, from nearly 630,000 to more than 846,000. However, urban VMT rose 90 percent, from 855 billion to 1,628 billion over this same period, meaning that the average urban through-put, an indicator of congestion, has risen significantly.[17]

According to the *2001 Urban Mobility Study*, which examined congestion trends in major road systems of 68 US urban areas from 1982 to 1999, cities of all sizes are experiencing more severe

[14] EIA. "Change in Method for Estimating Fuel Economy for the Residential Transportation Energy Consumption Survey."
[15] National Research Council.
[16] EIA. "Change in Method for Estimating Fuel Economy for the Residential Transportation Energy Consumption Survey." September 2000.
[17] Patterson and Westbrook.

congestion that lasts for longer periods of time and affects more of the transportation network. The study reported that the average annual delay per person rose by 227 percent from 1982 to 1999, from 11 hours to 36 hours.[18]

The increase in urban congestion would suggest that drivers are achieving lower average fuel economy in urban areas than that derived from the city test, as the driving pattern is more stop-and-go, more time is spent idling, and because it takes longer to travel the same distance.

Increasing Urban Share of VMT

The percentage of driving taking place in urban areas has also increased steadily over the past several years. In 1975, 55.7 percent of VMT by passenger vehicles occurred in urban areas, whereas in 2001, this figure had risen to 62 percent.[19] This increase is primarily due to population shifts to urban areas and increasing urban sprawl (which results in a larger fraction of roads being classified as urban). The calculation of the combined fuel economy values used to assess auto manufacturers' compliance with CAFE standards assumes that only 55 percent of driving occurs in urban areas.[20]

Increasing Highway Speeds

The highway test assumes an average driving speed of 48 miles per hour (mph), which significantly underestimates typical average speeds on US highways today. Highway driving speeds have risen due to the increase in the speed limit[21] and greater numbers of more powerful vehicles, among other factors. According to one study, the average highway speed increased from 55.8 mph in 1975 to 59.7 mph in 1987, and was projected to reach 66 mph by 2010.[22] Increased highway speeds are important because there are significant fuel economy losses with speeds above 45 mph; the average loss in fuel economy from 50 to 65 mph is nearly 10 percent.[23]

The test procedures, calculation methods and correction factors have become obsolete as a result of the changes described above, and are therefore yielding estimates that significantly overstate on-road fuel economy.

Consumers have a right to be provided with accurate information about the actual fuel economy that they will be able to achieve when driving their vehicle. Policy makers must also have accurate information to enable them to make informed policy decisions regarding measures to improve fuel

---

[18] Texas Transportation Institute, *2001 Urban Mobility Study*.

[19] Includes motorcycles. Federal Highway Administration, Highway Statistics Summary to 1995; Federal Highway Administration, Highway Statistics 1999.

[20] To assess manufacturer compliance, DOT uses a single fuel economy value for each vehicle model, which represents a weighted average of the city and highway test results. The combined fuel economy value is calculated as follows: 1/[(0.55 x FEcity) + (0.45 x FEhighway)].

[21] Congress set the national maximum speed limit at 55 mph in 1974 as a fuel-saving measure in response to the oil crisis. It relaxed the law in 1987, raising the limit to 65 mph on highways built to Interstate standards outside urban areas. Moreover, the National Highway System Designation Act of 1995 repealed the law requiring that states adhere to national maximum speed limits; states are now permitted to set their own limits, or none at all. Federal Highway Administration, "Draft Section by Section Analysis of the National Highway System Designation Act of 1995."

[22] Patterson and Westbrook.

[23] Transportation Energy Data Book: Edition 20-2000.

economy. Undoubtedly EPA and DOT share Bluewater Network's hope that consumers will increasingly consider fuel economy when purchasing new vehicles, in light of concerns about global warming and high gasoline prices, and that Congress will enact policies to raise fuel economy, in light of environmental, economic and national security concerns related to fuel economy. It is therefore critical that EPA and DOT provide consumers and policy makers with accurate information and thus the proper signals to motivate them to do so.

We therefore urge EPA and DOT to undertake a rulemaking to adjust the test procedures, calculation methods and/or correction factors used to determine the fuel economy values relayed to consumers and to Congress so that they more accurately reflect today's driving conditions and in-use fuel economy. We further urge DOT to ensure that it utilize the revised fuel economy values that may result from this rulemaking in its annual updates to Congress on the automotive fuel economy program.

We look forward to your response, and to working with you to address this pressing problem.

Sincerely,

Russell Long, Ph.D.
Executive Director
Bluewater Network

Cc: Dr. Jeffrey W. Runge, Administrator, National Highway Traffic Safety Administration
Margo T. Oge, Director, EPA Office of Transportation and Air Quality
Jeffrey R. Holmstead, Assistant Administrator, EPA Office of Air and Radiation