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TRANSPORTATION'S ROLE IN CLIMATE CHANGE AND REDUCING GREENHOUSE GASES

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

JULY 14, 2009

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ONE HUNDRED ELEVENTH CONGRESS
FIRST SESSION

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TRANSPORTATION'S ROLE IN CLIMATE CHANGE AND REDUCING GREENHOUSE GASES

TUESDAY, JULY 14, 2009

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The full committee met, pursuant to notice, at 2:30 p.m. in room 406, Dirksen Senate Office Building, Hon. Barbara Boxer (chairman of the full committee) presiding.

Present: Senators Boxer, Inhofe, Carper, Lautenberg, Udall, Merkley, Specter, Voinovich, Barrasso, and Alexander.

OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. The hearing will come to order.

This is our second hearing today, and I want to thank my colleagues. I know everybody is torn between the Supreme Court nomination, writing a health care bill, and working on a defense bill on the Senate floor. So, we understand.

But we want to make sure, as we write our climate change legislation, that we are looking at every single area that will be affected. And here is Mr. Transportation coming now.

As we work to pass legislation that will reduce our dependence on foreign oil, create millions of clean energy jobs, and protect our children from pollution, we need to consider global warming pollution from the transportation sector. Why? According to the EPA, transportation activities account for one-third of all U.S. global warming emissions.

The Obama administration has already taken important steps this year to address global warming pollution from motor vehicles. I want to thank them for their action. And I want to thank Secretary LaHood, and, of course, Hon. Regina McCarthy, who are here with us.

In May, the President brought together the Federal Government, the State of California, and the auto industry behind a nationwide program to cut new carbon emissions from vehicles and raise gas mileage requirements, along with new national automobile emissions standards that follow California's lead.

On June 30th, the EPA finally granted California's request for a waiver providing the green light to my State and more than a dozen others to tackle tailpipe emissions of global warming pollution. The granting of this waiver will unleash innovative tech-

nologies that will create millions of new jobs as we move forward toward new, cleaner and more efficient vehicles. It will make our families and our communities safer and healthier since more efficient transportation reduces the smog and soot pollution which is associated with asthma and other respiratory disease.

I think this fact is overlooked. I know Senator Lautenberg gets it because he always talks about watching a child with asthma. We do know that when we cut back on carbon emissions, we also cut back on that particulate matter that comes out of our vehicles.

In my own State, entrepreneurs are already making great strides in developing highly efficient vehicles and advanced renewable fuels as well, some based on algae. To continue to achieve significant reductions in transportation emissions, we will need cleaner, more efficient cars, advanced clean burning renewable fuels, and development policies that reduce the distances Americans need to travel every day. We need to invest in better transit systems and other ways to help reduce emissions from the transportation sector.

National global warming legislation is the very best way to unleash the power of American innovation from coast to coast to create the full array of solutions we will need to step up to this challenge.

I certainly look forward to hearing from all of our witnesses here today on the role the transportation sector can play in reducing greenhouse gas emissions.

Again, I want to say to Secretary LaHood how much I appreciate his being here today. He is the one who said that he wanted to personally be here. I commend him for that. He has been in so many of our States. He was just in our State at our port in Oakland talking about the incredible potential of our ports to be even greater economic engines.

And, of course, Regina McCarthy, the Assistant Administrator, Office of Air and Radiation, at the EPA. And I want to thank my colleagues who are here for helping us get that nomination through, because her voice is really needed.

So, I am giving everybody 5 minutes. I went under that, and I would encourage that, but it is up to you. We will give you up to 5 minutes. And Senator Voinovich will start. Is that right, Senator Voinovich? I am sorry, Senator Barrasso will start.

OPENING STATEMENT OF HON. JOHN BARRASSO, U.S. SENATOR FROM THE STATE OF WYOMING

Senator BARRASSO. Thank you, Madam Chairman.

The Waxman-Markey bill is designed to make fossil fuel use more expensive. We heard that at our hearing this morning. Advocates say that we must make fossil fuel more expensive to change the behavior of businesses and consumers. That makes making everything that is powered by fossil fuels more expensive: your car, your home, your office.

Fossil fuels power the airplanes, the trains, the trucks that we use to ship goods from farms and small businesses to the marketplace all across this country and abroad. All these things will be made more expensive because of the Waxman-Markey bill.

Increasing the cost of bringing goods and services to market in a recession, at any time but certainly in a recession, is a recipe for

disaster, for economic disaster. This is going to lead to lost jobs and lost economic opportunity.

We cannot afford to lose any more jobs. In the month of June, we lost about a half-million jobs in the United States. The unemployment rate has hit 10 percent. Mandating that companies buy carbon credits or dramatically slash their emissions is only going to make matters worse.

There is an article that appeared in Business Week, June 15th, entitled A Dogfight Over Greener Air Travel. In it, the author states that the U.S. airlines face their first big deadline to meet European Union rules on emissions linked to global warming. That is when carriers landing in Europe will have to submit proposals to the European Union on how they plan to track the emissions.

The article goes on to say that this is the first step toward tough European cap-and-trade laws requiring airlines to either slash greenhouse gases or pay for permits to emit. The article states, U.S. airlines are watching these developments anxiously, in part because they are already struggling with weak travel demand and the yo-yoing fuel prices. Nancy Young, the Air Transport Association's Vice President for Environmental Affairs, said having to purchase credits will stifle funding for the very innovation airlines must develop to cut emissions.

The airline industry is not the only business struggling with weak consumer demand and already high fuel prices. The airline industry cannot afford these European regulations. By deciding to pass Waxman-Markey, the majority will increase their cost of doing business in an economic downturn.

The legislation will also increase the cost of every small business by dramatically forcing them to pay more for everything that uses energy. Those costs will put businesses in debt or out of business. Jobs will be lost. Unemployment rates will continue to go up.

This is an approach headed in the wrong direction. We need to keep business costs low so that businesses can expand and create new jobs. Now, we can do that by making American energy as clean as we can, as fast as we can, but without raising prices on businesses and on American families.

Our goal must be to do everything we can to keep red, white and blue jobs that we have now, and then also find ways to add green jobs. We need them all. Let us move forward with those goals in mind.

Thank you, Madam Chairman.

Senator BOXER. Thank you, Senator.

On my list, I have Senator Lautenberg next. No, Senator Carper is first. I am so sorry.

OPENING STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. Thank you so much.

To our witnesses, welcome. To this panel, it is nice to see that you both could be here, and the panel that will follow you.

A quick comment in response to Senator Barrasso's words.

We met earlier today, a group of us interested Democrats met earlier today with Congressman Boucher, Congressman Waxman

and Congressman Inslee. Among the things we talked about were the costs of the Waxman-Markey bill.

We learned that CBO, which is neither Democrat nor Republican but non-partisan, has actually put a price tag, per family, on the Waxman-Markey bill, and said it works out on the annual basis of $170 per family. That is about 50 cents per day per family, or about the price of a postage stamp. And the lowest 20 percent of families are basically, the lowest quintile if you will, are exempted from those costs, basically, at all. So, I would ask us to keep that in mind as we go forward.

Madam Chairman, I want to thank you for holding this hearing. We have examined, as you know, many causes and solutions to climate change. But one area that has not received enough attention is the transportation sector.

Transportation accounts for some 30 percent of greenhouse gas emissions in our country. If we do not curb emissions from transportation, we will either fail to reduce greenhouse gas emissions to the level scientists say are necessary, or we will have to ask other sectors to make up the difference.

When the transportation sector has been considered before, the focus has always been on vehicle fuel economy or tailpipe emissions. In the last, Congress I was extremely proud to play, with my colleagues, a role in increasing the CAFE standard for cars and trucks for the first time in some 30 years. The new standard requires the entire U.S. fleet of cars and trucks to average about 35 miles per gallon by 2020, and President Obama recently announced that we will reach 35 miles per gallon by 2016.

In the same bill that raised CAFE, Congress also established a renewable fuel standard requiring that 36 billion gallons of renewable fuel is sold in 2020, up from 9 billion today. Taken together, the CAFE and the renewable fuel standard are expected to save $2 million barrels of oil per day and save consumers more than $80 billion.

While this is a major improvement, we must remember that our goal is to reduce greenhouse gases by 60 to 80 percent. We need to look for other ways to make the transportation system cleaner in this country.

In March, I introduced, along with Senator Arlen Specter, the Clean Low Emission Affordable New Transportation Efficiency Act, known as CLEAN-TEA. CLEAN-TEA reserves some 10 percent of allowance allocations and dedicates those funds to funding transportation projects that reduce greenhouse gas emissions.

Ten percent of allocations might sound like quite a bit. But, as I mentioned before, the transportation sector is 30 percent of the problem and growing faster. Not slower, but growing faster than any other sector. In addition, projects funded with these allocations will create jobs and reduce the transportation expense of Americans. I believe this is a critical piece of the puzzle which, if left out, hampers the effectiveness of our overall reduction efforts.

In 1975, you will recall, we created the first CAFE standards. But, at the same time, we closed down transit systems and built homes far from workplaces, schools, groceries and doctors. As a result, driving increased by 150 percent, and, therefore, even though cars got significantly more efficient, American use of oil in the

transportation sector increased by some 50 percent. We cannot afford to make that mistake again.

Last year, when gas prices went to $4 per gallon across our country, Americans sought ways to save money by driving less. Many of them found that their transportation options were, unfortunately, quite limited. Their neighborhoods had no sidewalks, and many of their communities had little or no transit service. Those who had options exercised them, but those who did not either had to pay the price of gas and skimp elsewhere or reduce the quality of their life. That is unacceptable.

We fund our transportation system through gas tax, which goes to say that we pay for roads and transit by burning gasoline. When people drive less, our transportation budgets dry up. So States and localities that seek to reduce oil use, lower greenhouse gas emissions and save their constituents money receive smaller transportation budgets. We ought to be rewarding them by sending money based on how much they reduced emissions.

As we develop a climate change bill, we must consider how every sector of the economy can play a part in lowering greenhouse gas emissions. When it comes to the transportation system, we, right here in Congress, have a lot to say about how that system is developed, how efficient it is, and how polluting it is. We should make sure that as we tell American businesses to get their house in order, we clean up our act as well.

By incorporating transportation provisions in the next climate bill later this year, we have the chance to make progress addressing many problems at once, finding additional funding for transportation infrastructure, building money, saving transportation alternatives, and lowering greenhouse gas emissions. This is an opportunity that we cannot afford to waste.

Thank you, Madam Chairman.

Senator BOXER. Thank you very much.

Senator Inhofe, since you are Ranking, I would call you or Senator Voinovich, whichever of the two.

Senator INHOFE. I will wait, that is fine.

Senator BOXER. OK.

OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Senator VOINOVICH. Thank you, Madam Chairman.

I appreciate the witnesses' being here today.

Senator Carper, I was interested in the CBO numbers. But I want to point out that those CBO numbers were based on the EPA analysis, and I have asked the Chairman to ask the EPA to re-run that analysis because it does not include some information that it should as it did last year when they came up with a comprehensive analysis of the bill.

Madam Chairman, thank you for holding today's hearing. I think we both agree that an open dialog among members is helpful. As we move ahead, I am anticipating the more substantive hearing on the legislative texts that you and I discussed and that you promised would occur.

Having a hearing on transportation's role in climate change is essential given the sector is responsible for roughly one-third of the

greenhouse gases released in the United States. Yet, as we seek policies to reduce these emissions, we must do so in a way that does not cripple an industry that our economy relies upon.

According to the Bureau of Transportation Statistics, the transportation-related goods and services accounts for more than 10 percent of the U.S. gross domestic product. Only three sectors, housing, healthcare and food, contributed a larger share of the GDP than transportation.

Transportation also contributes to the economy by providing millions of jobs. Indeed, 1 of every 7 jobs in the United States is transportation related. The transportation industry, including direct and indirect jobs, employed more than 20 million people in 2002, accounting for 16 percent of the U.S. total occupational employment.

Indeed, there are very few options available to the industry to reduce emissions, and many of these options are already being employed. These options include, one, increased vehicle fuel efficiency, which is already in the EISA through increased CAFE standards and through the new DOT tailpipe emissions standards; two, the blending of lower carbon additives with gasoline, which is already handled through the renewable fuel standard; and three, by replacing transportation fuels with something else.

The Waxman-Markey treatment of transportation fuels creates numerous problems. It will do little to reduce greenhouse gases in the transportation sector and instead could significantly raise gasoline prices for all consumers and further erode our Nation's energy security.

In my opinion, the caps are completely severed from what technology is able to deliver in terms of reduced emissions. This is a problem that extends beyond the transportation sector. The main cost containment mechanism in the bill, international offsets, also allows for off-shoring of literally tens of billions of dollars annually to meet compliance obligations that are otherwise unachievable.

The disconnects between what technology is capable of and what the bill requires is particularly troubling for our Nation's refiners. Because there are limits on our ability to reduce carbon in transportation fuels, what we are talking about here is sun-setting an industry.

The Waxman bill places disproportionate compliance obligations on producers of transportation fuels than for other major industries. Indeed, the bill holds refiners responsible for their own emissions, plus the emissions from the use of petroleum products, gasoline, diesel, jet fuel, home heating and so forth.

In total, refiners are responsible for approximately 44 percent of all covered emissions. Yet, the legislation grants them a mere 2 percent of these allowances. By contrast, the electric suppliers, who are responsible for 40 percent, get a 35 percent allowance.

This places an extremely high financial burden on the industry. Indeed, many refiners have indicated to me that they will not be able to pay for these costs in the face of decreasing demand and increased foreign competition.

And because refiners are not covered by the bill's provision which attempts to protect manufacturers from international competition, the legislation will force the off-shoring of U.S. refining capacity and jobs, leaving us at the mercy of foreign nations for refined gas-

oline supplies. Our Nation has over 700 million gallons of crude oil stored at the Strategic Petroleum Reserve for emergency. Of what use will that be if we do not have the refineries to refine it?

To the extent that the price increases can be passed to the consumers, the price increases will be significant. In fact, the same CBO analysis that was released indicates that the bill could add as much as 77 cents to the price of a gallon of gasoline over the next decade, with a significant impact on families, workers and industry.

What is clear is the combination of policies appeared by Congressmen Waxman and Markey in their climate change and energy bill will have significant impact on consumers including the poor, the elderly, those on fixed incomes and the businesses that drive our economy. This has been confirmed by the President, echoed by the Treasury Secretary and OBM Director.

In fact, increasing prices is the intent of the bill's authors. For years now, proponents of cap-and-trade legislation have been calling for a price signal on carbon. So, the story goes, it will induce consumers to change behavior, thus reducing their emissions.

While I believe climate change is an issue that needs to be addressed, we must not lose sight of the impacts that the policies will have on America's economy, communities, workers and families.

I think I would like to hear from the witnesses today about where they come out on all of this.

Thank you.

Senator BOXER. Thank you.

Senator Lautenberg.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator LAUTENBERG. Thank you, Madam Chairman, for holding this hearing.

I want to say to Secretary LaHood that I have watched you develop your views of how a Secretary of Transportation will operate, and I have seen wonderful signs of progress, and I commend you and urge you to carry on.

Just to note, we are at a transformative moment in the way Americans travel and ship their goods. The choices this committee makes in the next few weeks can shape our country and our future generations, attitude and health.

Right now, greenhouse gases from the transportation sector account for one-third of our country's total emissions, and emission from transportation come to everybody's neighborhood. There is no community that is free, and there is no doorway that is free from effects of toxic emissions from transportation and vehicles.

With America's population expected to hit 420 million people by 2050, it could mean even more cars and trucks on the road producing emissions that cloud the atmosphere and create the greenhouse gases that warm our planet.

So, we have a choice. We either hasten the effort to find alternatives, or run the risk of impairing the health of our children. Senator Boxer mentioned my interest in asthma. I have a child who has asthma. I note that the growth of asthma among young people over these last years is enormous. They are affected by bad

air which comes, ultimately, from the fact that our climate is changing and man is soiling the atmosphere. So, we have a choice. And the choice must include every sector of our economy working as one.

When it comes to transportation, it means trains, subways and barges that are more energy efficient and less destructive to our planet. For the last few years, we have seen Amtrak, for instance, break ridership records.

And I point out that the statistics are significantly threatening. In 1990, there were 189 million vehicles on the road. That is automobiles, buses and trucks. Sixteen years later, we had a gain of 60 million vehicles. That is in a period of 16 years. So, the condition is not going to improve if we stand by and watch the growth in the number of vehicles on our roads.

Just look at Amtrak. In fiscal year 2008, Amtrak's ridership hit more than 28 million riders, marking the sixth straight year of gains. People want the convenience and reliability of public transportation. But they also want a better quality of air and the environment.

We have seen similar gains with commuter trains, buses and subways. The numbers are improving enormously. We just have to work harder to keep up with the availability of public transit. These gains prove an essential point. If we provide convenient, reliable and efficient mass transportation options, Americans will choose them. And by making that choice, they are taking cars off the road and greenhouse gases out of the air.

Moving travelers and goods by rail uses 20 percent less energy than moving the same travelers or goods with cars or trucks. Yet Federal investment in rail and other efficient modes of transportation has been almost non-existent compared to investments in highways and aviation. That needs to change. That is why the recovery law that we passed, and President Obama signed, contains more than $8 billion for high-speed rail. This money will not only improve faster rail service and create jobs, but it will also fight climate change.

That is why the last Congress overwhelmingly passed a landmark law to prepare Amtrak and the States for the next generation of travelers. And that is why Senator Rockefeller and I have introduced a bill that would take a comprehensive and national approach to transportation planning and set clear goals for reducing emissions and congestion. Now, this committee in the Senate has to lead the way by passing a strong global warming bill that makes long overdue investments in developing energy efficient transportation options.

We do not want to see fewer jobs in this country. We cannot afford to do that. But we can plan for better jobs accompanying movements to a greener climate, a cleaner atmosphere, and to have that become a yardstick for our future.

Senator BOXER. Thank you, Senator.

Senator Inhofe.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Thank you, Madam Chairman.

I say to my good friend from Delaware, do not get too wrapped in this CBO thing because, one of the many faulty assumptions they have is that the revenues that will come in as a result of higher price for energy are going to rebated back to the people. Do you really think, in this Washington environment, that these things are going to rebated back? I think probably not.

This is one of the areas where the Chairman and I do get along in terms of wanting a robust transportation system. We have talked to Secretary LaHood about this. We both want to see, if there is an extension coming up, perhaps tomorrow, from this committee, that we try to get this thing through because this is something that is not just a jobs bill, but is something that has to be done. We are way behind.

I think, sometimes, about the 2005 bill and, as robust as it was, that did not really even maintain what we have today. The committee is going to consider the extension, and I look forward to that.

But today we are examining a different aspect of the transportation sector, and that is the role it would play under a cap-and-trade system. There is some interesting debate about what its role would look like, but there is no debate about this: cap-and-trade will make gasoline more expensive for American consumers.

The consumers represented here today are America's truckers. Trucking is a highly competitive industry with very low profit margins, sometimes no profit margin. This explains why, as fuel prices increase, many trucking companies are reporting lower profits if they are reporting any profits at all.

In 2007 and 2008, for example, over 5,000 trucking companies with at least five trucks went out of business, and thousands of independent operators, drivers and employees have lost their jobs. If we enact cap-and-trade legislation, fuel prices will rise, and more jobs in the trucking sector will be lost.

Supporters of cap-and-trade say it is all worth it because their policy would help break our dependence on foreign oil. Just look at EPA which, in its analysis of the Waxman-Markey bill, actually predicts that cap-and-trade will barely make a dent in petroleum use. In fact, the opposite is true, which is that passing this legislation will make us even more dependent on imports of refined petroleum products like gasoline, diesel, jet fuel and home heating oil.

The ISCF international study on the impacts of last year's Lieberman-Warner climate legislation indicate refining investment would drop over $11 billion in 2020 due to the burdensome costs cap-and-trade would impose on the U.S. refining sector. Moreover, the same analysis estimated that petroleum product imports would double from 15 percent to nearly 30 percent by 2020.

It is kind of interesting, if you look back on the discussions we had over 10 years ago on Kyoto, the studies that came out such as the Charles River Associates, the Wharton School, the MIT, all of them consistently talk about the high costs of this thing. And then to come out and say, for some reason, that this is going to be dif-

ferent, it is still cap-and-trade, we are still talking about the same thing.

It is a little bit laughable when people say we want to do something about dependence on the Middle East to run this country called America when those individuals are the very ones who have a moratorium on drilling offshore, and on oil sands, on shale, in the Western United States, and we could become independent overnight if we just lift those moratoria.

Whatever the solution is, we want to expand all domestic production, all forms of energy. That is our position, I think, on this side of the aisle. We want nuclear, clean coal, oil, natural gas, wind, geothermal. You name it, we want it. Bur we want it all. We want to leave everything on the table. I think we are the only country in the world that does not produce its own assets. So that is the thing that we need to change.

So, whatever the solution, we cannot lessen our dependence on foreign oil through taxes, mandates and bureaucracy. We can only do it by opening access to all forms of domestic energy and occurring innovation and the creation of new technologies right here at home.

Thank you, Madam Chair.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE,
U.S. SENATOR FROM THE STATE OF OKLAHOMA

Madam Chairman, you and I both know the importance of robust funding for our Nation's highways and bridges and ensuring the Highway Trust Fund is able to meet its commitments. I look forward, as always, to working with you on passing a highway bill extension and Trust Fund fix in the next 2 weeks.

As we have discussed many times in this committee, the Highway Trust Fund is going to run out of money sometime in the next few weeks and will require an infusion of $5 billion to $7 billion to get through the rest of fiscal year 2009. Additional funds will be needed to fund the highway and transit programs in future years.

This committee is going to consider an 18-month extension later this week. The Trust Fund will require a total of $20 billion to get through this 18-month period according to this Administration. It is critical to fix this shortfall. Failing to do so will delay planned and ongoing road projects and result in people being laid off. This would be unacceptable any time, but more so during today's economic downturn.

But today, we are examining a different aspect of the transportation sector—that is, the role it would play under a cap-and-trade system. There is some interesting debate about what its role will be. But there's no debate about this: cap-and-trade will make gasoline more expensive for American consumers. What's more, it will actually increase our dependence on foreign oil.

The consumers represented here today are America's truckers. Trucking is a highly competitive industry with very low profit margins. This explains why, as fuel prices increase, many trucking companies are reporting lower profits, if they are reporting any profits at all.

In 2007 and 2008, for example, over 5,000 trucking companies with at least 5 trucks went out of business, and thousands of independent operators, drivers, and employees have lost their jobs. If we enact cap-and-trade legislation, fuel prices will rise, and more jobs in the trucking sector will be destroyed.

For the sake of argument, let's use EPA's projected cost of carbon under cap-and-trade, which is about $20 per ton for CO_2. According to EIA estimates, Americans consumed about 268 billion gallons of finished petroleum products such as gasoline, diesel fuel and jet fuel in 2008. What does this mean? Well, according to the Union of Concerned Scientists, in testimony before the House Energy and Commerce Committee, this would translate into an increase of 20 cents per gallon of gasoline for American consumers.

If we take a step back and look at the big picture, this means consumers would pay almost $54 billion more annually for gasoline, diesel fuel, jet fuel and other petroleum products. And that is a low-ball estimate. As the cost of carbon increases over time—in addition to fluctuations in the global price of oil and the costs of more

refined product being imported because of higher operating costs to refiners in the United States—these costs estimates are likely to be much higher.

Supporters of cap-and-trade claim it will help break our dependence on foreign oil. In fact, the opposite is true: passing this legislation may make us even more dependent on imports of refined petroleum products like gasoline, diesel, jet fuel, and home heating oil.

Refining trends are not encouraging. Many of the new refinery capacity expansions abroad are being built to produce fuels solely for the U.S. market. According to a recent article in the publication OPIS about Indian refining company Reliance Industries, "Reliance's plan to sell oil products from its new 580,000-barrel per day Jamnagar refinery to the U.S. is beginning to take shape as the Indian refiner secured an additional 1 million barrel storage space at BORCO in the Bahamas." The 580,000 barrel per day figure alone represents more than 6 percent of U.S. daily gasoline consumption. This number is from one foreign refinery.

An ICF International study on the impacts of last year's Lieberman-Warner climate legislation indicated refining investment would drop over $11 billion in 2020 due to the high costs cap-and-trade would impose on the U.S. refining sector. Moreover, that same analysis estimated that petroleum product imports would double from 15 percent to nearly 30 percent by 2020.

Despite routine denial from environmentalists, it's clear that we will be using petroleum for decades to come. This is no secret; it's a fundamental fact of everyday life. So let's get on with it: let's expand domestic production of all forms of energy—nuclear, clean coal, oil, natural gas, wind, geothermal, you name it. Just last week, I introduced legislation to spur development of natural gas vehicles—which is one of many innovative ways to lessen our dependence on foreign oil.

Whatever the solution, we can't lessen our dependence on foreign oil through taxes, mandates, and bureaucracy. We can only do it by opening access to all forms of domestic energy and encouraging innovation and the creation of new technologies right here at home.

Senator BOXER. Thank you very much, Senator Inhofe.

Senator Alexander.

OPENING STATEMENT OF HON. LAMAR ALEXANDER, U.S. SENATOR FROM THE STATE OF TENNESSEE

Senator ALEXANDER. Thank you, Madam Chairman.

On the issue of climate, picking up where we left off this morning in our discussion on climate change and energy, you know, we have a spectrum of opinions in the U.S. Senate. We have some people who believe that it is a hoax, and we have some people who are ready to jump off a cliff. I am sort of, well, I am not ready to jump off a cliff by a long shot, but I believe that it is enough of a problem that we ought to buy some insurance.

I believe there are some other important issues before the American people that we have to consider, some of which Senator Inhofe just mentioned, such as the independence of our energy system, not relying on other countries too much, having large amounts of electricity, and especially having cheap energy. High priced energy drives jobs overseas looking for cheap energy. I mean, the Alcoa plant shut down in Tennessee waiting on a cheaper energy contract from TVA.

Senator Leahy says that it will stop its expansion if the Waxman-Markey bill passes. Eastman Chemical hires 10,000 or 12,000 people. So, costs matter. We should be looking for the cheap, easy way to do this, not for the hard, expensive way to do it.

That is why, this morning, I was suggesting, why do you not, you know, if you are sitting around saying I really care about climate change and 40 percent of the carbon is electricity or coal-fired power plants, and nuclear power produces zero carbon and 70 per-

cent of our pollution-free carbon-free electricity, why would we not build 100 new plants?

Now we are talking about transportation. I think that is about as easy. I mean, transportation is about 30 percent carbon and greenhouse gases. Well, why do we not put a low-carbon fuel standard on our vehicles? And gradually ratchet it down. We could do that in such a way that we actually lowered fuel prices, instead of raised them, because we have an alternative. We have electric cars. We have had testimony that we could electrify half our cars and trucks in the next 20 years without building one new power plant if we plug them in at night.

It is much more difficult over on the electricity side because we have not built a new nuclear plant in 30 years, so something is stopping it, even though France is 80 percent, and Japan and India and China and everybody else is going ahead.

But back to transportation. Why would we construct this big contraption of payoffs and allowances and taxes and mandates and interference in the free market that is in the Waxman-Markey bill when all we have to do is simply say, let us start with carbon.

People say we want an economy-wide climate change bill. We do not, really. I mean the Waxman-Markey bill is 83 percent of the economy and all of the economy-wide bills, so-called, that have come up here are 75, 80 or 83. Coal plants are 40 percent, transportation is 30 percent, so why not take the 70 percent and the cheap, easy way instead of going the hard way with all of these taxes?

As to the fact that it does not cost anything, well somebody is going to be paying up to $100 billion a year. Somebody is. And that is about $1,000 per family.

Dr. David Greene at the Oakridge National Laboratory, one of the most effective persons on transportation fuels, testified several times before this Congress, before this committee, on behalf of higher CAFE standards. When he did that on November 13, 2007, he also said that an economy-wide cap-and-trade is inefficient in reducing carbon in transportation because it would not raise the price of gasoline enough to change human behavior.

Why would we deliberately go out and raise everybody's gas tax? You know how much people really like that. Why would we do that if it does not reduce carbon? I mean, that is doing it the hard way and inviting opposition.

So, what started out to be an effort to reduce carbon to deal with global warming has turned out to be a byzantine construction of a contraption of taxes and mandates that may not do anything, when, instead, we could be building nuclear power plants for electricity and using a low-carbon fuel standard for carbon, and nothing else, leaving alone the cow tax, all of these cement companies, auto companies, leave them all alone. Let us take 70 percent of the economy and do something that actually works.

I will be interested in talking more about the low carbon fuel standard and why that is not sufficient and more efficient.

Thank you, Madam Chairman.

Senator BOXER. Thank you very much, Senator.

Senator Udall, you arrived at the moment of your opening statement. It is perfect timing.

Senator UDALL. I defer. I want to hear from these brilliant witnesses here. Thank you.

Senator BOXER. All right. No pressure, though.

Senator UDALL. I will put my opening statement in the record.

Senator BOXER. We will do that, without objection.

Senator UDALL. Thank you.

[The prepared statement of Senator Udall follows:]

STATEMENT OF HON. TOM UDALL,
U.S. SENATOR FROM THE STATE OF NEW MEXICO

Exactly 1 year ago today, a barrel of oil was $146.95, about the time that American cars, trucks and airplanes came to a screeching halt. Over the last month prices have been "only" $60 or $70, about where they were after Hurricane Katrina caused a huge price spike.

I think that most drivers and truckers in America believe we are going to see $150 oil and $4–$5 gasoline and diesel sometime again in the not-too-distant future. The era of cheap oil is over, and fossil fuels are unsustainable. Seventy percent of what is left of the world's oil is in the Middle East, Russia and Venezuela. We consume 25 percent of the world's oil and only have 3 percent of the supply—a figure that includes areas that we are not currently producing.

Every time you fill your tank, 40 percent of your gasoline bill goes to foreign oil—an oil dependence tax on consumers that it is likely to go up in the future as oil supplies diminish.

- In 2008, OPEC projected a dip in supply over the next 5 years.
- In 2007, the Government Accountability Office, the non-partisan investigative arm of Congress, said the U.S. should prepare for the decline of global oil supplies.
- In November 2007, the Wall Street Journal reported "the world is approaching a practical limit to the number of barrels of crude oil that can be pumped every day."

We could follow to the naysayers who argue that tackling clean energy and climate change is too expensive, but if we do, we will still be stuck with three terrible costs.

(1) We will still continue to pay a 40 percent oil dependence tax on each gallon of gasoline.

(2) We will lose the economic race for leadership in clean energy jobs.

(3) We will hand down a Nation to our children whose farms, forests, cities, mountains, and coastlines are irrevocably changed for the worse.

Or we can follow the President and the House of Representatives and realize that our window to act is now. The House bill is not perfect, but we should work to improve it, not to kill it.

We need to put a market price on carbon and greenhouse gas emissions to reflect their true cost on our national security, our economy, and our environment.

That price will become a huge market incentive for a sustainable portfolio of efficiency, biofuels, batteries, natural gas, and fuel cells that will transform our energy economy away from oil dependence.

Senator BOXER. Well, it is our great honor to turn to our distinguished panel. First will be Hon. Ray LaHood, Secretary of the United States Department of Transportation.

Mr. Secretary, the floor is yours.

STATEMENT OF HON. RAY LaHOOD, SECRETARY, U.S. DEPARTMENT OF TRANSPORTATION

Mr. LAHOOD. Thank you, Chairman Boxer, Ranking Member Inhofe and members of the committee for inviting me to discuss transportation's role in reducing the impact of climate change and cutting greenhouse gas emissions and in lessening our dependence on foreign oil.

These are very high priorities for President Obama's administration. We are committed to taking aggressive action to move the United States toward a clean energy environment that will create

jobs, spur innovation and help make our communities more livable and sustainable.

The Department of Transportation plays a key role in meeting these goals. The transportation sector accounts for nearly one-third of all greenhouse gas emissions in the U.S., and nearly two-thirds of that total is generated by passenger cars and light duty trucks.

Clearly, we must take action to make all forms of transportation more fuel efficient while stepping up efforts to introduce low-carbon fuels and alternative power sources for all types of vehicles from cars and trucks to buses and rail systems.

We are coordinating with the Environmental Protection Agency to develop new, coordinating tailpipe emissions and fuel-economy standards for 2012 through 2016. And we are leveraging technology to better manage traffic congestion and other factors that directly affect fuel consumption and emissions.

However, while these actions are important, they are not sufficient to take us where we need to go. If we were to achieve a 55 mile per gallon fuel efficiency standard in the coming years, carbon emission levels from the transportation sector would still only decline modestly.

In order to achieve our goals, we must implement policies and programs that will reduce total vehicle miles traveled. This means providing communities with additional transportation choices such as light rail, fuel-efficient buses, and paths for pedestrians and bicycles that intersect with transit centers. These efforts would also reduce household transportation costs, strengthen local economies, lower traffic congestion and reduce our reliance on foreign oil.

Our strategy also calls for investing transportation dollars in coordination with housing investments and economic development policies. By doing so, we can promote strong communities with mixed income housing located close to transit in walkable neighborhoods. Last month, we took an important first step toward this goal. HUD Secretary Donovan, EPA Administrator Lisa Jackson and I announced a new partnership to coordinate planning for, and Federal investments in, housing, transportation and water infrastructure so that we may create more sustainable communities.

This approach is enormously important to ensure that citizens in urban, suburban and rural communities have access to jobs, central business districts and other services without relying solely on private automobiles. In addition to supporting our environmental goals, this approach also helps preserve mobility for older citizens as well as those who are transit dependent.

We strongly believe that America needs a transportation program that seeks to bring down total vehicle miles traveled by redefining what livable, sustainable communities are all about. Our livable community partnership is a climate strategy, and it is an essential part of bringing down greenhouse gas emissions from the transportation sector.

Multi-modal transportation options, small community planning, smart community planning and efficient alternative fuel consumption are the hallmark of this approach. And we look forward to working with Congress to achieve these important goals in both an overall climate change strategy and a surface transportation reauthorization bill.

I look forward to your questions.
[The prepared statement of Secretary LaHood follows:]

STATEMENT OF
THE HONORABLE RAY LAHOOD
SECRETARY OF TRANSPORTATION

BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

HEARING ON
TRANSPORTATION'S ROLE IN CLIMATE CHANGE
AND GREENHOUSE GASES

JULY 14, 2009

Chairman Boxer, Ranking Member Inhofe, and Members of the Committee:

Thank you for inviting me to appear before you today to discuss transportation's role in climate change and reducing greenhouse gases.

Reducing dependence on foreign oil and reducing greenhouse gases (GHGs) are high priorities for the Obama Administration. The President is committed to action that will end our dependence on oil, create millions of clean energy jobs, and protect our children from dangerous pollution. President Obama has also made it clear that the United States will be a leader in the global effort to reduce greenhouse gas emissions. In fact, the G8 Leaders just last week expressed their support for a goal among developed nations of reducing their emissions by 80 percent by 2050 as part of a goal to be shared by all nations of achieving at least a 50 percent reduction of global emissions by that date. This acknowledges the broad scientific view that warming should be limited to no more than two degrees Celsius. This is a critical first step.

While there is much to do, the Department is taking steps to address transportation-related emissions and to target the most effective actions to reduce the sector's greenhouse gas emissions.

Virtually all human activities have an impact on our environment, and transportation is no exception. Transportation is crucial to our economy and our personal lives. It is also, however, a significant source of greenhouse gas emissions. In 2007, transportation accounted for 29 percent of total United States GHG emissions. About 60 percent of transportation emissions were from passenger cars and light-duty trucks, about 20 percent from medium- and heavy-duty trucks, and about 12 percent from aviation. As a consequence, it is imperative that the transportation sector be part of the solution.

The Department is working aggressively to implement forward-thinking policies and other measures that will reduce our dependence on fossil fuels, spur clean energy technologies and infrastructure developments, create jobs, and reduce emissions of

greenhouse gases to improve the lives of Americans. I want to take a few minutes to describe some of our efforts.

In 2007, when the Energy Independence and Security Act was enacted, the fuel economy standard for cars was still 27.5 miles per gallon, the same level established by Congress in 1975. The standard for light trucks, such as minivans, sport utility vehicles, and pickups, was 22.2 miles per gallon. DOT recently issued new fuel economy standards for passenger cars and light trucks for model year 2011. Under those standards, the Corporate Average Fuel Economy (CAFE) level for the industry as a whole is expected to be 30.2 miles per gallon for new cars and 24.1 miles per gallon for new light trucks.

In May, President Obama announced a new National Policy to establish the first-ever national greenhouse gas and fuel economy program for cars and light-duty trucks. DOT and the Environmental Protection Agency in coordination with the Department of Energy are working to develop proposed CAFE and GHG standards for 2012-2016. These standards would encourage the auto industry to use more fuel-efficient technologies that will save billions of gallons of fuel and ultimately save American consumers money. The proposed new rules would increase CAFE standards and adopt new GHG standards such that, by 2016, if the automotive industry achieves the CO2 level all through fuel economy improvements, the new cars and light trucks sold each year deliver a combined industry-wide fleet average of 35.5 miles per gallon. Preliminary analysis indicates cumulative greenhouse gas reductions of approximately 900 million metric tons (CO2 equivalent) and fuel savings of approximately 1.8 billion barrels of oil. DOT also is implementing new statutory authority to issue fuel economy standards for medium and heavy duty trucks.

Additionally, DOT is focusing on improving the operational efficiency of the transportation system. Improving system operations can decrease traffic congestion and delay, reduce fuel consumption, and decrease greenhouse gas emissions from the transportation sector. Currently, the Department conducts research, performs field tests, and disseminates information on traffic signal systems, freeway management, traffic incident management, and traveler information. The Department also works to enhance the design and implementation of work zones, provide information on different modes of transport and trip timing, and is researching ways to implement congestion pricing where appropriate.

All of these efforts reinforce DOT's commitment to tackling the climate change challenge, achieving America's energy security, and improving the lives of Americans.

However, as I mentioned before, passenger cars and light trucks account for 60 percent of all transportation emissions, and therefore reducing surface transportation related emissions should be a primary focus. Enhancing system efficiency, increasing fuel efficiency and introducing low carbon fuels such as biodiesel, ethanol, electricity, and hydrogen are important steps to reducing transportation related greenhouse gas emissions, but these measures cannot stand alone. Even if vehicle fuel efficiency were to

reach 55 mpg by 2030, we would still see only modest decreases in transportation CO2 emissions without a decrease in vehicle miles traveled (VMT).

Addressing VMT growth plays a key role in decreasing transportation related GHG emissions and should be included in overall efforts to prevent climate change. One way to achieve significant reductions in VMT is to develop more livable communities.

The effects of reduced VMT on greenhouse gas emissions have repeatedly been demonstrated. A report aired on National Public Radio evaluated the carbon footprint of two families living in Atlanta. One family moved from a walkable, transit-served community to a car dependent one and another family moved from a car dependent area to a livable community. The greatest difference in CO2 emissions between the families was in transportation related emissions. The carbon footprint for the family that moved to a car dependent area was 40 percent higher, and transportation accounted for almost 85 percent of the difference. This report, among others, indicates the relevance of VMT to greenhouse gas emissions and indicates that we should accelerate our efforts to identify ways to reduce VMT growth in order to meet our climate goals.

There are several steps that can be taken to spur the development of more livable communities and reduce VMT:

First, we can provide more transportation choices in more communities across the country. Single occupancy vehicles should be only one of many transportation options available to Americans to reach their destinations. Walking, bicycling, light rail and buses can be made available in more places.

Second, we can promote development of housing in close proximity to transit. In addition to reducing VMT and greenhouse gas emissions from cars driven by commuters, such planning would have the added benefits of decreasing transportation costs for families and reducing traffic congestion.

Third, we can promote mixed-use development, which incorporates residential and commercial buildings, allowing individuals the choice to walk, drive a shorter distance or easily use public transportation to reach their destination. Residents should have the option to live in an area with services and goods that are easily accessible. In addition to reducing greenhouse gas emissions, this would also reduce travel times involved in driving to and from grocery and department stores, medical service providers or even entertainment centers such as movie theaters.

While many view community planning and multi-modal transportation as affecting only urban or larger suburban areas, there are many ways in which such provisions would benefit smaller towns and rural areas as well. A strong, well planned town center could provide smaller towns or rural communities with easy access to jobs and services in one centralized location and increase foot traffic around locally owned small businesses. These town centers will also protect open spaces and valuable farmland. Additionally, all people, whether in urban or rural areas, need access to job centers, medical services and

schools. In urban settings this access might take the form of sidewalks and bike lanes. In rural areas, it might look more like intercity rail and bus service. But, especially as populations age, non-driving access to essential services is increasingly central to making towns more livable for 21st century populations. This poses a particular challenge for rural areas.

All of these factors will be critical elements of our livability initiative. Our work will not be easy, but it offers great promise for improving the lives of all Americans and reducing our use of energy and greenhouse gas emissions. The Department of Transportation and other agencies are already working closely to determine the best means to support sustainable, livable communities.

On June 16, Housing and Urban Development Secretary Shaun Donovan, Environmental Protection Agency Administrator Lisa Jackson, and I announced a new partnership to help American families in all communities - rural, suburban and urban - develop sustainable communities. Over the course of our collective work, we have defined six guiding principles. We are committed to

- providing more transportation choices,
- promoting equitable, affordable housing,
- enhancing economic competitiveness,
- supporting existing communities,
- coordinating policies and leverage investment, and
- valuing the uniqueness of communities and neighborhoods.

These principles will guide the interagency working group as we continue our efforts.

As we consider surface transportation reauthorization -- both in the short and longer-term -- the Department will prioritize creating a livability program that measurably works to reduce VMT, greenhouse gas emissions, and also provide added economic benefits to Americans in all geographic locations. Multi-modal transportation combined with mixed-use development and smart community planning are important issues to address when we consider transportation's role in climate change. Combined with more efficient vehicles and cleaner burning fuels, these strategies will be important to reaching our GHG reduction goals. They will also reduce our reliance on foreign oil

The Senate now has the opportunity, for the first time, to create a system of clean energy incentives designed to jumpstart a clean energy economy and confront the threat of carbon pollution. As the President has said, it is important that we accomplish these goals while protecting consumers, and helping sensitive industries transition.

I have outlined in my testimony today some of the ways in which the Department of Transportation can contribute to this effort. We would be particularly pleased if the final legislation gave the Department better tools to integrate climate change considerations into the transportation planning, financing, and implementation process and to facilitate

system improvements. Failing to recognize the connection between transportation and climate change will likely jeopardize our ability to achieve our GHG reduction goals.

Livable communities obviously have many benefits, but we should also take note that such planning will also have a large long-run impact on greenhouse gas emissions. For this reason, I hope to work with members of Congress to address these issues and find ways to decrease transportation's contributions to climate change.

Before closing, I would like to mention that while the focus of this hearing is surface transportation, the Department's climate change efforts go beyond highways and transit. In aviation, we have begun to modernize the U.S. air traffic system, called the Next Generation Air Transportation System (NextGen), and have put energy and environmental concerns at the heart of the effort. NextGen will result in the more efficient movement of planes in the air and on the ground. We are in the process of setting up a research consortium this year focused on accelerating the maturation of lower energy, emissions, and noise technologies for aircraft and engines and advancing cleaner alternative fuels. FAA has also partnered with manufacturers, airlines, and airports in the Commercial Aviation Alternative Fuel Initiative to develop and certify alternative fuels.

Likewise, the Maritime Administration is focused on the potential of new technologies to reduce the harmful emissions from marine diesel engines through cooperative efforts with the Environmental Protection Agency and the maritime industry on alternative fuels and reduced ship stack emissions.

We are engaged internationally through the International Civil Aviation Organization and the International Maritime Organization to help achieve global agreement on how best to reduce greenhouse gas emissions from international aviation and international shipping and we are beginning to see the results of our new level of engagement. In the coming months and years we will accelerate our efforts to help minimize the impacts from these international emissions.

While transportation emissions contribute to climate change, transportation infrastructure will also face climate impacts such as rising sea levels, changing precipitation patterns, and temperature fluctuations. The need for adaptation is unavoidable. To ensure the continued integrity of the nation's transportation system, transportation infrastructure decisions must adequately consider forecasted effects and impacts from climate change. The Department will undertake activities to assist state and local transportation decision-makers in assessing vulnerability and risk of transportation infrastructure to climate change effects, and planning and implementing strategies to adapt to climate change impacts.

Thank you again for the opportunity to discuss these important matters. I look forward to future collaboration and would be pleased to answer any questions you may have.

Committee on Environment and Public Works
United States Senate
July 14, 2009 Hearing
Follow-Up Questions for Written Submission

Questions for Secretary Ray LaHood

Questions from:

Senator Benjamin L. Cardin

QUESTION 1. The time and energy Americans spend stuck in traffic is both detrimental to our economy and to families. In the DC metropolitan area alone the 15% of commuters take more than hour to commute to and from work every day. The fuel consumption associated with these long, or prolonged depending on the traffic, commutes is enormous, not to mention that this is valuable time that could otherwise be spent earning income or with their families.

Increasing access to transit would help alleviate traffic congestion, save commuters time and money and use less energy.

A.• Secretary LaHood, what are some of the energy savings associated with transit as compared with personal vehicle transport?

B.• As we consider new climate change and energy legislation how do you see public transit investments fitting into the picture?

RESPONSE (A):
The energy and emissions savings resulting from using transit depend on multiple factors. The most important single factor is capacity utilization in transit. A single eight-car heavy rail train may carry more than 500 passengers, with commensurate savings, compared with single-occupancy vehicles. However, a transit bus with a single passenger is markedly inferior to a lone automobile.

Adding a single rider to an existing transit system with surplus capacity produces negligible additional fuel consumption or emissions, while adding or removing an extra on-road vehicle adds or removes several thousand Btu per passenger mile traveled.

The comparison between adding additional transit capacity and additional highway capacity will largely depend on the capacity utilization for the transit system. On-peak urban systems will generate large savings. Off-peak, suburban, rural, and other low density routes will have relatively less favorable comparisons with automobile travel on average.

Individual transit systems typically provide a mix of on-peak and off-peak services and have both high density and low density routes. According to the Federal Transit Administration's report, *Public Transportation's Role in Responding to Climate Change*, comparing the fuel use of transit system with typical capacity utilization and automobile travel:

Single Occupancy Vehicle (SOV) compared to modes of transit with average occupancies:

- Buses have 33% better fuel economy
- Heavy rail cars have 54% better fuel economy
- Light rail cars have 37% better fuel economy
- Commuter rail cars have 54% better fuel economy
- Van pool vehicles have 58% better fuel economy

When comparing SOVs with modes of transit at full seat capacity, the fuel savings are as follows:

- Buses have 83% better fuel economy
- Heavy rail cars have 89% better fuel economy
- Light rail cars have 84% better fuel economy
- Commuter rail cars have 89% better fuel economy
- Van pool vehicles have 90% better fuel economy

When comparing a 4-person carpool in a personal vehicle with modes of transit operating at full capacity, the fuel savings are as follows:

- Buses have 33% better fuel economy
- Heavy rail cars have 54% better fuel economy
- Light rail cars have 37% better fuel economy
- Commuter rail cars have 54% better fuel economy
- Van pool vehicles have 58% better fuel economy

RESPONSE (B):
As new climate change and energy legislation is considered, we see public transit investments as key components in achieving the desired outcomes of such legislation. Transit can be a low-emission, fuel-efficient alternative to automobiles, and is therefore an important tool for communities to provide low-emission, fuel-efficient transportation alternatives for citizens. Further, when transit investment is combined with sustainable mixed-used development, a synergistic effect occurs that amplifies the greenhouse gas reductions of each activity. In addition, deployment of alternative fuel and hybrid transit buses has demonstrated technologies that are applicable to other heavy-duty vehicles. Overall, when considering the suite of strategies to achieve the objectives of effective greenhouse gas and energy reduction, transit is one component that could contribute to the desired outcomes of a stabilized climate and sustainable energy consumption.

QUESTION 2. A few weeks back you came before this committee to discuss the dire situation involving the solvency of the transportation trust fund. This week, this

committee will report a temporary reprieve to the Full Senate to address this problem. However, looking forward consideration should be given to revenue sources for transportation projects especially as we consider growing and expanding transit options as means of reducing our greenhouse gas emissions.

> • How can Congress effectively make a climate/clean energy/green jobs bill a viable opportunity to generate revenue for transit projects?

RESPONSE:
We need to ensure that the transportation funding system for the nation is sufficiently flexible to address the different transportation challenges that face state, local, and regional governments. This includes the need to reduce greenhouse gases through transportation strategies such as increasing the availability of transit services and other modal choices to Americans. Our funding system must be designed to have the capacity to bring the country's transportation network to a state of good repair with improved safety, as well as facilitating an efficient 21st Century economy with the ability to address climate change effectively

QUESTION 3. Energy efficiency and safety from public transit are a direct result of proper maintenance and repair of these systems. As we all know to well from last month's tragedy on Metro's Red line what can happen when systems are not adequately maintained and problems go unfixed.

Currently, the Federal Government only offers funds for the purchase of new transit projects (new buses, rail cars or expansion of systems) and the cost burden for maintenance and repair of vehicles and infrastructure is the sole responsibility of state and local governments which often means it is underfunded.

> • What recommendations would you make for Congress to help municipalities better maintain and preserve existing transit vehicles and infrastructure?

RESPONSE:
The Federal Government does fund transit maintenance activities and improvements to existing systems. For urbanized areas with a population greater than 200,000, FTA formula grants reimburse transit agencies for eligible capital expenses. By law, this definition includes all preventive maintenance, defined by the Federal Transit Administration (FTA) as all maintenance. FTA's fixed guideway modernization formula grants provides capital assistance to operators of fixed guideways for improvements and modernization of existing assets.

Maintaining all transit assets—whether it is rolling stock or facilities—in a state of good repair will help ensure that public transportation continues to deliver safe and reliable transit service to the American public. Unfortunately, the economic downturn has affected revenues to transit agencies like most other businesses. It is important to ensure public transportation agencies receive adequate funding to enable good choices about maintaining, rehabilitating, replacing, or upgrading transit assets.

FTA has focused considerable attention on the state of good repair in the past year, including convening several workshops of industry stakeholders. A report issued in June, 2009, identified capital asset management planning as one way of reducing the cost of maintaining assets in a state of good repair over the long term. Linking increased funding to improved capital asset management planning is an option that Congress could consider in the next authorization. Congress should also consider refinements to the fixed guideway allocation formula. We look forward to discussing these options, and others that individually and in concert will help local transit operators better maintain their infrastructure and improve the state of good repair of their transit systems.

QUESTION 4. One of the common misconceptions about transit opportunities and smart growth is that it is entirely urban-centric. I can tell you that "Shore Transit" serving Maryland's *Eastern* Shore counties and Allegany County Transit in Western Maryland are examples of reliable transportation options serving rural communities.

- How might we further expand access and availability of public transportation for rural communities?

RESPONSE:
Systems such as those in Maryland have benefited from the increased funding for rural public transportation with the enactment of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) on August 10, 2005. Funding under FTA's formula grants for other than urbanized areas program now exceeds $500 million annually. These funds are apportioned to the States for public transportation in rural and small urban areas. Rural public transportation also benefits from transfers of flexible funding apportioned under Federal highway programs. In addition, FTA provides up to $15 million a year for Tribal Transit services. The American Recovery and Reinvestment Act of 2009 provided an additional $766 million for public transportation in rural areas and $17 million for Tribal Transit. The Rural Transit Assistance Program (RTAP) also provides funding at both the State and National levels for technical assistance, training, and support services to promote the provision of safe and reliable public transportation in rural areas. SAFETEA-LU included a provision requiring rural public transportation systems to report to the National Transit Database so FTA can track the increases in rural public transportation resulting from the increased Federal spending.

Moreover, the Department of Transportation (DOT) recognizes that rural areas have needs that are unique to their rural characteristics, and our livability initiative values their uniqueness. For example, rural communities are being affected by the aging of the population and often have a higher percentage of older Americans who need access to services while being dependent on the automobile. Under DOT programs, we have worked to include rural America in the transportation decision making process by ensuring that there is a proactive effort for the participation of the public and rural local officials in the statewide transportation planning process. Through early and ongoing public involvement in the planning process, the States are able to understand and plan for

rural transportation needs. Presently, we are working with the Department of Housing and Urban Development and the Environmental Protection Agency to explore new ways of fostering sustainable transportation and development in both urban and rural areas. Sustainable development in rural areas means providing for and supporting their capacity to maintain their character with a mix of businesses and a clean and healthy environment while also providing for access to services in town and urban centers in a safe and reliable manner.

Senator Amy Klobuchar

QUESTION 1. Secretary LaHood, as we have discussed in regards to transportation policy, I'm sure we agree that climate change legislation must be transformational. Elements of transportation that are energy intensive today can be energy efficient tomorrow if we make the right decisions now. What recommendations do you have to help transform the transportation sector from energy intensive to energy frugal? How do you envision DOT's role?

RESPONSE:
There are many opportunities to lessen transportation energy consumption. There are many near-term technologies that may have a large impact on emissions. According to the Energy Information Administration, for instance, advanced conventional gasoline vehicles and hybrid electric vehicles may decrease average new vehicle emissions by nearly a third by 2030. More advanced technologies such as hydrogen and electricity could have even greater impacts, but these technologies require a large financial investment and a long timeline.

An innovative area of transportation involves improving the efficiency of the transportation system, thereby decreasing energy demand and costs. Strategies to improve system efficiency include congestion management, measures to increase the efficiency of freight movement, expansion of transit, improving bicycling and walking conditions, and improving land use and parking management. DOT, HUD, and EPA have formed a partnership to provide communities with the tools necessary to gain better access to affordable housing, more transportation options, and lower transportation costs. Additionally, an intermodal team has formed to support livability as a part of transportation reauthorization and the Sustainable Communities Partnership.

On the aviation front, we have put addressing energy and environmental issues at the heart of the Next Generation Air Transportation System (NextGen) plan, including development of new and improved air traffic management products to reduce fuel burn and emissions. FAA has a new technology demonstration program to accelerate development of lower energy, emissions, and noise aircraft technology, and a public-private partnership to foster the development and deployment of sustainable alternative fuels. FAA is also working to foster the conversion of airport ground support equipment to clean energy through the Voluntary Airport Low Emissions (VALE) program, funded under the Airports Improvement Program.

The Department is nearing completion of its Report to Congress, *Transportation's Role in Reducing U.S. Greenhouse Gas Emissions*. We look forward to sending this report to the Committee, as it examines a range of strategies and options to reduce emissions from the transportation sector.

Senator James M. Inhofe

QUESTION 1. What is the Department's policy on the appropriate role of the EPA in developing GHG standards for the transportation sector, including on each of the issues of automobile technology, fuel technology and transportation planning decisions? What roles and responsibilities are you asserting for the Department of Transportation in setting GHG emissions reductions standards?

RESPONSE:
The Department of Transportation is responsible for regulating light duty vehicle fuel economy under the CAFE Statutes, and has authority to regulate fuel economy of heavy duty vehicles under the Energy Independence and Security Act.

- On September 15, DOT and EPA issued a joint Advance Notice of Proposed Rulemaking under their respective CAFE and Clean Air Authorities to regulate light duty vehicle fuel economy and greenhouse gas emissions under a National Program covering model years (MY) 2012-2016.

- EPA and DOT's Federal Aviation Administration (FAA) have an ongoing consultative relationship in the setting of emissions standards for aircraft engines as well as fuel quality standards for aviation fuel. This standard is enforced by the FAA.

- Internationally, the International Civil Aviation Organization (ICAO) is developing proposed measures for reducing greenhouse gas emissions from aviation and aircraft engine emission standards. The International Maritime Organization (IMO) is developing a greenhouse gas design index for ships. The US delegation to the ICAO is led by the FAA, and the US delegation to the IMO is led by the US Coast Guard. Multiple agencies, including EPA, contribute to the formulation of the US position in these agencies. Future US policy will be informed by ICAO and IMO deliberations.

The Department of Transportation is primarily responsible for Federal funding of aviation, highway and transit infrastructure, for managing the national air space, and for safety regulation of all transportation modes. DOT is also responsible for regulating transportation planning, and developing models for use by transportation planners. EPA provides emissions models and establishes how to determine the air quality impacts of transportation investments.

QUESTION 2. Do you think any added Federal taxes-either through a direct gas tax increase or an indirect tax such as cap and trade-should be invested in transportation infrastructure to begin addressing our $500 billion backlog of deferred highway and bridge maintenance and hundreds of billions of dollars in needed new investments?

RESPONSE:
It is crucial that we resolve the solvency problems currently faced by the Highway Trust Fund. The Administration recommends an 18 month extension of the current authorization. During this period, we plan to work together to develop a comprehensive, long-term reauthorization that provides the necessary reforms and resources to ensure that our surface transportation systems can meet the economic, environmental, social, and international competitiveness challenges of the 21st century. A variety of revenue mechanisms have been proposed that will be debated during the coming reauthorization discussions. The Administration is not yet prepared to endorse any of these proposals.

QUESTION 3. The President's cap and trade proposal aims to curb carbon emissions from the entire economy. The purported benefits of cap and trade are to set the total amount of acceptable carbon emissions and allow the market to determine the most efficient means of allocating the necessary cuts. Some people engaged in this debate advocate for additional, sector-specific limits. Do you support efforts to place an additional cap on transportation sector carbon emissions or to tie transportation funding to carbon emissions?

RESPONSE:
Advocates for additional, sector-specific limits cite studies indicating that few initial emission cuts will come from some sectors, such as transportation. For instance, EPA's recent analysis of H.R. 2454 indicated that a fraction of domestic emission reductions will come from the transportation sector. EPA's analysis indicates that most near-term domestic reductions will come from end-use efficiency gains and the power sector. The Energy Information Administration's analysis produces similar results. Sector-specific limits can be effective in the absence of an emissions cap; however, under a cap they would not reduce national greenhouse gas emissions. Limits would only rearrange emissions across sectors.

Sector specific limits may have a role in encouraging long-run technological change.

The joint DOT-EPA rulemaking on light duty vehicle fuel economy and greenhouse gas emissions is an example of a measure that will reduce greenhouse gas emissions in the absence of cap, and reduce compliance costs if and when a cap-and-trade bill is passed, promote long-run technological change, and reduce fuel costs for consumers.

QUESTION 4. In response to questions from Sen. Voinovich about the highway trust fund at a hearing this Committee held earlier this year, you expressed serious concern about raising gasoline prices. In fact, you stated, "This administration, in these hard economic times, with so many people out of work, can ill afford to tell people that we are going to raise the gasoline tax." However, this is essentially what a cap-and-trade program aims to do and you testified in favor of this policy before the Energy and Commerce Committee. Other Administration officials have explicitly stated this program will lead to higher gasoline and energy prices. In testimony about the costs of cap and trade at a House hearing last September, OMB director Orszag stated: "Much of those costs will be passed along to consumers in the form of higher prices for energy and

energy-intensive goods." How do you rectify these two divergent viewpoints from the Administration? Do you agree with your earlier statement about how people can ill afford to pay more for fuel, or with your new position that raising consumer energy prices through cap-and-trade is OK?

RESPONSE:
A cap and trade program will likely raise the price of carbon-intensive goods, including carbon-intensive travel. It is important, however, to note the magnitude of these increases. EPA's recent estimates indicate that H.R. 2454 would raise gasoline prices $0.25 per gallon in 2030 and $0.69 in 2050, much smaller than the fluctuations in gasoline prices we've seen in recent years. EPA's analysis indicates that the cost for an average family in 2020 will be a few cents per day. Another analysis by the Department of Energy's Energy Information Administration indicates that the H.R. 2454 would raise gasoline prices by $0.20 per gallon in 2020, and $0.35 per gallon in 2030. (EIA's analysis did not extend to 2050). EIA's estimate of the reduction in household consumption due to H.R. 2454 was $134 per year in 2020, and $339 in 2030.

However, more important than the magnitude of increases is the comparison between the use of gasoline tax revenues and possible cap and trade revenues. Cap and trade revenues could be used to assist those most affected by the price increase on energy-intensive goods. H.R. 2454 contains provisions for this purpose.

QUESTION 5. You have promoted as a priority the concept of "livable and sustainable communities" where people can live, work and shop all in the same area as a means of reducing vehicle miles traveled and related emissions. Unfortunately, we still haven't seen many details as to what exactly this will involve. I'm concerned that it either is taking a too simplistic view of society and personal decisions and preferences or it will result in reduced choices about where to work and live. In the absence of real details, can you please describe how this concept will address the fact that many workers now change jobs fairly frequently? Or how about the fact that about 70% of workers live in households with other workers, who may or may not work in similar fields?

RESPONSE:
Livable communities expand housing and transportation choices for people of all ages, incomes, races and ethnicities. They also enhance economic competitiveness through reliable and timely access to employment centers, educational opportunities and other basic needs of workers as well as expanded business access to markets.

The Sustainable Communities Partnership encourages the development of mixed-use, mixed-income housing to promote diverse transportation, employment, and housing opportunities. This diversity within condensed development near transportation hubs will increase access to employment for the worker as well as provide more options to reach that employment. Through the Sustainable Communities Partnership with HUD and EPA, DOT is working hard to develop strategies for providing safe, reliable and economical transportation choices that expand the employment opportunities of American workers.

QUESTION 6. We've been hearing more and more that one requirement of a global warming bill should be to reduce vehicle miles traveled. Yet, at an EPW hearing last year, a witness from the Natural Resources Defense Council testified, "One key issue to be aware of is that there are very substantial GHG reductions from improved traffic flow, roughly equal to those from reduced VMT." He went on to give an example of reducing greenhouse gas emissions through reducing congestion that was even accompanied by a small increase in VMT. So why isn't there more of a focus on addressing congestion, rather than the drumbeat to reduce VMT?

RESPONSE:
We are in full agreement that congestion on our highways is an important contributor to wasteful fuel consumption and excessive emissions output. We believe that we can get greater efficiency out of our highway systems, by reducing the overall growth in vehicular travel, by reducing congestion and improving traffic flow, and by replacing low mileage vehicles with more fuel efficient vehicles, and that this improved efficiency would greatly reduce fuel consumption and GHG emissions. This is also the case in our national airspace system, where we are seeking to accelerate the implementation of the Next Generation Air Transportation System plan to enhance energy efficiency of air travel. The best solution will require a combination of policies and programs that accomplish all these objectives. We believe it is critical that reauthorization legislation address these objectives in an imaginative and bold manner.

Senator George V. Voinovich

QUESTION 1. Last week in this Committee, Energy Secretary Chu touted the benefits of using freight trains to transport goods as a way of reducing C02 emissions.

Today, a freight train can move a ton of freight over 436 miles on a single gallon of diesel - a 90-percent improvement in fuel efficiency since 1980.

Building on that success, last week, CSX - a major railroad in the East and employer in Ohio - became the first transportation company in the Nation to get a certified GHG emissions reduction goal as part of EPA's Climate Leader Program.

CSX is also working on the National Gateway. The National Gateway Initiative, which my colleague Senator Cardin is well aware of, looks to modify the old B&O line into an efficient double-stack rail route linking Mid-Atlantic ports with Midwestern markets. The National Gateway will result in a significant reduction in greenhouse gas and other air emissions and thousands of jobs in Ohio, Maryland and 4 other states.

Do you believe Congress should continue to fund freight rail projects as part of the next surface transportation reauthorization bill that encourage public-private partnerships, which reduce greenhouse gas emissions, highway congestion and highway maintenance costs?

RESPONSE:
Depending on the type of railcar and the distance of transport, shipping freight by rail will require one-fourth to one-third of the fuel that the same shipment would require if it were shipped by truck. Because of this drastic difference in fuel efficiency, railroads emit fewer greenhouse gases and other pollutants. These reductions in fuel consumption are also noted in intermodal shipments, in which the truck trailer or shipping container is placed on a railcar in lieu of highway transport for the long-haul segment of the journey. One intermodal train can carry the equivalent of 280 trucks. Also, railroads have worked over the past years to improve their fuel efficiency and have shown gains of over 21 percent from 1990 through 2006. These gains are the result of a mix of technical improvements in railroad plant and improvements in equipment and operations. Ongoing developments will improve fuel efficiency as new technologies are implemented.

With our national goals of increasing safety, reducing greenhouse gas emissions, and reducing highway congestion, railroads can continue to play an important role as an alternative to highway freight transportation. As we begin to work on reauthorization, we must consider the appropriate relationship going forward between government and private rail companies. We look forward to continuing this dialogue with Congress.

Senator BOXER. It is my pleasure to introduce Hon. Regina McCarthy, Assistant Administrator, Office of Air and Radiation, United States Environmental Protection Agency.

Administrator.

STATEMENT OF HON. REGINA McCARTHY, ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Ms. MCCARTHY. Thank you.

Chairman Boxer, Ranking Member Inhofe and members of the committee, I want to thank you for the opportunity to testify today on transportation's role in reducing greenhouse gas emissions and moving our country toward a clean energy economy. I am pleased to offer this testimony together with Secretary LaHood.

Let me start with some important facts that underscore the challenge we face in developing a low-carbon transportation sector.

Today, transportation accounts for 29 percent of all U.S. greenhouse emissions, and that percentage keeps increasing. From 1990 to 2007, greenhouse gas emissions in this sector rose by 29 percent, while vehicle miles traveled increased by 40 percent. And this large and growing sector is almost wholly dependent on a single fuel. Transportation alone accounts for over 70 percent of U.S. oil consumption.

Transportation sits at the convergence of the climate change and energy security debate, and effective policies here can make tremendous progress toward a healthier planet and a more secure Nation. Congress clearly recognizes the opportunities. Recently, the House of Representatives passed the American Clean Energy and Security Act. In addition to covering transportation through an upstream cap, the bill includes engine standards, measures to help address greenhouse gas emissions from existing fleet vehicles, and tools to help States and cities account for greenhouse gas impacts in their transportation planning.

This kind of comprehensive approach is necessary if we are to make progress toward a low-carbon transportation future.

Let me describe a few of the steps the Administration has already taken. In May, President Obama announced a new national policy to establish, for the first time, uniform Federal standards to regulate both fuel economy and greenhouse gas emissions from cars and light duty trucks. This historic policy reflects unprecedented collaboration and consensus between the Federal Government, States, and private industry. EPA and the DOT are working together to develop this program. The benefits of these standards will be significant, bringing about cumulative greenhouse gas reductions of approximately 900 million metric tons and fuel savings of approximately 1.8 billion barrels.

Progress has also been made to reduce greenhouse gas emissions from heavy duty and non-road vehicle engines. But more needs to be done. Together, these sources comprise 42 percent of all transportation greenhouse gas emissions, and that percentage keeps growing.

When addressing this sector, we also need to consider opportunities to reduce black carbon. Scientists are learning more about black carbon every day. However, we do know that it significantly

contributes to warming and diesel engines are the single, largest source of black carbon in the United States.

Because of the link between particulate matter and black carbon, EPA has already been able to bring about large reductions in black carbon through our heavy duty and non-road emission rules. Our voluntary diesel retrofit is achieving additional reductions from the existing fleet. But again, more needs to be done.

EPA is also making progress on another major policy that will impact greenhouse gas emissions from the transportation sector, our expanded Renewable Fuel Standard. The Energy Independence and Security Act of 2007 mandates that transportation fuels include 36 billion gallons of renewable fuels by 2022.

In May, the Administrator signed a notice of proposed rulemaking to implement these new standards. We are now using this comment period for the rule to conduct a further scientific and public review of EPA's work, including our comprehensive methodology to evaluate the greenhouse gas impacts of these biofuels.

In an effort to address emissions for our existing fleets, EPA has been implementing our SmartWay Transport Program, where we have joined more than 1,500 industry partners to reduce fuel consumption in the freight sector.

Providing incentives to reduce the number of miles we drive must also be part of the solutions. Investments in public transportation and making communities more walkable results in less driving, less petroleum use and fewer greenhouse gas emissions. Fewer vehicle miles traveled also reduces criteria pollutants and can provide greater protections from the debilitating health impacts of air pollution.

EPA is pleased to have joined DOT and HUD in the Partnership for Sustainable Communities. We congratulate Secretary LaHood for his leadership in this partnership, and we pledge our continued efforts together.

I would like, in closing, to just thank the committee for keeping transportation a strong component part of our clean energy solution.

I would be pleased to answer any questions that you may have.

[The prepared statement of Ms. McCarthy follows:]

STATEMENT OF REGINA A. MCCARTHY
ASSISTANT ADMINISTRATOR
OFFICE OF AIR AND RADIATION
U.S. ENVIRONMENTAL PROTECTION AGENCY

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
JULY 14, 2009

Chairman Boxer, Ranking Member Inhofe, and Members of the Committee, thank you for the opportunity to testify today on transportation's role in reducing greenhouse gas (GHG) emissions and moving our country toward a clean energy economy. I am pleased to offer this testimony together with Secretary LaHood from the Department of Transportation. Our two agencies have developed a strong partnership and I look forward to continuing this relationship as we work together to enhance the transportation sector's role in meeting the challenges we are facing.

Today, transportation accounts for 29% of all U.S. greenhouse gas emissions. It is one of the fastest growing sources of greenhouse gas emissions. From 1990 to 2007, transportation greenhouse gas emissions rose by 29 percent due, in large part, to increased demand for travel and the stagnation of fuel efficiency across the U.S. vehicle fleet. The number of vehicle miles traveled by light duty motor vehicles (passenger cars and light-duty trucks) increased 40 percent from 1990 to 2007. This large and growing sector is almost wholly dependent on a single fuel and, in fact, accounts for over 70% of U.S. oil consumption. These numbers suggest the challenges we face in developing a low-carbon transportation sector. Transportation sits at the convergence of the climate

change and energy security debate and effective policies here can make tremendous progress toward a healthier planet and a more secure nation.

Congress has clearly recognized these opportunities. Recently, the House of Representatives passed the American Clean Energy and Security Act of 2009 which, in addition to covering the transportation sector through an upstream cap, includes a number of policies for the transportation sector, including engine standards, measures to help address GHG emissions from the existing vehicle fleet, and tools to help states and cities account for GHG impacts in their transportation planning. President Obama has said that he will support a bill that reflects the principles he believes are essential for our nation's energy future: decreasing our dependency on oil, creating millions of new jobs in emerging clean-energy technologies, and reducing the pollution that is a danger to our children. As Administrator Jackson said when she appeared before this Committee last week, clean energy is to this decade and the next what the Space Race was to the 1950s and '60s, and America is behind. Governments in Asia and Europe are ahead of the United States in setting policies that promote aggressive investments in clean-energy technology. American businesses need strong incentives for investments now in order for this nation to lead the 21st Century global economy.

I believe a comprehensive approach is necessary if we are to make progress towards a low-carbon transportation future. Let me describe a few of the steps this Administration has already taken. In May, President Obama announced a new National Policy to establish for the first time uniform federal standards to regulate both fuel economy and greenhouse gas emissions for cars and light-duty trucks. This historic

policy reflects unprecedented collaboration and consensus between the federal government, states, and private industry.

EPA and the DOT are working together to develop this program for a national fleet of more efficient passenger vehicles. The National Policy has also garnered the support of major stakeholders. They include the state of California, the United Auto Workers, and the CEOs of nine of the world's largest auto companies. The standards, if adopted, would achieve a 30% decrease in GHG emissions by 2016, compared to today's standards and assuming constant vehicle miles traveled. The environmental and energy security benefits of these standards would be significant. Preliminary analysis indicates cumulative greenhouse gas reductions of approximately 900 million metric tons (CO2 equivalent) and fuel savings of approximately 1.8 billion barrels, over the lifetime of the model years covered.

Progress can also be made to reduce greenhouse gas emissions from heavy duty and nonroad vehicles and engines. In addition to the original petition regarding emissions from highway vehicles, EPA has received, and is currently evaluating, seven petitions from states and environmental organizations requesting that the Agency use existing Clean Air Act authorities to set GHG standards for locomotives, marine vessels, aircraft, and other nonroad engines. Together, these sources comprise 42 percent of all transportation greenhouse gas emissions in the United States. We expect significant growth in this sector in the coming years.

EPA also is making progress on another major policy that will impact the greenhouse gas emissions of the transportation sector—our expanded Renewable Fuel Standard. The Energy Independence and Security Act of 2007 mandates our transportation fuel include 36 billion gallons of renewable fuel by 2022. This volume includes a substantial increase in the volume of advanced cellulosic biofuels-reaching 16 billion gallons by 2022. In May the Administrator signed a notice of proposed rulemaking to implement these new standards. We are now using the comment period for this rule to conduct a further scientific and public review of EPA's work, including our comprehensive methodology to evaluate the GHG impact of biofuels as required by the Act.

While lower carbon fuels and more efficient vehicles and engines are crucial to bringing about the transformational changes that are critically necessary to reduce transportation emissions, we must also address greenhouse gas emissions from the fleet of vehicles already navigating America's highways, railways, and waterways. Through EPA's SmartWay Transport program, we have joined with over 1500 industry partners in an effort to reduce fuel consumption in the freight sector. By deploying fuel efficiency improvements such as aerodynamic improvements, single-wide tires and auxiliary power units, these partners have significantly reduced their CO_2 emissions, saving hundreds of millions of gallons of diesel fuel each year. Through the SmartWay Transport program, the Agency has been able to assist both the freight industry and the general public in adopting cost-effective technologies and practices that can significantly reduce GHG emissions and save money for trucking firms, railroads and ship owners.

Providing incentives to reduce the number of miles we drive may also be part of the solution. There is no need to wait for some technological breakthrough to reduce the amount of driving we do. Strategies exist today to help people drive less. We know that investing in public transportation, making communities more walkable, and creating more housing near job centers results in less driving, less petroleum use, improved physical activity, and less greenhouse gas emissions. Reduced driving also brings important co-benefits. Fewer vehicle miles traveled will reduce criteria air pollutants and can provide greater protections for those most vulnerable among us from the debilitating health impacts of air pollution.

Rural, mid-sized and urban communities across the country are already successfully implementing these approaches. We see communities large and small increasing transportation options, putting environmental infrastructure where it makes sense, and connecting housing development to jobs, services and transportation choices. These smart decisions lead to healthier communities that are not only good for the environment, but are also socially and economically strong. They offer enhanced employment and educational opportunities, safe and affordable homes, better access to recreation, health care and other needs of daily life. These strategies also result in lower household transportation costs – especially important for rural and low-income households.

EPA is pleased to have recently joined DOT and HUD in a partnership focused on helping our communities have the tools they need to make these smart development

decisions. The Partnership for Sustainable Communities announced on June 16th by Secretaries LaHood and Donovan, and Administrator Jackson is designed to fully coordinate our actions to overcome the significant challenges we face together. Through this partnership, DOT, HUD, and EPA will coordinate federal housing, transportation, and other infrastructure investments to protect the environment, promote equitable development, and help to address climate change

I would like to thank Secretary LaHood for his leadership on this effort. His strong voice for better coordination of land-use and transportation investments to create more livable communities and reduce greenhouse gas emissions represents a bold new vision for the transportation system in this country and the relationships between our departments. We look forward to working with DOT and HUD and to sharing EPA's experience in transportation and air quality planning in our work together to make sure that investments by any one of our agencies will meet our shared policy goals.

In closing, I commend the Senate in wasting no time in answering the call of the President to demonstrate the same commitment we saw in the House to building a clean-energy foundation for a strong American economy. I am encouraged that this Committee is dedicated to continuing this momentum and to keeping transportation part of the solution. I would be pleased to answer any questions that you may have.

Environment and Public Works Committee Hearing
July 14, 2009
Follow-Up Questions for Written Submission

Questions for Assistant Administrator McCarthy

Questions from:

Senator Cardin

QUESTION: Do you support an approach that would integrate greenhouse gas emissions into the existing state and regional transportation planning process, and devote a portion of cap-and-trade revenues to help fund this planning and low-carbon transportation projects?

ANSWER: Considering greenhouse gas emissions as part of the existing state and regional transportation planning process can play an important role in helping to reduce greenhouse gas emissions. EPA and DOT have been working for over 15 years with State and local transportation and air quality officials to better integrate transportation and air quality planning. There are many aspects of the current program that can be helpful in addressing climate change, including the consultation process that could be used as a guide for bringing transportation and air quality officials together to discuss climate goals, as well as existing EPA guidance on data and modeling needs that will be valuable for understanding transportation's role in addressing climate change.

Better transportation planning and low-carbon transportation projects can provide an important complement to fuel-efficient vehicles and low-greenhouse gas fuels and help reduce demand for petroleum fuels, thereby reducing the cost of carbon allowances. Low-carbon transportation projects that provide cost-effective alternatives to driving are another way to protect Americans from the effects of high gas prices. It's no coincidence that transit ridership increases when the price of gas rises. However, the Administration has not taken a position on whether these projects should be funded with cap-and-trade revenues.

Senator Klobuchar

QUESTION: Biofuels have the potential to play a significant role in transforming our nation's energy and transportation infrastructure. How can the next generation of biofuels best help meet our nation's goal of reducing greenhouse gas emissions while increasing our energy independence?

ANSWER: Advanced, next-generation biofuels such as cellulosic biofuel hold significant promise in terms of providing greenhouse gas reductions and decreasing our nation's dependence upon petroleum. The carbon price signal created by a cap-and-trade program, as well as the volume mandates included in the Energy Independence and Security Act of 2007 (EISA) provide a clear path forward for the increasing development and use of these advanced biofuels, and the statute's lifecycle greenhouse gas thresholds for these fuels will help ensure continuing climate benefits.

QUESTION: The second panel for today's hearing will focus on the transportation infrastructure changes needed to address climate change. These changes go beyond the creation of new vehicle standards and renewable fuel standards in which your office is engaged. What steps do you recommend be taken in the transportation sector to take us to a low carbon future? How does EPA's Office of Air and Radiation play a role in promoting smart growth and improving mass transit?

ANSWER: We believe that smart growth and mass transit can play an important role in helping to reduce greenhouse gas emissions from the transportation sector. The air quality planning process under the Clean Air Act has provided an important framework for the integration of transportation, land-use, and air quality planning. This process has been able to quantify and communicate to local officials and the public the important role transit and smart growth development can play in helping to reduce emissions. A number of Smart Growth showcase projects in cities like Sacramento, Charlotte, Atlanta, and Denver were initiated, in part, to address transportation and air quality issues that were raised under the CAA process. EPA also supports smart growth and transit by developing models and technical guidance documents to assess and measure emission benefits, conducting case studies, and providing technical assistance to local areas.

A recent report, *Moving Cooler*, which EPA, DOT and others helped to fund, provides new evidence that public transit, smart growth, carpools, and intermodal freight can reduce emissions in 2050 by between 4% to 24% below projected levels depending on how aggressively these measures are employed. The report notes that achieving these reductions will require considerable changes in transportation infrastructure, land use patterns, travel behavior, and public policy. According to the *Moving Cooler* report, for 5 of the 6 strategies evaluated, annual savings of direct vehicle costs exceed estimated implementation costs by between $72 and $112 billion, but the report also caveats this result, noting that it has not included some important cost and benefit categories in its assessment.

Senator Inhofe

QUESTION: Does EPA really think their economic growth projections and the assumption of 150 percent increase in new nuclear units is reasonable? To expedite these new nuclear plants, does the Administration support expanding nuclear reprocessing and supporting a speedy development of Yucca Mountain?

ANSWER: EPA does not create its own projections of economic growth. Instead, in its analyses EPA has benchmarked its models for consistency with the Energy Information Administration's (EIA) Annual Energy Outlook (AEO) for long-term projections of energy demand and economic growth.

EPA's analysis of H.R. 2454 stated that one of the key uncertainties was "the degree to which new nuclear power is technically and politically feasible." The analysis included sensitivity scenarios designed to address this uncertainty; in particular, one scenario limited nuclear power to reference case levels, which were calibrated to the March release of the AEO 2009. EIA's analysis of H.R. 2454 similarly included multiple scenarios reflecting different possible nuclear power futures, although EIA's "basic" scenario allowed for faster growth of nuclear power than in EPA's core policy scenario. In EPA's analysis of H.R. 2454 the ADAGE model showed 67% growth in nuclear power by 2030 in the core policy scenario. In an alternative scenario, ADAGE modeled nuclear power growth under H.R. 2454 restricted to the amount forecast in the reference scenario (12% growth in nuclear power by 2030). In EIA's analysis of H.R. 2454, their "basic" scenario showed nuclear power increasing 91% by 2030. In the 'high cost' scenario, EIA showed nuclear power increasing by 14%.

In regards to expanded reprocessing of spent nuclear fuel, President Obama and Energy Secretary Chu have announced their intent to appoint an expert panel to examine alternatives to the current policy of disposing spent nuclear fuel at Yucca Mountain. At this time, the scope and membership of this panel have not been defined. Questions regarding the Administration's position on reprocessing of spent nuclear fuel and the ongoing Yucca Mountain license application review are more appropriately directed to the Department of Energy or Nuclear Regulatory Commission.

QUESTION: Why should the country set both a fuel economy standard (DOT/NHTSA) and an emissions standard for C02 (EPA)?

ANSWER: EPA sets emission standards under the Clean Air Act to help protect public health and the environment. DOT sets fuel economy standards under its statute to help achieve the nation's energy policy goals. EPA tailpipe and DOT fuel efficiency standards have co-existed for decades, and coordination between the two agencies ensures that the standards are consistent. EPA and DOT issued a joint proposed rulemaking on September 15, 2009, to implement the President's May 19 announcement regarding greenhouse gas and fuel economy standards for 2012 -2016 model years. The program, if adopted, would allow each auto manufacturers to produce a single national fleet that meets both standards.

QUESTION: Which program would provide useful life monitoring, enforcement, and recall of non-complying vehicles to ensure that these investments would achieve their intended results?

ANSWER: EPA and DOT worked closely together to design compliance programs that would minimize the burden to manufacturers while efficiently ensuring that vehicles meet both the fuel economy and greenhouse gas standards. A detailed description of this program is included in the joint proposal issued on September 15, 2009.

QUESTION: Could you provide me the source for the emissions reductions and oil saving in your prepared testimony?

ANSWER: These estimates were based on preliminary analysis by EPA and DOT that was included in the "Notice of Intent" to propose a joint rulemaking, published soon after the President's May 19, 2009 announcement. These estimates are updated and explained in more detail in the September 15, 2009, proposal for 2012-2016 greenhouse gas and fuel economy standards.

QUESTION: If more states opt into the California GHG program, now that the Waiver has been granted, has EPA or DOT examined the impacts on the domestic auto makers in facing multiple states with the California program?

ANSWER: In a letter to the EPA, California has committed to revise their 2012-2016 standards so that compliance with EPA GHG standards, once adopted, shall be deemed compliance with the CA GHG standards. California included a number of conditions for this commitment, such as the adoption of national standards that are consistent with EPA and DOT's Notice of Intent to propose standards and auto manufacturer support for national standards.

Senator BOXER. Thank you.

We are about to start questioning. But, before we do, Senator Specter left the Judiciary Committee's very urgent hearing, so, if there is no objection, I would like to ask him if he would like to have 5 minutes for an opening statement. And we are very glad to see you, Senator.

OPENING STATEMENT OF HON. ARLEN SPECTER, U.S. SENATOR FROM THE STATE OF PENNSYLVANIA

Senator SPECTER. Thank you very much, Madam Chairwoman.

I am at the Judiciary Committee Supreme Court nomination, but I wanted to stop by, first of all, to thank you for convening the hearing, and to thank the witnesses, Secretary LaHood and Ms. McCarthy.

The legislation to provide transportation which would reduce greenhouse gases is enormously important, and there is no better time to focus on a matter of this importance than on this legislation.

There are many ways that this can be done and many benefits which we all know about: dependence on foreign oil undercut, noxious fumes, we are trying to deal with the environment, the political implications of how Chavez and Iranian authorities are so powerful because of all the money they derive from oil. So, it is a win-win-win-win situation.

I want to thank my colleague, Senator Carper, for his leadership on this important issue.

I want to give special thanks to Secretary LaHood for setting a date to come to Pennsylvania to take a look at some of our projects.

We have a rail line which has been in the making for a long time leading from Center City, Philadelphia to Reading. It goes alongside an expressway known as the Schuylkill Expressway. I know we will have Senator Barrasso's backing on this because Senator Barrasso is from Reading, and I know he has had a great deal of time spent on the Schuylkill Expressway and that is why he moved to Wyoming.

[Laughter.]

Senator SPECTER. The roads are less cluttered there.

But it is a virtual parking lot for much of the day.

Then we are going to go into the Lehigh Valley where there are some important projects. And we are going to go into Scranton, where we will try to get a rail line to service New Jersey. Senator Lautenberg and I, and Senator Schumer, would like to extend it up to Binghamton to create a Wall Street West in the Pocono area, which is a beautiful area and really in need to diversify Wall Street for its important function and what we know can happen in the big city situs.

So, those are all in furtherance of this proposal. We had a great bike area along the Schuylkill, and this is really a very, very important item.

I thank you, Madam Chairwoman, for what you are doing to promote these important issues. As much as I would like to stay here, Judge Sotomayor requires some attention, too.

Thank you.

Senator BOXER. Senator Specter, we thank you so much. We know how much transportation means to you and to your State. Your Governor Rendell has been here many times talking about the need to turn to transit as we battle global warming. We appreciate your being here today. Thank you.

We are going to start the questions. Let me say, some of my Republican friends, and they are my friends even though we get kind of heated, we are friends. Here is the thing. They said that the Waxman-Markey bill was, and I am quoting them verbatim, "designed to make fossil fuel more expensive."

Now, that is not the purpose of the Waxman-Markey bill. The purpose of the Waxman-Markey bill is to get us off foreign oil so that we are energy independent, to create millions of jobs as we move toward other technologies, and to protect our children from harmful pollution. Those are the three goals.

When pressed this morning, it is true that the EPA modeling, and there is some argument about the modeling and we will model it every way to Sunday, shows that, indeed, there might well be a 2 cent per gallon increase per year as a result of the Waxman-Markey bill.

I would say to my friends, rhetorically, where were you when the price of gas per gallon was going up $2 in 1 year in my State? No global warming legislation here, nothing to do with it here. But yet, the price of gasoline to fill a car went up to almost $5 a gallon. Why? Because we are too dependent on people who do not like us, and we need to move away from this dependence. There is $700 billion a year leaving from the pockets of our citizens to go to countries that do not like us.

So, let us not say that the purpose of the Waxman-Markey bill was to make fossil fuel more expensive. That is ridiculous on its face. And the least you can do is allow the proponents of the bill to tell them why they designed the bill the way they do, and not say why they designed the bill. That is No. 1.

No. 2. We had a similar debate this morning and the predictions of gloom and doom, gloom and doom, the likes of which you hear from my dear friend the Ranking Member, my friend from Ohio, my friend from Wyoming, my friend from Tennessee, exactly the same kind of predictions that were made in the 1990 Clean Air Act Amendment fight when we set up the first cap-and-trade system to deal with acid rain.

For example, the Edison Electric Institute said that the Clean Air Act updates will cost consumers $120 billion in higher electricity rates. In fact, the reality is that the opposite happened: consumer electricity rates declined by an average of 19 percent.

Then you had the U.S. Chamber of Commerce say that the 1990 Clean Air Act amendments would cost America's businesses $50 billion a year. Actually what happened is the benefits exceeded the costs 40 to 1. Forty to one, according to the OMB.

And last, the same naysayers, except different people said it, but the same naysayers said the Clean Air Act amendments may cost Americans 4 million jobs. In reality, we created 20 million jobs. From 1993 to 2000, the economy grew by 64 percent.

There is something good about being a little bit older, and that is that I have seen all of this come and go. From the days I was

a County Supervisor, people were trying to pit cutting pollution against a strong economy. It is the opposite. If you cannot breathe, you cannot work. That is clear. So, let us start from there.

This debate is going to get heated, you know, but it is about global warming, and it is going to be hot. I know that. But what I want to say is, under the Waxman bill, which we are starting off with as our marker before we introduce a new bill, we are going to see solar energy, wind energy, natural gas, geothermal, cellulosic, and nuclear energy all become competitive with fossil fuels. That is what we are going to see.

And we are going to see more nuclear plants built under Waxman-Markey than Senator Alexander proposed. I am not the biggest proponent of nuclear energy. I worry about the waste. But the fact is that, when you put a price on carbon, all of these other energy sources become more competitive. We do not pick a winner or a loser.

So, I have just one question, I would like to ask more, for the two you. I love this idea of your getting together to talk about sustainable communities. Because at the end of the day, so many people say to me, you know, I do not want to use my car, but I do not have any options. I want a better, safer way to get on a bike path. I want a better way to have the industry closer to where I live. So, I wonder if each of you could discuss this, because it is exciting and I have not heard that much about it.

What have you discussed, if you can tell us, as some of the landmarks that you hope to reach in this new idea of the sustainable communities?

Mr. LAHOOD. Well, let me begin, Madam Chair, by saying that when I was in West Los Angeles with Congresswoman Roybal-Allard, we toured West Los Angeles, and we toured it on a light rail system that went through several neighborhoods.

It went through an Asian neighborhood, a Hispanic neighborhood, an African-American neighborhood and tied them all together. These neighborhoods were run down with run down housing. They all now have very nice housing stock, some apartments and some town homes.

This would have never happened, tying all of these neighborhoods together, from downtown L.A. out to west L.A., giving people an opportunity that cannot afford a car to ride on a light rail system so that they can go to work, go to the grocery store, and go to the drugstore. And at these metro stops where the light rails stop, there were grocery stores, there were restaurants, and all along the way there were different housing stocks.

Now, this contributes to cleaning up CO_2 in the air because you do not have people in automobiles. You have people on very clean burning forms of transportation. This is the vision that we have for communities that want to do this. This is a vision that we have for communities that want to use some of the HUD money and also use some opportunities from the EPA and some transportation dollars to have neighborhoods available to people that cannot afford automobiles, that may want to get onto a bike path or a light rail system, or transit buses that burn natural gas or diesel that are clean burning.

I saw it in west L.A. I saw it in Houston. When people get on a light rail system in downtown Houston, go out to M.D. Anderson, the Children's Hospital, the Women's Hospital where their doctors are, and all along the way, different housing stocks. Those are the kinds of neighborhoods that people in America want to live in today, particularly in areas where they can little afford two or three automobiles.

In neighborhoods in cities where the city leaders want to do those kinds of things, we are going to be there to be helpful with our dollars and innovative approaches to doing it.

Senator BOXER. Administrator, do you want to add anything to that?

Ms. MCCARTHY. Madam Chairman, I would just say that as an old environmental commissioner, I feel like I died and went to heaven listening to a Secretary of Transportation talking like this.

I would say that I know that the Administrator is excited about entering into this partnership. We understand the need not just to reduce vehicle miles traveled but to try to reduce single individuals driving in cars.

We know that it is extremely important to look at investments in public transportation. It is opportunities, not just for greenhouse gas reductions, but for reductions of criteria pollutants that really cause deaths, lung disease, heart problems, and asthma in our children. These are the kinds of things that we want to avoid.

And a good transportation strategy that considers these environmental issues and considers them during the planning process is a unique opportunity, and it is an opportunity not just for more livable communities, but ones that are healthier as well.

Senator BOXER. Well, thank you both.

Senator Inhofe.

Senator INHOFE. Thank you, Madam Chairman.

Well, you know, we can go into this and re-debate everything, but it does not really serve any useful purpose, I guess.

On the costs of cap-and-trade, we know what it is going to be. We can kid ourselves, we can use false criteria and come up with analysis, but we know that for the last 11 years, since the first analysis came out by the Wharton School of Economics, and after that MIT and CRA, the range is going to be, and has been, and no one even argued it, actually, certainly Senator Lieberman agreed with this during the debate on the Warner-Lieberman bill, and that is that it is going to cost hundreds of billions of dollars. It is going to be the largest tax increase in history.

We can act like it is not, but I have a feeling that it is not going to pass anyway, so it does not make that much difference. The vast majority of the people know how expensive it would be.

I always felt, and this is probably a good place to say it, if you really believe that CO_2 is causing global warming, why not just tax CO_2? I mean, that is the honest way. But there is a reason that we do not do that. And that reason is that you cannot masquerade it. I mean, everyone knows that it is a tax.

In this rare case I agree with James Hansen, who is the father of global warming, and he said just 2 days ago that the fact is that the climate course set by Waxman-Markey is a disaster course. Their bill is an astonishingly inefficient way to get a tiny reduction

of emissions. It is less than worthless because it would delay, by at least a decade, starting on a path that is fundamentally sound from the standpoints of both economics and climate preservation.

But anyway, that is not what we are supposed to be talking about in this thing.

Ms. McCarthy, let me ask you this question, because I think it makes some sense to ask it at this point. The 2007 Energy Bill contained a requirement for the EPA to measure the indirect greenhouse gas effects caused by the massive mandates of the Renewable Fuel Standard. If a farmer plants an additional acre of corn in Iowa, EPA must measure the effects that action has on land use changes and greenhouse gas emissions in places like Brazil and Malaysia. EPA must somehow measure the immeasurable.

Now, Senator Bingaman wrote an op-ed piece, I think it was yesterday or the day before, and in that, and I am quoting, he says many scientists have argued that there is insufficient modeling capability to accurately assign a numeric value to international indirect land use change at this time. With the science still evolving, it seems that the legislative requirement to assess indirect effects might have gotten ahead of our ability to understand those indirect effects.

Do you agree with Senator Bingaman?

Ms. MCCARTHY. Senator, as you know, the Administrator has, in May, put out a proposal to actually implement the Renewable Fuel Standard. One of the requirements by the Energy Independence and Security Act was for us to take a look at the greenhouse gas impacts associated with different types of renewable fuels. That does mean, and it specifically says, that we have to look at the significant greenhouse gas emissions that would be generated, including those that come from indirect land use.

And that is a challenge. There is no question about it. We believe that the agency did a good job in looking at how you would measure those challenges. We use the best science available. We think that it is sufficient and will meet the test of time. We are, right now, accepting comment on that proposal.

In addition, we have also started a peer review process, which is an independent assessment using OMB and EPA's process for peer review to take a look at the underlying premises that we used and the tools that we used to make those judgments on how to measure indirect land use impacts. And we will have that report ready quite shortly, within the comment period, so that we can consider that, as well as all the comments, in making the final decision.

Senator INHOFE. It is a tough problem though. We understand that.

Secretary LaHood, you and President have been very adamant that we should not increase Federal gas taxes. Frankly, I agree with you. During this turndown, by design a cap-and-trade scheme will increase the cost of energy, including gasoline. The Union of Concerned Scientists estimates that it will translate to 20 cents per gallon, which is about double our current tax. Others have looked at it, like the EIA and I think CRA and said it is going to be more than that.

Now, either way, do you see a contradiction here in that while you and I both agree we should not be increasing gas tax, his

would have the effect of increasing the cost of that energy by an amount about equal to what our gas tax is today?

Mr. LAHOOD. Well, Senator, I will say what I have said on a couple of different occasions at this committee and also at other committees, both in the House and Senate. With these hard economic times, President Obama and his Administration does not believe that raising the gasoline tax is good for Americans who are out of work and can least afford to have gasoline raised.

We will stand by that. We are going to work with Congress on other alternatives to help with the Trust Fund, which is obviously inadequate, we know that it is, and we have suggested some other funding ideas. But we are not for raising the gas tax.

Senator INHOFE. Yes, but if you are not for raising the gas tax, which I agree with you, and you stated that it would impose a cost on people during an economic downturn, would not this same increase cost per gallon of gas due to the increase costs of energy under cap-and-trade, if that were the case, impose the same hardship on these people?

Mr. LAHOOD. Well, Senator, I have not really looked at that the way that you have. I have not analyzed it the way that you have. But I, you know, as the Senate moves ahead with its bill, I am certain that the Administration will have to weigh in on these matters.

Senator INHOFE. All right. Thank you.

Thank you, Madam Chairman.

Senator BOXER. Thank you very much, Senator.

Senator Carper.

Senator CARPER. Thank you.

Just a quick comment, if I can, for those of us who question whether or not we need to do anything about global warming. I come from a State where, well, the highest point of land in Delaware is a bridge. If we do not do anything, we will continue to see the kind of ice melts up in the North Pole and other places where we have glaciers. Parts of my State are going to be underwater. Not just my State, but States along the East Coast from Maine to Florida. Large parts of Florida could well be underwater by this time in the next century. I just think we have to do something about it while we have time.

For those who would seek to demonize cap-and-trade, the first time I ever hard cap-and-trade was I think 1990. Our President was a guy named George Herbert Walker Bush, and as I recall, he proposed harnessing market forces to try to address the problems that we had with acid rain destroying forests and water and lakes and so forth in New England. He said, why do we not create a market-based system, called a cap-and-trade, and see if that might work.

And it worked. It worked. People were saying at the time, we ought to put a tax, if you will, on socks, and they estimated what that might be. By putting in place a market-based system, we actually ended up, the costs of removing a ton of sulfur dioxide was I think less than half of what most experts had thought.

As for those who want to demonize cap-and-trade, their numbered States are part of the energy program already, including Delaware. We have in place a cap-and-trade system. I do not think

anybody in my State has noticed that with respect to their energy costs. So I just would put that out there for the record.

Questions. The Waxman-Markey bill that passed the House allows 1 percent of allowances to be used for some individual transportation projects that could reduce greenhouse gas emissions. However, it does not fund a comprehensive strategy to reduce emissions across various modes of transportation.

Is the 1 percent in Waxman-Markey sufficient investment to reduce emissions for the transportation sector commensurate with the overall cap? Would you like to respond to that? I think it is probably for both of you. Thanks.

Ms. MCCARTHY. Senator, I think you raise an excellent point concerning the need for investments in sound transportation planning that really considers environmental consequences like greenhouse gases, as well as the need for investments in public transportation. I agree with you that Congress really needs to look at the allocation issue and consider the needs of States who are struggling in these areas. But certainly it is up to Congress to determine the allocation process and we will be there to help in any way that we can to provide technical assistance.

Senator CARPER. All right. Thanks.

Secretary LaHood.

Mr. LAHOOD. Well, Senator, we testified before Congressman Waxman's committee, and I testified with Secretary Chu and EPA Administrator Jackson, and we will consult with the Senate as they move ahead on your bill. We will be happy to consult with you on this. As soon as we know what direction you want to take, we will be there with whatever technical assistance we can provide to you.

Senator CARPER. All right. Thanks so much.

Second question. Unfortunately, some people say that transportation efficiency improvements and smarter development can only apply to urban areas. They say that residents of suburban and rural areas do not want to reduce the amount that they drive. Let me just ask: do you all agree with those views, and how can transportation efficiencies and smarter development bring increased mobility to rural areas and to suburban areas and cut greenhouse gas emission as the same time?

Mr. LAHOOD. Well, we have a program at the department, Senator, which allows for funding of, in some instances, transit districts to purchase vehicles in order to go out to rural areas to deliver people into communities where they want to go to a doctor's appointment or a grocery store. It allows them to stay in the rural communities where they raise their children and they want to live out their lives. For whatever reasons, they cannot get into the so-called urbanized areas.

We think that program has worked well, and we think it has delivered people to areas where they have wanted to go. We are going to continue to pursue that kind of program and opportunity for rural America. In some instances, it will be in cooperation with transit districts, in others it will be with community organizations that provide these kinds of transportation services. Rural America will not be left out in their transportation needs. They will not.

Ms. MCCARTHY. Senator, let me just add that——

Senator CARPER. Could you be just very brief in your response please?

Ms. MCCARTHY. I'm sorry?

Senator CARPER. Would you just be very brief in your response, please? We are out of time. Thank you.

Ms. MCCARTHY. Yes, I will.

Senator, I am excited about the opportunities for smart transportation to actually continue to preserve and restore New England villages. I think they are under threat. I think we have seen that. And I want my children, and their children, to be able to walk to school, to be able to bike along the streets, and to be able to feel that sense of community that we all felt when we were growing up.

Senator CARPER. All right. Thanks so much.

Senator BOXER. Thank you, Senator Carper.

Senator Barrasso.

Senator BARRASSO. Thank you very much, Madam Chairman.

Mr. Secretary, on February 19 in the National Journal there was an article entitled LaHood Predicts More High Speed Rail Funds. The article delved into the role that the Transportation Department is going to play in climate change.

The article said that "Addressing the role that the Department will play as Congress and the Administration move forward on climate change legislation this year, LaHood said he would take his cues from Obama and White House Energy and Climate Advisor Carol Browner." You were quoted as saying "I am going to take my leads from Carol Browner. I will be a good faithful soldier on this."

And then on April 13th an article appeared in SustainableBusiness.Com entitled Carol Browner's White House Role. The article stated that you had been to six meetings chaired by Carol Browner already and that you gave her very high marks. That was back in April. That was 3 months ago.

I am curious as to what you meant when you said you were going to take your leads from Carol Browner? I mean, you are a Senate-confirmed Cabinet Secretary in charge of climate change policy for the Department of Transportation. I want to know what that meant, and at any point has Carol Browner made policy decisions for the Department of Transportation with regard to climate change?

Mr. LAHOOD. Well, Senator, when you get sworn into a job like I have, you are a part of a team. I am a part of President Obama's team. And I am very proud of that. I think it is a great opportunity for me to continue my 30 years of public service and, when I assumed this job, I assumed it with the idea that I am a part of the President's team. And the President has assigned certain responsibilities to certain people on his team to lead certain of these opportunities.

Carol Browner was asked, by the President, to coordinate opportunities for moving ahead with the President's initiative on climate change. And so what she did, she convened meetings on any number of occasions of Cabinet members and other officials that work for the President to try and coordinate and collaborate so that there could be an opportunity for the President to move his initiative for climate change. And I participated in those meetings.

Senator BARRASSO. You mentioned six meetings before April 13th. So there are ongoing meetings since that time?

Mr. LAHOOD. Senator, we meet once a month.

Senator BARRASSO. Are there other Cabinet members there?

Mr. LAHOOD. Yes, sir.

Senator BARRASSO. So, could you just describe then what you see as Ms. Browner's role? You know, there have been significant discussions in the Senate, as well as in the press, about the role of all of these czars that the President has appointed who are not confirmed by the Senate and who do not come in front of the Senate.

Mr. LAHOOD. Well, I mean, Senator, I would tell you this. I believe that Ms. Browner has been asked by the President to help put forth his initiatives for climate change. She has done it very well. She has done it in a very collaborative way. She has asked for advice from every Cabinet member that has attended those meetings, and they have been well attended. It is no different, Senator, than a Senator or a House member having staff people and you assign them certain responsibilities to carry out your initiatives. That is what Ms. Browner is doing.

Senator BARRASSO. So then at these monthly meetings, there are a number of Cabinet members——

Mr. LAHOOD. Yes, sir.

Senator BARRASSO. In terms of Secretary of Transportation, Energy, Interior——

Mr. LAHOOD. Yes, sir.

Senator BARRASSO. OK. Thank you.

Thank you, Madam Chairman.

Senator BOXER. Thank you.

Senator Voinovich.

Senator VOINOVICH. Mr. LaHood, I thank you for your testimony and again for being here.

In a hearing we held earlier this year in response to my question about increasing the gas tax, you said, this is just a repetition of what you just said, but I will do it again, this Administration in these hard economic times with so many people out of work can ill afford to tell people that we are going to raise the gasoline tax. Well, you would not have to raise the gasoline tax. We would have to do that.

However, this is essentially what, and this follows up on Senator Inhofe, what a cap-and-trade program aims to do. And you testified in favor of this policy before the Energy and Commerce Committee. So, on the one hand, you say oh no, no gas tax or user fee, and on the other, you say it is OK to raise the energy costs of the American people.

In testimony about the cost of cap-and-trade at a House hearing last September, Director Orszag stated much of those costs will be passed along to consumers in the form of higher prices for energy and energy-intensive goods.

How do you rectify these two opposing viewpoints from the Administration? Do you agree with your earlier statement about how people cannot afford to pay a higher user fee or gas tax or with your new position that raising consumer energy prices through cap-and-trade is OK?

Now let me just say this to you. One of them, and it is really interesting, you are talking about more rail and more transit and all of these others things. The question you have got to ask yourself is how are you going to pay for them?

There is a group out there right now that is talking about a new stimulus bill. How are we going to pay for it? By borrowing more money?

I contend that increasing the gas tax and higher use tax, whatever you call it, is going to result in thousands of jobs, a real stimulus bill that we would pay for and not borrow the money, and it will help reduce greenhouse gases. We have got testimony coming up about that. It would provide the infrastructure that would enhance our competitive position in the global market. It will make rail and transit more available because we will have a lot more money to put into it and, if you look at Jim Oberstar's bill, he has got a lot of money in there for rail and transit.

And last, but not least, it is going to make our highways and our transit a lot more safe. For example, we are going to let the Metro system use some of their money so they can do the maintenance that is necessary. Back in Illinois, the transit system there has $6 billion worth of deferred maintenance that needs to be made.

So, are we in the real world or are we not? I mean, where is the money going to come from? If you are opposed to this, and you say, well, how are you going to do it? How are you going to do it? And how do you reconcile that you are for higher energy costs for people, which we hope will reduce greenhouse emissions, and not in favor of raising the money that we need to do lots of the things that you have been talking about?

Mr. LAHOOD. Well, the way we are doing it right now, Senator, is with the money that the Congress gave us in the Economic Recovery Plan which was $48 billion. We already have $4 billion out the door for transit. Many of the transit districts will use that money to buy buses, to build buildings. One billion is out the door to repave runways all over America. So $1 billion, that is what the Congress has provided, and we have spent it. It is out the door. People are working repaving runways.

And we were also provided $28 billion for roads and bridges——

Senator VOINOVICH. But that is going to end, just like the $24 billion that we put in for highways in that bill, and it should have been something like $57 billion. It is going to be gone. It is going to be gone. What are you going to do after it is gone?

Mr. LAHOOD. Well, Senator, some of it is being spent now, but the lion's share of it will be spent over the next 18 months. And we are going to work with Congress over the 18 months on an authorization bill that will be very robust, will have the money to pay for it, and we are committed to doing that.

Senator VOINOVICH. Well, we will have the money to pay for it. You still have not told me how you are going to pay for it, Mr. LaHood.

Mr. LAHOOD. You know, Senator, I have been here before and I have talked about a number of different things, in addition to the Highway Trust Fund, including infrastructure bank, including tolling. I just met with the Governors of Washington and Oregon out

in Seattle. And at that meeting we talked about the Columbia River Crossing Bridge. That bridge will be paid for by tolling.

You can build bridges and roads by tolling. That is one alternative that I hope the Senate will look at. You can also create an infrastructure bank, which can create a lot of money to help pay for the infrastructure that I know that all of you want to do.

So, there are a lot of good ideas floating around, Senator, including the use of the Highway Trust Fund. But we need to build on that, thinking outside of the box.

Senator VOINOVICH. I think it will take that and a lot more.

Senator BOXER. OK. We are going to move on to the next panel.

I just want to say, before Secretary LaHood, you leave, and the Assistant Administrator, we are going to have this debate on Thursday because I am going to propose, I am sorry, tomorrow, I am going to propose an 18-month clean extension. Just before you leave, I wanted to make two points.

First of all, because I know Senator Inhofe is right, this is not the place and time to debate Waxman-Markey, but unfortunately that is what some of my colleagues started to attack. The record has to show there is not any tax increase in Waxman-Markey. There is a tax credit to defray any increase in costs, and the modeling shows a 2 cent per gallon increase in gasoline over each year.

I wanted to also point out that under the Oberstar bill over in the House, it would take a doubling of the gas tax, which I do not support. I identify with the President on that point.

I am willing to look at an indexing to inflation of the gas tax, which I have publicly said, but I think we do have to look at these many other ways to pay-go.

So, here is where we are. We have now spent a very long time with you and we have several others. But my question to you is, and I understand, Senator Alexander, do you have questions for this panel?

Senator ALEXANDER. I would like to.

Senator BOXER. OK, then we will do that. I ask the patience of this next panel.

But before I do, would you answer the question on why it is that you support an 18-month extension, not a 12-month extension?

Mr. LAHOOD. Well, first of all, we believe that over the next 18 months we can work with Congress on a bill, and that times out the use of the stimulus money. And the timing is pretty good on that. We believe over the next 18 months, which is the timeframe Congress gave us when they passed the bill for highways and airports and transit and high speed rail and our discretionary money, and during that 18-month period, while we are using that money, we will work with Congress on a bill, and the timing will be pretty good, almost match up with when we are finished with our stimulus. That is the reason.

We also believe, and our willing to work with you, Madam Chairman, on the idea that it will take $20 billion. We are working with the OMB to find the money and pay for it. So, we appreciate your leadership in holding a mark up tomorrow on this important extension.

We do not want to see Congress leave town around the first of August and have our Trust Fund run out of money in mid-August.

That would be completely unfair to the States, particularly as the Economic Stimulus Program is really taking off. It is really jettisoning.

Senator BOXER. Well, Mr. Secretary, if I could just say, I so appreciate your leadership on this. You make common sense. Trust Fund is running out of money, we want to take care of it, and we want to do it in a way that we send a strong signal that there will be no disruption. The stimulus money piggy-backing on what we already are going to do to keep things at an even keel will give us a bit of an increase here and get us through and give us the time.

I want to just pledge to my committee again, which I said before, we intend to work with all colleagues on both sides of the aisle and with the Administration on reforms and make the necessary changes and look at this wide array of funding that we need to seriously look at because, at the end of the day, the Gas Tax Fund is just not going to be there for us.

It is a bad news-good news story. The bad news is that it is not going to be there for us. The good news is that people are moving to more fuel efficient vehicles, we are going to have more sustainable communities, and the cars are going to be electric and hybrid and all the rest.

So, we really have an issue on our hands that we cannot resolve under the threat of the Trust Fund going broke. So, I just want to thank you.

I just want to note the importance of these particular witnesses who come to us, you know, as Republicans, in a spirit of bipartisanship, and how important I think it is to note that.

Senator Alexander, you have the final word for 5 minutes, and then we are going to move on. All right?

Senator ALEXANDER. It is a rare opportunity, Madam Chairman.

Senator BOXER. Which I know you will take.

Senator ALEXANDER. I thank you for your courtesy.

Ms. McCarthy, I would like to explore, and this is a question I asked you at an earlier testimony, a little about the idea of a low-carbon fuel standard as a way to deal with carbon in fuel. I mean, we have established that fuel is about one-third of the greenhouse gases or of carbon. The question is, if we think that reducing that carbon is a good idea, what is the most sensible way to do it?

A low-carbon fuel standard would be a simple standard that would, say, over time you would gradually reduce the amount of carbon in your fuel, that is the way I understand it, and that people who sold fuel would know that in advance and begin to look for alternatives in whatever way the market permitted.

If we had an effective low-carbon fuel standard, why would we need to apply an economy-wide cap-and-trade, such as that in the Waxman-Markey bill, to fuel?

Ms. MCCARTHY. Well, Senator, you challenged me to come here a little bit more informed, and hopefully you will find that I am on this issue.

Senator ALEXANDER. I did not say it that way.

Ms. MCCARTHY. Well, I pledged to you that I would come here more informed.

You challenge the thinking concerning whether or not transportation should remain part of, and within, the cap-and-trade system,

and clearly we did model those issues. There is some price signal that keeping transportation sends in, that sends to the market in terms of reducing greenhouse gases. It is a modest signal that will not really transform the transportation sector that we all would be looking forward to.

So, there is the need for these other complimentary measures. Many of them are in the bill——

Senator ALEXANDER. But my question is, if you have an effective low-carbon fuel standard, why do you even need an economy-wide cap-and-trade on fuel?

Ms. MCCARTHY. What I was going to say, Senator, is that I do know that a low-carbon fuel standard is a performance-based technology-neutral market-based tool. We have not modeled the effectiveness of a low-carbon fuel standard. I am happy, if you are interested in looking at that, to provide you opportunities to look at the market associated with that and what impact that may have.

Senator ALEXANDER. I would appreciate that. May I ask you also, I mean, Dr. David Greene from Oakridge, who testified here, said that a carbon price, he evaluated the Climate Change Act of 2007. He said a carbon price of $30 to $50 per ton transcends to roughly 25 to 50 cents per gallon of gasoline. That is a pretty big gasoline tax increase.

He basically said that would not make much difference. Even at that rate, and I am paraphrasing a little bit, his testimony is for the record, that while it would be constructive, he said, it would be very inefficient, not make much difference. In plain English, it would not change behavior enough to cause people to drive less and reduce carbon.

In the rest of his testimony, which is generally in favor of higher CAFE standards, which he greatly supports, he suggests, especially in the early years, that a low-carbon fuel standard is more effective.

So, my question would be, and it is fine with me if you want to respond at a later time, is what difference would it make, a low-carbon fuel standard, as compared with an economy-wide cap-and-trade, and as long as the so-called economy-wide cap-and-trade does affect the whole economy anyway, I mean, it is about 83 percent, and so we could take fuel out of it and that would take it down to 53 percent and say, why should we not just put a low-carbon fuel standard on fuel?

I have a second question. Maybe you know the answer now, maybe you would rather think about it and get back to me. It seems to me that since, in 1990–91, Senator Boxer went over this this morning, when the Government put on the cap-and-trade for acid rain, we had a clear way to deal with it. It had scrubbers. So, you could say to the coal plants, so here is the mandate but you have got an alternative over here, scrubbers.

The problem right now with coal is that we have not built a nuclear power plant in 30 years, and we do not have a commercially viable way to deal with carbon capture. That is not the case with transportation. We have electric cars about to be made by everybody. We have Brookings saying we can plug them in at night and not even need to build one new power plant. We have some biofuels.

So my question is, if EPA were to regulate fuel, carbon coming from fuel, would the current law permit you to calibrate that and align that with costs so that you did it such a way that it did not increase the costs of fuel to the American consumer? Or, do you need for us to pass a law giving you the authority to do that or requiring you to do it?

Ms. MCCARTHY. Just very briefly——

Senator BOXER. Go ahead. He has gone over his time, but why do you not give the Senator an answer to his question.

Ms. MCCARTHY. Let me answer your last question. We do have general authorities to set standards for transportation fuels. But we do believe, again, that it should be a part of a comprehensive strategy, and we do think that there are elements in the Waxman-Markey bill, like tougher standards on heavy duty motor vehicles and non-road engines, investments in clean vehicles and energy infrastructure, that are critically important and that should go along with a comprehensive strategy.

Senator ALEXANDER. Thank you.

Senator BOXER. Thank you so much, Senator Alexander. And to our panel, we appreciate your candor. I hope we have some good news for you tomorrow, Mr. Secretary, and that we can get this going. Thank you.

Now, I would ask, as our panelists leave from the first panel, for Ralph Becker, Mayor of Salt Lake City, Utah; David Bragdon, President, Portland Metro Council; Steve Winkelman, Director of Adaptation and Transportation Programs, Center for Clean Air Policy; and Ray Kuntz, Chief Executive Officer, Watkins and Shepard Trucking.

To those who are leaving, if they could do so quietly, because of time. We need to start.

So, Mayor Becker, we are very pleased and honored that you are here. We appreciate all of our panelists waiting for so long a time. We really want to hear from you. So why do you not proceed.

STATEMENT OF HON. RALPH BECKER, MAYOR, SALT LAKE CITY, UTAH

Mr. BECKER. Thank you very much, Chairman Boxer.

Thank you, Chairman Boxer, and members of the committee. I appreciate very much the opportunity to appear before you today to discuss this most important topic to my city and, I know, to so many communities across the country.

Just by way of background, by training I am an environmental lawyer and planner. I have worked in government in the private sector for over 30 years in this general arena. Currently, I have the great privilege—and joy, really—of serving as the Mayor of the wonderful city of Salt Lake.

We have been focused, as many, many cities have across the country, on transportation and climate change and what we can do to contribute to solutions to the growing global warming crisis that we face.

Salt Lake City is unique and really gives us, I think, a chance to have a unique view of the effects of climate change. We are a valley, a beautiful valley that is surrounded by peaks that rise over 7,000 feet above our valley floor. We see the changes as they relate

to climate change today, I think, to the surprise of me and many people, and we find ourselves preparing to adapt as best we can long term to the effects of climate change.

The climate change issue for us is one that requires a comprehensive approach, one that is accomplished at all levels of government, and one that looks at all sectors of the economy in our society.

The American Clean Energy and Security Act as passed by the House, which certainly I commend and I know many others do, recognizing the challenges you face, really misses a key component from our perspective in the transportation sector.

I want to talk just briefly a bit in terms of some things that we are doing in Salt Lake City. We have taken a multi-modal approach. We are building, as near as I can tell, faster than about anywhere in this country, a rail system that includes two light rail lines in place, a commuter rail line that opened earlier this year, and we have 70 miles of rail under construction as we speak.

We have also, since I have been in office, multiplied times 10 the amount of money we are putting into bikeways. And we are looking comprehensively at land use and other efforts in a sustainability ordinance that, as near as I can tell again, is the first in this country as a comprehensive sustainability ordinance.

We are also looking at the next step for us, which is a major investment in streetcars. We are looking at three streetcar lines, different lines that really, in a way, serve slightly different purposes in our city, and some of them, we hope—and we hope, of course, that the Federal Government can help us here—that we are really within a year of initiating.

We also, as I mentioned, have done work with bikes and bikeways. We have a bike sharing program that is about to start. We have a car sharing program, a zip car-type program, which is really just getting underway as well.

We have also looked beyond that in a community-based effort to look at what we can do beyond the governmental arena by bringing together the community of stakeholders, whether it is the Chamber of Commerce, the faith organizations, the different non-profit organizations, and asked them what can we do that will make a difference.

What they have come up with as the No. 1 goal is to reduce vehicle miles traveled, and the No. 1 approach is through education. And we have just finished a Clear the Air Challenge where we have reduced, in 6 weeks, 1 million VMTs. And we are encouraged to keep moving further in that regard.

As a leader in climate change policy, we really believe that it is important that all levels of government work together. There are examples around the world where transportation has been done wonderfully well. I was in Vienna in the last 2 months where one-third of the transportation is by transit, one-third by vehicles, and one-third by biking and walking. It is a wonderful city to get around in and a very livable community.

We look forward to the Federal action that will help us achieve what we want to accomplish as a community for improvements and for future generations. We invite you to look at what the U.S. Con-

ference of Mayors has been doing, and working with you to accomplish what we need to do.

Thank you for allowing me to be here.

[The prepared statement of Mr. Becker follows:]

WELCOME TO
SALT LAKE CITY

Transportation and Greenhouse Gas Emissions:
Opportunities for Reduction

Statement of

The Honorable Ralph Becker,
Mayor of Salt Lake City

Before the

Committee on Environment and Public Works
United States Senate

July 14, 2009

Chairwoman Boxer, Ranking Member Inhofe and Members of the Committee:

Thank you for the opportunity to meet with you this afternoon to discuss efforts to reduce pollution and greenhouse gas emissions in the Salt Lake City region. I appear before you today not only as Mayor of Salt Lake City but also previously as founder and partner of an environmental planning and policy development firm where I was frequently a consultant to local government, community groups and stakeholders throughout Utah and the Rocky Mountain West in formulating sustainable land management and development policies, as a professional planner and adjunct professor at the University of Utah's College of Architecture and Planning where I taught courses on land use, community planning and environmental problem solving, and as an elected official where I served for over 10 years in the Utah House of Representatives, much of this time as the House Democratic Leader, and currently as the Mayor of Salt Lake City.

Before I begin my remarks, I would like to gratefully acknowledge the strong leadership that Senator Robert Bennett, formerly a member of this committee, has provided to our region. His leadership has been a decisive factor in the willingness of our community to embrace mass transit and in the rapid pace of development of our mass transit system in Utah. We are grateful as well for the fine contributions made in this regard by Senator Orrin Hatch and Congressman Jim Matheson.

Introduction

We know our physical climate is experiencing unprecedented warming, as illustrated by rising average air and ocean temperatures, accelerated snow and ice melts, and rising average sea levels.

Several months ago, I was backcountry skiing in the Utah's Wasatch Mountains with a good friend, Jeff Niermeyer, who is responsible for Salt Lake City watersheds. (More than 60 percent of Salt Lake City's water comes from the Wasatch Canyons draining into the Salt Lake Valley.) Jeff and I often discuss what is happening in our Rocky Mountains and the best projections for our future.

As we skied, Jeff and I considered the Salt Lake Valley's future: With less winter snowpack and the timing of our precipitation changing, our water system built off the snowpack and storing the runoff will be greatly reduced. Our ski industry will be dramatically reduced. Greater, longer beetle infestations will not only result in more dying off of our mountain forests and changing vegetation, but will result in more sedimentation of our streams and rivers. Already we are seeing winter rain at elevations of 9,000 feet on a relatively frequent basis, and lower elevation snowpack so greatly reduced that it is no longer a factor in our water storage around Salt Lake City.

We have no choice but to adapt to these radical changes. In Salt Lake City, we must adapt not only the ways in which we manage our water resources, but we must adapt many of our individual lifestyle patterns in order to improve not only our local air quality, which gets significantly worse each year, but to reduce the amount of greenhouse gas we contribute to the much bigger problem of global climate change, which requires a national response.

Overall Perspective

I applaud the U.S. House of Representatives for their leadership in passing the American Clean Energy and Security Act last month. This is commendable legislation and a bold step toward achieving energy independence, reducing global warming pollution and transitioning to a clean energy economy.

However, encouraged as I am by the leap forward taken in the House, I believe that a major component of efforts to reduce global warming pollution is not addressed in the bill. The United States is responsible for nearly a quarter of worldwide greenhouse gas emissions. The transportation sector accounts for 28% of such emissions in the United States. National efforts to reduce global warming pollution must address the impact of individual vehicle emissions.

Reduction of these emissions are a function of improving vehicle fuel efficiency, reducing fuel carbon content and reducing vehicle miles traveled, or VMT. Since 1980, the number of miles Americans drive has grown three times faster than the U.S. population, and almost twice as fast as vehicle registrations. The U.S. Department of Energy's Energy Information Administration forecasts a 48% increase in driving between 2005 and 2030. Energy and climate policy initiatives at the federal and state levels have focused almost exclusively on technological advances in vehicles and fuels. Yet, there is a growing recognition that managing VMT has to be part of reducing global warming pollution.[1]

We must formulate a comprehensive federal transportation policy that seeks to reduce greenhouse gas emissions by reducing VMTs through (i) a greater federal commitment and incentives to expand mass transit networks in our cities, (ii) encourage smarter land-use planning, development of complete communities and higher density development by shifting a portion of our federal commitment of resources away from expenditures that subsidize urban sprawl to a more balanced program of federal investment, and (iii) a greater commitment to alternative modes of transportation including the development of bikeways, reducing VMTs by shifting commuting habits to include carpooling, vanpooling and trip chaining. *Our observations in these areas are highlighted below.*

I. Mass Transit Investments

Over the past 60 years, urban sprawl and population growth have dictated our need for more and more personal automobiles, greater highway capacity and miles of additional roadways. For many years, auto-centric development spurred highway and road construction and discouraged mass transit. Salt Lake City had a 115-mile streetcar system that was eliminated in 1941.

American Public Transportation Association (APTA) research recently showed that households with access to transit drive an average of 4,440 fewer miles annually than

[1] Growing Cooler: The Evidence on Urban Development and Climate Change By Reid Ewing, Keith Bartholomew, Steve Winkelman, Jerry Walters, and Don Chen· Washington D.C. (2008)

those in similar households without access to public transit. APTA also reports that a two-adult household that gives up one car to use public transit saves $9,596 annually. Science Applications International Corporation found that it takes just one commuter switching from daily driving to public transit use to reduce the carbon footprint of that household by 10%. Statistically, public transit is 25 times safer than using a car, improves public health, fostering an active lifestyle, encouraging more people to walk, job and bicycle to transit stops.

Today we are responding with sustainable planning strategies, transit-oriented developments, light rail lines and re-implementation of streetcars. Salt Lake City has emerged as a national leader in transit development. After two successful light rail lines and a new, 40-mile commuter rail line built in the last eight years; Utah voters have approved ballot initiatives taxing themselves to build an additional 70 miles of rail in the next seven years. This rapid build-out of light rail and commuter rail in the Salt Lake metropolitan area is moving ahead at an aggressive pace, including construction currently underway on 4 light rail spurs connecting Salt Lake City to its suburban developments and a commuter rail extension between Salt Lake City and Provo.

In addition to expanding our transit connections to surrounding suburbs and adjacent metropolitan areas, we are also seeking to improve mass transit options within Salt Lake City with the development of several additional streetcar lines. Many cities in the United States have built modern streetcar systems in recent years, and have experienced incredible success with these projects. As slower-moving, neighborhood-scale forms of public transportation, streetcars entice thousands of riders who might otherwise drive for short- or medium-length trips within the city.

Sugar House Streetcar

Together with the Utah Transit Authority, or UTA and the City of South Salt Lake, we are progressing with plans to build a streetcar line in an abandoned Union Pacific Railroad corridor. The line is located in a heavily traveled east/west transportation corridor and will cross two major north/south automobile arterials, passing through residential, light industrial and commercial zones of both cities. Based on preliminary design elements, we believe we can complete this project for roughly $45 million and anticipate that up to half of this amount can be funded through tax increment financing or other private resources. The benefits to our communities will be enormous.

Downtown Streetcar

We are seeing a growing number of downtown residents and expect to see many more. Streetcars can enable many downtown residents to own fewer cars, or forgo auto ownership entirely, saving thousands of dollars a year in living expenses. Streetcars also provide an attractive, reliable transit option for the last segment of many commuters' trips to downtown, as streetcars provide access to areas of the city that may not be served by commuter rail or light rail systems.

Streetcars have also proven to be an extremely effective development tool. Little Rock, Tacoma, Tampa, and Portland, among others, have seen hundreds of millions, or even billions of dollars in private investment take place adjacent to their streetcar projects, which cost those communities a small fraction of those amounts to build. In

Portland, Oregon, for example, their $55 million investment in their first streetcar line yielded over $2 billion in new investment within a few blocks of the line (a 4200% return on investment).

The development community there has indicated that the City's "permanent transportation investment" has given them the confidence to invest their own dollars in the streetcar neighborhoods, creating vibrant, safe, and active urban communities. Those who live in those communities make a large number of their trips on foot, bike, streetcar, or a combination of those modes, thereby reducing traffic and parking congestion, vehicle miles traveled, and air pollution.

I believe all of these benefits warrant the development of a downtown streetcar in Salt Lake City. The line I have proposed would connect our downtown with a commercial center and commuter rail hub immediately adjacent to downtown. While this project is in its early stages of planning, we are in the process of engaging a consulting team to help us advance the project quickly through design to construction.

South Davis Streetcar

Finally, we are working closely with neighboring communities to develop an additional streetcar line that would serve commuter and traveler needs between downtown Salt Lake City and cities to our north that are underserved by mass transit. This project will provide a transit alternative to driving between Salt Lake City and southern Davis County. The current roadway system is congested due to rapid suburban growth despite continual projects expanding its capacity.

II. Better Land-Use and Development Planning and Balanced Transportation Investments

We are here today at a point in our history where we are faced by numerous challenges and a pressing need to address significant infrastructure issues that are critical to our future including energy needs, water management and expensive transportation investments. Demand-side management is forefront in any discussion or analysis of energy or water needs. However, we rarely discuss demand management as it relates to transportation needs. This is a critical component of transportation planning.

We can reduce VMTs through transportation demand management strategies. One such strategy is our land use decisions. Providing our citizens with the real option of being able to live, work, shop and recreate in the near where they live would reduce VMT, improve air quality, improve public health, strengthen neighborhoods, reduce public infrastructure expenditures and significantly reduce global warming pollution.

In January 1997, I was involved in the founding of Envision Utah, a public/private partnership formed to guide the development of a quality growth strategy to protect Utah's environment, economic vitality and quality of life for future generations. The Quality Growth Strategy, developed with the input of thousands of Utah residents, sought to preserve critical lands, promote water conservation and clean air and improve our region-wide transportation systems. Through the exhaustive involvement of the public, local and state elected officials, the business, civic, and religious communities, and other

key stakeholders, the process was an enormous success in raising public awareness and building consensus needed to implement the strategy.

Utah is among the fastest growing states in the nation. Envision Utah is currently involved in a project where it is exploring land use and transportation relationships in the context of developing our region's long-range transportation plan. Envision Utah tells me that two-thirds the buildings that will exist in our region in 2040 have not yet been built. We have an opportunity to change the course of our future and strike a better balance for the development of our future. Nearly 1.9 billion square feet of new and rebuilt space will be needed to accommodate the projected 2.9 million jobs we'll have by 2040. If we continue current patterns of development, municipalities will soon find that growth-related expenses exceed expected revenues. The Wasatch Front has limited land available for development, and building roads to serve widely dispersed populations will become increasingly impractical.2

This explosion of development in our region's future gives us the opportunity to create more vibrant urban environments and improve the efficiency of our transportation investments. Envision Utah has developed what they are calling the "3% Strategy", which is to strategically accommodate one-third of our future development on 3% of available land, near key transit stops and existing road corridors. The regional benefits of embracing this strategy are significant. In addition to creating neighborhoods that reflect consumer preferences and minimize expensive public infrastructure investments, lower per capita water use and more active neighborhoods supporting improved public health, our region would see 10% less driving, resulting in cleaner air, less traffic congestion and a $6.4 to $8.8 billion in savings in roadway investments.

We cannot achieve our goals under the 3% strategy without federal participation in a balanced funding solution of roads and public transportation. While much of our travel will continue to be by automobile, other transportation choices are crucial to our pursuit of balanced and sustainable land use planning. At the federal level, at the current time federal support for surface transportation is 80% to highways and 20% to transit. Since those are matching funds, the level of state and local expenditures on federally-aided projects is similar. Local and state capital expenditures on non-federally-aided highways and transit in most communities is even more unbalanced, closer to 90% -10%.

In almost all European cities, the average percentage of total household income devoted to transportation is between 8% and 12%. In Canada, it ranges between 10% and 15%, even in cities like Calgary, which are western, and have higher automobile ownership rates. In the United States, it generally ranges between 15% and 25%. That's about double the European percentage. And while those are averages, the percentage spent by low income families is typically much, much higher. The lower the transportation costs, the more families have to spend on housing. The Brookings Institute and Urban Land Institute have done a great deal of research on the combined cost of housing and transportation to families in U.S. cities, and note that while moneys spent on housing retain some long-term value to families, expenditures on transportation are short-lived.

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[2] Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah (2009)

Federal transportation policy must be aligned to encourage balanced transportation investment along the Wasatch Front if we are to build a transportation system that will reinforce the 3% Strategy and allow us to redevelop our urban corridors, bringing new life to our cities, lower public infrastructure costs and preserving our recreational areas and open space and reducing our global warming pollution.

The key to making substantial greenhouse gas reductions is to coordinate federal, state and local policies and practices, funding, and spending, incentives, and rules and regulations pointing in the same direction, toward smart growth and away from sprawl. Currently, policies at most levels are pointed toward sprawl, creating conditions that lead to ever increasing greenhouse gas emissions.

III. Alternative Modes of Transportation and Shifting Commuting Habits

A final, but important component to reducing greenhouse gas emissions is encouraging individuals to make responsible choices and lifestyle changes that will result in sustainable communities.

In Salt Lake City we have worked with employers to provide commuters with transportation options. In truly public-private partnerships we are working with businesses to implement trip reduction programs which include vanpools, carpools, and bicycle commute programs. Through this effort we have been able to increase transit ridership, get more people to carpool and vanpool, and ultimately get more people out of their solo commutes. We have found that employers want to do more to help the environment, reduce congestion, and provide transportation options for their employees.

Clear the Air Challenge

In the Salt Lake valley, vehicle emissions represent about 50% of the total emissions that create our air quality problems. Changing individual behaviors is critical to solving this problem. In an effort to encourage emission reducing behavior, I invited Governor John Huntsman and our county Mayor Peter Coroon to join me in issuing the *Clear the Air Challenge.* This was a six-week effort to reduce VMTs and single driver car trips. The challenge rewarded individuals for driving less and driving smarter with a competition for weekly and grand prizes. A website was provided for participants to log their daily efforts to drive less including trips eliminated, miles saved and alternative modes of transportation taken (including mass transit, active transportation, and trip chaining).

The challenge has been very successful. We set extremely ambitious goals including 10,000 participants, 300,000 trips eliminated, 1 million miles saved, and 1.8 million pounds of emissions reduced. In reality we had 3500 registered participants, and realized about 100,000 trips saved. Even with the lower participation and trips saved, we have nearly met our goals of 1 million miles saved and 1.8 million pounds of emission reductions. Imagine what an impact we can have as more and more people hear and respond to this message.

Bikeways

In Salt Lake City we are actively working on the planning, design and implementation of bike trials throughout the City and surrounding communities.

The 900 South Trail Project will design and construct a linear pedestrian/bicycle trail with ancillary improvements on a former Union Pacific Railroad right-of-way in a developing part of Salt Lake City. The former railroad line runs approximately along 900 South between 500 West and the Surplus Canal. This project will provide an off-road connection for a residential neighborhood to the Jordan River Parkway which provides recreational and commuter connection from Davis County to the north to Utah County to the south, eventually connecting the Great Salt Lake and Utah Lake. This trail will also connect to the 800 south bike lane which is a major east-west bike lane through all of the Salt Lake City, connecting to Emigration Canyon and the Bonneville Shoreline Trail.

We are also working to complete the PRATT Trail, an 8 mile trail that will connect the Bonneville Shoreline Trail on the east with the Jordan River Parkway Trail on the west.

These projects help the region move one step closer to meeting the goals of developing alternative transportation, mobility and recreation needs of the state and the nation.

U.S. Conference of Mayors Priorities

Finally, I am pleased to serve as a member of the Advisory Board of the U.S. Conference of Mayors, very ably led by its President, Mayor Greg Nickels of Seattle. The Conference recently held its Annual Meeting in Providence, and adopted a great number of resolutions, which I know will make very useful contributions to this Committee's work in the areas of transportation and greenhouse gas reduction. Those policy resolutions can be found at http://usmayors.org/resolutions/77th_conference/. I would like to highlight the resolution entitled "Calling on Congress to Pass Meaningful Climate Protection Legislation." A copy of this resolution is attached. Not only does it support the American Clean Energy and Security Act of 2009, it also highlights several modifications to the bill that would be of benefit to local governments. These include:

- Support for enforcement as well as adoption of local energy and land use codes;
- Eliminate federal and state barriers to local financing programs that use property tax mechanisms to finance efficiency upgrades;
- Allocate federal transportation dollars directly to local governments to support increased investment in transit as well as bicycle and pedestrian infrastructure;
- Direct allocation of credits or auction revenues to cities for investment in climate mitigation, through such initiatives as the Energy Efficiency and Conservation Block Grant program, as well as adaptation initiatives, consumer protection and workforce development programs.
- Direct some funding achieved through a cap and trade system toward assisting high greenhouse gas emitting generators of electricity and research and development firms, dedicated toward finding cleaner energy solutions;
- Include tax exempt financing for Investor Owned Utilities to finance utility plant retrofits for clean energy.

We hope you will give very strong consideration in forthcoming climate change legislation to not only including very comprehensive transportation provisions, but also making the above modifications which could also have a substantial impact in reducing greenhouse gases from the transportation sector.

Conclusion

I believe that a comprehensive effort to reduce global warming pollution must encompass transportation demand management strategies through a commitment to mass transit options, balanced funding approaches to transportation infrastructure investments and a commitment to support development of alternative forms of transportation and encouraging habit changes that reduce VMT. Incentives for systemic change must begin at the federal level.

I appreciate the opportunity to provide this testimony to the Committee and look forward to your questions.

Environment and Public Works Committee Hearing
July 14, 2009
Follow-Up Questions for Written Submission

Questions for Becker

Questions from:

Senator Benjamin L. Cardin

1. We're very focused in this hearing on the climate and energy implications of making different transportation investments and decisions.

- Can you talk about any of the other positive results of Salt Lake City's approach to transportation over the last few years?

A: The best results have come from our rail system. The initial successes have created additional demand for more rail lines. The number of riders has reduced the amount of traffic to downtown and the University of Utah. For the University, this has reduced the need for parking, freeing more land for other uses and avoiding having to pay for construction of expensive structured parking lots. Overall congestion has also been reduced, saving motorists time and money.

We have also started seeing success from our increased commitment to making Salt Lake City a more bicycle-friendly city. As we have significantly increased bike lanes in our city, we have seen a corresponding increase in commuters who choose to use their bicycles. With this increase in bicyclists, we believe that bicycle commuting has become a safer activity because of increased awareness of bicycles by our motorists. Increasing our commitment to becoming a bicycle-friendly city is relatively inexpensive and has been an important component of our comprehensive transportation policy.

- In particular, have you seen impacts on your economic development or your economy in general as a result of the decisions made by your city and region?

A: Historically, the State of Utah has made a significant investment in the development of roads and highways. Much of the revenue for the construction of these roads comes from our urban areas, which do not directly benefit from the construction of expansive roads. This has resulted in significant sprawl throughout the Salt Lake valley and a corresponding need for additional commitment of public resources to build public infrastructure and significant increases in VMTs and vehicle emissions of greenhouse gases. Most recently, the Utah Legislature passed legislation distributing the costs of building new schools in high growth suburban areas throughout our region. The net effect of this tax is that urban areas, particularly Salt Lake City, is required to send property tax revenue of $8 million per year, equal to approximately 5% of our annual general fund budget, to fund the construction of new school construction, while at the same time we must internalize the costs of maintaining existing schools in our city. I am concerned that placing the financial burden for constructing public infrastructure in sprawling suburbs on our urban centers will negatively impact our

economic viability, encourage unsustainable land use practices and accelerate a cycle of urban decay. For this reason, I encourage federal incentives to increase our commitment to further development of mass transit options.

2. Legislation called CLEAN-TEA would devote funding from a climate bill to states and regions that develop plans to reduce emissions from the transportation sector.

- If those kinds of resources were available, how would Salt Lake City likely employ new funding for low carbon transportation strategies and what difference would that make for the city and region?

A: The funding could be used for improved transit options, infrastructure to support natural gas and electric vehicles, and to educate motorists on the effect of vehicle emissions on area air quality. The Wasatch Front is out of compliance with the new ozone and PM 2.5 particulate air quality standards, with over 50% of the pollution coming from vehicles. More funding for transit would not only have long-term implications to limit climate change, but for Salt Lake City it would also provide important shorter-range options to improve air quality in the region.

Senator Amy Klobuchar

1. In your testimony you highlighted the impacts of climate change you are already feeling in your state. You also said that we have no choice, we must adapt. Today's hearing is about the role the transportation sector can play in limiting the long-term adaptations that will be needed if we do not address climate change. I know the transportation sector can help fight climate change, but what is needed to address the impacts of climate change on transportation? Are you considering these impacts as you make plans for the future?

A: Adapting to climate change will require efforts in many areas. In regards to transportation, the best thing we can do is to plan our communities so that they are transit-oriented, and developed in a way as to minimize the needs for vehicle use. Salt Lake City is currently revising its zoning codes to reflect these priorities, and help create a sustainable community that provides the infrastructure and encourages development patterns that encourage walkable, bikeable and transit-oriented population centers.

2. There seems to be a common theme in today's testimony: We can't rely on vehicle technology alone to reduce the carbon emissions from fuel use. What is necessary in legislation to transform our communities to maximize the benefits provided by advances in vehicle technology?

A: Communities should have emission reduction goals, just like those businesses and industries will be required to meet. Each community could then determine ways to meet the goals based on their population and specific needs, but this would require them to look at long-range solutions based on such things as vehicle miles traveled reduction programs, long-range community planning, and more.

Questions from Senator James M. Inhofe

1. Mr. Mayor, you state in your testimony that VMT reductions have been largely successful in the Salt Lake City area. What other options does the Salt Lake City region have to reduce their GHG emissions?

A: Another option for us is energy efficiency in industry and individual homes. A Federal standard for buildings and homes, and the requirement of retrofitting to meet those standards when a structure is sold, would reduce emissions significantly. It would also put everyone on the same level playing field, so one region does not have a competitive advantage by not meeting current energy efficiency standards.

A second option is to incentivize the development of renewable energy resources. The more support and incentives we can receive to develop renewables in the region, the better.

2. You also state that changing individual behaviors is critical to reducing overall emissions. Does that mean you believe that State or local governments should be legally required to change the behavior of their citizens?

A: The idea of changing individual behaviors is not one of mandates, but one of educating citizens and providing incentives so that they understand the benefits of changing their behaviors, with the end result being a new social "norm" of the desired behavior. In addition to education, incentives should be created, and barriers to undesirable actions implemented, with actual behavior change the result. Community social marketing techniques can be used to determine what appropriate benefits and barriers would be for each locality.

3. At a hearing last year, a witness from the Natural Resources Defense Council, while discussing road pricing measures, testified that "One key issue to be aware of is that there are very substantial GHG reductions from improved traffic flow, roughly equal to those from reduced VMT ... " Do you agree with his statement? If so, doesn't it make more sense to allow VMT reductions to be used at State or local discretion as a tool to meet other goals, rather than require VMT reductions as a federal goal?

A: Improved traffic flow will reduce GHG reductions through reduced delays and idling, but does not provide a barrier as a disincentive to vehicle use. It is my belief, based on the experience in our region that improved traffic flow may, in fact, provide for a temporary decrease in GHG emissions, but such an approach would be offset in the medium term by a corresponding increase in VMTs and consequently in GHG emissions. States and localities can choose methods to put VMT reductions into place, but having a Federal goal that all are held to will ensure that the reductions occur.

Senator BOXER. Thank you so much, Mr. Mayor.

Now, David Bragdon, President of the Portland Metro Council. Welcome, sir.

STATEMENT OF DAVID BRAGDON, PRESIDENT, METRO COUNCIL, PORTLAND, OREGON REGION

Mr. BRAGDON. Thank you.

Madam Chair and members of the committee, I am David Bragdon. I am President of the popularly elected Council in Portland, Oregon, the metropolitan planning organization.

You might think, like most Americans might think, that there are no two cities more different than Salt Lake City and Portland, Oregon, and in fact you would be right in many respects. Demographics are different. Our history is different. I suspect our politics are different. So, it is very revealing that our approach on this issue is nearly identical. I am sitting here next to the Mayor of Salt Lake City and am ready to tell a similar story, despite the difference in our two communities.

Our 1.4 million residents are, in many respects, just typical Americans. Like most Americans, most Oregonians get around by car. Yet, there is a lot of evidence that, unlike the rest of the country, our greenhouse gas emissions are stable or being reduced. So, if in many respects we are typical Americans, then how is it that in this one way, in this very important way, we are trending in a different direction than the rest of the country?

Well, there are two key reasons. First, although most people do get around the Portland area by car, we are not forced to do so, because enough of us can take advantage of the other choices that have been provided: a very good transit system and the ability to bike and walk.

The second difference is that, although we do drive, we simply drive a little bit less than people in other parts of the country, because of the way our community is laid out. We can take care of more of our needs close at hand, rather than having to drive, as people do in regions where jobs and housing are dispersed further apart.

We have a regional strategy with three simple elements. First, an urban growth boundary prevents wasteful suburban sprawl. Rather than spending tax dollars extending new roads and other services further out, we encourage more efficient use of land and infrastructure.

Second, we encourage more concentrated development around transit lines.

Third, we have constructed more than 60 miles of light rail and operate an extensive bus network. And we have invested in lanes and trails to accommodate thousands of commuters who are on bikes.

The results of this strategy are starting to show. We are growing more compact. The Portland area is consuming new land at a rate equal to or less than the rate of population growth. Our transit ridership and the uses of bicycles are growing far, far faster than the growth in population. And the Portland region's per capita private vehicle miles traveled has been trending downward and our average trip length is shrinking.

We think our experience offers two lessons for our fellow Americans. First, our Nation cannot successfully address climate change without reforming our transportation system. And second, we cannot successfully reform our transportation system without also improving the way our communities are designed and reducing the need for people to drive. We cannot just focus on the supply side. We have to address demand as well.

The Senate and this body can help in many different ways. Since Secretary of the Treasury Alexander Hamilton first proposed that the Nation build national canals, the Federal role in transportation has been hotly debated. Whether it was President Lincoln signing the Pacific Railroad Act of 1862 or President Eisenhower signing the Federal Aid Highway Act of 1956, the Federal influence on transportation reaches into every community in this country.

Even though zoning is a local matter, the mid-20th century policies of the Federal Government funding new road infrastructure shaped auto-oriented patterns throughout the country. This committee is uniquely situated to change those patterns. You are uniquely situated to address climate change through transportation reform. And you can use the climate change legislation to set goals which can be addressed in the upcoming transportation authorization.

I praise Representative Oberstar and Representative DeFazio of the House for their approach and the draft transportation legislation, and I would urge you to embrace many of their concepts.

Among the important ones that I would promote are linking the planning requirements of the climate change bill that you are talking about now to the planning requirements of the upcoming transportation bill.

I would add that many of these things can be done administratively as well during this extension period that you are talking about tomorrow. They do not have to wait for the final bill. You can work on them in the meantime.

In our region, we are already researching and working on ways to model greenhouse gas impacts, not only of transportation projects but of competing strategies, different approaches being as important as the projects themselves.

Second, you can link the highway bill to the transit bill, the transit bill that will emerge from the Senate Banking, Housing and Urban Affairs Committee. Use the transit bill to create carbon offsets for the highway bill.

Third, you can reduce administrative obstacles that prevent localities from using Surface Transportation Program funds for non-auto uses, and overhaul some of the federally mandated design standards which often force localities and taxpayers into the most expensively engineered solutions.

And fourth, include an aggressive program to address metropolitan mobility in the upcoming transportation bill.

The Americans in the Portland region will do our part for the country, but we need the Senate's leadership on these issues.

Thank you for the opportunity to participate today.

[The prepared statement of Mr. Bragdon follows:]

TESTIMONY OF

METRO COUNCIL PRESIDENT DAVID BRAGDON

PORTLAND, OREGON REGION

BEFORE THE

US SENATE

COMMITTEE ON ENVIRONMENT

AND PUBLIC WORKS

TUESDAY, JULY 14, 2009

2:30 P.M.

"ADDRESSING CLIMATE CHANGE THROUGH LAND USE AND TRANSPORTATION POLICY IN THE PORTLAND, OREGON REGION"

Metro | 600 NE Grand Ave. Portland, OR 97232 503-797-1540
www.oregonmetro.gov

Madam Chair, Members of the Committee, I am David Bragdon, President of the Metro Council, the popularly-elected metropolitan planning organization in the Portland, Oregon region.

Our 1.4 million residents are typical Americans. We get a few more inches of rain, our consumption of beer is in the upper quartile, and we recycle more of our garbage than most Americans do, but we're roughly average in most other statistical respects. Like most Americans, most Oregonians get around by car.

Yet, there is evidence that our greenhouse gas emissions are stable or being reduced. If in many ways we are typical Americans, how is it that in this one important way we are trending in a different direction than the rest of the country?

We think there are two key reasons: First, although most people get around the Portland area by car, *we are not forced to do so*, and many of us can take advantage of other choices: a good transit network and the ability to bike or walk.

Because of those choices, transit ridership grew at twice the rate of population growth between 1990 and 2000 and by more than 13 percent last year. And, people in the Portland region are seven times more likely to commute by bike.

The second difference is that although we drive, we simply drive less. There's a reason why: we don't have to drive as much. We take care of more of our needs – work, shopping, entertainment – closer to home than people can do in regions where jobs and housing are dispersed farther apart.

Our regional strategy originally was developed to save money, revitalize existing neighborhoods, reduce air pollution, and preserve agricultural lands. Fortunately, it has become a strategy against climate change as well.

There are three simple elements to the strategy:

- One: An Urban Growth Boundary prevents wasteful urban sprawl. Rather than spending tax dollars extending new roads, water, sewers and other services farther out, we make more efficient use of existing development and infrastructure.
- Two: We use a variety of tools to concentrate development, particularly around transit lines, and to encourage neighborhoods which have a mixture of uses.
- Three: While continuing to invest in and maintain roads, we used a combination of state, local and federal funds to construct more than 60 miles of light rail and to operate an extensive bus network. We also invested in lanes and trails to accommodate

thousands of commuters on bikes, who otherwise would be in cars at far greater expense to the taxpayer and themselves.

The results of this strategy are starting to show:

- We are growing more compact: Nationally the land consumed for suburbanization outstrips the growth in population by a factor of two or three. The Portland area is consuming new land at a rate equal to or less than the rate of population growth.
- We are the 24th most populous metro area in the nation, but rank 8th in transit ridership per capita. Bike usage has grown three-fold across our major downtown bridges in a decade, and the Brookings Institute ranked us the 5th most walkable region in the nation.
- The Portland region's per capita vehicle miles traveled has been trending downward for more than a decade. Also, our average trip length is shrinking. As a result, according to the Texas Transportation Institute's Urban Mobility Report, the impact of congestion per motorist is far less than in other metro areas and less than our size would suggest.
- Our population drives 20 percent less per day than people in other large metro areas, which means, according to CEOs for Cities, about $1.1 Billion a year in savings on fuel, auto maintenance, insurance and other costs.

Our experience offers two lessons for our fellow Americans:

First, our nation cannot successfully address climate change without reforming our transportation system. And second, we cannot successfully reform our transportation system without improving the way our communities are designed, and reducing the need for people to drive. We can't simply reform the "supply" of transportation; we have to reduce "demand" – and the way our communities are laid out is a major determinant of demand.

Changing fuels and reducing emissions from vehicles are good efforts as far as they go, but they will not get us the change we need unless we also reduce miles traveled.

Which brings me to how this committee can help.

Since Secretary of the Treasury Alexander Hamilton proposed construction of canals, the federal role in transportation has been hotly debated. One thing not debatable is that whether it was President Lincoln signing the Pacific Railroad Act of 1862 or President Eisenhower signing the Federal-Aid Highway Act of 1956, the federal influence on transportation is far-reaching. Even though zoning is a local matter, mid-Twentieth Century federal policy to fund new road

and sewer and water infrastructure and facilitate home mortgages shaped the auto-oriented land use pattern now prevalent in localities throughout the country. Those development patterns were not produced by a free market, but are the result of implicit and explicit federal, state and local expenditures and regulations. Your committee has the chance to reshape those influences for the next fifty years.

This committee is uniquely situated to address climate change through transportation reform. Just as Senator Moynihan and this Committee used the 1990 update of the Clean Air Act to create aspirations for the Intermodal Surface Transportation Efficiency Act of 1991, you can use climate change legislation to set goals which can be addressed in the upcoming transportation authorization.

Take full advantage of this opportunity:

1. Link the planning requirements of the pending climate change bill to the planning requirements of the upcoming transportation bill. In our region, we are already undertaking to model the greenhouse gas impact of transportation projects.
2. Link your Highway Bill to the Transit Bill which will emerge from the Senate Banking, Housing and Urban Affairs Committee. Use the transit bill to essentially create carbon off-sets for the highway bill.
3. Reduce administrative obstacles that prevent localities from using Surface Transportation Program funds for non-highway uses, and overhaul the federally-mandated design standards which often require the most expensively engineered solutions.
4. Include an aggressive program to address metropolitan mobility in the transportation bill. Urban regions provide the nation's biggest opportunity for reductions in transportation-related greenhouse gases – give them the tools to do so.

The Americans of the Portland region will do our part for our country, but we need the Senate's leadership. Thank you for the opportunity to participate today.

Senate Environment and Public Works Committee Hearing
July 14, 2009
Written Submission of Follow-up Questions
To
Metro Council President David Bragdon, Portland, Oregon

Senator Benjamin L. Cardin

1. **Some people have claimed that there's a link between increasing vehicle miles traveled and economic growth, and Portland has shown that to be a false link, with the city cutting vehicle miles traveled while growing its economy and becoming one of the most desirable places in the country to live.**
   - **Can you talk about how the city has achieved this, and if you think it's possible for other places in the country to get the same kinds of results?**

Response:

Dating to the mid-1970's the Portland region has pursued an intergovernmental strategy for growth management and transportation investment. This has been implemented through creation of Metro as a regional government, implementation of the intergovernmental policy committee, the Joint Policy Advisory Committee on Transportation (JPACT) to support policy development for the Metropolitan Planning Organization (MPO) and establishment of the Metropolitan Policy Advisory Committee (MPAC) to be a forum for coordination between regional and local land use strategies.

The local, regional and state governments share both a vision and coordinated strategies to maintain a compact region, limit sprawl onto productive agricultural and forest lands, focus growth in targeted higher density, mixed-use, walkable centers that are well served by transit, particularly light rail. The region's leadership has been clear in defining the goals of this shared vision, has ensured there is good public support and has established measures to monitor progress. Decisions on transportation investment are made based upon achieving the outcomes we are seeking for economic growth and prosperity, livable communities and environmental protection and enhancement rather than a single focus on addressing traffic congestion. We pay close attention to the desires and values of the public and implement land use and transportation actions based upon how effective they will be under real market conditions. Tools that we use include zoning and land use regulation, public investments and incentives, tax incentives, parking management and pricing, attention to design details and public education. A full description of the implementation of the Portland region's strategy is attached in an article: "PORTLAND METROPOLITAN REGION TURNS A CLIMATE CHANGE CORNER."

Throughout the region's 30+ year history in pursuing this agenda, federal transportation and air quality legislation has been an important influence. In many cases, this legislation has provided the region with tools that we have been able to use to implement our goals. Good examples include the Federal Transit Administration's (FTA) "New Starts and Small Starts" programs, the availability of flexible funds at the MPO level to facilitate multi-modal transportation decision-making and use of Congestion Mitigation/Air Quality (CMAQ) funds to reduce transportation-related vehicle emissions. However, in many ways, the region has been successful at implementing our goals despite federal legislation. Examples that we have been able to overcome include the overly burdensome administration of the FTA "New Starts and Small Starts" programs, the sometimes difficulty in flexing funds from the Federal Highway Administration to FTA and the excessive federal design and congestion standards. The

upcoming federal authorization bill and climate change bill provide an opportunity to adopt legislation that furthers the goals of the Portland region.

- **And if you do think other places can get similar results, what are some of the challenges that exist on the local and regional level to making this happen?**

Response:

We've identified three major areas of challenge. First, regional cooperation toward a shared vision is essential. Local governments, regional transit providers and state transportation and economic development agencies need to develop such a shared vision, understand how each of their actions impact the vision and commit to a coordinated strategy that achieves the desired outcome. Proposals for the transportation authorization bill now being suggested for "Blueprint Planning" in metropolitan areas are a useful vehicle to consider. The key elements of this proposal are for metropolitan areas to take a more holistic land use and transportation view and consider alternative scenarios for how the region might grow and change over time linked to targets to reduce greenhouse gases. It is important to ensure federal transportation funding implements the outcomes that result from this process.

Second, the public must buy into the vision and see tangible results. In the Portland region, we've committed resources equally to public outreach processes and technical planning processes. The public has grasped the idea that one-size does not fit every lifestyle, and that a framework for choice in travel, employment, and housing location is beneficial to the entire region.

And third, to measure success against our regional goals and commitments, progress must be measured. Such measurement means developing and utilizing appropriate data collection, storage, and display technologies and communicating honest results with the public.

Senator Amy Klobuchar

1. **In your testimony, you listed three elements in your strategy to save money, revitalize existing neighborhoods, reduce air pollution, preserve agricultural lands, and address climate change. These elements include promotion of smarter urban development, providing better public transportation options preventing urban sprawl. However, you do not mention improving the fuel efficiency of cars as a primary element. Can you explain why you believe fuel efficiency "will not get us the change we need unless we also reduce miles traveled?" Why do other urban centers of the country continually push for tighter vehicle standards, if as you say, we need to reduce demand?**

Response:

The experience from the Clean Air Act was that technology was very successful in reducing the air pollution emission rates from vehicles. However, due to growth in the number of people travelling and the increased number of vehicle miles travelled by each individual, many metropolitan areas continue to have an air pollution violation problem despite 40 years of concerted effort. The growth in vehicle travel simply overtook the improvement in vehicle pollution control.

As we look to the future, current trends indicate there will continue to be growth, prevailing land use patterns and transportation system expansion will continue to support growth in auto use and movement of freight will grow at a rate faster than population growth. For example, the US Census Bureau forecasts a US population of just over 350 million in the year 2030, up from the official 2000 census of 275 million. While it is essential that improvement in fuel efficiency be aggressively pursued, it is equally essential that we pay attention to whether or not this reduction in greenhouse gases is simply overtaken by further growth in vehicle travel. Further complicating this issue is that dramatic improvements in fuel efficiency will simply reduce the cost of travel, thereby potentially increasing vehicle use with the resultant increase in greenhouse gases.

In simple terms, if fuel efficiency is improved by double but overall vehicle travel also doubles, there will be no net reduction in greenhouse gases. If the country expects to reduce greenhouse gasses in 2050 by 80% from 2005 levels, a doubling of fuel efficiency and no increase in vehicle travel will only result in a 50% reduction of greenhouse gasses once the fleet fully turns over. Under this circumstance, there is another 30% reduction needed to get to 80% and if there is any growth in population and vehicle miles traveled, there will be even more of a reduction needed. If the transportation sector doesn't take on its responsibility to reduce its share of greenhouse gasses, the burden will simply shift to the electric generation or industrial sectors.

To accomplish meeting the greenhouse reduction targets being proposed in the climate change bill, it is our expectation that three strategies will need to be employed:

1. Improve the technology of the vehicle to be more fuel efficient.
2. Develop alternative fuels that produce less carbon emissions.
3. Reduce vehicle miles of travel.

The first two will result from regulatory and market-based requirements generated at the national and international level and implemented by the automobile and energy industries. The third will result from actions taken at the local and metropolitan level to impact urban form and transportation systems. Responsibility for implementing strategies to reduce vehicle miles of travel are clearly the responsibility of the local area while our ability to impact the first two

strategies is practically none. While other areas may prefer push the Congress for tighter vehicle standards, we think we should be doing our part as well.

However, the need to manage demand not just mandate tighter vehicle standards is the key nexus between the transportation authorization bill and the energy and climate change bill. The Senate Environment and Public Works Committee is the only place in Congress where these two responsibilities overlap. If the Committee develops and adopts a climate change and greenhouse gas reduction strategy, it is essential that the transportation authorization bill reinforce not confound that policy direction. The federal investments in transportation that flows from the transportation bill will have long lasting effect on whether urban areas can manage demand. This upcoming legislation provides the opportunity for the Congress to provide tools to the Portland region, and other metropolitan areas throughout the US, that helps implement our vision and facilitates our goal of managing demand. As noted in my testimony, consideration should be given to linking the metropolitan planning requirements for greenhouse gas reduction with transportation planning requirements and inclusion of an aggressive multi-modal metropolitan mobility and access program.

2. **Your strategy seems to address transportation in urban areas. How would your strategy have to change to meet the needs of rural areas of America? Is it applicable?**

Response:

Metropolitan areas of over 50,000 population where MPOs are required to do metropolitan transportation plans comprise 70.5% of the nation's population and 66% of the nation's vehicle miles travelled and will therefore be the greatest contributors to reducing greenhouse gases from vehicle travel. These metropolitan areas have the greatest opportunity to implement the full array of land use and transportation actions to effectively manage demand, including development of effective transit and non-motorized alternatives, use of price signals, parking management, increased densities and mix of land uses, especially in centers. The largest metropolitan areas of over 1 million population where the application of these tools have the most potential comprise 43% of the nation's population and 39% of the nation's vehicle miles travelled.

On a smaller scale, self-contained, independent towns and villages that are not part of a greater metropolitan region should be able to emulate this strategy with the exception of significant reliance on transit. Even on a smaller scale, the benefits of higher density, mixed-use centers with good walking and biking access can be effective. However, towns and villages and rural areas that surround and are part of a greater metropolitan region rely upon access to that region for jobs, shopping, services and recreation in a land use pattern that is dependent upon auto access. It is this sprawling pattern and the resulting increase in vehicle travel that we are working hard to limit.

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Portland Metropolitan Region turns a Climate Change Corner

August 2009

Submitted for publication in ISOCARP Review 05 by the International Society of City and Regional Planners

PORTLAND METROPOLITAN REGION TURNS A CLIMATE CHANGE CORNER

Between 1990 and 2007, total emissions of greenhouse gasses (GHG) rose 17 percent in the U.S. In Portland and surrounding Multnomah County, during the same period, total GHG emissions dropped to 0.7 percent below the 1990 level. A three percent decline in per capita emissions nationally was overwhelmed by population growth. Meanwhile, Portland and Multnomah County grew faster than the U.S., yet experienced a 17 per cent decline in per capita emissions.

MULTNOMAH COUNTY CARBON EMISSIONS, BY SECTOR
(Metric Tons, CO_2-equivalent)

	1990	1995	2000	2005	2006	2007
Residential Energy Use	1,770,974	1,758,764	2,015,339	1,722,750	1,772,171	1,759,674
Commercial Energy Use	1,885,692	2,036,343	2,380,636	2,086,743	2,142,319	2,132,798
Industrial Energy Use	1,540,295	1,757,799	1,935,596	1,367,695	1,398,802	1,367,204
Transportation Fuel	3,441,087	3,385,929	3,369,741	3,418,793	3,424,911	3,483,801
Waste Disposal	237,691	226,778	147,349	82,954	79,362	66,153
Total	**8,875,739**	**9,165,613**	**9,848,661**	**8,678,935**	**8,817,565**	**8,809,630**
(Relative to 1990)		**(+3.3%)**	**(+11.0%)**	**(-2.2%)**	**(-0.7%)**	**(-0.7%)**

City of Portland Bureau of Planning and Sustainability

GRAPHIC: Multnomah County Carbon Emissions, by Sector

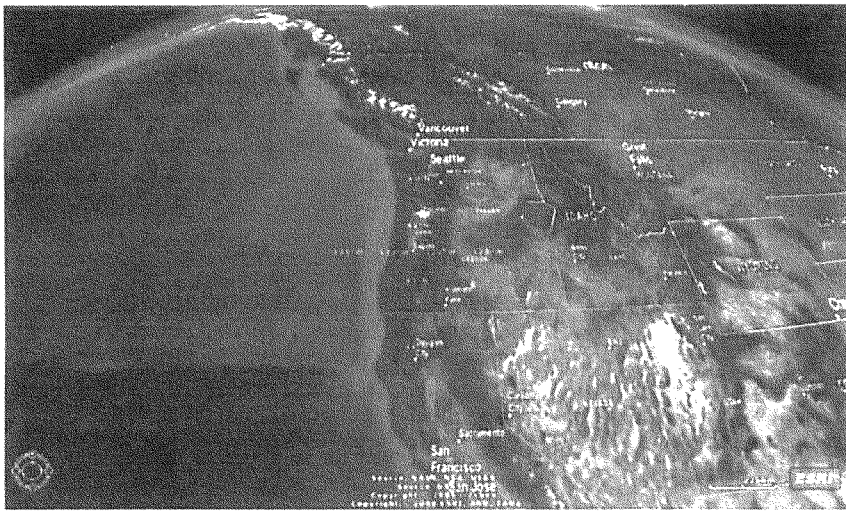
Why has Portland bucked the national trends? Those of a spiritual bent might attribute Portland's success to residents' superior virtue, noting that Portlanders own more hybrid cars per household than residents of other U.S. cities and sport one of the highest recycling rates in the nation (64 per cent in 2007). Descendants of settlers from the puritan Northeast U.S. may believe Portlanders' legendary frugality is responsible, citing the $2.6 billion residents save every year by commuting shorter distances.

Planners of the region take a different view. Citing total and per capita emissions numbers, they contend that people of the region achieved this success by attending countless and long meetings during the cold, wet times of the year (September through June), huddled with their neighbors, contemplating the future. This argument is well received by spiritual leaders and local economists because this odd behavior suggests both higher virtue and lower consumption. The author, having spent more than 30 years in planning, most of it in meetings, endorses the planning theory: the region's growth management – from the statewide planning goals, to Metro's Growth Concept, to city and county comprehensive plans – deserves most of the credit. Growth management is changing the urban form of the region and yielding dramatically lower driving per capita.

Regional Setting

The 1.4 million people of the Portland metropolitan region reside at the confluence of two great rivers of the West, the Columbia and the Willamette. Mount Hood rises to the east, with the

Columbia River Gorge National Scenic Area adjacent to the eastern edge of the urban growth boundary. The Tualatin Mountains on the northwest side constitute a significant wildlife corridor between the region and the Coast Range. The region's natural beauty and bounty have cultivated among residents a fierce devotion to the landscape and the lifestyle it affords them.



GRAPHIC: Map: Metropolitan Region in Pacific Northwest Context

The lush northwest forests in the larger region played a dominant role in the economy and culture of settlers, from the mid-1800s until the 1980s, when over-harvesting led to changes in federal forest policies that reduced harvest levels. The rich soils and abundant rainfall in the valley of the Willamette yield a cornucopia of crops and made agriculture the second pillar of the settler economy (agriculture now leads forestry in economic impact). The landscape and natural resources of the region led settlers to develop trade between Portland and its hinterlands and a system of navigable waterways, railroads, roads, bridges and airports to facilitate international trade. The resulting economy and culture stimulated the emergence of a regional identity that led, in turns, to regional thinking, regional governance and regional growth management.

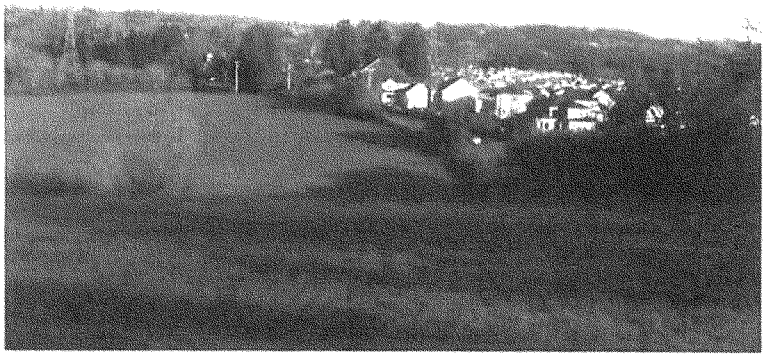
Political Context

Metro, the nation's only popularly elected regional government, is chartered by voters to protect the region's quality of life. But it is intentionally lodged between state and local governments, in the political middle of an overall framework that is essential to the achievement of the region's vision. In 1973, the Oregon Legislature enacted Senate Bill 100, which set the state on its unique planning course. The law requires every city and county to adopt a comprehensive plan that meets nineteen statewide planning goals (which have the

force of law). These goals address issues ranging from citizen involvement to housing, the economy and protection of farm and forestland.

Upon its founding in 1979, Metro, too, became subject to the statewide planning goals. For Metro, the most important is the Urbanization Goal. It requires every city and urban region to establish an "urban growth boundary" (known as the "UGB") to limit the extent of urbanization. The Urbanization Goal and the statewide goals that protect farm and forest land outside UGBs establish the fundamental growth management strategy for the state and the Portland metropolitan region.

Metro assumed responsibility for the UGB surrounding 25 cities and the urbanized portions of three counties that comprise the urbanized region. As discussed below, Metro's growth concept calls for a compact development form. The "compactness" of the region is measurably improving. It owes much of this success to three critical roles played by the state-required regional UGB: (1) ensuring that cities near the Portland metropolitan area don't sprawl onto rural land between the cities and the metro (they have their own UGBs); (2) strictly limiting ex-urban development on these same rural lands; and (3) allowing Metro and "neighbor cities" expand their UGBs only if they can demonstrate that they have taken all reasonable actions to use land inside their existing UGBs more efficiently.



GRAPHIC: Edge of Urban Growth Boundary, Springville

Formation of Metro

Concern about regional issues in the Portland area reaches back to 1925 with the formation of a legislative committee to study problems of local governments in the metropolitan area. Over the next five decades, regional governance evolved into two agencies, the Metropolitan Service District (MSD) and the Columbia Region Association of Governments (CRAG). Both were created under a typical model for associations of governments. MSD was created to deliver regional services efficiently and assumed responsibility for the zoo and the solid waste disposal system. CRAG was created to coordinate planning for land use, transportation, water quality and criminal justice. Each had a governing body of predominantly local elected officials, with significant crossover between them.

By the mid-1970s Oregon and the Portland area were going through a significant shift in policy direction. The state had established the statewide planning program described above. The City of Portland was aggressively working to reverse the decline of its downtown and retain strong, family-oriented neighborhoods. The region was embroiled in controversy over proposed urban freeway construction that would have had dire effects on neighborhoods. And the nation was beginning to tackle significant environmental issues, particularly air and water pollution.

A "good government" coalition of representatives from government, business and civic organizations called for a new regional governance structure with authority to tackle these issues and be accountable to the public. Assisted by a grant from the National Academy of Public Administration, the Tri-County Local Government Commission drafted a proposal that was adopted largely intact by the 1977 Oregon Legislature.

The new law authorized a regional government to be elected by voters of the three-county region. The law provided for a 12-member council elected by districts and an executive officer elected at-large to manage the organization. It assigned the duties of CRAG and MSD to the new entity and gave it power to tax and ensure local plans are consistent with regional plans. It shrank the boundaries of CRAG and MSD to the area of contiguous urbanization. In May 1978, people of the region voted 55 to 45 percent to create a new regional government, now called Metro. That November voters elected the first Metro Council and Executive Officer. The change in government went into effect in January 1979.

After a decade of operation, it became apparent that the region needed authority to make governance decisions on its own, without having to seek state legislation for every change. The Oregon Legislature authorized and voters statewide approved a change to the Oregon Constitution allowing Metro a home-rule charter. A commission drafted a charter for consideration by Metro's voters that declared livability of the region to be Metro's primary responsibility. It required Metro to adopt a 50-year "future vision" and a long-range regional framework plan with which city and county comprehensive plans would have to comply. It also called for establishment of the Metro Policy Advisory Committee (MPAC), composed predominantly of local elected officials, to advise the Metro Council on any land use

requirement that would apply to local governments. The region's voters approved the charter in 1992.

2040 Growth Concept: the Region Charts a Course

Metro established the UGB for the region in 1979, surrounding a land area intended to accommodate 20 years of growth (229,000 acres). A recession that ran into the early '80s slowed development inside the UGB. But the region's economy came roaring back in the late '80s and its population grew faster than the rest of the nation. Leaders in the region understood that the UGB would not, by itself, stop sprawling development patterns within the boundary. Metro developed a "base case" scenario in 1992 to show what the region would look like in 2040 under existing zoning in the UGB. Development at low densities would exhaust the remaining supply of land inside the UGB and force expansion onto 120,000 acres, much of it productive farmland. Dependence upon the auto and the length and number of trips would rise. Air quality would decline and infrastructure costs, especially for new roads, would be daunting. In 1992, Metro had neither the knowledge nor the technology to determine the effect of the "base case" on GHG emissions. It was not even a subject of public discussion.

Leaders in the region rejected the base case, as the region's future and called for new policies to "build up, not out." Polling showed a majority of residents would accept slightly higher densities in their neighborhoods if necessary to avoid expansion onto farmland. After unprecedented public involvement, Metro composed the "2040 Growth Concept," a long-range regional plan adopted by the Council in 1995. The plan relied upon a "tight" UGB to encourage more efficient use of land, and for new policies in city and county comprehensive plans to allow higher densities in focus areas. Despite opposition from development interests whose principal market was land close to the edge of the UGB, cities and counties of the region embraced the Growth Concept and began to implement it.

The 2040 Growth Concept merges land use planning and transportation planning to reinforce the objectives of both. It concentrates mixed-use and higher-density development in 38 "centers"; 33 "light rail station communities"; and 400 miles of "corridors" that connect many of the centers. The Growth Concept then plans high-capacity transit (principally light rail) to connect the "central city" (Portland) and seven "regional centers (Hillsboro, Gresham and Beaverton among them)." Bus service, often with 10-minute headways, connects 30 "town centers" with the central city and regional centers.

The Growth Concept builds upon this fundamental land use and transportation superstructure. The central city serves as the hub of business and cultural activity in the region. The regional centers provide commercial and civic services in a market of hundreds of thousands of people. Town centers offer localized services for tens of thousands within a three- to five- mile radius. At a finer grain, the Concept recognizes the importance of "Main Streets" as traditional neighborhood commercial hubs within walking distance of surrounding residential districts. The Growth Concept has brought infill and a mix of uses to some residential areas, mostly in centers

and along Main Streets and corridors. But an estimated 80 percent of traditional residential areas have not been significantly affected by these changes.

To bring the Growth Concept to life, the Metro Council relies upon traditional land use and transportation strategies and new tools developed with cities and counties in the region. These strategies and tools are collected in Metro's over-arching Regional Framework Plan (RFP), adopted in 1997. The Council adopted an Urban Growth Management Functional Plan to implement land use strategies in the RFP through city and county comprehensive plans and zoning ordinances. The Council adopted a Regional Transportation Plan to implement transportation strategies and build the multi-modal transportation system called for in the Growth Concept. The Council also adopted a Metropolitan Greenspaces Master Plan to guide investments in parks and greenspaces. Each of these implementation plans is part of, and must be consistent with, the framework plan. Recognizing that plans and regulations alone do not, themselves, build better communities, the Council aligned its transportation and other investments to encourage development in centers, corridors and Main Streets.

Regional Transportation Planning

The mid-70s also brought a shift in regional transportation policy. The initial segments of a regional freeway system had been built, but there were dueling visions for expansion of the region's transportation system. The pre-Metro regional planning organization, CRAG, had adopted a major freeway expansion plan developed by the state highway department. Three new segments of the interstate system were mired in controversy. Meanwhile, TriMet, the newly created public transit agency, called for significant transit expansion.

To overcome a stalemate, a Governor's Task Force on Transportation was formed to sort out the region's policy direction. The overall freeway expansion plan was cancelled. Policies were re-directed toward a multi-modal transportation system. The role of Metro staff and elected levels was strengthened.

Since this shift, regional collaboration on multi-modal transportation issues has been centered at Metro. A dual decision-making structure was established to meet the federal requirements for a metropolitan planning organization: a Joint Policy Advisory Committee on Transportation (JPACT), composed of elected officials representing cities, counties and Metro, and representatives of transportation agencies; and the elected Metro Council. A professional staff at Metro carries out regional transportation planning, light-rail project development, travel-demand forecasting, land use planning, economic and demographic forecasting and, more recently, transit-oriented development and demand management.

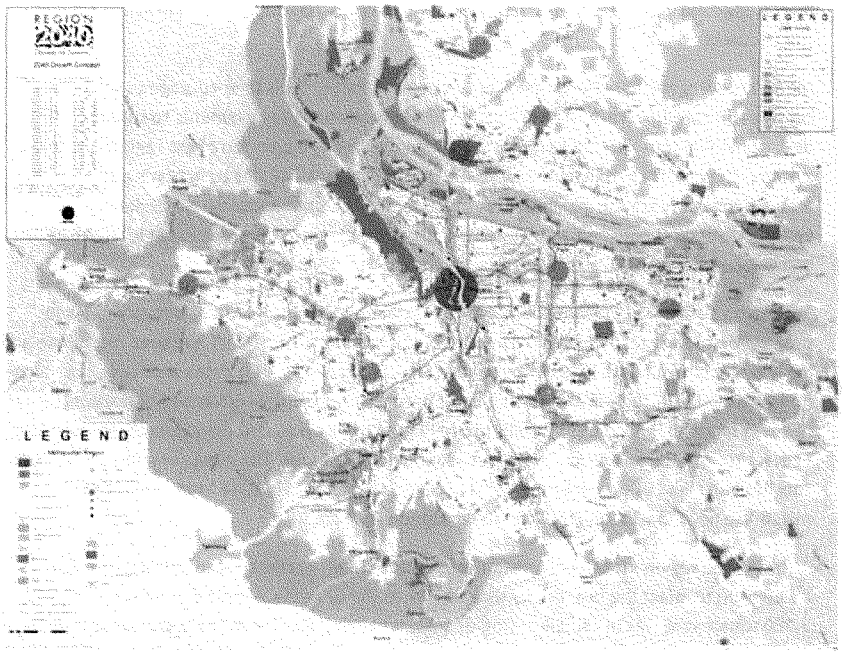
A critical Metro/JPACT responsibility is to allocate flexible transportation funds. Throughout the late '70s and '80s most of these funds came from the transfer of federal funds from the canceled freeways to other projects. After 1991, they flowed from new flexible funds provided by federal transportation legislation.

GRAPHIC: Eastside Light Rail, Gresham

For a sustained 30+ year period, Metro and its regional partners have aggressively developed a regional light rail and streetcar system, numerous smaller projects to support a more compact urban development pattern and an expanding system of bus, bike, pedestrian and trail projects.

Building a Compact Urban Form

The fundamental growth management strategy in the 2040 Growth Concept is to develop a compact urban form, using lands inside the UGB as efficiently as possible. Maintaining a tight UGB has generally succeeded in channeling market forces from a sprawling edge to the designated centers. State law requires Metro to review the capacity of the UGB every five years to ensure it provides a 20-year land supply. But the law directs Metro to seek needed capacity from more efficient use of existing urbanized land before expanding the UGB. This requirement reinforces the 2040 Growth Concept, which stresses redevelopment and infill (dubbed "refill" locally). Metro has developed a detailed and sophisticated land-monitoring process to inventory vacant land and track the rate of refill. Metro's most recent process provided a 20-year development capacity (2002-2022) by relying upon refill at the rate of 29 percent for residential, 45 percent for industrial and 52 percent for commercial, plus a modest expansion of the UGB (20,000 acres, 8.7 percent). This means Metro expects the region will accommodate 29 percent of new households, 45 percent of new industrial jobs and 52 percent of new commercial jobs through refill.



GRAPHIC: Map: 2040 Growth Concept

The UGB is only one tool available to Metro and its partner local governments. The region employs a wide array of regulatory, incentive and investment tools, and constantly seeks new tools. The first Metro action after adoption of the 2040 Growth Concept in 1995 was, with the urging of MPAC, to call for removal of zoning barriers to higher densities in centers. City and county elected officials at the MPAC table negotiated a series of household and employment growth targets, with regional equity in mind. The targets evolved into Metro requirements: each city and county undertook a re-zoning process to provide the targeted capacity. Cities and counties can distribute and re-distribute residential capacity as they choose, but they cannot reduce zoned capacity below the targets. To help concentrate development in centers and corridors, Metro also set housing unit and employment targets for them and ratios for city and county minimum and maximum parking standards.

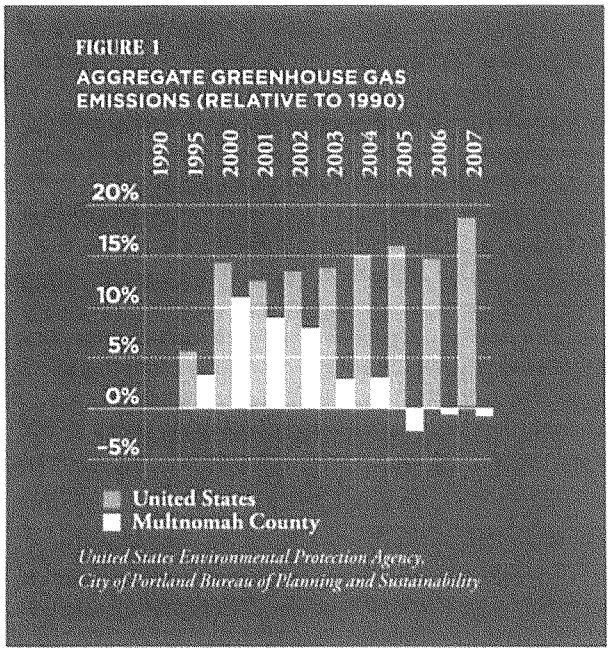
This widespread re-zoning generated opposition. In 2002, an anti-planning group gathered sufficient signatures to place a measure on the regional ballot that would have repealed Metro's authority to require up-zoning. The measure was voted down by the region's voters, but only after the Metro Council placed an alternative measure on the ballot – which passed – limiting its own authority to require cities and counties to increase density in certain single-family neighborhoods. Because the 2040 Growth Concept focuses high density in nodal centers rather

than single-family neighborhoods, passage of the measure has not impeded progress toward compactness.

Metro encourages cities and counties to use non-regulatory tools to encourage development in centers and corridors, such as prioritization of transportation improvements to support development in those areas. Foremost has been the steady expansion of the regional light rail system. The goal is to connect the central city and all regional center by light rail and make the area around every station a high-density "Station Community." Recently, the expansion of the system has been supplemented by a central city streetcar system that provides local circulation and leverage for high-density residential and mixed-use development.

The region also places a priority on allocating certain categories of federal highway funds to projects that leverage development in centers and corridors. The result has been more than a decade of improvements to downtown Main Streets, sidewalks, bike paths and trails, bus stops and accessibility in centers and corridors. Of particular note is the conversion of flexible federal highway funds to federal transit dollars to help fund transit-oriented development through the Federal Transit Administration's Joint Development regulations. The most common use of this tool has been land value "write-downs" for developments that include higher density and mixed-use beyond what the market would support.

Although the region's long-range vision emphasizes "refill" in centers and corridors, action has been taken to affect the broader landscape. When the Growth Concept was adopted in 1995, 7,500 square feet was the smallest single-family lot zoning allowed in the urban areas around Portland. Re-zoning to meet the statewide planning goal on housing and Metro housing targets yielded a large supply of 3,500-5,000 square foot lots, which the market quickly absorbed. Metro also requires cities and counties to allow accessory dwellings in their single-family zones. These provide an affordable housing opportunity with minimal effects on neighborhoods. To ensure efficient use of industrial land and protect freight transport facilities, Metro requires cities and counties to prohibit large-scale retail and certain types of offices in the region's most important industrial areas.



GRAPHIC: Aggregate Greenhouse Gas Emissions (Relative to 1990)

When Metro and the cities and counties of the region committed to more efficient use of land in centers and corridors, they recognized that more intensive development must be matched with better access to parks and open space. Learning to think of the region's floodplains, wetlands, streams and riparian areas as "greenfrastructure," the region developed complementary greenspaces strategies using land acquisition, regulation, and a broad program of public engagement and incentives. In 1995 and 2006, voters passed measures sponsored by Metro and a coalition of local governments, businesses and conservation organizations to authorize a combined total of $364 million in general obligation bonds to purchase land for parks and greenspaces. A portion - $69 million – is allocated to cities, counties and park districts to protect water quality and habitat and park and open space improvements. Metro has acquired over 8,000 acres across the region and expects to add another 3,500 to 4,500 acres to the region's parks, trails, greenspaces and natural areas.

Region Becomes More Compact; Emissions Drop

It was not a stated objective of the 2040 Growth Concept (1995) to reduce greenhouse gas emissions. In the years leading to its adoption, air quality, costs of public infrastructure, protection of farmland outside the UGB and re-vitalization or downtowns of the region were uppermost in the minds of regional leaders. But cities and counties, especially Portland and Multnomah County, began to address emissions reduction on a track that paralleled development of the Growth Concept. The city led the way by adopting the nation's first carbon dioxide reduction strategy in 1993. Eight years later, the county joined the city in a joint Local Action Plan on Global Warming (2001), setting a CO2 reduction target of ten percent below the 1990 level by 2010. Each of these efforts identified the links among development patterns, vehicle miles traveled (VMT) and GHG emissions. Each called for more compact development as a principal strategy to reduce VMT and emissions. These efforts not only complemented and reinforced implementation of the 2040 Growth Concept, they also added a compelling new reason to "build" the Growth Concept. New people and new organizations have enlisted in the drive toward compact, mixed-use, walkable communities and investments in transit, bicycle and pedestrian infrastructure.

From the beginning of implementation of the Growth Concept, Metro and many observers outside the state - from the U.S. Census Bureau to university researchers and the Brookings Institution - have been measuring the results of the region's growth management efforts. The data show that the city of Portland, surrounding Multnomah County and the entire region are all becoming more compact. Between 1982 and 1997, the amount of land consumed nationally for urban development increased by 47 percent while the nation's population grew only 17 percent. From 1990 to 1996, Portland spread just 13 percent, the same as its growth rate. Each new person moving into the Washington, D.C metropolitan area used 480 yards of space in 2000. Each person moving into the Portland metro area used 120 yards. Between 1990 and 2000 population density in the region (including Clark County, Washington, with less rigorous growth management) increased by 13 percent. In contrast with most metropolitan regions in the U.S., the center of this region (city of Portland) grew as fast as its suburbs - about 43 percent – from 1980 to 2000. In the same period, Seattle grew 14 percent while its suburbs grew 46%; for Denver it was 12 percent to 47 percent. Between 1990 and 2000, 88 percent of the Portland region's growth (again, including Clark County, Washington's growth) occurred in high-density urban areas, compared to 7-63 percent for four other metropolitan statistical areas of comparable size (Charlotte, Columbus, Orlando, and San Antonio).

Table 1: Population Growth in Portland and MSAs with Similar Populations

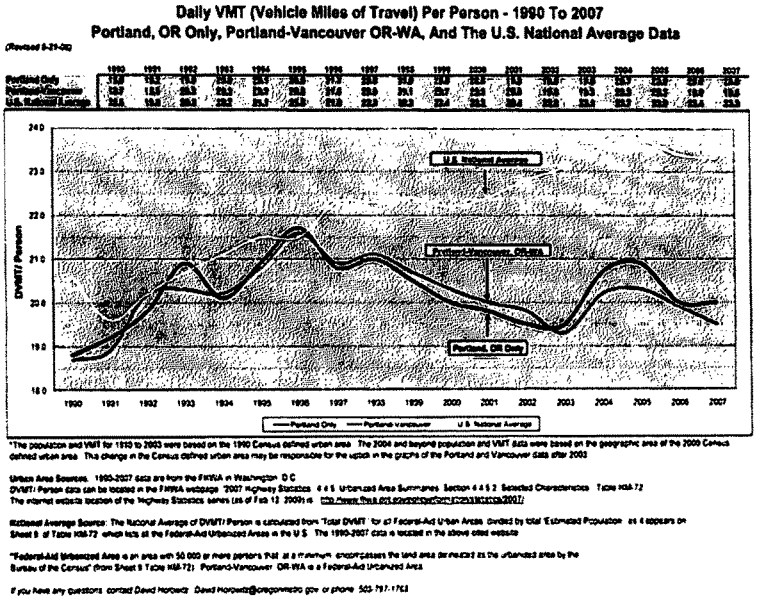
	Charlotte	Columbus	Orlando	San Antonio	Portland
Urban	7%	31%	64%	63%	88%
Suburban	50%	45%	23%	8%	9%
Exurban	45%	18%	12%	12%	1%
Rural	-1%	7%	2%	17%	3%

Source: Nelson and Sanchez, 2003

GRAPHIC: Population Growth in Portland and MSAs with Similar Populations

The region's trend toward greater "compactness", complemented by investments in non-auto modes, appears to be reducing vehicle miles traveled (VMT). The Federal Highway Administration's Highway Performance Monitoring System (HPMS) shows the Portland metropolitan area's average daily vehicle miles traveled per capita is lower than the national average for urbanized areas and declining while the national trend continues upward. Average U.S. VMT is increasing by 1.8 percent per year, 2.5 times the rate of population growth. Residents of the ten most-sprawling communities in the U.S. drove an average of 27 VMT/capita/day. Residents of the ten least-sprawling communities average 21 VMT/capita/day. In the Portland-Vancouver region it was 19.5 in 2007.

Trips by transit, on foot and by bike are replacing and shortening auto trips. Transit ridership in the region (excluding Clark County, Washington) rose from 58 million in FY 1995 to 96.9 million in FY 2007. According to the Federal Transit Administration, the Portland metropolitan area ranks 23rd in population while TriMet ranks 10th in overall annual ridership and 8th highest in annual ridership per capita. Transit ridership and mode share continue to increase. Only six of the nation's 41 metropolitan statistical areas (MSAs) saw in increase in trips per revenue mile, including the Portland MSA.



GRAPHIC: Daily VMT (Vehicle Miles of Travel) Per Person – 1990 To 2007

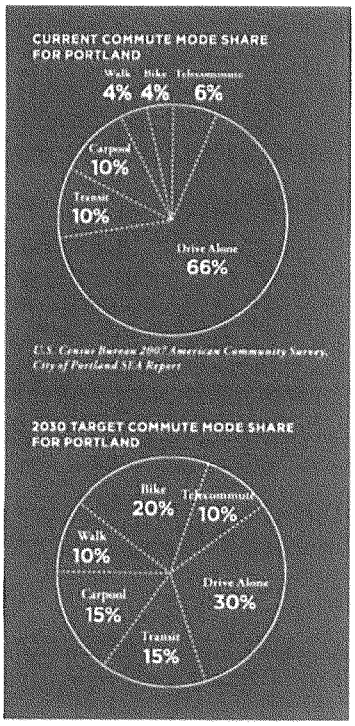
Data show a modest increase in walking work trips within the city. Planners attribute the increase to infill housing in the central city. The Brookings Institution (2007) rated metropolitan areas for walkability and found the Portland metro area to be the 5th most walkable region in the country.

Most impressive, however, has been the remarkable growth in bicycle trips. The number of summer-day trips on the four principal bridges across the Willamette River to downtown Portland from the east side rose from 2,855 in 1991 to 16,700 in 2008, a 584 percent increase. The number of auto trips across the bridges did not increase over that same period. Bike trips now comprise 13 percent of all trips across the bridges. Of all trips in the U.S., 0.4 percent are by bicycle. In 2005, Portland had a bicycle commute mode share of 3.5 percent. As evidenced by the bridge counts, the bicycle share continues to growth. CAP36: increase commute mode share from four percent to 20 percent by 2030.

Emerging data also indicate that the region is experiencing some of the hoped-for benefits of its planning efforts. The shift from auto travel is saving people of the region a considerable amount of money. Because commutes in the Portland area are four miles shorter than the national average (20.3 miles/day v. 24.3 miles/day), households in the region spent seven percent less on

transportation in 2004 than households in other western metropolitan statistical areas. A report for CEOs for Cities estimates that the region's residents save $2.6 billion per year, $800 million of which would otherwise leave the state.

The CEOs for cities report cites data showing that people "trade" housing costs for transportation costs, suggesting a new dimension of the land use-transportation connection: compact development encourages walking, biking and transit use, thereby saving travel dollars, thereby freeing household income for mortgage or rent payments. The combination of household income for housing and transportation (the two highest costs typically faced by a household) shows the Portland region to be among the lowest of all regions studied.



GRAPHIC: Current Commute Mode Share for Portland; 2030 Target Commute Mode Share for Portland

Conclusion

Be it residents' superior virtue, their historic frugality, or their dedication to planning, the region has corrected its greenhouse gas emissions course. But this success has drawn attention to how far the region must yet come. The city will not reach the goal set in its 1993 CO2 reduction strategy (20 percent below the 1988 level). Despite efforts to re-develop into a compact, mixed-use pattern, fewer than 25 percent of Portland neighborhoods receive a "Walkscore" of 80 points or higher (Sightline Institute indicator of walkable neighborhoods). Fully 69 percent of the city's population lives in neighborhoods that do not have the characteristics of "20-Minute Neighborhoods", a goal of the city's overhaul of its comprehensive plan. The region is becoming more compact. But it faces the same challenge nearly all U.S. cities face: reversing 60 years of auto-oriented development by refitting suburban land use patterns.

BUDGET FOR A LOW-CARBON FUTURE

	1990	2007	2030	Percent change from 2007	2050	Percent change from 2007
Total carbon emissions (metric tons)	8,875,739	8,809,630	5,283,000	-40%	1,756,000	-80%
Population	584,000	702,000	967,000	+38%	1,276,000	+82%
Per person carbon emissions (metric tons)	15.2	12	5.5	-56%	1.4	-89%
Passenger miles per day per person	17.4	18.5	13.2	-29%	6.7	-64%
Electricity (kWh per person)	13,046	12,300	8,319	-32%	4,146	-66%
Natural gas (Therms per person)	391	383	320	-16%	104	-73%

GRAPHIC: Budget for a Low-Carbon Future (Multnomah County)

Nonetheless, success has whetted the region's appetite for further reductions. The draft City of Portland and Multnomah County Climate Action Plan 2009 proposes a 2050 reduction goal of 80 percent and an interim 2030 goal of 40 percent, with 64 actions to be taken by 2012. In the category of Land Use and Mobility the Plan sets two 2030 objectives:

- 90 percent of city residents and 80 percent of county residents can easily walk or bicycle to meet all basic daily, non-work needs.

- Reduce per capita daily vehicle miles traveled by 50 percent from 2008 levels.

Legislation passed by the Oregon Legislature (House Bill 2001) directs Metro to use its sophisticated modeling capabilities to develop a growth management scenario that would meet state emissions reduction goals (similar to Climate Action Plan goals). This work will provide residents of the region ample opportunity for their much-loved winter pastime – huddling in countless, long meetings peering into the future.

About Metro

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy

Metro representatives

Metro Council President – David Bragdon

Metro Councilors – Rod Park, District 1; Carlotta Collette, District 2; Carl Hosticka, District 3; Kathryn Harrington, District 4; Rex Burkholder, District 5; Robert Liberty, District 6.

Auditor – Suzanne Flynn

Metro
600 NE Grand Ave.
Portland, OR 97232
503-797-1800

www.oregonmetro.gov

Senator BOXER. Thank you so much.

I just want to say to the other members of the panel that I have been called away for a very urgent meeting right now on the issue of global climate change. So I am going to be going to that meeting.

I am going to be handing the gavel over to Senator Carper, and Senator Carper, once we finish, we will give you the list of the arrival and we will let you keep this going as long as you wish to and members wish to.

I thank the panel, really, for your participation.

Senator CARPER. Thank you, Madam Chair. We will break for dinner around 6:30 p.m.

[Laughter.]

Senator CARPER [presiding]. Please proceed. Thank you.

STATEMENT OF STEVE WINKELMAN, DIRECTOR, ADAPTATION AND TRANSPORTATION PROGRAMS, CENTER FOR CLEAN AIR POLICY

Mr. WINKELMAN. Chairman Boxer, members of the committee, good afternoon.

My name is Steve Winkelman. I am the Director of the Transportation Program at the Center for Clean Air Policy, also called CCAP, an environmental think tank with offices in Washington, DC, California, New York, Brussels and Paris.

CCAP helps governments at all levels design and implement climate policies that balance economic and environmental concerns. We conduct technical analysis and facilitate dialog among government, industry, and environmental stakeholders to craft practical and effective solutions. Our international dialog engages climate negotiators from 30 countries in developing post-2012 solutions.

CCAP's transportation and climate dialog brings together high level officials from State, local and Federal agencies, as well as experts from advocacy groups, car companies and oil companies.

I encourage you today to consider travel efficiency in crafting climate legislation. Travel efficiency measures include smart growth, transit, walking, biking, telecommuting, system efficiency and freight improvements. They benefit cities, suburbs and rural towns, and are just as important for fast-growing and long-established communities. The key is to provide communities with the tools and incentives they need to determine and implement their own solutions.

My top points today are: reducing vehicle miles traveled (or VMT) is critical for climate protection; travel efficiency can reduce VMT and save money while cutting CO_2; there are many short-term savings opportunities; and CCAP and our dialog partners recommend that Congress dedicate a meaningful share of climate allowance value to fund travel efficiency.

Transportation CO_2 emissions are nearly one-third of the U.S. total and result from three factors that we call a three-legged stool: vehicle efficiency, fuel carbon, and how much people drive as measured in VMT. While the 2007 Energy Bill addressed the first two legs, it did not address the third leg of the stool, VMT.

Between 1977 and 2007, driving grew three times faster than population growth. And the Department of Energy projects that per capita VMT will grow 15 percent through 2030. If driving grows

anywhere near this pace, the increased emissions will overwhelm the reductions from low-carbon fuels in vehicles, even at 55 miles per gallon.

Without reducing VMT, we will be off path to reaching 2050 climate goals and will increase the burden on other sectors of the economy.

While the price signal from cap-and-trade will reduce point source emissions, it will not slow VMT growth, as most Americans lack convenient alternatives to driving long distances. Yet, real estate studies and demographic trends indicate robust and growing market demand for compact, walkable communities. And empirical studies show that people drive one-third fewer miles in places with rich transportation choices and spend less money on fuel. That is as good as driving a Toyota Prius and shows that "sidewalks are as sexy as hybrids!"

Since more than half of the 2030 built environment does not yet exist, we have an unprecedented opportunity to reshape the landscape. While cars last 10 to 15 years, transportation and land use decisions can last for centuries.

In a recent study on the cost effectiveness of travel efficiency, CCAP estimated that best practices could reduce VMT per capita by 10 percent, a level already achieved in Portland. I would like to submit that report for the record.

Senator CARPER. Without objection.

[The referenced report was not received at time of print.]

Mr. WINKELMAN. A 10 percent decline in per capita VMT would cut annual emissions by 145 million metric tons CO_2 in 2030, the equivalent to 30 million cars and 5 percent of the 2030 goal in the House climate bill.

Travel efficiency measures can bring tremendous economic benefits. In the Sacramento region, smart growth planning is projected to save $9 billion in infrastructure costs, yielding a net cost savings of $200 per ton CO_2. In Tampa, $60 million of public spending for a streetcar line helped attract $1 billion in private investment.

While typically seen as long-term strategies, transit and pedestrian improvements can reduce CO_2 in the short-term as well. And other strategies can also produce rapid results. An International Energy Agency study found that the United States could cut oil use 14 percent within 1 year at less than $3 per ton CO_2 through car pooling, telecommuting, compressed work week and eco-driving.

CCAP and our dialog partners propose a transportation greenhouse gas reduction incentive program that calls for dedicating 10 percent of climate allowance value to travel efficiency, funding bottom-up goal setting and planning processes, competitive grants to reward early adopters and higher achievement, and funding to improve travel data and measure performance.

Dedicating a meaningful share of cap-and-trade allowance value to travel efficiency would provide immediate and long-term benefits, strengthen our communities, and help build a foundation for a healthy, vibrant and equitable future.

Thank you.

[The prepared statement of Mr. Winkelman follows:]

Testimony of Steve Winkelman, Center for Clean Air Policy

Senate Committee on Environment and Public Works
"Transportation's Role in Climate Change and Reducing Greenhouse Gases"

July 14, 2009

Chairman Boxer, Ranking Member Inhofe and Members of the Committee: good afternoon. My name is Steve Winkelman. I am the Director of the Transportation Program at the Center for Clean Air Policy (CCAP), an environmental think tank with offices in Washington, DC, New York, Paris, California and Brussels. Since 1985, CCAP has been a recognized world leader in climate, transportation and air quality policy. We work with private and public sector leaders to develop and implement market-based solutions to climate, air quality and energy problems, balancing environmental and economic interests.

Our behind-the-scenes dialogues educate policymakers and help them find economically and politically workable solutions. Our Future Actions Dialogue (FAD) provides in-depth analyses and a "shadow process" for climate negotiators from 30 nations from around the world to help them develop the post-2012 international response to climate change. We also facilitate policy dialogues with leading businesses, environmental groups and governments in the European Union and the U.S. on designing the details of future national and transatlantic climate change mitigation, adaptation and transportation policies.

CCAP played a major role in the design and passage of the SO2 trading system enacted in the 1990 Clean Air Act Amendments and was the lead consultant in the original design of the European Union's Emissions Trading System. It has also helped develop national, regional, state and local climate policies in the U.S. and many other nations, including emission mitigation policies, smart growth initiatives, forestry policies and innovative approaches to climate adaptation. We have ongoing programs in China, India, Mexico and Brazil developing bottom up analysis of what is possible in their major industrial sectors, including steel, cement and electricity.

CCAP's **Vehicle Miles Traveled (VMT) and Climate Policy Dialogue** brings together high-level decision makers and experts on transportation, smart growth and climate policy from all levels of government, private industry, non-profits, and academia. Participants in the dialogue include the secretaries and deputy secretaries of transportation from Kansas, Maryland, Pennsylvania, executives from, the American Association of State Highway and Transportation Officials (AASHTO), the California Air Resources Board and the Sacramento Area Council of Governments (SACOG), and senior representatives from the Federal Highway Administration, the Environmental Protection Agency (EPA), the American Public Transit Association (APTA), New York City, the Brookings Institution, the Bi-partisan Policy Commission, British Petroleum, Exxon, Ford, Honda, Environmental Defense Fund, Natural Resources Defense Council, Smart Growth America and Transportation for America.

The goal of my testimony today is to encourage you to consider the importance of **travel efficiency** measures as you craft comprehensive climate change legislation. Travel efficiency measures include smart growth, public transit, transit-oriented development, improved pedestrian and cycling facilities, travel demand management, transportation system efficiency improvements and freight rail improvements.

In my short time with you today, I would like to leave you with a few key messages:

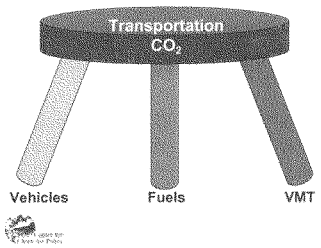
- Reducing vehicle miles traveled (VMT) is critical for climate protection;
- Travel efficiency measures can reduce per capita VMT by 10 percent, reducing emissions growth by 145 $MMTCO_2$ -- equivalent to taking 30 million cars off the road;
- Travel efficiency measures reduce household transportation costs and yield net economic benefits per ton of CO_2 reduced, unlike some other mitigation strategies;
- There are many short-term GHG savings opportunities for communities with new, economic developments and those reinvesting in existing infrastructure; and
- CCAP and the participants in our VMT and Climate Policy Dialogue recommend that Congress dedicate significant cap-and-trade allowance value to fund the **planning, implementation, and measurement** of travel efficiency policies and projects.

The Problem: Growth in Driving is a Major Contributor to GHG Emissions

Nearly one third of GHG emissions in the U.S. come from the transportation sector, making it the nation's largest end-use source of emissions.[1] Moreover, transportation is a rapidly growing source of U.S. emissions, accounting by itself for almost half of the net increase in total U.S. emissions between 1990 and 2007. Climate change policy that ignores transportation will neglect opportunities to meet overall emission reduction goals while increasing the burden on other sectors of the economy.

Transportation GHG emissions result from three factors that can be viewed as a "three-legged stool": vehicle fuel efficiency; the lifecycle GHG emissions of fuels; and how much people drive, as measured in VMT. Each of these elements is important in reducing GHG emissions from the transportation sector.

Congress has taken steps to address the GHG emissions from two legs of the transportation stool. The Energy Independence and Security Act of 2007 (EISA 2007) mandated a 35 mpg Corporate Average Fuel Economy (CAFE) standards by 2035, and an approximately 10 percent reduction in the GHG intensity of motor fuels by 2020. However, that legislation did not address emissions from the third leg of the stool— how much people drive.



As the Senate considers climate legislation in the coming months and evaluates the American Clean Energy and Security Act (ACESA) that recently passed the House of Representatives, you

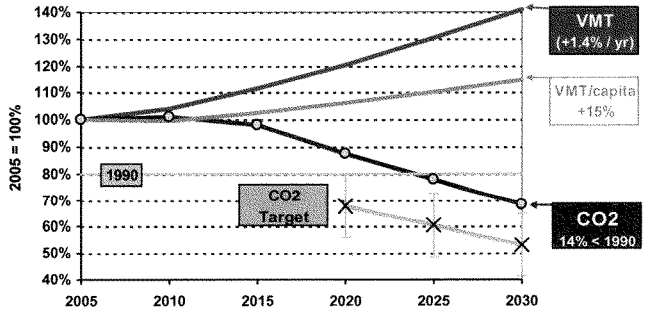
[1] U.S. Department of Energy (USDOE), Energy Information Administration (EIA), "Emissions of Greenhouse Gases in the United States 2007," ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057307.pdf

have an opportunity to make travel more efficient by not only offering Americans healthier, more energy efficient choices for getting from Point A to Point B, but also creating incentives to grow our communities in ways that bring Points A and B closer together.

We need new thinking to move beyond our old transportation policies and investments which have tended to encourage more driving, thereby increasing overall transportation sector GHG emissions. Recent history demonstrates this clearly. Between 1977 and 2007, driving, measured in VMT, grew 110 percent, even though the U.S. population increased only 37 percent. If we do not change how we invest in transportation, driving will continue to increase. If we continue to increase our driving anywhere near this pace, the increased emissions will overwhelm the reductions in emissions from increasing fuel economy standards and lower carbon fuels.

According to the Energy Information Administration (EIA), per-capita VMT will rise 15 percent by 2030.[2] Although this is a slower growth rate than the recent past, it will effectively offset the emissions savings expected from the improved fuel efficiency and low carbon fuels requirements in EISA 2007,[3] and even the new vehicle standards proposed by the Administration (35.5 mpg by 2016). Using EIA's projected growth of travel demand, and assuming major improvements in vehicle efficiency (55 mpg CAFE in 2030) and fuel GHG intensity (15 percent reduction in 2030), CCAP calculates that by 2030 GHG emissions from passenger vehicles would be 14 percent below 1990 levels. While this is an impressive improvement, it is not enough to be on track to economy-wide GHG emissions levels of 60-80 percent below 1990 levels by 2050. In our estimate, the path to the 2050 goal would require GHG emissions to be 20-47 percent below 1990 levels by 2030 (Figure 1).[4]

Figure 1. Passenger Vehicle GHG Emissions Forecast: Business-as-Usual VMT



Source: CCAP calculations based on assumptions of +1.4 percent VMT/year, 35.5 mpg CAFE standard in 2016 and 55 mpg in 2030, 15 percent reduction in fuel lifecycle GHG intensity.

[2] USDOE/EIA, *Annual Energy Outlook 2009*, Table A7. http://www.eia.doe.gov/oiaf/aeo/

[3] Ewing, Reid, Keith Bartholomew, Steve Winkelman, Jerry Walters and Don Chen, *Growing Cooler: The Evidence on Urban Development and Climate Change*, Urban Land Institute, 2008.

[4] This target level assumes equal reductions from all sectors. From a cost-effectiveness standpoint, it is likely that those sectors with cheaper reductions would achieve greater relative reductions. It is also likely, given the deep reductions required, that major efforts will be required from all sectors of the economy – including transportation.

Why Doesn't the Price Signal from Cap and Trade Create Enough Incentive to Reduce VMT?

The price signal from a cap-and-trade system, such as the one proposed in the *American Clean Energy Security act*, will be insufficient to slow growth in VMT. An economy-wide cap-and-trade system effectively sets a price on emissions and, theory says, will stimulate the most cost-effective GHG reductions, as sectors with cheaper emissions reduction potential will achieve greater reductions relative to other sectors. The theory works well when applied to large point sources of emissions. However, it breaks down when it comes to driver behavior for three reasons: (1) modest changes in fuel prices have not historically changed driving behavior, (2) citizens in many parts of the country are stuck in their cars because they do not have convenient travel choices, and (3) transportation infrastructure and land use decisions are made by a multitude of government and private entities such that no single party is in a position to make comprehensive changes in response to a price signal.[5]

In most parts of the country, safe and convenient alternatives to driving, even for very short distance trips like going to the grocery store or soccer field, are limited or non-existent. This lack of transportation choices extends to all types of communities: growing cities, established cities, and revitalizing urban, suburban and rural areas. To address the lack of transportation options, states, metropolitan planning organizations (MPOs) and local governments need funding to expand travel choices for their citizens, reduce VMT growth, improve transportation system efficiency, and achieve GHG reduction goals.

The Solution: Smart Growth, Improved Transportation Choices, and System Efficiency

Smart growth has many definitions, but in general, this term can mean mixed-use, compact, transit-oriented, and infill development. These patterns all promote growth that reduce land and resource consumption and are reinforced by improvements to public transportation and bicycle and pedestrian networks, travel demand management and system efficiency.

The technical literature confirms what common sense dictates – people drive less in places with rich transportation choices. The empirical evidence shows that a typical resident of a traditional, walkable neighborhood emits significantly less transportation GHG emissions than typical auto-oriented development – 30 percent lower on average.[6] For example, there is 40 percent lower VMT in Chapel Hill, North Carolina's Southern Village and 59 percent lower in Atlanta's Atlantic Station development than the regional average. That is more effective than driving a Toyota Prius, and, as I like to say, "sidewalks are as sexy as hybrids!"

The transportation infrastructure and land use decisions we make now will have a tremendous impact on future GHG emissions. In fact, according to Professor Arthur C. Nelson of the University of Utah, more than half of the built environment of the United States we will see in 25 years does not yet exist, giving us an unprecedented opportunity to reshape the landscape.[7] Similarly, while cars last 10-15 years, transportation infrastructure and land use patterns can last

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[5] Winkelman, Steve, Tim Hargrave, and Christine Vanderlan, "Transportation and Domestic Greenhouse Gas Emissions Trading." Center for Clean Air Policy, April 2000. http://www.ccap.org/docs/resources/558/Transportation20&20GHG20Trading20(CCAP%202000).pdf.

[6] Ewing et al. (2008), *op cit.*

[7] Nelson, A.., "Leadership in a New Era." *Journal of the American Planning Association* 72, no. 4 (2006): 393-407

for centuries. The opportunity cost of not improving our development patterns is too great to ignore. Just as it may make more sense to fund renewable energy, to displace more carbon intensive fuel sources, it makes sense to prioritize travel efficiency and efficient land use patterns, instead of building additional energy-intensive transportation infrastructure projects.

Market studies, real estate trends, and demographic shifts indicate robust demand for compact, walkable development. A recent study found that 83 percent of Americans want to live in communities that allow them to use their car less often.[8] The current real estate market is saturated with large-lot homes, even as compared to projected demand, while demand for small-lot single family and attached housing types could exceed 18 million and 17 million additional units, respectively, over the next 20 years.[9] In *The Option of Urbanism*, developer Chris Leinberger explains that there is pent-up demand for walkable neighborhoods, and that compact development is poised to dominate the real estate development market in the coming years, as the regulatory and financial environment allows.[10] Federal climate policy can help improve travel options and supportive land use patterns to meet this unmet and growing market demand.

Potential GHG Reductions Available from Transportation in the Long Term

Unchecked VMT growth is a policy choice, not a foregone conclusion. By funding transportation planning and low-carbon transportation projects, and applying comprehensive best practices, the U.S. can achieve the 10 percent per capita reduction needed. In the report, "Cost-Effective GHG Reductions through Smart Growth & Improved Transportation Choices: An economic case for investment of cap-and-trade revenues," CCAP estimated achievable GHG reductions by looking at case studies of measured and modeled VMT reductions at the states, regional and local levels.[11] CCAP would like to submit this report for the record; the Executive Summary is attached as Appendix A.

Overall, CCAP expects that with comprehensive application of best practices, the transportation sector could reduce VMT per capita by 10 percent. **This 10 percent decline in per-capita VMT would result in annual savings of 145 MMTCO$_2$ in 2030, amounting to 5-6 percent of the 2030 GHG reduction goal in the ACES Act of 2009, passed by the U.S. House of Representatives, and equivalent to the annual emissions of some 30 million cars or 35 large coal plants.**[12]

Examples of Measured VMT Reductions

1) Through comprehensive investments in transit, bicycle and pedestrian infrastructure, the Portland-Vancouver region saw a per capita VMT reduction of 8-10 percent, while national VMT per capita grew by 8 percent. During this same time, population grew by 14 percent and the region grew as an economic center.

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[8] National Association of REALTORS®, "2007 Growth and Transportation Survey," 2007. http://www.realtor.org/smart_growth.nsf/Pages/pollingresults?OpenDocument

[9] Nelson, *op cit.*

[10] Leinberger, Christopher. *The Option of Urbanism: Investing in a New American Dream*. Island Press. 2007.

[11] Steve Winkelman, Allison Bishins and Chuck Kooshian, "Cost-Effective GHG Reductions through Smart Growth & Improved Transportation Choices: An economic case for investment of cap-and-trade revenues" Center for Clean Air Policy, 2009. Available at www.ccap.org.

[12] GHG savings from VMT reduction would be higher if we had assumed lower mpg or fuel GHG savings. Coal plant and car estimates based on current US averages for a 600 MW coal plant and on-road light duty vehicle fleet.

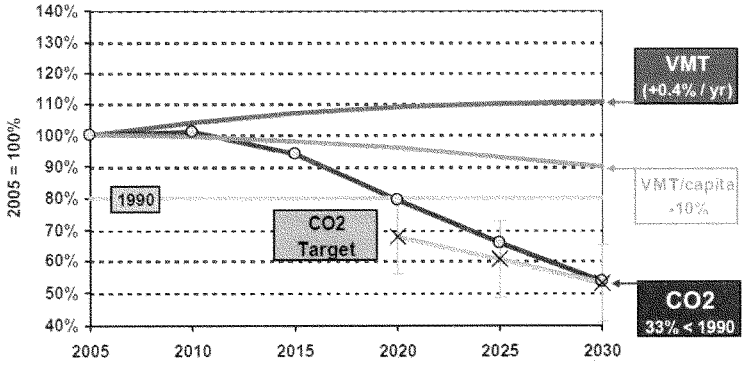
2) In Arlington, Virginia, extensive transit-oriented development policies led to population growth of more than 1 percent per year with no growth in VMT. This would be equivalent to a 20-30 percent reduction in VMT per capita from 1980 to 2005.
3) The Atlantic Station development was projected to reduce per capita VMT by 30 percent, and initial site review indicates a 59 percent reduction in resident VMT and a 36 percent reduction for employee VMT.

Projections of VMT Reductions

1) Sacramento found that the Preferred Blueprint land use scenario will reduce VMT per capita between 6 and 10 percent in 2035.
2) A McKinsey and Company study for Georgia, which included a number of transit, system efficiency and TDM measures, projects a 7 percent reduction in VMT per capita for the Atlanta metropolitan area, from 2010 to 2030.
3) In Growing Cooler, Ewing et al. found that increased density, slower growth in highway construction, faster growth in transit use, and widespread pricing policies could reduce VMT per capita 17 percent below 2007 levels by 2030.
4) The Federal Highway Administration looked at various pricing and transportation management strategies to cut GHGs, and found multiple strategies that individually can yield VMT and GHG reductions of 10 percent or more each.

A 10 percent reduction in VMT per capita from 2005 levels could be achieved with a VMT growth rate of 0.4 percent per year, which, in conjunction with projected population growth rates, would raise overall VMT in 2030 to 10 percent higher than 2005 levels (or 30 percent below EIA projections). Assuming improved vehicle efficiency (55 mpg CAFE in 2030) and fuel GHG intensity (15 percent reduction by 2030), passenger vehicle CO2 emissions would be 33 percent below 1990 levels in 2030 — well on path to meeting GHG reduction goals (Figure 2).

Figure 2. Passenger Vehicle GHG Emissions Forecast: Smart Growth Case



Source: CCAP calculations based on assumptions of +0.4 percent VMT/year, 35.5 mpg CAFE standard in 2016 and 55 mpg in 2030, 15 percent reduction in fuel lifecycle GHG intensity

This reduction in per-capita VMT and GHG emissions is achievable through many different measures, which are outlined below. Some of these reductions are achievable in the short-term, e.g., 1 to 2 years, while others will take longer to implement, similar to investments in GHG reduction technology like carbon capture or plug-in hybrids. Additionally, long-term GHG reduction strategies have short-term benefits that grow as penetration rates increase. Each new transit line, bicycle lane or telecommuting program reduces GHGs, just as each new hybrid vehicle sold or compact fluorescent light bulb installed reduces GHGs.

Economic Benefits of Smart Growth and Improved Travel Choices

Using cap-and-trade revenues to fund smart growth and improved transportation choices is an investment in energy efficiency that yields energy cost savings dividends, similar to switching to an energy-efficient light bulb. Unlike a light bulb, though, travel efficiency investments can also reduce net infrastructure costs, attract private investment and generate new revenue streams. If we ignore the full economic benefits of smart growth and improved travel choices, we will miss inexpensive and money-saving GHG reductions that provide additional benefits to our communities. Many communities are realizing the benefits of smart growth planning and implementations; below I offer a few examples from CCAP's new report.[13] The multiple co-benefits of travel efficiency measures include:

- Reduced infrastructure costs (roads, water, sewer, schools, community services);
- Leveraged private investment and increased local revenues for community development;
- Reduced overall household costs from transportation and utility bills;
- Improved public health and lower health care costs; and
- Improved U.S. energy security.

The Sacramento Area Council of Government's (SACOG) Blueprint planning process used cutting-edge planning software in an extensive public outreach process to explore alternative growth scenarios through 2050. The adopted Preferred Blueprint Scenario features infill development and transportation investments that will reduce GHG emissions and lower infrastructure costs for transportation capital, local streets, water, sewer, flood control, sidewalks, gas, electric and communication facilities. Sacramento calculated the price tag of the Base Case Scenario to be $47.4 billion through 2050 versus $38 billion for the Preferred Blueprint Scenario — a savings of $9.4 billion dollars. One third of the savings are from transportation infrastructure, another third from water infrastructure, and the last third from flood control and dry utilities. SACOG calculates that transit operating costs would increase by about $120 million per year under the Preferred Blueprint Scenario. CCAP calculates that annual consumer fuel expenditures would be $380 million lower under the Blueprint Scenario, and the net present value of the increased transit costs, fuel cost savings and avoided infrastructure costs will be $1.4 billion — not bad for a $4 million investment in visioning! Implementation of the Blueprint plan is projected to reduce emissions by 7.2 $MMTCO_2$ through 2050, which would yield a net economic *benefit* of $198 per ton CO_2 saved.

In Atlanta, CCAP calculates that the Atlantic Station project will reduce CO_2 by a total of 0.63 $MMTCO_2$ over 50 years at a net cost savings, because municipal tax revenues from the project

[13] CCAP 2009, *op cit.*

will be greater than what is required to pay back the initial project loan. Portland, Oregon's investment in bicycle infrastructure is projected to cut 0.7 $MMTCO_2$ with net economic *benefits* of more than $1,000 per ton CO_2. A McKinsey and Co. analysis for Georgia concludes that strategic investments in transit, demand management, and freight could yield net economic benefits of over $400 billion over 30 years. CCAP calculates associated transportation GHG savings of 18 $MMTCO_2$, which totals an economic benefit of $22,000 per ton of CO_2 saved.

Other communities have seen a rapid return on investment from their streetcar projects, where transit investments, coupled with compact land-use strategies can help attract significant levels of private investment, leveraging scarce public resources toward even higher returns. The Center for Transit Oriented Development estimates $1 in public transit investment can leverage up to $31 in private investment. Little Rock, Arkansas spent $20 million of public money on the Little Rock Streetcar, which helped leverage $200 million in private investment; Tampa, Florida spent $60 million in public money in the TECO Streetcar, which helped leverage $1 billion in private investment; and Portland, Oregon spent $73 million on the Portland Streetcar, which helped attract $2.3 billion in private investments within two blocks of the line, a more than 30-fold return on investment. Thanks to orders from Portland Streetcar, Oregon Iron Works began manufacturing the first U.S.-built modern streetcar in 2008, creating more that 20 new local jobs. In general, investment in public transit represents an important opportunity for job creation and economic development. A 2004 study by the Surface Transportation Policy Project (STPP) found that every $1.25 billion spent on public transit creates approximately 51,300 jobs, while the same expenditure on roads and bridges would create 43,200 jobs.

Achieving such long-term savings requires upfront and sustained investments in transit (capacity and operation), cycling and walking infrastructure, smart growth planning and travel demand management. The climate bill can help jump start these efforts, providing critical resources to states, MPOs and local governments to plan, implement and measure travel efficiency policies and projects. Financial support from climate legislation would enhance state and local capacity to achieve and measure GHG reductions from travel efficiency. This experience will be a critical step toward performance-based federal surface transportation policy that rewards GHG reductions.

Measures that Can Reduce Transportation GHG Emissions in the Short Term

While significant long-term GHG reductions are achievable in the transportation sector, a number of emissions reductions strategies can yield results quickly and at a net savings to society. These strategies fall into three general categories: travel demand management, short term infrastructure projects, and system efficiency. A brief list of these strategies is included below; a more complete list is included in Appendix B. These short term strategies not only support longer term strategies, but many long-term strategies will also have important short-term benefits as well.

1) Travel Demand Management

The term travel demand management includes a wide range of strategies that are aimed at reducing demand for single occupancy vehicle use.

- Comprehensive, Statewide Travel Demand Management Programs

  - In its first two years, the Washington State Commute Trip Reduction Performance Program 1.3 million vehicle trips were avoided, cutting 34 million VMT.
- Telecommuting/Teleworking (working from home)
  - Telecommuters currently save 55-78 MMTCO2 per year, if an additional 10 percent of workers began telecommuting, the US could reduce emissions by about 42 $MMTCO_2$ per year.
- Compressed Work Week (working fewer days) can cut VMT by 10-20 percent.
- Carpooling (commuting with others)
- Parking Cash-out/Parking Pricing (removing the subsidies for parking)
  - One study estimated that firms in Southern California saw a 12 percent reduction in commute VMT when offering parking cash out to their employees.
- Public Information Campaigns (publicizing alternate behaviors)
- Pay as You Drive (PAYD) Insurance (making car insurance based on amount of travel)
  - Changing all car insurance policies to Pay as You Drive Insurance can save money for consumers and insurance companies: up to $60 billion annually, while reducing VMT by 8 percent and reducing crash rates.
- VMT-based Registration Fees (making registration fees based on amount of travel)
- General VMT Fees (charging fees for travel in general)
- Congestion Pricing (charging fees for travel in specific areas)
  - Stockholm instituted a pilot program for congestion charging in 2006 which led to a 22 percent reduction in vehicles entering the zone, reduced injuries by up to 10 percent, and reduced carbon emissions by 14 percent in the central city, and up to 3 percent citywide. During the first year, public transportation use was up 6 percent city wide, 9 percent on inner city routes, and the average morning commute was reduced by almost an hour.

2) Immediate Infrastructure Projects that can Reduce Transportation Demand
Many strategies that are viewed as long term can have short-term impacts, including changes to infrastructure project priority, changes to the land development code, and road design.

- Improving Pedestrian and Bicycle Infrastructure and Accessibility
  - Portland, Oregon, reduced its GHG emissions by 26,500 tons CO_2 in 5 years, and another 36,700 tons CO_2 over the following 5 years, by investing in bicycle infrastructure.
- High Occupancy Toll (HOT) and HOV (High Occupancy Vehicle) Lanes
- Improving Transit and Making Transit More Accessible
  - Reducing headways, extending peak-level service, and reducing fares are all ways to improve transit ridership.
  - Bus Rapid Transit and Dedicated Bus Lanes
  - New York City statistics show that it is possible to have growth in population and employment without a concomitant increase in traffic. Between 2003 and 2007 the city's population grew 2 percent and employment grew 6 percent. Yet citywide traffic went down by 1 percent. How did the new residents and employees travel? How did the system handle all of this growth? With transit, sidewalks and bike lanes. Transit ridership went up by 8 percent during that time period and bicycle commuting rose by 70 percent between 2002 and 2007.

- Reforming Parking Requirements at the Local Level

3) System Efficiency
The term system efficiency generally includes a wide range of strategies that are aimed at improving the flow of traffic, reducing stop-and-go traffic, reducing congestion, and stabilizing travel speeds.

Recommendations for Travel Efficiency in the Climate Bill
As part of CCAP's VMT and Climate Policy Dialogue, we sought the input of a diverse set of transportation stakeholders. The result is our proposal for a Transportation GHG Reduction Incentive Program, which represents CCAP's best attempt to capture the core areas of agreement from the dialogue. The proposal is not intended to represent the specific views of any individual agency, organization or company. In the course of our dialogue some stakeholders indicated they would prefer more performance accountability, while others would prefer more flexibility than presented in this proposal.

The proposal aims to ensure that climate legislation will promote cost-effective GHG reductions. Key elements include:

- Congress would dedicate approximate 10 percent of cap-and-trade allowance value to fund the planning, implementation, and measurement of travel efficiency policies and projects.
- Funding and technical support for improving state and regional data and capacity for planning, implementation and monitoring travel efficiency policies and projects.
- A public, bottom-up goal-setting and planning process for states and MPOs to reduce GHG emissions by improving travel efficiency.
- Competitive grants designed to provide greater funding to entities that achieve greater GHG emissions, or what we call, "Do More, Get More."
- Finally, support is needed to measure results as we move toward performance-based accountability within the program. The proposal includes CCAP's Travel Data and Modeling Recommendations to Support Climate Policy and Performance-Based Transportation Policy.

Conclusions
Our daily travel decisions have a significant impact on GHG emissions. Many Americans are frustrated with their limited travel choices, the time and money they waste stuck in traffic, and their vulnerability to increases in global oil prices. Where high quality choices are available, more and more Americans are riding transit, telecommuting, carpooling, walking and biking.

The legislation you are considering will allow all Americans to align their personal needs, like going to work and spending time with their families, with our national objectives to reduce GHG emissions, achieve energy independence, and create jobs. By investing now in transportation and land use strategies that make our communities more efficient, we can empower people to reduce GHG emissions in ways that are good for the economy and improve their quality of life.

To save money, improve our communities, and reduce GHG emissions, Congress should dedicate cap-and-trade allowance value to fund the ***planning, implementation, and measurement*** *of travel efficiency policies and projects.*

Giving states, MPOs and the local governments a set of tools and incentives to expand and improve low-carbon travel choices, enhance system efficiency, reduce congestion, and encourage compact growth patterns is an effective way to help achieve local, state and national GHG reduction goals. Directing a significant percent of cap-and-trade allocation values toward travel efficiency measures would not only provide immediate and long-term economic benefits, but would strengthen our communities and help build the foundation for a healthy, vibrant and equitable future.

Thank You.

APPENDIX A
EXECUTIVE SUMMARY

Cost-Effective GHG Reductions
through Smart Growth & Improved Transportation Choices
An economic case for strategic investment of cap-and-trade revenues

The Need to Connect Transportation and Climate Change Policies
Nearly one third of greenhouse gas (GHG) emissions in the U.S. come from the transportation sector, making it the nation's largest end-use source of emissions. Moreover, transportation is the fastest growing source of U.S. emissions, accounting for almost half of the net increase in total U.S. emissions between 1990 and 2007.[14] Transportation GHG emissions are a result of three drivers — vehicle fuel efficiency, fuel emissions and how much people drive, as measured in vehicle miles traveled (VMT). In 2007, Congress addressed the first two drivers by improving Corporate Average Fuel Economy (CAFE) standards and mandating reduced GHG intensity of motor fuels. However, Congress has not put the same effort into improving travel choices to address how much people drive. Historically, U.S. transportation policy and infrastructure investments tend to encourage more driving. If we do not change how we invest in transportation, driving will continue to increase, effectively offsetting the emissions savings expected from the recently improved fuel efficiency and low carbon fuels requirements.

Cap-And-Trade Models Ignore Smart Growth and Transportation GHG Reductions
The price signal from a cap-and-trade system will not be effective in reducing VMT, due to market imperfections and limited transportation choices in many parts of the country.[15] Typical GHG reduction analyses miss the emissions reductions and economic benefits of improved transportation choices and assume a high "cost per ton" for these reductions. They also overlook broader benefits of smart growth and transportation pricing including lower infrastructure costs, consumer fuel cost savings, time saved, lower insurance costs and increased local tax revenues.

Smart Growth and Transportation Choices Reduce Emissions and Save Money
In this report, the Center for Clean Air Policy (CCAP) analyzes the benefits of reducing GHG emissions through smart growth, improved transportation choices, and transportation pricing. With input from Transportation for America, Smart Growth America, Natural Resources Defense Council, Environmental Defense Fund, and HDR Inc., we estimate that comprehensive **application of best practices could reduce VMT per capita by 10 percent** and reduce annual GHG emissions 145 $MMTCO_2$ in 2030 — equivalent to the annual emissions of some 30 million cars or 35 large coal plants.[16] These GHG reductions total approximately 6 percent of the 2030

[14] Energy Information Administration, Office of Integrated Analysis and Forecasting, U.S. Department of Energy. "Emissions of Greenhouse Gases in the United States 2007,"
ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057307.pdf
[15] Winkelman, Steve, Tim Hargrave, and Christine Vanderlan. "Transportation and Domestic Greenhouse Gas Emissions Trading." Center for Clean Air Policy, April 2000.
http://www.ccap.org/docs/resources/558/Transportation20&20GHG20Trading20(CCAP%202000).pdf.
[16] Our calculations assume 55 mpg CAFE standards in 2030 and a 15 percent reduction in fuel GHG intensity. GHG savings from VMT reduction would be higher if we had assumed lower mpg or fuel GHG savings. Coal plant and car estimates based on current US averages for a 600 MW coal plant and on-road light duty vehicle fleet.

GHG reduction goal proposed in the American Clean Energy and Security Act.[17] **Our analysis indicates that these reductions can be achieved profitably,** when factoring in avoided infrastructure costs, consumer savings and projected tax revenue growth. When viewed holistically, many transportation-related emissions reductions are not only cheaper than reductions in the utility and petroleum sectors, but also would help ease the cost of compliance on those sectors.

According to our review of the economic impacts of smart growth, integrated planning can:

- **Reduce infrastructure costs** by approximately 25 percent or more;
- **Attract private investment**, increasing municipal revenues through real estate taxes;
- **Reduce household costs**, freeing up disposable income, especially for working families;
- **Improve energy security** by reducing dependency on oil; and
- **Increase walking and bicycling, improve public health** and reduce medical costs.

The report contains case studies at the local, regional, state and national level, which include:

- The **Sacramento** region's smart growth plan is projected to reduce emissions by 7.2 $MMTCO_2$ through 2050. CCAP calculates a net economic *benefit* of $198 per ton CO_2 saved through $9 billion dollars savings on infrastructure and consumer fuel savings.
- In **Atlanta**, CCAP calculates that the Atlantic Station project will reduce CO_2 by a total of 0.63 $MMTCO_2$ over 50 years at a net cost savings, because municipal tax revenues from the project will be greater than what is required to pay back the initial project loan.
- A McKinsey analysis for **Georgia** concludes that strategic investments in transit, demand management, and freight could yield net economic benefits of over $400 billion over 30 years. CCAP calculates associated transportation GHG savings of 18 $MMTCO_2$.
- Rails-to-Trails calculates that **Portland, Oregon's** investment in bicycle infrastructure will cut 0.7 $MMTCO_2$ with net economic *benefits* of more than $1,000 per ton CO_2. The Center for Transit Oriented Development reports that $73 million invested in the Portland Streetcar helped attract $2.3 billion in private investment within two blocks of the line.
- A Brookings Institution study shows that shifting to per-mile car insurance **pricing** could cut VMT and related GHGs by 8 percent yielding insurance cost savings for two thirds of households, averaging $270/vehicle/year and annual societal savings of $50-60 billion.

Conclusion

Smart growth is not only cost-effective compared to other mitigation measures, it can be profitable. If we ignore the full economic benefits of smart growth and improved transportation choices, we miss inexpensive GHG reductions that also provide additional community benefits and reduce the burden on other sectors to reduce their emissions. Dedicating a meaningful portion of allowance value to smart growth planning would be a cost-effective investment that can lower economy-wide GHG mitigation costs. For a more in-depth look of these issues, look for our forthcoming report, "Growing Wealthier: The Economic Benefits of Smart Growth."

[17] 145 MMTCO2 is 5.8 percent of the 2030 savings from covered sources or 4.8 percent of economy-wide GHG reductions in House Report 111-137: http://thomas.loc.gov/cgi-bin/cpquery/R?cp111:FLD010:@1(hr137).

APPENDIX B

Examples of Short Term VMT and GHG Reduction Strategies

1) Travel Demand Management
The term travel demand management includes a wide range of strategies that are aimed at reducing demand for single occupancy vehicle use.

Comprehensive, Statewide Travel Demand Management Programs

- In its first two years, the Washington State Commute Trip Reduction Performance Program avoided 1.3 million vehicle trips were avoided, cutting 34 million VMT. The program exceeded its initial goal by 41 percent.[18]
- Washington State's Regional Mobility Grant Program began supports local efforts to improve transit mobility and reduce congestion with estimated savings of 6.7 million vehicle trips and 130 million VMT since 2006.[19]

Telecommuting/Teleworking (working from home)

- Individual companies like AT&T find that allowing telecommuting increases productivity and job satisfaction among telecommuters, and for AT&T, reducing vehicle emissions by approximately 44,000 metric tons.[20]
- WorldatWork estimated in 2008 that 8 percent of the workforce telecommutes almost daily. The Consumer Electronics Association estimates that telecommuters emit 17 and 23 kg of CO_2 less per day. Therefore, existing telecommuters save between 55-78 $MMTCO_2$ per year.[21]
- According to the American Consumers Institute, if an additional 10 percent of workers began telecommuting, the US could reduce emissions by about 42 $MMTCO_2$ per year. [22]

Compressed Work Week (working fewer days)

- Allowing employees to work a compressed work week, either 40 hours in 4 days or 80 hours in 9 days, reduces that employee's VMT by 20 and 10 percent, respectively. Even a small portion of workers switching to compressed workweeks could significantly impact overall and peak VMT.

Carpooling (commuting with others)

- Providing incentives to employees can reduce single occupancy vehicle trips to the worksite by up to 20 percent. The Organisation for Economic Co-operation and Development (OECD) estimates that adding one additional passenger to every commute trip would reduce overall VMT by 14 percent.[23]

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[18] WSDOT Commute Trip Reduction Performance Grant Program, 2003-2005 Program Report.
[19] WSDOT. Transit Mobility Programs 2008 Annual Report.
[20] World Wildlife Federation, *From Workplace to Anyplace: Accessing the Opportunities to Reduce Greenhouse Gas Emissions with Virtual Meetings and Telecommuting*. 2009
[21] World Wildlife Federation, , *op cit.*
[22] Joseph Fuhr and Stephen Pociask. "Broadband services: economic and environmental benefits," The American Consumer Institute, October, 2007
[23] OECD/IEA *Saving Oil in a Hurry*. 2005. www.iea.org/textbase/Papers/2008/cd_energy_efficiency_policy/5-Transport/5-SavingOil2005.pdf

- The Washington, DC area Commuter Connections program estimates that the ridematching portion of the program reduces 82,000 tons of CO_2 annually.[24]
- The Washington State Vanpool Grant Program has funded 2,360 vans carrying 19,000 daily riders. Since the Grant Program's inception, ridership has increased 53 percent.[25]

Parking Cash-out/Parking Pricing (removing the subsidies for parking)

- One study estimated that firms in Southern California saw a 12 percent reduction in commute VMT when offering parking cash out to their employees.[26]
- Case studies of employer-based programs that involved raising employee parking fees to market rates have shown significant decreases in vehicle use, in the range of a 26 to 81 percent decrease in solo driving.[27]

Public Information Campaigns (publicizing alternate behaviors)

- The OECD estimates that a public information campaign on transportation demand management, plus employer commitments to these strategies, costs only $0.05 per barrel of oil saved , and can save the US 523,000 barrels per day, a daily savings of $26,123,850 per day - fuel not purchased at $50/barrel.[28]
- The OECD estimates that an "eco-driving" campaign could reduce global emissions by 3 percent, while McKinsey and Co. estimates that altering driving behaviors could save 35 $MMTCO_2$ in North America, by 2030 at a net savings to society.[29]
- Portland's SmartTrips Programs provides information to residents each year on reducing drive-alone trips. In 2007, drive alone trips were reduced by 9.4 percent in the target area, the equivalent of 19.4 million vehicle miles of travel or 8,400 tons CO_2 reduced.[30]

Pay as You Drive (PAYD) Insurance (making car insurance based on amount of travel)

- According to the Brookings Institute, changing all car insurance policies to Pay as You Drive Insurance can save money for consumers and insurance companies: up to $50-60 billion annually, while reducing VMT by 8 percent and reducing crash rates.[31]
- While universal Pay as You Drive Insurance may take a decade to be fully implemented, providing tax credits to early adopters could achieve some VMT reductions – about 1000 miles not driven per Pay as You Drive insurance policy - within approximately 2 years. If one percent of policies converted to Pay as You Drive, this would equate to approximately 1.8 billion miles not driven, or 770,000 tons of CO_2.

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[24] National Capital Region Commuter Connections Program, Transportation Emission Reduction Measure Analysis Report, FY2006-2008

[25] WSDOT Vanpool Grant Program, 2007 Status Report

[26] Donald C. Shoup, "The High Cost of Free Parking." Journal of Planning Education and Research, Vol. 17, No. 1, 1997

[27] Federal Highway Administration. *Strategies to Reduce Greenhouse Gas Emissions from Transportation Sources.* pg. 45. 1998

[28] OECD/IEA, *op cit.*

[29] OECD/IEA, *op cit.*

[30] Portland Office of Transportation, *SmartTrips Southeast Final Report.* December 2007

[31] Bordoff, Jason E. and Pascal J. Noel. "Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving-Related Harms and Increase Equity." Brookings Institution. July 2008
http://www.brookings.edu/~/media/Files/rc/papers/2008/07_payd_bordoffnoel/07_payd_bordoffnoel.pdf

VMT-based Registration Fees (making registration fees based on amount of travel)

- The U.S. Environmental Protection Agency estimated that charging registration fees that were based on VMT would reduce overall VMT by up to 3.6 percent.[32]

General VMT Fees (charging fees for travel in general)

- The U.S. Environmental Protection Agency estimated that a VMT fee of $0.02 per mile would reduce overall VMT by up to 5.6 percent.[33]

Congestion Pricing (charging fees for travel in specific areas)

- London instituted a central congestion charge in 2003. In July 2005 the basic charge was raised from £5 to £8 per day. In February 2007 the original central London congestion charging zone was extended westwards, creating a single enlarged congestion charging zone. The number of vehicles in the zone decreased more than 16 percent from 2002 to 2007. Within those five years, bicycle numbers in the zone increased 66 percent. Transport for London estimates that the congestion charge (currently £8) has achieved a 6.5 percent reduction in CO_2.[34]
- Stockholm instituted a pilot program for congestion charging in 2006 which led to a 22 percent reduction in vehicles entering the zone, reduced injuries by up to 10 percent, and reduced carbon emissions by 14 percent in the central city, and up to 3 percent citywide. During the first year, public transportation use was up 6 percent city wide, 9 percent on inner city routes, and the average morning commute was reduced by almost an hour. The trial charge was variable depending on the time of day, but was no more than approximately $2.50. The scheme was made permanent in 2007, and the maximum charge is now approximately $3.75.[35]
- New York's proposed congestion charge – $8 for passenger vehicles, $21 for truck and $1 for taxis – would have produced an estimated 6.8 percent reduction in VMT and 34.3 percent reduction in stop and go traffic in Manhattan south of 86th Street.[36]

2) Immediate Infrastructure Projects that Can Affect Transportation Demand

Many strategies that are viewed as long term can have short-term impacts, including changes to infrastructure project priority, changes to the land development code, and road design.

Adopting Complete Streets Principles and Improving Pedestrian and Bicycle Access to Transit

- Making streets more attractive and safe, through "Transit Connectivity Initiatives," Complete Streets programs, or other enhancement programs tend to increase usage, which in turn can reduce the number of short vehicle trips, increase transit use and reduce GHG emissions.

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[32] OECD/IEA, *op cit.*

[33] OECD/IEA, *op cit.*

[34] Transport for London. *Central London Congestion Charging: Impacts Monitoring, Sixth Annual Report.* July 2008

[35] Leslie Abboud and Jenny Clevstrom, "Stockholm's Syndrome," August 29, 2006, Wall Street Journal, http://online.wsj.com/article/SB115681726625048040.html

[36] Recommendation of the Traffic Congestion Mitigation Commission, 2008 https://www.nysdot.gov/portal/page/portal/programs/repository/TCMC_FINAL_REPORT.pdf

Creating Safe Routes to Schools Programs and Improving Pedestrian and Bicycle Connections

- The Safe Routes to School program in Columbia, Missouri, has five participating schools and reduces GHG emissions by an estimated 19 tons CO_2 per year (within two years of starting the program), with participation of an average of just 280 students (6 percent of student population of those schools). [37]
- Las Cruces, New Mexico, started at Safe Routes Pilot Program for just one school, which was estimated to reduce GHG emissions by 2 tons per year. If the existing rate of implementation is applied to all schools in Las Cruces, it will reduce emissions by 77 tons per year.[38]

Adding Bicycle Lanes and Mixed Use Trails

- Portland, Oregon, reduced its GHG emissions by 26,500 tons CO_2 in 5 years, and another 36,700 tons of CO_2 over the following 5 years, by investing in bicycle infrastructure.[39]
- The New York City Department of Transportation completed its initial 3-year, 200 mile on-street network of bike lanes. This nearly doubles New York City's on street bike network and has led to a 45 percent growth in commuter cycling.[40]
- In Minneapolis, the Toyota Prius would have to comprise 12 percent of the rolling fleet to equal the current contribution of biking and walking. The actual market share of Prius today is less than one per of the new car market.[41]
- There are hundreds of ready-to-go bicycle and pedestrian projects, representing $3.7 billion in unmet need in the U.S.[42]

High Occupancy Toll (HOT) and HOV (High Occupancy Vehicle) Lanes

- Lanes dedicated to high occupancy vehicles, like carpools and buses, allow lower carbon vehicles to travel more quickly, which creates an incentive to use these methods of travel.
- Studies show that converting existing lanes to carpool lanes (such as HOV or HOT), reduces VMT by 0.2 to 1.4 percent.[43]

Improving Transit and Making Transit More Accessible

- Reducing headways, extending peak-level service, and reducing fares are all ways to improve transit ridership[44].
- New York City statistics show that it is possible to have growth in population and employment without a concomitant increase in traffic. Between 2003 and 2007 the city's population grew 2 percent and employment grew 6 percent. Yet citywide traffic went down by 1 percent. How did the system handle all of this growth? With transit,

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[37] "Safe Routes to School Steps to a Greener Future: How walking and bicycling to school reduces carbon emissions and air pollutants" Dec 2008, http://www.saferoutespartnership.org/media/file/SRTS_GHG_lo_res.pdf
[38] *Ibid.*
[39] Thomas Gotschi, Rails to Trails, personal communication, July 2009.
[40] Jon Orcutt, NYC Department of Transportation, personal communication, July 2009.
[41] Rails-to-Trails Conservancy. "The Short Trip with Big Impacts: Walking, Biking and Climate Change." August 2007
[42] America Bikes, "Ready to Go Bike and Pedestrian Projects." 2009. www.americabikes.org/docs/America_Bikes_Ready_to_Go_Projects_lr.pdf
[43] OECD/IEA, *op cit.*
[44] American Public Transit Association. *Rising Fuel Costs: Impacts on Transit Ridership and Agency Operations.* September 2008

sidewalks and bike lanes. Transit ridership went up by 8 percent during that time period and bicycle commuting rose by 70 percent between 2002 and 2007.[45]

- The City of Freiburg, Germany saw an increase in transit ridership when it introduced a city-wide, single-fare transit pass. The "Eco-Ticket" was introduced in 1985 and resulted in an increase in transit ridership by 23 percent.[46]
- While ridership is reaching record levels, funding losses are forcing many public transit agencies to cut routes, raise fares, and lay off employees.[47]
- 78 regions in 37 states have proposed 400 new transit projects worth $248 billion.[48]

Bus Rapid Transit and Dedicated Bus Lanes

- In 2007, Eugene, Oregon joined launched a Bus Rapid Transit route that serves Eugene and nearby Springfield in Lane County, which have a combined population of just 200,000. Since the Green Line opened, corridor ridership has jumped by almost 50 percent over the previous bus line.[49]
- The Kansas City Metro Area Express (MAX), the city's first Bus Rapid Transit system opened in 2005. The project was completed in under four years and total capital costs were less than $21M. Daily ridership increased more than 50 percent since service commenced and nearly double the previous ridership along the corridor.[50]
- The Los Angeles Orange Line, which opened in 2005, exceeded the ridership for 2020 within 7 months of opening. By December 2005, the Orange Line had taken approximately 2,200single occupancy vehicles off the road every weekday (14 percent of 16,100 weekday riders). The Orange Line has been estimated to reduce southbound traffic on Highway 101 by 7 percent.[51]

Reforming Parking Requirements at the Local Level

- Local governments can require that developers "unbundle" parking spaces from the sale or rental of housing units, which allows parking to be charged at market rates.
- Local governments can remove parking minimums, which prevents the over-provision of parking. Many local governments are considering parking maximums, to reverse the over-provision of parking in future developments.

3) System Efficiency

The term system efficiency generally includes a wide range of strategies that are aimed at improving the flow of traffic, reducing stop and go traffic, reducing congestion, and stabilizing travel speeds.

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[45] New York City Department of Transportation Sustainable Streets Index 2008
[46] Beatley, Timothy. *Green Urbanism: Learning from European Cities*. 2000)
[47] American Public Transit Association, *op cit.*
[48] Center for Transit Oriented Development. "Jump Starting the Transit Space Race." October 2008. http://reconnectingamerica.org/public/display_asset/jumpstartingtransit
[49] Lane Transit District 2009
[50] Kansas City Area Transportation Authority
[51] William Vincent and Lisa Callahan, A Preliminary Evaluation of the Metro Orange Line Bus Rapid Transit Project, 2007, http://www.nbrti.org/docs/pdf/Orange_Line_Preliminary_Evaluation_by_BTI.pdf

Traffic Efficiency and Flow Smoothing (reducing congestion and traffic)

- McKinsey and Co. estimates that smart navigation could save 3 $MMTCO_2$ in North America by 2030, at a net savings to society.[52]
- McKinsey and Co. estimates that highway smart routing could save 12 $MMTCO_2$ in North America, by 2030, at a net savings to society. [53]
- University of California Riverside estimates that congestion mitigation (e.g. ramp metering, incident management), speed management (e.g. enforcement), and traffic flow smoothing techniques (e.g. variable speed limits) can reduce CO2 by 5-12 percent each.[54]

[52] Roads toward a low-carbon future: Reducing CO2 emissions from passenger vehicles in the global road transportation system March 2009, McKinsey & Company
[53] McKinsey & Company, *op cit.*
[54] Professor Matthew Barth, University of California Riverside

Steve Winkelman, Center for Clean Air Policy
Response to Questions for the Record

from the

Senate Committee on Environment and Public Works
on July 14, 2009 Hearing:
"Transportation's Role in Climate Change and Reducing Greenhouse Gases"

Question from Senator Amy Klobuchar

1. Biofuel can play an important role in addressing climate change. In your testimony, you did not highlight the potential for biofuels. What roll do you believe biofuels have in helping the transportation sector reduce its environmental and carbon footprint?

CCAP Response to Senator Amy Klobuchar:

Biofuels can play an important, if potentially limited role in reducing transportation GHG emissions. Land availability will limit the total penetration of biofuels. "Second-generation" biofuels pose significant promise and require further research. The costs of second-generation biofuels will greatly influence their ultimate penetration. Recent concern about the indirect land use impacts of biofuels grown on arable land is an issue that warrants further research to assess global net GHG impacts.

Further analysis is also needed to assess the costs, benefits and efficiencies of converting biomass to transportation fuels vs. combusting biomass in stationary applications, considering both energy security and climate policy objectives.

In the longer-term we will need significantly lower GHG transportation fuels. Electricity generated from low-GHG energy sources – which could include biomass – is likely to play a critical role in powering the transportation sector. Under fuel-neutral, performance-based policies, such as a Low Carbon Fuel Standard, the market will pick the most effective and cost-effective fuels, which will likely include biofuels.

Minimizing transportation energy demand via efficient vehicles and travel-efficient communities will be essential for minimizing expenditures on low-GHG fuels.

Question from Senator James M. Inhofe

1. In your testimony, you mention that CCAP was the lead consultant in the original design of the European Union's Emissions Trading System. Under the EU system, refiners are considered energy intensive industries and receive 100% of their allowances for stationary sources. Additionally, fuels are not included under the cap in Europe. Can you tell me why Europe chose not to include fuels under the cap? Also, what led to the decision to include refining as an energy intensive industry? What were the benefits of incorporating the refining industry in this manner into a trading scheme?

CCAP Response to Senator James M. Inhofe:

Can you tell me why Europe chose not to include fuels under the cap?
There are some important advantages to including fuels under the cap, particularly the broad coverage that can be achieved as the allowance price is passed through to all fuel users, which maximizes the number of mitigation opportunities and lowers the overall cost of compliance. In addition, capping emissions from fuels as part of a comprehensive cap-and-trade program can ensure that greenhouse gas emissions from all sources face the same allowance price for each ton of greenhouse gas emitted, supporting an equitable and efficient outcome.

In deciding to include only large, high-emitting industrial installations like power plants, oil refineries,[1] cement plants, pulp and paper and iron and steel production in the Emission Trading System, the European Union opted for a different approach. Their rationale was that in regulating large emitters, the allowance price would provide a clear and direct signal to plant operators on the cost of greenhouse gas emissions, which would motivate them to invest in energy efficiency and other low-carbon technologies that cost less than the allowance price.

Europe addresses other significant sources of greenhouse gas emissions such as housing and transportation through policies and measures outside the Emissions Trading System. In the December 2008 European climate and energy package, the European governments jointly decided that emissions from sectors outside the Emissions Trading System have to be reduced by every member state by a specific and mandatory percentage. To reach this goal, Europe has put in place comparably high efficiency standards for passenger cars and energy taxes in some member states. The European Commission is also working on a regulation to establish a minimum energy tax in all member states to reduce fuel consumption.

What led to the decision to include refining as an energy intensive industry?
In the December 2008 European climate and energy package, the European governments agreed on a set of criteria to identify sectors that are at risk of carbon leakage and will therefore get free allocation of allowances within certain, possibly quite ambitious benchmarks. (See the explanation below for details on the criteria.) An assessment carried out by the European Commission in spring 2009 showed that the refining industry fulfills the criteria that the EU set for being at risk of shifting of production and emissions to uncapped countries.[2]

[1] Refineries were included just for their direct emissions, not for the emissions that would be released later via combustion of petroleum-based fuels in the transportation sector.
[2] Under the EU program, a sector or subsector is deemed to be exposed to a significant risk of carbon leakage if: (a) the sum of direct and indirect additional costs induced by the implementation of this Directive would lead to a substantial increase of production costs, calculated as a

Note that under Europe's approach to compensating carbon-intensive and trade-intensive industry sectors in the post 2012 period, eligible industries are compensated based on the average of the top 10% most efficient plants in the sector. This means that only the most efficient plants will receive all their needed allowances for free. Less efficient refineries will have to buy a portion of the allowances needed to cover their emissions. This contrasts with the US approach to the refining sector under H.R. 2454 in which refineries are not eligible for the rebate program but instead receive a fixed 2.25% of the total allowances in the early years of the program.[3]

What were the benefits of incorporating the refining industry in this manner into a trading scheme?

One effect of the European approach to regulating the refining industry for its direct emissions is that refineries must purchase allowances just to cover their emissions, not for every unit of fuel produced. Because fewer allowances need to be purchased, the refining industry is less susceptible to the ups and downs of the allowance market. Also, applying a fuel tax instead of a cap-and-trade program to cover petroleum fuels eliminates industry concerns about not being able to find enough allowances for compliance while providing a high degree of certainty on price. However, this solution also results in less certainty on the total emissions reductions and could lower the overall efficiency of the greenhouse gas control program.

A second effect of the European treatment of the refining sector is that in including refining as a sector eligible for compensation, the program acknowledges the significant impact a carbon program could have on industrial production, particularly in the long-run. On the other hand, unlike many other trade-intensive and energy-intensive sectors, refiners may be able to pass some of their costs to consumers as emissions from refining (and the costs of purchasing allowances to cover these emissions) are quite small compared to the price of fuel.

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proportion of the gross value added, of at least 5 %; and (b) the intensity of trade with third countries, defined as the ratio between the total value of exports to third countries plus the value of imports from third countries and the total market size for the Community (annual turnover plus total imports from third countries), is above 10%.

In addition, a sector or subsector is also deemed to be exposed to a significant risk of carbon leakage if:(a) the sum of direct and indirect additional costs induced by the implementation of this Directive would lead to a particularly high increase of production costs, calculated as a proportion of the gross value added, of at least 30%; or (b) the intensity of trade with third countries, defined as the ratio between the total value of exports to third countries plus the value of imports from third countries and the total market size for the Community (annual turnover plus total imports from third countries), is above 30%.

[3] These allowances are enough to compensate for roughly 40% of the direct emissions from the refining sector. According to the Energy Information Administration, petroleum refining emitted 277.6 million metric tons of CO_2 in 2002. (Schipper, Mark. Energy-Related Carbon Dioxide Emissions in U.S. Manufacturing. EIA. November 2006. http://www.eia.doe.gov/oiaf/1605/ggrpt/pdf/industry_mecs.pdf)

Senator CARPER. Thank you, Mr. Winkelman.

Last, but not least, Ray Kuntz. Welcome, Mr. Kuntz, we are glad to see you.

STATEMENT OF RAY KUNTZ, CHIEF EXECUTIVE OFFICER, WATKINS AND SHEPARD TRUCKING

Mr. KUNTZ. Thank you.

Chairman Carper and other members of the committee, thank you for this opportunity to testify before you today. I will summarize my written statement and ask that the full statement be submitted for the record.

Senator CARPER. Without objection. In fact, all of your entire full statements will be submitted for the record.

Mr. KUNTZ. ATA strongly supports efforts to reduce greenhouse gases and to make our country more energy independent.

Trucking employs nearly 9 million people and moves approximately 11 billion tons of freight annually. Trucking delivers nearly 70 percent of all tonnage in America. Eighty percent of our Nation's communities receive all of their goods exclusively by truck. And in my State of Montana, 87 percent of manufactured tonnage is moved by truck. Roughly 96 percent of motor carriers have 20 or fewer trucks and are considered small businesses.

The trucking industry is aggressively working to reduce fuel consumption and our carbon output. In 2008, my own company was one of 27 companies, nationwide companies, which received EPA's SmartWay Excellence Award for the reduction of fuel consumption and greenhouse gases. We have reduced our fuel consumption 14 percent in the last 2 years.

How did we do it? We control our speed below 65 miles an hour, we employed idling reduction technology, we purchased fuel efficient tires, and we started a driver education system that made our drivers more fuel efficient.

Our company certainly shares the goal of further reducing our greenhouse gas emissions. It is very simple. If we reduce our fuel consumption, we reduce our costs. We reduce our carbon output. But here is our challenge. We do not build engines. We do not refine fuel. But we do pay the price of any increased fuel costs due to climate change legislation.

Studies show that climate change legislation could dramatically increase our fuel costs. Our company burns approximately 10 million gallons of fuel per year. A 50 cent per gallon increase would cost our company $5 million a year. A $1 per gallon increase would cost our company $10 million per year, much more than we have made in the last 5 years. And in spite of my company meeting our environmental goals, our company will still be penalized under some climate laws.

This committee has the unique position in that you will consider both climate change legislation as well as highway reauthorization. As you know, the American Trucking Association has indicated its willingness to support an increase in fuel taxes to pay for the much-needed infrastructure improvements. However, if climate change legislation results in significant increases in our fuel costs, this could very well jeopardize our ability to absorb additional fuel cost increases to fund infrastructure improvements.

Another area that I would quickly like to address is the notion that we can address the transport sector's carbon footprint by simply diverting large amounts of freight to other modes. The reality is that if inter-modal rail tonnage were to double by the year 2020, the market share of inter-modal would be 1.8 percent. Trucking would still be 71 percent.

And in rural States like Montana, where I come from, that is not even an option. We are served by one railroad, and that railroad will not even stop in Montana to deliver inter-modal freight and pick it up, and it has no plans of doing so in the future.

ATA has come up with a very aggressive sustainability plan. No. 1 on the list is a national 65 mile per hour speed limit. Over a 10-year period, we would save nearly 12 billion gallons of fuel and reduce our carbon by over 116 million tons. It would cost our consumers nothing. In fact, it would save them money.

We also want increased participation in the EPA's SmartWay Program. We want to spend more money on anti-idling technology and get tax incentives to help do that. We support national fuel economy standards for trucks, and, most importantly, we would like to reduce highway congestion.

The other area that we are promoting is the use of more productive trucks. Montana is very fortunate to be one of the States that is allowed to use more efficient trucks. My own company uses them. But other States have been prohibited from experiencing fuel savings and carbon reductions for almost 20 years due to a Federal freeze in size and weights.

In conclusion, I would hope that this committee would recognize the inherent differences between stationary and mobile sources like trucking and pursue strategies that efficiently reduce fuel consumption without penalizing the consumer.

Thank you for your time. I would be glad to answer any questions.

[The prepared statement of Mr. Kuntz follows:]

Before the
Senate Committee on Environment and Public Works

Statement of Ray Kuntz, Chairman & CEO
Watkins and Shepard Trucking
1500 Blaine Street
Helena, MT 59601
on behalf of the
American Trucking Associations, Inc. (ATA)

"Transportation's Role in Climate Change and Reducing Greenhouse Gases"

July 14, 2009

Mr. Chairman and Members of the Committee:

Thank you for the opportunity to present testimony on *Transportation's Role in Climate Change and Reducing Greenhouse Gases*. My name is Ray Kuntz. I serve as the Chairman and CEO of Watkins and Shepard Trucking based in Helena, Montana, and founded in 1974. Watkins and Shepard Trucking offers truck freight hauling throughout the U.S. from 20 terminals and arranges intermodal transportation which involves hauling freight by multiple methods such as road and rail. My trucking company is also proud to be an EPA SmartWay[SM] participant, a collaborative, voluntary federal program for the freight sector designed to improve energy efficiency and energy security in our country while significantly reducing greenhouse gas (GHG) emissions. As a SmartWay[SM] partner, Watkins and Shepard has reduced its fuel use and corresponding carbon emissions by 14 percent and has been recognized by EPA with a SmartWay[SM] Excellence Award for our exceptional performance in GHG reductions and environmental stewardship efforts.

Today, I appear before you representing not just my company, but also the American Trucking Associations (ATA) headquartered in Arlington, Virginia. I currently serve as Chairman of ATA's Executive Committee and I am the Immediate Past Chairman of ATA.

ATA is the national trade association of the trucking industry. Through its affiliated state trucking associations, affiliated conferences, and other organizations, ATA represents more than 37,000 members throughout the U.S.

Overview of the Trucking Industry

With more than 600,000 interstate motor carriers in the U.S., the trucking industry is the driving force behind the nation's economy. Trucks haul nearly every consumer good at some point in the supply chain. Few Americans realize that trucks deliver nearly

70 percent of all freight tonnage or that 80 percent of the nation's communities receive their goods exclusively by truck. Even fewer are aware of the significant employment, personal income, and tax revenue generated by the motor carrier industry.

Nearly 9 million people employed in the trucking industry move approximately 11 billion tons of freight annually across the nation. Trucking annually generates $660 billion in revenues and represents roughly 5 percent of our nation's Gross Domestic Product. One out of every 13 people working in the private sector in the U.S. is employed in a trucking-related job ranging across the manufacturing, retail, public utility, construction, service, transportation, mining, and agricultural sectors. Of those employed in private-sector trucking-related jobs, 3.5 million are truck drivers.

The trucking industry is composed of both large national enterprises as well as a host of small businesses, all of whom operate in extremely competitive business environments with narrow profit margins. Roughly 96 percent of motor carriers have 20 or fewer trucks and are considered small businesses.

ATA strongly supports efforts to reduce GHG emissions and to make this country more energy independent. We want our industry to be as green and fuel efficient as possible. Yet our industry faces unique challenges in its attempt to reduce carbon emissions. These challenges include funding our nation's highway infrastructure needs to address mounting congestion and introducing new technologies and fuel that preserve the trucking industry's ability to efficiently deliver virtually all of our country's consumer goods. These hurdles have the potential to add considerable cost and complications to the movement of goods in this country.

Trucking Industry Concerns Over Climate Change Legislation

A. Increased Fuel Costs

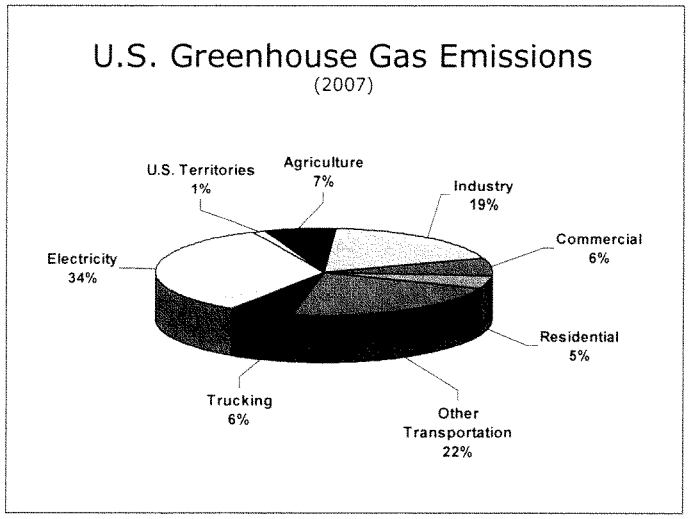
The trucking industry is concerned that climate change legislation will significantly increase the price of fuel we consume. Numerous experts have indicated that climate change legislation will dramatically increase the price of transportation fuels. One major petroleum supplier to the trucking industry has advised that fuel costs could rise by up to 77 cents per gallon for gasoline and 88 cents for diesel fuel. Fleets are extremely sensitive to rapidly shifting operating costs given thin operating margins of between 2-4 percent.

These low profit margins continue to be chipped away given the numerous and unprecedented costs being imposed upon the industry to reduce emissions from trucks. For instance, new diesel engine emission standards imposed by the U.S. Environmental Protection Agency (EPA) in 2002 drove up engine costs on average between $3,000 to $5,000 while decreasing fuel economy between 6-8 percent. EPA diesel engine emission standards in 2007 drove up the cost of engines between $8,000 to $10,000 and decreased fuel economy an additional 2-4 percent. Diesel engine emission standards set to take effect in 2010 could again increase new engine costs up to $10,000. However, we hope to experience a reversal of downward fuel economy trends with the introduction of these new engine technologies.

To illustrate the significance of these reductions and the progress being made to produce today's near-zero diesel engine emissions, every 60 new trucks purchased this year will equal emissions of particulate matter (PM) from 6 trucks purchased just three years ago and of a single new truck purchased 20 years ago. These new trucks also began the first half of what ultimately will be an additional 90 percent reduction in nitrogen oxide (NOx) emissions. Put another way, today's clean diesel engines are as clean as comparable natural gas vehicles.

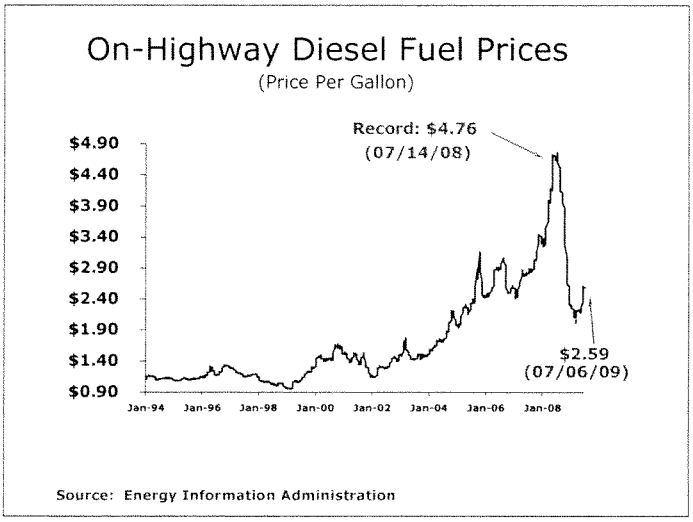
Not only have equipment costs increased due to federal requirements, state environmental mandates have substantially increased the financial burdens being placed upon our industry. Such state regulations include diesel engine retrofits, equipment mandates, and state biodiesel fuel requirements. Beyond the actual increases in equipment costs, the impact of reduced fuel economy further increased operating costs of the industry and had the unfortunate effect of increasing the trucking industry's carbon footprint.

I would like to take a few minutes to further expand upon the critical role diesel fuel plays in the trucking industry. The nation's long-haul truck industry depends on diesel fuel. Diesel fuel provides greater fuel economy and the higher energy content necessary to transport widely-diversified loads under extreme operating conditions. Diesel fuel is the main source of carbon emissions from our industry equating to 22.2 pounds of CO_2e per gallon of fuel at the point of combustion and 27.1 pounds of CO_2e when accounting for lifecycle emissions. While the transportation sector emits 28 percent of all U.S. GHG's, trucking contributes ***less*** than 6 percent of total U.S. carbon emissions.[1]

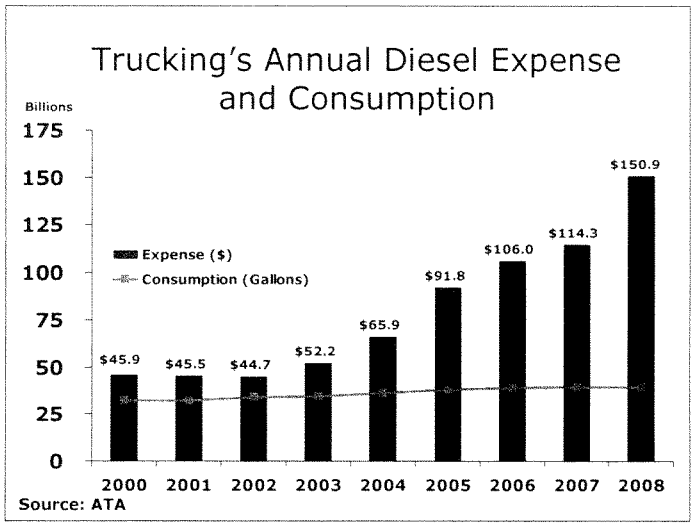


[1] U.S. EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007* (April 15, 2009).

While today's price for diesel fuel is a far cry from the nearly $5/gallon we experienced in July 2008, these depressed diesel fuel prices are only temporary and once the economy rebounds, so will the escalation of fuel prices even in the absence of a climate change legislation.

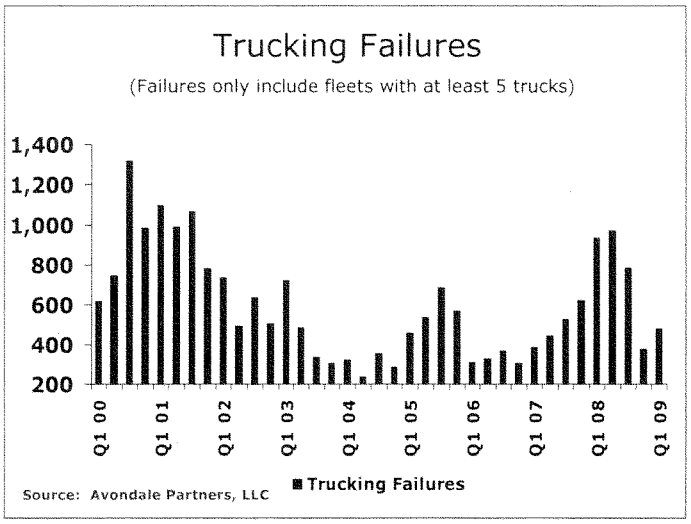


In 2008 trucking consumed over 39 billion gallons of diesel fuel. This means that a one-cent increase in the average price of diesel costs the trucking industry an additional $390 million in fuel expenses. Fleets spent an astonishing $151 billion on fuel in 2008, a $36 ***billion*** increase from 2007 and more than double the amount spent in 2004.



To provide a better illustration as to the impact that increased fuel prices has on an individual trucking fleet, let me use my company as an example. I run 649 tractors, operate 1,672 trailers, and directly employ 854 hard-working professional men and women. My company consumes nearly 10 million gallons of diesel fuel annually. At this volume, $3/gallon diesel fuel equates to a fuel bill of $30 million/year; at $4/gallon, $40 million/year; and at $5/gallon, $50 million/year. While it is difficult to predict how much fuel prices will increase under cap-and-trade legislation, let us assume four scenarios of diesel fuel price increases: $.10/gallon, $.25/gallon, $.50/gallon, and $1.00/gallon. For my company, that would mean an additional cost burden of $1 million, $2.5 million, $5 million, and $10 million per year respectively, costs that will be difficult to absorb. Diesel fuel price increases exceeding these scenarios will further devastate the movement of this nation's freight. In addition to the direct costs associated with carbon reductions, speculation in the emerging carbon markets may further increase fuel costs leading to uncertain and unstable energy market futures and throw our best business planning out the window.

Sudden fluctuations in operating expenses, especially fuel, raise havoc in the trucking industry. With the downturn in the economy and soft demand for freight transportation services, trucking companies are struggling to survive. In 2007 and 2008, over 5,000 trucking companies with at least 5 trucks failed and thousands of independent operators, drivers, and employees have lost their jobs. A large number of companies that operate fewer than 5 trucks have also turned in their keys. These hardships surprise few in the industry, but may surprise those less familiar with the nature of freight movement.



As noted earlier, trucking is a highly competitive industry with very low profit margins. This explains why many trucking companies are reporting that as fuel prices increase, profits are greatly suppressed, if they are making a profit at all. Fleets can not absorb rapid increases in fuel costs. That is why the trucking industry is extremely sensitive to how climate legislation may further escalate fuel prices.

B. Climate Change Legislation Needs to Address Highway Infrastructure Improvements

Our nation faces an infrastructure crisis. The National Surface Transportation Policy and Revenue Study Commission reported to Congress that we need to invest at least $225 billion annually to build and maintain a world-class infrastructure that can safely move both people and goods. According to the most recent report from the Texas Transportation Institute, drivers in metropolitan areas wasted 4.2 billion hours sitting in traffic, burning 2.81 billion gallons of fuel. Thus, one of the most effective ways to reduce fuel consumption is to make the nation's highway system more efficient. If this is an approach that Congress ultimately adopts, then it is critical to apportion specific carbon auction revenues generated under climate change legislation to go toward highway infrastructure improvements that could reduce congestion and in turn reduce GHG emissions.

The Highway Trust Fund, which funds our highway and transit programs, is funded in large measure through the federal tax on gasoline and diesel. ATA has publicly stated its willingness to support an increase in those taxes provided the proceeds are invested in highways to address congestion and system capacity. However, by significantly raising the cost of fuel, climate change legislation will have the added consequence of jeopardizing the ability of the trucking industry to absorb additional fuel

tax increases for these much-needed infrastructure improvements. It has been trendy to talk about investments in public transportation systems - such as light rail and transit - as well as smart growth or "livability" initiatives as a way to reduce greenhouse gas emissions. However, the available evidence discussed below suggests that such approaches are not cost-effective and may, in some cases, even increase GHG emissions.

In 2006, transit systems on average emitted 213 grams of CO_2 per passenger-mile. The average passenger car emitted 245 grams of CO_2 per passenger-mile, just 15 percent more. While transit appears to do a little better than automobiles today, it is important to understand that auto energy efficiencies are improving, while public transportation efficiencies have declined, a trend that is likely to continue. As a result of EPA's new fuel-economy standards, by 2025 the average car on the road will emit only about 186 grams of CO_2 per passenger mile. This rapid improvement is possible because America's auto fleet almost completely turns over every 18 years. By comparison, rail transit trainsets remain in service for at least 30 years. Therefore, potential investments in transit must be compared, not to today's cars, but to cars that will be built 15 to 20 years from now.

It has also been assumed over the past several decades that transit-oriented development, smart growth, and similar initiatives will produce more compact communities that will advance alternative transportation such transit, biking, and walking. However, the vast majority of Americans choose to live in low-density communities and such investments are unlikely to change their minds. According to the National Association of Homebuilders, 83 percent of respondents in a nationwide survey would prefer a detached, single family home in the suburbs to an equally priced townhouse in the city, even though the suburban home would mean longer distances to work, shopping, and public transportation. Indeed, even after hundreds of billions of dollars in public transportation investments over the past 50 years, the number of people using public transportation has not increased, and the share of commuters who drive to work alone has risen significantly. Investment in public transportation, while perhaps helpful in terms of providing access to those who do not or cannot drive, has not lived up to expectations when evaluated in terms of its ability to reduce congestion and lower emissions.

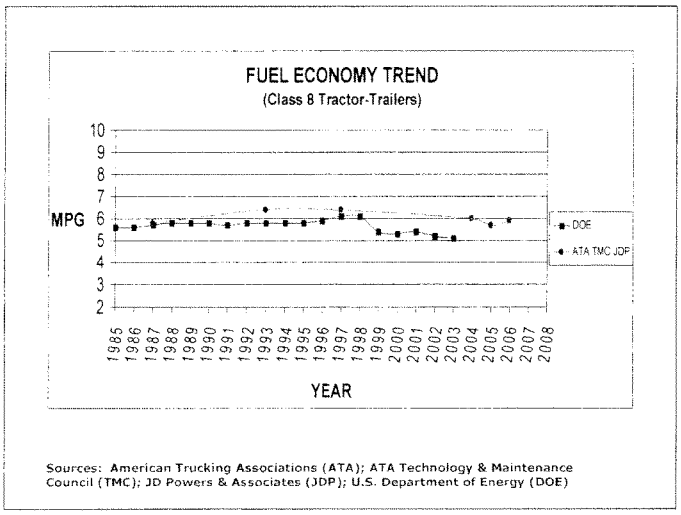
Another myth which must be dispelled is that we can't build our way out of congestion. The respected Texas Transportation Institute's annual congestion report found, in fact, that areas which were more active in adding roadway capacity were able to significantly slow the increase of traffic congestion. This is not to suggest that adding highway capacity is always the answer or increasing transit capacity is never the answer. However, it is time to put aside the false notion that transit is the best or only solution to solving congestion problems or that highways are never the answer. Federal policy should not discriminate against either solution. Instead, federal policy should ensure that solutions to congestion reduction meet cost-benefit tests and do not favor one approach over another. It is also inappropriate, and ultimately ineffective, to force people into making choices about where they live, work, or shop based on somebody else's notion of what constitutes a "livable community."

C. Carbon Oversight Markets Must be Carefully Monitored and Transparent

ATA believes that it is critical to pass and implement commodities trading reforms prior to the creation of new physical and derivative carbon markets. ATA has been a vocal advocate for greater government oversight of markets that impact our industry in order to put a stop to excessive speculation. For example, the dramatic surge in fuel prices last summer (due in part to excessive speculation) taught our industry a valuable lesson about the consequences of lax government oversight of energy commodities. Carbon markets have the potential to add yet another layer of volatility to the cost of diesel fuel – a cost increase that can very easily devastate trucking company operations and the nation's freight movement.

D. Trucking Needs to be Addressed Differently from Other Transportation Modes

Congress needs to be mindful that heavy-duty trucks are far different from passenger cars. The trucking industry's consumption of fuel is not discretionary. It is undertaken to deliver freight and artificially inflating the price of diesel fuel will not reduce the industry's need to continue to consume this indispensible fuel source. Fuel economy of line-haul trucks has averaged between 6.0 and 6.5 miles per gallon over the last quarter century and in no way compares to fuel economy of automobiles. There are no mass-produced hybrid heavy-duty trucks, alternative fuels such as biodiesel and natural gas create operational challenges for certain segments of our industry, and so trucking remains dependent upon diesel fuel. The table below depicts historical fuel economy trends in our industry.



Truck transportation is not a discretionary activity – it is undertaken for the sole purpose of moving freight for our customers. We are dependent upon the use of diesel as our fuel of choice out of necessity given its cleanliness and efficiency in moving heavy loads. Natural gas may be used in certain segments of the trucking industry, but is an inadequate substitute for diesel fuel for over-the-road tractor semi-trailers. Similarly, biodiesel may be used in low percentage blends, but cannot begin to replace the industry's dependence upon petroleum-based diesel fuel. The intent behind climate change legislation may indeed be to raise the price of petroleum-based fuels as a means to encourage consumers to pursue less energy-intensive or alternative means of transportation; however, those of us in the business of moving the nation's freight have few, if any, alternative technologies or fuel options that are available to automobiles and light-duty trucks.

As for shifting transportation mode decisions, there has been much said lately regarding taking freight off of trucks and moving it onto rail for transport. The fact remains that rail generally has limited transportation networks, delivers non-time-sensitive goods, and often does not provide ultimate deliveries to their final destinations without the services of a truck. Take my home state of Montana for example. Intermodal rail does not service Montana nor are there any plans to do so. All goods delivered in Montana, and even other states, must be delivered by a truck. While many trucking companies do rely on rail to provide certain segments of their goods movements, and rail likewise relies on trucking as an important customer, the fact remains that trucking will continue to dominate the movement of freight transportation tonnage moving 71 percent of such tonnage in 2020.

It is critical to recognize and address trucking as a unique mobile source and not simply apply a one-size-fits-all solution for all mobile sources. Climate change legislation must consider dedicating specific carbon auction revenues for advancing new technologies and alternative fuels for an industry so vital to our nation's economic well-being.

E. State Transportation GHG Reduction Plans Must not Impede the Delivery of Goods

Any state efforts to develop transportation GHG emission reduction goals and plans should ensure the safe, efficient, and unimpeded movement of goods between states. Emphasis should be placed on mitigating identified highway bottlenecks through highway infrastructure improvements. Each state that develops targets and strategies should be required to consider use of higher productivity vehicles and speed reduction on its highway system as a means of reducing carbon and saving fuel.

F. Need for Federal Preemption of Regional, State, and Local Carbon Laws

The trucking industry supports federal preemption of local, state, and regional climate change laws to avert a widely-diverse regulatory patchwork which would impede the delivery of the nation's goods given the interstate nature of trucking. Such a patchwork would create widely varied economic and administrative regulations that will serve as barriers to an efficient transportation system. In the absence of federal climate

change guidance, governmental entities are taking matters into their own hands either independently or in collaboration with other vested stakeholders.

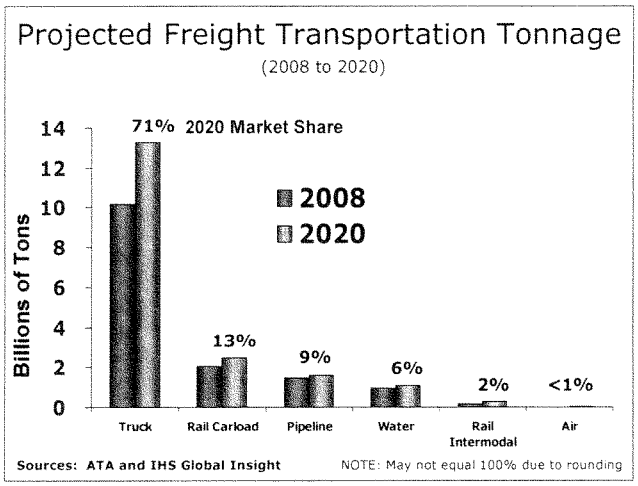
Long-haul truck drivers will not be able to efficiently deliver goods across state lines unless Congress proceeds to preempt regional, state, and local climate change efforts already enacted or being pursued. If 100 percent federal preemption is not secured by Congress, ATA in the alternative asks for a blanket exemption applicable to business activities involving the interstate transport of goods.

G. Free Allowances for Fuel Production are Critical to Maintain the Nation's Goods Movement

Oil refiners should receive appropriate free carbon allowances for fuel production to help offset significant price increases for refined products. GHG contributions from the refining sector (including the refining facilities as well as the combustion of the fuels they produce) make up about 45 percent of total U.S. energy emissions. Given that new fuel economy standards for both automobiles and medium- and heavy-duty trucks are just around the corner, it is critical for the Congress to take measures to ensure fuel price spikes do not impede the nation's economic recovery efforts during this transition period. Increased free carbon allowances afforded to refineries will help keep fuel price increases in check.

A misconception exists that any increase in energy costs can simply be passed through to the next downstream entity. In reality, 100 percent of fuel cost increases can not be passed along from the refinery to the ultimate consumer. Not every entity throughout the supply chain will be able to recoup all of the cost increases passed onto it due to market uncertainties and the cost-competitive nature of businesses.

Trucking's fuel cost increases need to be taken into account under climate change legislation to ensure economic stability and growth in this country. We have a saying in our industry -- *Without Trucks America Stops*. Trucking is, and will remain, the predominant means of moving the nation's freight. As previously noted, by the year 2020, 71 percent of freight transportation tonnage will be delivered by a truck.



Keep in mind that as the U.S. population continues to grow, so does the corresponding demand for more consumer goods. The demand for more products equates to a need for more trucks which results in more vehicle miles traveled and more diesel fuel consumed. The following table shows the relationship between Class 8 trucks, diesel fuel demands, vehicle miles traveled, and population projections for the U.S.

Trucks, Fuel Use, VMT's and Population

Year	Class 8 Trucks (Millions)	Diesel Fuel Consumed (Billion Gallons)	VMT (Billions)	U.S. Population (Millions)
2000	2.60	32.5	119.7	282.3
2001	2.61	32.5	115.7	285.0
2002	2.63	33.9	114.5	287.7
2003	2.64	34.6	113.9	290.3
2004	2.72	36.4	117.8	293.0
2005	2.86	38.1	130.5	295.7
2006	3.01	39.1	139.3	298.4
% Increase Over 2000	+16%	+20%	+16%	+6%
2018	3.64	--	178.8	330.7
% Increase Over 2000	+40%	--	+49%	+17%

Source: American Trucking Associations

Since trucking consumes over 90 percent of the nation's on-road diesel fuel, climate legislation must not inhibit the ability of the nation's trucking fleets to afford fuel purchases in order to keep up with business and consumer demands for products. If diesel prices are not kept in check, the movement of the nation's freight will be impeded and the very core of the nation's economy will be impacted. While it is important to increase the amount of free allocations for refinery operation emissions, it is more critical to set aside free allowances specific to diesel fuel to mitigate dramatic fuel pricing increases. Mechanisms should be put in place to ensure any diesel fuel emission allowances are in fact used to keep diesel fuel prices in check.

There are Reasonable Measures to Further Reduce Carbon Emissions from Trucks

Any substantial cost increases imposed directly or indirectly on trucks by climate change legislation will curtail the delivery of vital consumer goods across the nation such as food, medicine, and clothing. Constraining the country's freight delivery system would change our way of life for the worse by significantly increasing the cost of everything we buy.

The trucking industry believes that commercial trucks should be addressed differently than traditional stationary or mobile sources under any proposed climate change legislation. Since there are better, cost-effective measures to use to reduce carbon emissions from the trucking industry, ATA developed its *Strategies for Reducing the Trucking Industry's Carbon Footprint*. (To view ATA's plan, go to: http://www.trucksdeliver.org/pdfs/Campaign_Executive_Summary.pdf).

ATA's proactive sustainability agenda includes: (1) enacting a national 65 mph speed limit and governing truck speeds at 65 mph for trucks manufactured after 1992; (2) increasing fuel efficiency through EPA's SmartWay℠ Program[2]; (3) supporting national fuel economy standards for medium- and heavy-duty trucks; (4) decreasing idling[3]; (5) reducing highway congestion through highway infrastructure improvements; and (6) promoting the use of more productive truck combinations.

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[2] In February 2004, the freight industry and EPA jointly unveiled the SmartWay℠ Transport Partnership, a collaborative voluntary greenhouse gas reduction program designed to increase the energy efficiency and energy security of our country while significantly reducing emissions in the process. The program's mantra is "fuel not burned equates to emissions not had." The program, patterned after the highly-successful Energy Star program developed by EPA and DOE, creates strong market-based incentives that challenge companies shipping products and freight operations to improve their environmental performance and improve their fuel efficiencies. The trucking industry fully embraces SmartWay℠ and relies upon the innovativeness of this cutting edge program. However, while the program is growing by leaps and bounds, future funding remains uncertain. ATA and other freight and shipping sectors continue to work towards ensuring permanent funding for the SmartWay℠ program.

[3] Operation of a truck's main engine when a truck remains motionless is known as idling. Trucks idle for a variety of reasons including traffic congestion; heating or cooling the cab/sleeper compartment of the truck during required federal rest periods; providing power to operate on-board appliances; and keeping the engine block and oil warm to avoid cold engine start-up problems during the winter season. An idling truck consumes .8-1 gallon of diesel fuel per hour.

ATA's sustainability agenda could reduce trucking's annual carbon emissions by more than 20 percent. These reasonable measures will bring real results for reducing trucking's carbon footprint while at the same time reducing other regulated emissions, enhancing safety, helping to achieve energy independence, and keeping the nation's economic engine churning.

ATA and Watkins and Shepard Trucking appreciate the opportunity to offer the trucking industry's testimony before this Committee and I look forward to answering any of your questions. Thank you.

August 20, 2009

Senator James Inhofe
United States Senate
c/o Heather Majors
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, DC 20510

via e-mail: Heather_Majors@epw.senate.gov

RE: Response to Follow-Up Questions from July 14, 2009 Testimony of Ray Kuntz, Chief Executive Officer, Watkins and Shepard Trucking, and American Trucking Associations Immediate Past Chairman and Executive Committee Chairman

Dear Senator Inhofe:

Thank you for the opportunity to testify before the Committee on Environment and Public Works' recent hearing entitled *Transportation's Role in Climate Change and Reducing Greenhouse Gases.* This letter responds to your specific request below for additional information and represents the positions supported by the American Trucking Associations (ATA).

Senator James Inhofe

1. **At a hearing last year, a witness from the Natural Resources Defense Council testified, "One key issue to be aware of is that there are very substantial GHG reductions from improved traffic flow, roughly equal to those from reduced VMT." If the federal government were to move forward with reducing emissions, which policy option do you think would be less harmful to your business, improved traffic flow or reduced VMT?**

The trucking industry favors improved traffic flows over VMT restrictions as its preferred method of reducing carbon emissions. Measures to forcibly reduce VMT through higher taxes or reduced highway mobility will be ineffective and very costly. However, the trucking industry can reduce its rate of VMT growth at little to no additional cost if federal and state laws were reformed to allow the industry to operate more productive equipment.

Congestion relief offers one of the most viable strategies for reducing carbon emissions. According to a Texas Transportation Institute study, if there were no congestion in all 437 urban areas, the trucking industry and cars would save 2.9 billion gallons of fuel annually. ATA estimates, based on fuel burn rates in stop-and-go traffic and the percentage of truck miles in urban traffic, that the trucking industry would save 4.1 billion gallons of fuel and reduce CO_2 emissions by 45.2 million tons over a ten-year period if congestion in all 437 urban areas were eliminated. ATA also estimates that cars would save 27.7 billion gallons of fuel and

reduce CO_2 emissions by 268.5 million tons over a ten-year period if congestion in all 437 urban areas were eliminated.

ATA's sustainability agenda lists improved traffic flows (*i.e.*, reducing highway congestion through highway infrastructure improvements) as one of six key measures to reduce carbon emissions from the trucking industry. ATA recommends a 20-year plan for addressing congestion in its report. During the first five years, the focus would be on fixing critical highway bottlenecks. During the next five to 15 years, traffic flow in critical freight corridors would be improved through highway capacity expansion. Beyond that, the focus would be on creating truck-only corridors which would enable carriers to run more productive vehicles. A copy of the plan can be viewed at http://www.trucksdeliver.org/pdfs/Campaign_Executive_Summary.pdf).

We have a saying in our industry -- *Without Trucks America Stops*. Trucking is, and will remain, the predominant means of moving the nation's freight. In fact, by the year 2020, 71 percent of freight transportation tonnage will be delivered by a truck. Keep in mind that as the U.S. population continues to grow, so does the corresponding demand for more consumer goods. The demand for more products equates to a need for more trucks which results in more vehicle miles traveled and more diesel fuel consumed.

Limiting VMT's for trucks would inhibit the ability of the nation's fleets to keep up with business and consumer demands for products. Constraining the country's freight delivery system would change our way of life for the worse by significantly increasing the cost of everything we buy.

Heavy-duty trucks are far different from passenger cars. There are currently no mass-produced hybrid trucks, truck fuel economy continues to remain stagnant at between 6-6.5 miles per gallon, and truck movement is not discretionary – it is undertaken to conduct business operations, not pleasure. In short, trucking is unlike any other industry, mobile source or otherwise. Mobile sources, such as commercial trucks, need to be addressed differently than other mobile sources under any proposed carbon reduction regulatory program.

ATA's sustainability agenda, which includes improved traffic flows, could reduce trucking's annual carbon emissions by more than 20 percent. The other five measures included in ATA's plan include: (1) enacting a national 65 mph speed limit and governing truck speeds at 65 mph for trucks manufactured after 1992; (2) increasing fuel efficiency through EPA's SmartWay℠ Program; (3) supporting national fuel economy standards for medium- and heavy-duty trucks; (4) decreasing idling; and (5) promoting the use of more productive truck combinations.

Reasonable measures, such as improving traffic flows, will bring real results for reducing trucking's carbon footprint while at the same time reducing other regulated emissions, enhancing safety, helping to achieve energy independence, and keeping the nation's economic engine churning.

On behalf of ATA and Watkins and Shepard Trucking, thank you for the opportunity to provide information to the Committee on this issue of significant importance to the nation's trucking industry. If you have any questions concerning these responses, please contact Glen Kedzie, ATA's Vice President and Environmental Counsel at 703-838-1879 or gkedzie@trucking.org.

Respectfully submitted,

Ray Kuntz, Chief Executive Officer, Watkins and Shepard Trucking, and American Trucking Associations Immediate Past Chairman and Executive Committee Chairman

August 20, 2009

Senator Amy Klobuchar
United States Senate
c/o Heather Majors
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, DC 20510

via e-mail: Heather_Majors@epw.senate.gov

RE: Response to Follow-Up Questions from July 14, 2009 Testimony of Ray Kuntz, Chief Executive Officer, Watkins and Shepard Trucking, and American Trucking Associations Immediate Past Chairman and Executive Committee Chairman

Dear Senator Klobuchar:

Thank you for the opportunity to testify before the Committee on Environment and Public Works' recent hearing entitled *Transportation's Role in Climate Change and Reducing Greenhouse Gases.* This letter responds to your specific request below for additional information and represents the positions supported by the American Trucking Associations (ATA).

Senator Amy Klobuchar

1. **I would like to commend you for your company's efforts to voluntarily reduce greenhouse gas emissions. In your testimony you said that Watkins and Shepard has reduced its fuel use and corresponding carbon emissions by 14 percent with the help of EPA's SmartWay program, an impressive accomplishment. Can you tell us what your company has done to reduce emissions? Why did you take these steps? Do you know of other companies taking similar action? What factors do you think would motivate other companies to take similar action?**

We have a saying in the trucking industry – fuel not burned results in emissions not had. Watkins and Shepard has done several things to reduce our carbon footprint, emissions, and corresponding fuel consumption. First, we keep our truck speeds below 65 miles per hour. The rate of speed by which a truck travels is directly related to fuel consumption. The rule-of-thumb is that for every 1 mph increase in average vehicle speed, there is a 2.2 percent increase in fuel consumption. Put another way, for every 1 mph increase in *average speed*, there is a corresponding 0.14 mpg penalty in fuel economy

My company has invested in equipment to reduce unnecessary idling of the main engine during federally-required rest periods or other times. The equipment we prefer are known as auxiliary power units (APU's) which are, by simplest definition, small diesel

engines that run independent of the main engine to provide heating, cooling, and other comfort features for a driver. Main engine idling consumes roughly .8–1.0 gallons of diesel fuel per hour. APU's on the other hand, consume a small amount of diesel fuel (as low as .2 gallons per hour). While such devices can cost up to $10,000 apiece, add roughly 400 pounds of weight to a truck, and require routine maintenance, these devices serve my company's business quite well.

Watkins and Shepard works closely with our manufacturers to reset engines to ensure they were running at peak fuel efficiency and has invested in new, fuel efficient tires. Based upon data provided by tire manufacturers and EPA testing and research, EPA determined that certain tire models can provide a reduction in nitrogen oxide (NOx) emissions and an estimated fuel savings of 3 percent or greater, relative to the "best selling" new tires for line-haul trucks, when used on all three axles. The options offered include both dual tires and single wide tires (single wide tires replace the double tire on each end of a drive or trailer axle, in effect turning an 18-wheeler into a 10-wheeler). Low rolling resistance tires can be used with lower-weight aluminum wheels to further improve fuel savings. Finally, my company has instituted a driver education and incentive program to eliminate driving habits that previously wasted fuel.

Watkins and Shepard voluntarily undertook the above steps to reduce our fuel consumption and fuel expenses while at the same time trying to reduce our carbon footprint. We did so under the umbrella of EPA's voluntary greenhouse gas (GHG) reduction program for the freight sector known as the SmartWay Transport Partnership (SmartWay) program.

SmartWay is a collaborative, voluntary GHG reduction program designed to increase the energy efficiency and energy security of our country while significantly reducing GHG emissions. The program, patterned after the highly-successful Energy Star program developed by EPA and DOE, creates strong market-based incentives that challenge companies shipping products and freight operations to improve their environmental performance and improve their fuel efficiencies. By 2012, the SmartWay program aims to save between 3.3 and 6.6 billion gallons of diesel fuel per year and reduce trucking's annual carbon emissions by 48 million tons. Currently, there are over 1,900 participating companies. Roughly 324 (or roughly 16 percent) of ATA members are SmartWay partners. These partners operate 585,000 trucks running more than 51 billion miles per year. That represents roughly 20 percent of the estimated 3 million heavy-duty trucks registered in the United States and 37 percent of the 139.3 billion miles logged by Class 8 trucks in 2006.

My company and ATA members have stepped to the forefront to reduce emissions and save fuel. However, many companies could do more by signing up to become SmartWay partners. The trucking industry relies upon the innovativeness of this cutting edge program. While the program is growing by leaps and bounds, funding levels of $2-3 million pall in comparison to the Energy Star program's annual operating budget of $50 million. Recent funding cuts to grants, contracting, marketing, technology

development, and other program expenses have severely undermined the mission of the program to address GHG reductions from the freight sector. It is therefore our hope that the efforts of SmartWay continue to be recognized with a substantial increase in authorized funding and staffing.

The leading hurdle facing fleets to reduce their emissions is their economic ability to undertake additional financial debt. Taking into account that 96 percent of trucking companies are small businesses, additional equipment purchases are weighed very carefully. While recent legislation waiving the federal excise tax (FET) of 12 percent on the purchase of idle reduction equipment is a step in the right direction, more needs to be done to enable fleets to purchase fuel efficient equipment. Extending the FET waiver to purchases of fuel efficient equipment on both tractors and trailers would greatly aid fleets in their ability to purchase such equipment. Federal tax credits on the purchase of idle reduction and fuel efficient equipment would likewise speed the introduction of such equipment into the marketplace. Finally extension of hybrid truck tax credits, efforts to establish fuel efficiency/economy standards for medium- and heavy-duty trucks, and continued research for directed at trucks, should and must continue to help advance freight transport fuel efficiency to the next level.

2. **Without regulation, it seems like fuel consumption and emissions could be significantly reduced if other trucking companies followed your lead. Are a lot of companies doing what you have done? Are their technologies and strategies available to reduce emissions now? Are there significant barriers to becoming more fuel efficient? How do you think these barriers could best be overcome?**

While trucking companies have always focused on conserving diesel fuel given that fuel is one of the two highest operating costs for fleets (diesel fuel and labor costs flip-flop depending on oil market pricing), companies have a renewed focus on further reducing their fuel use and associated expenses. As noted in the response above, more-and-more fleets are undertaking efforts to reduce fuel consumption. Fleets today are more educated and savvy than ever insofar as their business planning is concerned.

Each trucking company is unique and therefore each fleet must consider what fuel efficiency solutions work best for them. My company's approach to reduce fuel use may work well for some fleets but may not work well for others.

As noted in my written testimony, ATA has developed industry strategies to save fuel. ATA's plan, *Strategies for Reducing the Trucking Industry's Carbon Footprint*, can be viewed at http://www.trucksdeliver.org/pdfs/Campaign_Executive_Summary.pdf). ATA's proactive agenda includes: (1) enacting a national 65 mph speed limit and governing truck speeds at 65 mph for trucks manufactured after 1992; (2) increasing fuel efficiency through EPA's SmartWay Program; (3) supporting national fuel economy standards for medium- and heavy-duty trucks; (4) decreasing idling; (5) reducing highway congestion through highway infrastructure improvements; and (6) promoting the use of more productive truck combinations.

Aside from these strategies, there are specific technologies available today to reduce emissions and improve fuel efficiency. Many of these technologies are highlighted and verified under the EPA SmartWay program and include such items as APU's, direct-fired heaters, battery packs, fuel efficient tires, and aerodynamic devices to name a few. Other technologies are at different stages of testing and/or research including truck hybridization, fuel cells, aerodynamic improvements, lubricants, etc. It is critical to ensure funding continues for research and development to allow these potential fuel-saving solutions to advance beyond concepts into becoming reality.

There are barriers to trucking companies becoming more fuel efficient. These barriers have already been addressed in my response above as has the question regarding how these barriers could best be overcome. One thing I would wish to add is that trucking company operating costs keep increasing from all angles whether from safety, environmental, insurance, driver compensation, fuel, or equipment. As one example, EPA's diesel engine emission standards drove up the cost of new engine purchases up to $15,000 since 2002 while decreasing fuel economy between 8-12 percent. Diesel engine emission standards set to take effect in 2010 could again increase new engine costs up to $10,000. Operating cost increases coupled with the state of the nation's economy and a drop-off in the purchase of consumer goods has severely impacted fleet purchasing decisions. Keep in mind that the number one business of a trucking company today is to stay in business.

I again thank you for the opportunity to provide information to the Committee on this issue of significant importance to the nation's trucking industry. If you have any questions concerning these responses, please contact Glen Kedzie, ATA's Vice President and Environmental Counsel at 703-838-1879 or gkedzie@trucking.org.

Respectfully submitted,

Ray Kuntz, Chief Executive Officer, Watkins and Shepard Trucking, and American Trucking Associations Immediate Past Chairman and Executive Committee Chairman

Senator CARPER. Thank you so much for your testimony. It was good of you to join us today.

I am going to ask, for about the next 5 minutes, some questions of our panel, and then yield to Senator Voinovich and then Senator Merkley.

This will be a question, really, for Mayor Becker and for Mr. Bragdon. Do people call you President Bragdon?

Mr. BRAGDON. Councilor is fine.

Senator CARPER. All right. I am impressed that two very different States, Utah and Oregon, and I have been privileged to visit them both, but two very different States are at the forefront of efforts to cut greenhouse gas emissions from the transportation sector.

Could you describe the public participation that went into the development of your plans? And second, in the upcoming climate bill, how could the Federal Government further assist the efforts that you have already made and incentivize other regions of our Nation to maybe take similar actions?

Mr. BRAGDON. Senator Carper, there is a high degree of public participation in the public planning in the State of Oregon and in our region.

I should add that, what effectively constitutes a climate change strategy did not start as that. It started in the 1990s as a multifaceted strategy about conserving infrastructure, conserving tax dollars, preserving agriculture and forest land that surrounds our area, and making the best use of the urban neighborhoods. So, in seeking to achieve those objectives, we are also, fortunately, addressing issues of climate change.

And those efforts have been very popular in our region in terms of—as I mentioned, my agency is a popularly elected body, and so the policies that are adopted by our body are to some extent reflective of the voters who put us in office to adopt those policies. So, I would say there has been a high degree of public participation going back to the 1990s in terms of our region, as well as in the political marketplace, but also in the demographic and economic marketplace as well in terms of household size, in terms of people wanting to live the type of live style that we are talking about.

Senator CARPER. All right. Thanks.

Mr. BRAGDON. In answer to your question, in terms of the Federal involvement, I think the Federal Government needs to be a better partner in terms of the multi-modal transportation. We need to do a better job of judging the costs and benefits of different approaches and strategies in transportation. There has not been an even playing field since the 1950s.

Senator CARPER. OK. Thanks.

Mr. BECKER. In Utah, we have had an experience that may be similar to that of many other communities that have looked toward rail, not having a rail history for some time. When our first bond election went forward, our first election went forward to raise taxes for rail, it failed.

At about that same time, an organization called the Coalition for Utah's Future started something called Envision Utah and engaged the community in a massive way in looking at the trends we are on with our existing transportation infrastructure and land use and

land consumption and how those trends would play out in the future, and then provided the community with alternatives.

We had, for example, 20,000 respond to a newspaper insert, this was pre-major-Internet opportunities, 20,000 people responded on the type of future they prefer. This was done as a visioning exercise. But by the time the next bond election came along, people were beginning to gather around the concept that the present trend we were on was not a desirable trend, that they favored the idea of some increased density, they favored the idea of more transit and other modes of transportation as preferable.

And by the time the next bond election came, it passed overwhelmingly. And every bond election for an increase in taxes for rail and transit improvements since has passed up and down the Wasatch front, which is our urban core. It has been done through value-based work, through visioning exercise, transportation-specific and otherwise, but along the model of this Envision Utah effort.

I think that underlying concept of really engaging the community and having the community look toward its future, and then how that future would play out with the different modal mix, has happened.

We have seen the same thing happen quite recently in an area that, I think, was to the great surprise of the people in Southwestern Utah, which is most rural but is the fastest growing county in the United States until just recently, where people said they wanted more transit in their future.

So, I think engaging the community in a thoughtful way that looks at the values they want, which now is much more toward walkable communities than it was 10 or 15 years ago, makes a very large difference. And I think providing assistance in that kind of collaborative public engagement can make a big difference in helping the people who live in our communities look toward the future they want, and then how to realize it.

Senator CARPER. We have been joined by Senator Merkley. Senator Merkley, I want to not only welcome you but thank you for joining Senators Specter, Lautenberg, Cardin and myself as cosponsors of the CLEAN-TEA legislation. Thank you for joining us, and you are recognized for the next 2 hours.

[Laughter.]

Senator MERKLEY. Only 2 hours? And there is so much to say and so much to ask.

Thank you, very much, Mr. Chair, and I want to thank very much David Bragdon, President of the Metro Council in Portland, for coming and testifying on the work that is being done in the Portland metropolitan area, and again draw attention a couple of statistics that he mentioned, or some close version of them.

One is that, where in the United States, between 1990 and 2007, the total emission of greenhouse gases increased 17 percent, in the Portland metropolitan area during that same period emissions dropped, they dropped about .7 percent. So, it is really counter to every trend we are seeing in the country, and if you want to frame it in per capita greenhouse emissions, it is even more dramatic because there is, unfortunately the number is the same so it might

be a bit confusion, a 17 percent reduction in per capita greenhouse gas emissions.

In your testimony, President Bragdon, you noted some of the features in the metropolitan area. I am sorry I missed your testimony. I am rushing here from the Healthcare Committee. But, I was wondering if you could talk about this new concept, the Intertwine, if you have not already addressed it, and how that incorporates the vision of parks, walking trails and biking trails, and what it means.

Mr. BRAGDON. Senator Merkley, thank you.

In terms of our results, yes, we are proud of that. But there are other communities, Boulder, Colorado, I think has also had significant results, and it shows that this is not necessarily all that complicated. But if we stick to some of the fundamentals that we have talked about in terms of walkable communities and alternative ways of getting around other communities, Portland is—we like to think that it is unique, but in fact, in many ways, there are things than can be emulated.

With regard to the Intertwine, our approach on the environmental front is multifaceted. It is not just a matter of transit, it is not just a matter of land use, it is also a matter of parks, recreation and preserving natural areas. And many other parts of the country are characterized by a very fragmented system of parks and natural areas. So, we have been working very diligently to bring all the different partners together.

The voters in our region—just as Mayor Becker talked about that supported the ballot box in the Salt Lake City area for light rail—our voters have been very generous. In addition to having voted for light rail at various points in the past, they have also voted twice for natural area protection. And we use those funds to purchase natural areas.

The Intertwine is sort of our brand name for working with our partners in the non-profit sector and the local government and, ideally, with the Federal Government given that one of the aspects of our region, we are somewhat distinct in that we are surrounded, well not totally surrounded, but we have a lot of U.S. Forest Service, BLM, U.S. Fish and Wildlife holdings all around us. The Intertwine is a voluntary association of government, non-profit and all levels of government to work together to manage those lands and allow our citizens the best possible use of them.

Senator MERKLEY. Thank you. I wanted to give you a chance to address that because that is a newly coined term and, in addition to kind of creating the interconnectedness of officials at various levels working together, I think it also captures to some extent the interconnectedness of the dimensions of the different components, the walking trails, the biking trails, the green spaces and so forth that have grown into a system that enables citizens to have very significant choices whether it be in recreation or commuting.

I wanted to ask you what the stages are as the metropolitan area in Portland thinks about how it could proceed, should proceed and the things that we should really be looking at to assist communities like Boulder, like Portland, as they take the next step in trying to tackle this challenge.

Mr. BRAGDON. Senator Merkley, I think, in many respects, there are some of the things that we have been doing in the Portland

area where we feel we have been almost pushing against Federal policies, many of them dating from the 1950s. And so, we like to imagine a world in which we are still trying to do the same things that are doing, but we are doing them with Federal policy.

It dates back to the 1970s in our case. We are the first locality to trade in interstate funds and use those—instead of for one large highway which would have destroyed 1 percent of the houses in the city, we used them on a multitude of road and street projects throughout the region and a light rail system. That was an example of the Federal Government starting to provide some flexibility for us to have some local choice around that.

I think Federal legislation needs to encourage more of that, give localities the tools to evaluate different choices, different strategies, measure among modes and among strategies. Quite often, the Federal surface transportation funds on the road side is distributed formulaically with certain assumptions that tend to bias toward new things rather than maintenance and good repair of existing things, that would an example, whereas transit programs are discretionary, and, quite rightly, have to meet a cost-benefit type of analysis that highways projects have not been subjected to. So, I think that leveling that playing field would be another example.

Finally, I think metropolitan areas, in terms of the economic impacts, in terms of the potential for climate change, that is where the action is going to be. That is where the freight is. That is where the people are. So there needs to be a title in the new bill that really does address the unique needs of metropolitan areas in a multimodal sense.

Senator MERKLEY. Thank you very much. I think that one area where the Portland metropolitan area has been pushing in kind of opposition, or at least not getting a lot of cooperation, was in streetcars. That has changed with Secretary LaHood providing a significant reevaluation of the role of streetcars and support, recently, for the expansion of the Portland Streetcar System.

Mayor Becker, I think you are considering streetcars in your city, and I would like you to just share a little bit of what it is you see in that particular feature that could be of value.

Mr. BECKER. First, I should tell you, we have really appreciated the leadership from the Portland metro area on streetcars and light rail, kind of showing the way, providing the tracks to the future, really, in many respects, for a western city like ours.

We are looking right now, and are moving as quickly as possible, to develop three streetcar systems in Salt Lake City, one using an existing abandoned, or actually acquired, railroad corridor that will serve a commercial and residential area in the south part of our city and with an adjacent city, South Salt Lake, with the Utah Transit Authority.

A second one in the downtown area that could be a circulator system, but we are looking more as a way to reach out into a neighborhood that is really prime for redevelopment and providing better transportation options as well as development-oriented transit there. And a third to connect us with a neighboring suburban community that has realized that roads really do not provide all of the options that they need and has made their highest priority a rail connection into Downtown Salt Lake.

We are hoping, and I think with Federal assistance it would make a difference in how quickly that we can undertake the initiation and development of those, within the next 5 years, which is very ambitious but we have been ambitious with our rail programs and have seen great success. We want to keep building on that.

As was mentioned, multi-modal approaches are the real key. Transit has to be convenient and accessible and safe and reliable. To do that, we need service that is frequent and is accessible for people. We need bikeway systems in a valley like ours, and big wide streets like ours should be so bike-able, but people are afraid to get out on the streets to commute.

So, we are looking to alter our own allocation of resources so we invest much more heavily in transit to try to rebalance the equation a little bit as Portland has does and as we hope happens in future Federal legislation.

Senator MERKLEY. Mr. Chair, I see my 2 hours has evaporated rather quickly. I will just note that, as you proceed, Oregon Iron Works is now building streetcars, the first streetcar built in America in a generation, and we certainly invite you to come out and have a ride on our streetcar system and talk to Oregon Iron Works as well.

Thank you.

Senator CARPER. Those 2 hours went by quickly, did they not?

Senator MERKLEY. They certainly did.

Senator CARPER. Thanks for those questions.

I have a question for Mr. Winkelman next, and the maybe one for Mr. Kuntz, and we will bounce around a little bit. If Senator Merkley is still around, we will go back to him for another 2 hours.

Senator MERKLEY. Mr. Chair, I do apologize but I have to return to the healthcare markup. My regrets.

Senator CARPER. I understand. God bless you.

For Mr. Winkelman, if you would. In your opening statement, I think you stated that comprehensive travel efficiency strategies can reduce vehicles miles traveled by, I think you said 10 percent, the equivalent of taking maybe 30 million cars off the road. The environmental and economic advantages of building new transit systems with freight rail capacity and smarter development are, I think, pretty well established.

These types of projects will provide greenhouse reduction over a long period of time. What can we do in the short term, though, maybe in the next couple of years, 2 or 3 years, to reduce emissions from the transportation sector? And can dedicating resources to the transportation sector in the upcoming climate bill reduce emissions in the short term?

Mr. WINKELMAN. Thank you, Senator. Those long-term strategies also deliver in the short term. If you remember——

Senator CARPER. Would you talk about that?

Mr. WINKELMAN. Say again?

Senator CARPER. Would you talk about that, please?

Mr. WINKELMAN. Thank you. The fuel prices, if you remember from last year, and the record transit ridership we saw when people responded to that by getting on the bus, getting on the train, actually that ridership maintained in spite of the declined economy. So, certainly investments in transit, improving operation and ex-

panding the system, can reduce short-term greenhouse gas emissions.

Look at a place like Arlington, Virginia, which has had continuous investment in transit and sidewalks. The people there drive 60 percent less than the regional average here. So they are spending that much less money. So they have those options right now in the real time to respond to. New York City increased bicycle commuting by 70 percent in just 5 years. Places like Las Cruces, New Mexico had a Safe Walk to School Program that reduced CO_2 in 1 year.

Interestingly, telecommuting right now saves on the order of 60 million metric tons of CO_2 per year. That is cheap and easy to do, and it is something that also can apply in rural areas, especially if you improve broadband coverage, for example.

So, there are a number of examples that can deliver in the short term, and I list more in my written testimony. Certainly, investment from the climate bill in terms of climate allowances can reduce emissions in the short term cost effectively, and as I lay out, also leading to long-term economic benefits.

Senator CARPER. OK. Thanks. I would really like to just ask a follow up question of you, if I could. In terms of cost effectiveness, how do strategies to reduce emissions from the transportation sector compare to reductions in other sectors, for example with respect to utilities? If designed correctly, is designating a significant portion of funds to transportation accompanying a climate bill cost effective?

Mr. WINKELMAN. Thank you, Senator.

I think we have all seen the McKinsey Curves, and if you look at carbon capture and storage, that can be on the order of $60 per tons of CO_2, solar on the order of $30 per ton. As we lay out in our report on Travel Efficiency, Sacramento is saving $200 per ton of CO_2. Calculations show that Portland is saving $1,000 per ton CO_2 on bicycle infrastructure. And a McKinsey analysis for the State of Georgia shows in the area of $20,000 per ton of CO_2 savings.

But of course looking at a broader economic perspective of avoided infrastructure costs, fuel cost savings, increased tax revenues, and leveraged private investment, certainly those cost-effective strategies on travel efficiency compare nicely to those more expensive options in other sectors. We are going to need them all, but certainly you want to do the efficient stuff and the stuff that pays back.

Senator CARPER. All right. Thank you.

Mr. Kuntz, a question for you. I was really struck and impressed by some of the strategies that you have employed in your company to reduce fuel consumption, energy consumption. I think you mentioned tires, I think you mentioned anti-idling strategy, and I think you mentioned—I will paraphrase this—driving habits, the way that your drivers are driving the vehicles. Talk about the latter for us, if you would.

Mr. KUNTZ. Yes, there are several things that drivers, both in cars and commercial vehicles, do and can do that make their fuel consumption a lot worse or a lot better. And a lot of this, in trucking, is their energy to speed up and slow down a truck. That costs

a lot. So, if you can drive more consistently and not be speeding up and braking, speeding up and braking, and things like that, it drastically reduces energy.

Unfortunately, the congestion that we are being asked to drive in gets worse and worse. It is harder for us to not do that type of behavior. So, it is more of a consistent driving pattern that does not burn energy that we try to teach our drivers.

Senator CARPER. I am always struck by drivers, when I see people at a street with traffic lights or stop signs, or even out on the more open highways, how people will accelerate only to have to stop in like 100 or 200 yards, or slow down and come to a stop. It never made much sense to me.

I drive my wife crazy because I do not do that. And like you suggested, I try to keep at a fairly even speed so that I do not burn out my brakes, and I actually level out my fuel consumption as well.

I just want to be able to give my wife your phone number so the next time she starts really carping at me, I will say, call Ray Kuntz and he will straighten this out.

[Laughter.]

Mr. KUNTZ. Thank you. And we might have you talk to our driver's class, too.

Senator CARPER. Well, good, maybe we can do a tag team here.

I think that it is very clear that you are very knowledgeable of the role of the trucking industry and freight movement. Let me just ask you, in order to reduce transportation emissions and improve product delivery, does the U.S. need more inter-modal centers to transfer freight between, say, air and rail and trucks?

Mr. KUNTZ. We put our trailers on rail, and I think the reality is that we need infrastructure investment in the rail as well as we do our highways. As I told you earlier, even if double the amount of the trailers that we put on the rail, we would still be only looking at 1.8 percent. The other reality is that it is going to take a lot of money for the railroads to be able to double their amount of infrastructure to handle doubling of capacity.

So, I think you have to look at an entire transportation package when you are looking at transportation, rail, truck, you know, inter-modal, steamship lines, everything. But what I referred to earlier is that the idea that we can just randomly pull 10 percent off trucks and say that this is going to fix our problem is a little ludicrous because there is no way to do that with our existing infrastructure.

That is what we have to be careful of. I think it is very important that this committee stays on the realities and looks at opportunities to reduce costs of freight and not increase our costs of operations.

Senator CARPER. All right. Thank you.

My last question is probably for Mr. Winkelman, but maybe also be for Mr. Bragdon and Mayor Becker. If you want to take a shot at this, Mr. Winkelman, you can lead off.

Do you believe that reducing emissions from the transportation sector through smarter development forces Americans into behavior that they do not want, they do not want, or are these strategies about providing increased mobility involuntary alternatives to driv-

ing? In Utah and Oregon, have residents embraced these concepts? So, those are my questions. Mr. Winkelman, if you want to take the first shot at that.

Mr. WINKELMAN. Thank you, Senator. In my written testimony, I cite some of the real estate market studies, economic studies, demographic studies that show that actually maybe one-third to one-half of the country wants a more walkable community, wants a more compact development where they can drive shorter distances, where they can walk to the park. So, let us just meet that 40 percent of the market, say, before we worry about forcing something on anyone else.

The point is that a lot of people want this, as my colleagues to my right have pointed out, an experience that they have seen in their communities. The National Association of Realtors, in a 2007 study, shows that 83 percent of Americans want to live in communities where they can drive less. And a leading developer, Chris Weinberger, shows there is really this pent-up demand for more compact development. In fact, we may have plenty of housing stock of the large lot detached, but we are going to need to have more of the townhouses, more of the infill, whether it is in city center or rural village.

There is also evidence that sort of more transit-oriented places with rich transportation choices have held up better in terms of real estate values under the latest downturn in places like Boston, L.A., and Denver. So, the economic, the environmental, the convenience and household cost issues all come together. So, there is a significant chunk of the market that wants this and can help reduce greenhouse gases if we provide it.

Senator CARPER. Thank you.

Mr. Bragdon.

Mr. BRAGDON. Senator Carper, I would agree. As I said before, Portlanders, we like to think we are unique. But in many ways we are typical Americans, and we want the things that typical people want, which is safe and stable neighborhoods, the ability to walk around and satisfy your needs in terms of shopping and getting work and having a park nearby. Those are very traditional things.

So, what we are talking about here in terms of community design really is very typically American. I would say that there is a mythology that the development patterns of the last 30 or 40 years are somehow the product of a market, or the invisible hand, but in fact the development patterns that we have experienced in this country over the last 30 to 40 years are not the product of a market or invisible hand. They are the result of very explicit, as well as implicit, Federal policies, as well as State and local policies.

I think the demographics that Mr. Winkelman mentions are spot-on in terms of family size changing and the work force changing. So, I would agree that this is a direction that has been embraced by people and will be borne out by them.

Senator CARPER. All right. Thank you.

Mayor.

Mr. BECKER. Thank you, Senator. In Utah, I think we have seen the same kind of experience and results that we are hearing in Oregon and in studies around the country. I mentioned Envision Utah. They have done a series of studies that are value-based stud-

ies, looking at what people value and what they want. Then they have gone out and had major public involvement, public engagement efforts.

It has all led to the same conclusion, that people want walkable and livable communities. They want other modes of transportation. They do not like being caught in congestion. It is what has been available to them. As we can offer good choices and alternative modes, I think we are finding in Salt Lake that we are exceeding the projections for transit use. We are finding that as we improve our bikeways, we are getting many, many more people using bikeways.

When I ran for Mayor—I am a cyclist, I did not, before I became Mayor, cycle that much as a commuter because I was scared to. But what I found when I was walking door-to-door running for Mayor, I was so surprised at the number of people whose doorstep I went to and said well, what do you want for Salt Lake City, and they said, you know something, I like to bike, but I do not dare bike in my community.

Well, as we improve the biking infrastructure, we are providing that option for people. And as more and more cyclists get on the road, we feel more secure on the road. That kind of providing that sort of access for people in terms of transportation mode is what I think is going to make the difference. It is not that people do not want to use transit or do not want to bike or have more walkable communities. On the contrary, I think people do. At least we certainly find that in our community.

But we have to provide it. And that means a shift in what we invest in so that we provide that as a good alternative. And we have certainly seen, as I mentioned and as I am sure you know around the world, where the transportation investment has been more balanced in terms of modes that people will use more transit rather than less over time. Obviously, that has great benefits for us in the long term.

We have also found, if I might add for a minute. I mentioned this Clear the Air Challenge that I did with Governor Huntsman and County Mayor Caroon. When we put something in front of people where there is a little bit of a challenge, there is an education component but there is a little bit of a challenge, and people begin to compete and say, you know something, I am going to use transit 1 day a week, or I am going to combine and link my trips together, or I am going to bike with my kids to the store, and we have all of these anecdotal stories that came out of our Clear the Air Challenge, that people jumped on it. Not everyone. But the people who wanted to got involved, got excited and found there were great alternatives.

I think we need to give people opportunities and a little encouragement and some rewards for changing what has become their behavior. And we're hoping that will lead to reductions from a citizen-based effort, not just a government-based imposition.

Senator CARPER. What is the population of Salt Lake now?

Mr. BECKER. The population of the metropolitan area is about 1.5 million. The city itself is about 180,000.

Senator CARPER. And how about Portland?

Mr. BRAGDON. The city of Portland is about 580,000 and our metropolitan region on the Oregon side of the river is about 1.4 million.

Senator CARPER. Mr. Kuntz, where are you from?

Mr. KUNTZ. Helena, Montana.

Senator CARPER. Do you know——

Mr. KUNTZ. Home of Senator Baucus.

Senator CARPER. Home of Senator Baucus. You went to high school there. Is there a high school there? What is it called?

Mr. KUNTZ. Yes. Helena High School.

Senator CARPER. Ironically, he is a graduate of Helena High School, and he is President of the Senate Finance Committee, and the previous chairman of the Senate Finance Committee, Bill Roth from Delaware, is also a graduate of Helena High School. Imagine that, that within a span of like a couple of years, two graduates of Helena High School end up being chairman of the Senate Finance Committee, one from either party. And although Senator Roth is about 30 years older than Senator Baucus, I always accused him of being in the same graduating class.

[Laughter.]

Senator CARPER. We are grateful to each of you for being with us here today. Thank you for bearing with us as we waded through that first panel. You were worth the wait, worth the wait, and we are grateful for your input.

We are going to leave the record open for questions for a while. I do not know if it is a week or two, but it will be open for a while. Some of our colleagues were unable to join us because of other commitments but may want to submit some questions. If you receive those, we just ask that you respond to them promptly.

Again, thank you very, very much.

And with that having been said, this hearing is adjourned.

[Whereupon, at 4:55 p.m., the committee was adjourned.]

[An additional statement submitted for the record follows:]

STATEMENT OF HON. BENJAMIN L. CARDIN,
U.S. SENATOR FROM THE STATE OF MARYLAND

Madam Chairman, thank you for holding this hearing on the transportation piece of the greenhouse gas emissions puzzle and what we can do to address this issue. In last week's hearing I raised this issue with Secretary of Energy Steven Chu and EPA Administrator Lisa Jackson, but we only scratched the surface of this specific issue area.

It is no coincidence that both our transportation and energy infrastructure systems are simultaneously at a crossroads. They are connected to each other by what drives them both—fossil fuels. Fortunately, this committee has a tremendous opportunity to act on this issue.

It is on the matter of fuel consumption where our Federal policies toward these intersecting policies diverge from one another.

Americans are encouraged to conserve energy, which reduces our reliance on foreign oil, reduces carbon emissions, and during these trying economic times saves consumers' money. To many, this means driving less, purchasing fuel efficient vehicles and using public transportation to get around—all of which I support. Unfortunately, funding for our surface transportation systems is reliant upon sustained, if not increased, fuel consumption in the form of the gas tax.

Because of this divergence in policy, along with the greenhouse gas emissions that come from burning fossil fuels, we need to rethink fuels and transportation planning and explore better, cleaner, more efficient options.

FUELS

Be it coal fired power plants or internal combustion engines, the burning of fossil fuels is the greatest source of greenhouse gases from human activities. The trans-

portation sector is responsible for 30 percent of the United States' greenhouse gas emissions. That is why it is imperative we shift away from fossil fuels to power vehicles.

The proposed method for capturing greenhouse gas emissions from the transportation sector is by accounting for fuels "upstream" where we import oil or at the point of production at the refinery. Ultimately, the cost is passed down to consumers. These costs would be reduced significantly over time as we move toward the production of clean fuels.

We must diversify our transportation power sources to include ethanol refined from algae, switch grass and other sources of biomass—sources that do not have a direct effect on consumer food prices. Plug-in electric vehicles powered by renewable energy and hydrogen fuel cells will also reduce our dependence on foreign oil, reduce our carbon emissions, and spur commercial and job growth and marketplace competition.

TRANSIT AND SMART GROWTH

While burning fossil fuels is the source of transportation carbon emissions, the amount of carbon emissions is a factor of how much time people spend in their cars and trucks, especially the extraordinary waste of fuel and time spent when motorists are stuck in traffic. Secretary Chu's and Administrator Jackson's answers to my question last week noted that increased availability and accessibility of public transportation would lead to significant carbon emission reductions.

Last week, the Texas Transportation Institute released its 2009 Mobility Report, which notes that public transportation saved travelers 646 million hours in travel time in 2007. This same report had troubling news that the DC Metropolitan Area, including Maryland, now has the second worst traffic in the Nation. The report goes on to note that each motorist in the Maryland-DC-Virginia metro area loses an average of 62 hours and wastes an average of 42 gallons of fuel a year because they are stuck in traffic. This is despite Metro ridership being the second highest in the country beyond New York City.

According to the American Public Transportation Association, public transit currently saves 37 million metric tons of carbon dioxide emissions per year. These carbon savings become even greater as more and more energy is generated from renewable sources.

To increase the efficiency of our transportation infrastructure and improve accessibility to transit, transportation plans' carbon footprint must be taken into consideration prior to approval or receipt of Federal transportation funds. Building livable communities that promote multi-modal transportation options is essential to reducing the transportation sector's carbon emissions.

And we do not need to reinvent the wheel to achieve these goals. The framework established under the Clean Air Act is a fine model for also achieving greenhouse gas reductions from a region's transportation sector.

Sweeping improvements in efficiency and pollution reduction to our Nation's transportation systems are just as visionary as President Eisenhower's concept of a national infrastructure system and is equally attainable.

The opportunity for economic expansion and job growth in these sectors is nearly limitless, but we must act now to make sure these innovations are domestically developed and produced by hardworking Americans.

I look forward to working with my colleagues to promote a more efficient transportation system and secure investments in transit from revenues generated by the legislation we construct. Again, I thank the Chairman for holding this hearing, and I look forward to our witnesses' testimony.

[Additional material submitted for the record follows:]

National Congestion Tables

Table 1. What Congestion Means to You, 2007

Urban Area	Annual Delay per Traveler		Travel Time Index		Wasted Fuel per Traveler	
	Hours	Rank	Value	Rank	Gallons	Rank
Very Large Average (14 areas)	**51**		**1.37**		**35**	
Los Angeles-Long Beach-Santa Ana CA	70	1	1.49	1	53	1
Washington DC-VA-MD	62	2	1.39	4	42	2
Atlanta GA	57	3	1.35	10	40	3
Houston TX	56	4	1.33	11	40	3
San Francisco-Oakland CA	55	5	1.42	3	40	3
Dallas-Fort Worth-Arlington TX	53	6	1.32	12	36	8
Detroit MI	52	9	1.29	20	34	11
Miami FL	47	11	1.37	5	33	12
New York-Newark NY-NJ-CT	44	14	1.37	5	28	20
Phoenix AZ	44	14	1.30	17	31	14
Seattle WA	43	19	1.29	20	30	15
Boston MA-NH-RI	43	19	1.26	25	29	19
Chicago IL-IN	41	21	1.43	2	28	20
Philadelphia PA-NJ-DE-MD	38	29	1.28	24	24	34
Large Average (29 areas)	**35**		**1.23**		**24**	
San Jose CA	53	6	1.36	8	37	7
Orlando FL	53	6	1.30	17	35	9
San Diego CA	52	9	1.37	5	40	3
Tampa-St. Petersburg FL	47	11	1.31	14	30	15
Denver-Aurora CO	45	13	1.31	14	30	15
Riverside-San Bernardino CA	44	14	1.36	8	35	9
Baltimore MD	44	14	1.31	14	32	13
Las Vegas NV	44	14	1.30	17	30	15
Charlotte NC-SC	40	23	1.25	26	27	23
Sacramento CA	39	24	1.32	12	28	20
Austin TX	39	24	1.29	20	27	23
Minneapolis-St. Paul MN	39	24	1.24	28	27	23
Jacksonville FL	39	24	1.23	32	27	23
Indianapolis IN	39	24	1.21	34	27	23
San Antonio TX	38	29	1.23	32	27	23
Portland OR-WA	37	34	1.29	20	26	31
Raleigh-Durham NC	34	36	1.17	43	22	37
Columbus OH	30	40	1.18	39	21	39
Virginia Beach VA	29	41	1.18	39	19	41
Providence RI-MA	29	41	1.17	43	18	42
St. Louis MO-IL	26	47	1.13	52	17	46
Cincinnati OH-KY-IN	25	51	1.18	39	18	42
Memphis TN-MS-AR	25	51	1.12	57	15	52
New Orleans LA	20	61	1.17	43	12	65
Milwaukee WI	18	67	1.13	52	13	60
Pittsburgh PA	15	70	1.09	70	9	71
Kansas City MO-KS	15	70	1.07	80	9	71
Cleveland OH	12	76	1.08	77	8	74
Buffalo NY	11	79	1.07	80	7	77
90 Area Average	**41**		**1.29**		**28**	
Remaining Areas						
48 Urban Areas Over 250,000 Popn	24		1.16		15	
301 Urban Areas Under 250,000 Popn	18		1.10		10	
All 439 Urban Areas	**36**		**1.25**		**24**	

Very Large Urban Areas—over 3 million population. Large Urban Areas—over 1 million and less than 3 million population.

Annual Delay per Traveler – Extra travel time for peak-period travel during the year divided by the number of travelers who begin a trip during the peak period (6 to 9 a.m. and 4 to 7 p.m.). Free-flow speeds (60 mph on freeways and 35 mph on principal arterials) are used as the comparison threshold.

Travel Time Index – The ratio of travel time in the peak period to the travel time at free-flow conditions. A value of 1.30 indicates a 20-minute free-flow trip takes 26 minutes in the peak

Note: Please do not place too much emphasis on small differences in the rankings. There may be little difference in congestion between areas ranked (for example) 6th and 12th. The actual measure values should also be examined.

Also note: The best congestion comparisons use multi-year trends and are made between similar urban areas.

Table 1. What Congestion Means to You, 2007, Continued

Urban Area	Annual Delay per Traveler Hours	Rank	Travel Time Index Value	Rank	Wasted Fuel per Traveler Gallons	Rank
Medium Average (31 areas)	**23**		**1.14**		**15**	
Tucson AZ	41	21	1.24	28	26	31
Oxnard-Ventura CA	38	29	1.24	28	27	23
Louisville KY-IN	38	29	1.20	35	26	31
Nashville-Davidson TN	37	34	1.15	48	23	35
Albuquerque NM	34	36	1.18	39	22	37
Bridgeport-Stamford CT-NY	33	38	1.25	26	27	23
Birmingham AL	32	39	1.15	48	21	39
Salt Lake City UT	27	45	1.19	37	18	42
Oklahoma City OK	27	45	1.12	57	17	46
Honolulu HI	26	47	1.24	28	18	42
Omaha NE-IA	26	47	1.16	47	17	46
Sarasota-Bradenton FL	25	51	1.19	37	15	52
Colorado Springs CO	23	54	1.13	52	14	56
Allentown-Bethlehem PA-NJ	22	55	1.14	50	14	56
Grand Rapids MI	22	55	1.10	64	13	60
Tulsa OK	22	55	1.10	64	13	60
Hartford CT	21	60	1.12	57	15	52
Fresno CA	20	61	1.13	52	13	60
Richmond VA	20	61	1.09	70	13	60
El Paso TX-NM	19	64	1.12	57	12	65
New Haven CT	19	64	1.11	63	14	56
Albany-Schenectady NY	19	64	1.10	64	12	65
Poughkeepsie-Newburgh NY	17	68	1.09	70	10	68
Dayton OH	14	73	1.09	70	10	68
Toledo OH-MI	14	73	1.08	77	9	71
Indio-Cathedral City-Palm Springs CA	13	75	1.14	50	8	74
Bakersfield CA	12	76	1.09	70	7	77
Springfield MA-CT	11	79	1.06	85	7	77
Rochester NY	10	83	1.06	85	6	83
Akron OH	9	85	1.07	80	6	83
Lancaster-Palmdale CA	6	89	1.10	64	3	89
Small Average (16 areas)	**19**		**1.10**		**11**	
Charleston-North Charleston SC	38	29	1.20	35	23	35
Cape Coral FL	29	41	1.17	43	17	46
Pensacola FL-AL	28	44	1.13	52	16	50
Knoxville TN	26	47	1.12	57	16	50
Columbia SC	22	55	1.10	64	14	56
Little Rock AR	22	55	1.09	70	15	52
Salem OR	16	69	1.10	64	10	68
Laredo TX	15	70	1.12	57	8	74
Boulder CO	12	76	1.09	70	7	77
Eugene OR	11	79	1.08	77	7	77
Beaumont TX	11	79	1.05	87	7	77
Anchorage AK	10	83	1.07	80	6	83
Corpus Christi TX	9	85	1.05	87	5	86
Spokane WA	9	85	1.05	87	5	86
Brownsville TX	8	88	1.07	80	5	86
Wichita KS	6	89	1.02	90	3	89
90 Area Average	**41**		**1.29**		**28**	
Remaining Areas						
48 Urban Areas Over 250,000 Popn	24		1.16		15	
301 Urban Areas Under 250,000 Popn	18		1.10		10	
All 439 Urban Areas	**36**		**1.25**		**24**	

Medium Urban Areas—over 500,000 and less than 1 million population. Small Urban Areas—less than 500,000 population.

Annual Delay per Traveler – Extra travel time for peak-period travel during the year divided by the number of travelers who begin a trip during the peak period (6 to 9 a.m. and 4 to 7 p.m.). Free-flow speeds (60 mph on freeways and 35 mph on principal arterials) are used as the comparison threshold.

Travel Time Index – The ratio of travel time in the peak period to the travel time at free-flow conditions. A value of 1.30 indicates a 20-minute free-flow trip takes 26 minutes in the peak

Note: Please do not place too much emphasis on small differences in the rankings. There may be little difference in congestion between areas ranked (for example) 6th and 12th. The actual measure values should also be examined.

Also note: The best congestion comparisons use multi-year trends and are made between similar urban areas.