

**A CREDIT WHERE CREDIT IS DUE: WHY
CONGRESS' LONG-AWAITED EQUALIZATION OF
THE TRANSIT PASS AND QUALIFIED-PARKING
EXCLUSIONS, WHILE LAUDABLE, DOES NOT GO
FAR ENOUGH**

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I. INTRODUCTION

After nearly a decade of attempts by legislators to bring parity to the mass transit and qualified-parking individual income tax exclusions under Section 132(f)(2) of the Internal Revenue Code ("IRC")¹, Congress has taken the important step of offering commuters who choose to travel via mass transit a monetary incentive equal in amount to the incentive available to commuters who choose to drive to work and park their vehicles.² While the

¹ Transportation Equity Act for the 21st Century, Pub. L. No. 105-178, 112 Stat. 107 (1998) (successfully increasing the amount excludable for employer-sponsored transit passes from \$60 to \$100 but still not equalizing the transit-pass exclusion to the exclusion for qualified parking); Commuter Benefits Equity Act of 2003, S. 661, 108th Cong. (2003) (increasing the amount excludable for employer-sponsored transit passes from \$100 to \$190 and increasing the exclusion for qualified-parking expenses from \$175 to \$190); Commuter Benefits Equity Act of 2005, S. 787 109th Cong. (2005) (increasing the amount excludable for employer-sponsored transit passes from \$100 to \$200 and increasing the exclusion for qualified-parking expenses from \$175 to \$200); Highway Reauthorization and Excise Tax Simplification Act of 2005, S. 1230, 109th Cong. (2005) (increasing the amount excludable for employer-sponsored transit passes from \$100 to \$155 and increasing the exclusion for qualified-parking expenses from \$175 to \$200).

² See American Recovery and Reinvestment Act of 2009, Pub. L. No. 115-5, 123 Stat. 115 (2009). The law is not yet codified but the relevant provision can be found in Div. B, Title I, Subtitle B, Part VI, § 1151(a).

equalization of the individual income tax exclusions available for mass transit and parking is a laudable and important step toward providing a true incentive for commuters to choose mass transit over driving to work, the policy change does not go far enough. A more powerful tax incentive is needed in order to persuade drivers to abandon the comfort of their automobiles and to choose mass transit.

Academics, politicians, and journalists have repeatedly called on Congress to reform the tax system in order to eliminate tax provisions that encourage environmentally-destructive behavior and to encourage commuters to choose an environmentally-friendly mode of transportation.³ The increasing severity of the climate change threat in recent years has made taking such steps even more important. Furthermore, the substantial impact transportation source greenhouse gas emissions (“GHGs”) have on the environment in comparison to other sources of the pollutants justifies tailoring our tax policies to target emissions from transportation sources.⁴

This Note proposes one modest but effective step toward reducing greenhouse gas emissions from transportation sources and combating global warming. GHGs could be significantly reduced by shaping the federal tax policy in a manner that provides an incentive for individuals to cease relying so heavily on their automobiles for transportation and to instead utilize mass and regional transit.⁵ More specifically, this Note proposes that

³ Tax incentives were proposed to Congress as a tool in the fight against global warming as early as President Clinton’s time in office. See *Department of Treasury Tax Analysis, Review of Administration Climate Change Proposal: Hearing Before the S. Comm. on Energy and Natural Resources*, 105th Cong. (1998), <http://ustreas.gov/press/releases/rr2492.htm> (statement of John Karl Scholz, Deputy Assistant Secretary, Department of Treasury) (discussing the potential for tax incentives for electric vehicles, mass transit, and energy-efficient construction to aid in the fight against global warming).

⁴ Transportation is one of the major causes of global warming for which humans are responsible. MARK MASLIN, *GLOBAL WARMING: A VERY SHORT INTRODUCTION* 161 (2009) (stating that transportation accounts for thirteen percent of greenhouse gas emissions globally and noting that, in the UK, scientists predict that any gains made in the fight against global warming since 1990 could be wiped out by increased car use over the next twenty years).

⁵ Fareed Zakaria, *Foot-Dragger? No, a Fighter*, NEWSWEEK, Oct. 29, 2007, at 50, available at <http://www.newsweek.com/id/57495> (quoting the belief of one of the preeminent climate scientists about the central role mass transit must play in any

Section 132 of the IRC, which provides taxpayers with an exclusion for income spent on mass-transit passes, be modified so that taxpayers are offered a credit, the Stimulus for Urban and Suburban Transit to Abate Increasing Noxious Emissions (“SUSTAINED”) Credit, in place of the current exclusion.⁶ In addition, this Note suggests an expansion of the provision to also provide a tax incentive for regional travel by rail and common carrier bus service.⁷

Replacing the current exclusion for mass transit with a tax credit has several advantages. First, it provides a more powerful incentive than the current exclusion. A mass and regional travel tax credit provides a true incentive for commuters and travelers to get out of their carbon-monoxide emitting automobiles and travel by a more environmentally-friendly mass or regional transportation alternative. Second, it curtails the “perverse incentive” created by the sizeable income exclusion for parking under the IRC, which is equal in amount to the exclusion available for commuters who choose mass transit. Third, the incentive allows taxpayers to reap a tax benefit from mass transportation directly without having to participate in an employer-sponsored transit-pass program. Fourth, and lastly, instituting a credit in place of the current exclusion for mass transit is sound tax policy and is a step in increasing the overall efficiency, in a structural sense, of the U.S. tax schema.

This Note is organized as follows. Part II provides an overview of the climate change problem and of the role of

strategy to abate global warming).

⁶ Tax credits have been proposed as a means of encouraging all kinds of socially-responsible behavior, from eating more healthily to donating blood and organs. See Chris L. Winstanley, Comment, *A Healthy Food Tax Credit: Moving Away from the Fat Tax and Its Fault-Based Paradigm*, 86 OR. L. REV. 1151 (2007) (healthy eating); Joseph B. Clamon, *Tax Policy As a Lifeline: Encouraging Blood and Organ Donation Through Tax Credits*, 17 ANNALS HEALTH L. 67 (2008) (donating blood and organs). A tax incentive is an ideal choice for encouraging commuters to choose mass transit because it is a more politically viable policy tool than other policy instruments, such as regulations and, according to some polls, is preferred by most Americans over environmental regulations. See Winstanley, *supra*, at 1186-87 (noting the political popularity of the Earned Income Tax Credit and of tax incentives in general); *The Air They Breathe*, ECONOMIST, Sept. 30, 2000, at 31.

⁷ For simplicity's sake, any reference to mass transit from this point forward will also refer to regional rail and common-carrier bus service in addition to local public transportation service.

transportation in climate change, including a brief look at mass transit in the United States. In addition, it considers the different legislative solutions policymakers have created in order to reduce greenhouse gas emissions, including tax legislation. Part III lays out the proposed mass-transit tax credit and analyzes why a more powerful incentive is needed to encourage commuters to choose mass transit over driving. Part IV more narrowly examines the proposed credit in relation to the current transit pass and parking exclusions under Section 132 and analyzes how the credit could provide a stronger incentive to choose mass transit.

II. BACKGROUND

A. *We're Driving Head-On Into Climate Change*

Many nations and scientists view global warming as the most formidable environmental threat of our times. A recent report by the International Panel on Climate Change ("IPCC") states that human activity has contributed to greenhouse gas levels within our atmosphere and that current levels are nearly a third more than or twice pre-industrial levels.⁸ The United Nations Environment Programme ("UNEP"), whose aim is to care for the environment in order to ensure the environment's suitability for human life,⁹ recently warned that "humanity's very survival is at risk."¹⁰ While there is consensus about the existence and gravity of the global-warming threat, there is little consensus about how, as a

⁸ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers, in CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS*, 1, 2-3 (2007) [hereinafter: IPCC, WORKING GROUP I SUMMARY] (noting that the global atmospheric concentrations of methane, carbon dioxide, and nitrous oxide in 2005 range from nearly a third more (carbon dioxide and nitrous oxide) to more than double (methane) the concentration of levels during pre-industrial times).

⁹ United Nations Environment Program, About UNEP: The Organization, <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=43> (last visited Apr. 5, 2009) (stating that the organization's mission is to provide leadership for caring for the environment and to improve the quality of life for both current and future generations).

¹⁰ Anne-Marie Conway, *Survival of the Muddiest Week that Was. . .*, SUNDAY TELEGRAPH (London), Oct. 28, 2007, at 31; see also Lewis Smith, "Humanity's Very Survival" is at Risk Says UN, TIMES (London), Oct. 26, 2007, <http://www.timesonline.co.uk/tol/news/uk/science/article2739926.ece>.

world community, as a nation, and as individuals, we should reduce greenhouse gas emissions to obviate the ecological destruction many predict global-warming portends.¹¹

Political leaders in the United States are particularly uncertain about how to most effectively combat global warming.¹² Some policymakers emphasize the role of industry and minimize the benefit of changes in individual behavior.¹³ A number of political leaders advocate alternative energy sources such as nuclear power,¹⁴ fuel from crops, or even coal.¹⁵ Still others advocate for a fuel tax for both consumers¹⁶ and industry or for a

¹¹ Even nations who have already adopted ambitious policies to fight global warming disagree with each other about what the best solution is. In Europe, there is disagreement over whether renewable energy targets should be binding and how nuclear energy should be classified within the green energy framework. Dan Bilefsky, *Europe Divided on How to Fight Global Warming*, N.Y. TIMES, Mar. 9, 2007, at A3.

¹² This should come as no surprise given how the official position of the United States has radically changed from not even acknowledging global warming to now recognizing the phenomenon as a serious threat. See Jeanne Cummings, *White House Does an About-Face on Vow to Regulate Carbon Dioxide as Pollutant*, L.A. TIMES, Nov. 2, 2007, at A1.

¹³ For an overview and historical account of lawmakers' differing approaches to emissions from individual and industrial polluters, see Michael P. Vandenberg, *From Smokestack to SUV: The Individual as Regulated Entity in the New Era of Environmental Law*, 57 VAND. L. REV. 515 (2004). Vandenberg's article also discusses the proportion of emissions attributable to individual behavior by pollutants and analyzes the different policy tools available for reducing individual source emissions. *Id.* at 542-84.

¹⁴ Thomas Content, *Midwest Pact Sought in Climate Change; Governors to Gather in Milwaukee Next Week*, MILWAUKEE J. SENTINEL, Nov. 10, 2007, at A1 (noting the Bush Administration's support of nuclear power as a way of reducing GHG emissions).

¹⁵ For example, Congress has recently decided to provide funding for "Fossil Energy Research and Development" under Title IV of the recently passed economic-stimulus bill, the American Recovery and Reinvestment Act of 2009. Pub. L. No. 115-5, 123 Stat. 115 (2009). Although the final version of the bill did not expressly reference clean coal technology, but instead only designated funds for fossil energy research generically, an earlier version of the bill specifically appropriated funds to develop "clean-coal" technology under that same U.S. Department of Energy program. H.R. 1, tit. iv., 111th Cong. (as passed by Senate, Feb. 10, 2009). Congress's provision of funds in the stimulus bill to the U.S. Department of Energy's Fossil Energy Program comes on the heels of repeated calls by legislators for clean-coal energy research and development. See Douglas Jehr & Lizette Alvarez, *Conservation Bill Benefits Coal Industry, Critics Say*, N.Y. TIMES, Jul. 25, 2001, at A14; see also U.S. Dep't of Energy, *Clean Coal Technology & The Clean Coal Power Initiative*, <http://www.fossil.energy.gov/programs/powersystems/cleancoal.htm> (last visited Mar. 1, 2009).

¹⁶ See, e.g., *It's July 1, So Pay Up*, N.Y. TIMES, July 1, 2007, at 14CN-15 (announcing

system of emission credits under which companies with emissions below their goals sell credits to companies unable to cut emissions. Newly-elected President Obama strongly advocated for a market-based emissions trading program on the campaign trail and has included such a program in his budget proposal to Congress.¹⁷ As legislators grapple with what approach to adopt and flounder over how to respond to mounting evidence showing the imminent harms we are faced with from climate change, we must confront an uncomfortable reality: the global warming problem is not improving.

In fact, it is getting worse. Since 1990, GHGs have increased 17% in the United States.¹⁸ Some public affairs experts have a bleak prognosis for our ability to combat climate change even if we are vigilant in our efforts to reduce GHGs.¹⁹ Our political leaders have begun to take notice of these dire predictions and it appears some progress is being made with the creation of new programs to fight climate change.²⁰ In order to formulate an effective program to stem climate change, programs must be crafted with an understanding of climate change, greenhouse gas emissions, and global warming in general.²¹

the annual increase in the Connecticut gasoline excise tax and describing the putative purpose of the tax as the funding of mass transit).

¹⁷ Jeff Zeleny, *Obama Proposes Capping Greenhouse Gas Emissions and Making Polluters Pay*, N.Y. TIMES, Oct. 9, 2007, at A24 (summarizing Obama's cap-and-trade proposal made on the campaign trail); John M. Broder, *Setting 'Green' Goals*, N.Y. TIMES, February 27, 2009, at A16 (outlining the cap-and-trade program in President Obama's budget and how the money generated from the program will be used to achieve environmental and fiscal goals).

¹⁸ Roberta F. Mann, *On the Road Again: How Tax Policy Drives Transportation Choice*, 24 VA TAX REV. 587, 605 (2005).

¹⁹ Paul J. Saunders & Vaughan Turekian, *Why Climate Change Can't Be Stopped*, FOREIGN POL'Y, Sept. 2007, http://www.foreignpolicy.com/story/cms.php?story_id=3980.

²⁰ This change in policy began during the Bush Administration. See Cummings, *supra* note 12. Since President Obama took office, the United States started to place a higher priority on abating global warming. See Jim Tankersley, *Obama Still Plans to Cut Emissions; A Cap-and-Trade Initiative Would Limit Greenhouse Gases—Some Fear, at the Economy's Expense*, L.A. TIMES, Jan. 25, 2009, at A11.

²¹ One example of a policy implemented with only good intentions but that proved to be flawed because of the failure of lawmakers to take into account the mechanisms underlying global warming is the European Union's (EU) initial reliance on biofuels as a way of meeting its renewable energy source targets. See Lewis Smith, *Biofuels "Do More Harm than Good to Environment" Says Royal Society*, TIMES (London), Jan. 14, 2008, <http://www.timesonline.co.uk/tol/news/>

1. The Current State of Climate Change and the Scientific Basis for Global Warming

Because climate change is, by definition, a trend in climate conditions, and therefore represents a climate property as measured over an extended period of time, any inquiry into the current state of the phenomenon will involve examining how a particular facet of the climate has changed from a point in time in the past to the present.²² The IPCC recently released its Policymakers' Summary of the Synthesis Report of the IPCC Fourth Assessment Report ("Policymakers' Synthesis Summary"), in which it presented an analysis of key climate-change trends using the most recent data available.²³ The report tracks several climate trends as evidence of the gravity of climate change, including change in temperature, the melting of snow and ice, and the rising of global sea levels.²⁴

In regard to temperature, the past 11 years are among the 12 warmest years on record and a significant warming trend has been observed over the past 100 years in average yearly temperature.²⁵

environment/article3185588.ece (last visited May 5, 2009). One law mandating that five percent of fuel sold in the U.K. be from renewable sources, was not crafted in order to discriminate between renewable fuel sources which ultimately result in lower GHG emissions from those which result in an increase in GHG emissions, after taking into account emissions generated by the production and transport of the fuel. *See id.* (discussing the Renewable Transport Fuels Obligation). In response to the role deforestation, production, and transportation play in the net effect biofuels have on GHG emission levels, the EU has introduced draft laws aimed at restricting the use of biofuels to those that at least offer "a minimum of greenhouse gas savings." *See* James Kanter, *Amid Doubts, Europe May Ban Some Biofuels*, N.Y. TIMES, Jan. 15, 2008, at C1.

²² See the definition of climate change provided in INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 8 (2007) [hereinafter: IPCC, SYNTHESIS REPORT]. The IPCC describes a climate change over an extended period of time as a change that spans decades.

²³ Mike McCarthy, *Here It Is: The Future of the World, in 23 Pages*, INDEPENDENT (London), Nov. 19, 2007, at 22.

²⁴ *Id.*

²⁵ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers, in* CLIMATE CHANGE 2007: SYNTHESIS REPORT 2 (2007) [hereinafter: IPCC, SYNTHESIS REPORT SUMMARY] (describing the notably warmer temperatures for 11 of the past 12 years and comparing the 100-year linear trend for temperature for the Fourth Assessment Report of 0.74 to the smaller corresponding 100-year linear trend from the Third Assessment of 0.6).

Decreases in the amount of snow and ice and a rise in sea level are also consistent with a rise in global temperatures. The amount of snow coverage globally and number of mountain glaciers have decreased.²⁶ In the Arctic, glaciers have diminished in size on average by 2.7 percent per decade.²⁷ The sea level has risen over the past 47 years on average at a rate of 1.8 millimeters per year.²⁸ Over the past 15 years, the average rise has been even more pronounced, with a rate of 3.1 millimeters per year.²⁹ These physical phenomena, both the rise in temperature and the subsequent effect on the earth's natural systems, are discernable by examining a large number of data sets compiled over a larger geographical area and from more comprehensive observations than were used in previous IPCC reports.³⁰

Not only do the key climate change indicators demonstrate that global warming is occurring, but there is an increase in the severity of global warming as evidenced by the rise in temperature and sea levels and the decrease of snow and ice. The changes observed are more severe than previously thought,³¹ and the scientists conducting the research relied upon in the IPCC Fourth Assessment Report ("Fourth Report") have deduced that many of these observations can be made with great certainty.³² In fact, the authors of the Policymakers' Synthesis Summary stated that it is

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ IPCC, WORKING GROUP I SUMMARY, *supra* note 8, at 1, 5.

³¹ Sharon Begley, *The 'Geo-Engineering' Scenario*, NEWSWEEK, Nov. 23, 2007, at 55 (observing that our estimations of climate change, the loss of arctic ice and the rise in sea levels in particular, have been too conservative and that the changes have actually been more severe than anticipated).

³² A number of the key temperature changes and arctic ice observations have been observed with a high level of certainty. IPCC, SYNTHESIS REPORT SUMMARY, *supra* note 25, at 2 (stating that it is very likely that cold nights have decreased and hot nights have increased, that it is very likely that the period between 1951 and 2000 was very likely warmer on average than any other 50-year period over the preceding 500 years and that it is likely that across the earth, the area affected by drought has increased since the 1970s). Not only is the level of certainty great for the physical phenomena described in the IPCC Fourth Assessment, scientists have gained a better grasp of how to assess the certainty of the climate phenomena they are studying. IPCC, WORKING GROUP I SUMMARY, *supra* note 8, at 1 (discussing how the work in the IPCC Fourth Assessment involved a more "extensive exploration of uncertainty ranges.").

“unequivocal” that global warming is occurring and that it is very likely humans are to blame for the change in climate.³³ Notably, the climate observations and predictions offered by the IPCC in its reports are the product of scientific inquiry and are representative of the views of the international scientific-community.³⁴

2. The Causes and Consequences of Global Warming

Global warming is largely attributable to human activity.³⁵ Although natural processes contribute to global warming in a small degree, human activity is overwhelmingly to blame for the observed increase in the earth’s temperature since the mid-1800s, corresponding to the beginning of the industrial era.³⁶ Scientists have concluded that the primary cause of global warming is greenhouse gas emissions and that carbon dioxide (“CO₂”) emissions account for the greatest threat among all GHGs.³⁷ Other air pollutants that contribute to global warming include methane, nitrous oxide, and aerosols.³⁸ In the United States, 84 percent of

³³ IPCC, SYNTHESIS REPORT SUMMARY, *supra* note 25, at 2, 6.

³⁴ About the IPCC—Intergovernmental Panel on Climate Change, <http://www.ipcc.ch/about/index.html> (last visited March 12, 2008) (describing the IPCC as a scientific body comprised of hundreds of scientists who work alongside policymakers to provide decision-makers with a neutral, scientifically-based, peer-reviewed source of information about climate change).

³⁵ Thomas H. Maugh II, *No Stopping Climate Change U.N. Says*, L.A. TIMES, Nov. 2, 2007, at A12 (citing the IPCC Fourth Assessment in which the UN panel states that global warming is “very likely” the result of human activity).

³⁶ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Frequently Asked Questions Working Group I*, in CLIMATE CHANGE 2007: THE SCIENTIFIC BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT Question 2.1 at 100 (2007) [hereinafter: IPCC, WORKING GROUP I FAQ] (stating that natural occurrences such as solar changes or volcanic eruption play only a small role relative to the role of human activity in climate change).

³⁷ IPCC, SYNTHESIS REPORT SUMMARY, *supra* note 25, at 1 (pointing to GHGs as the dominant force causing climate change and singling out CO₂ as the most important human-generated GHG); Paul Davidson, *States Take on Global Warming; More than Half Target Emissions*, USA TODAY, Jan. 21, 2008, at 1A (describing greenhouse-gas emissions as the pollution that causes global warming); Andy Vuong, *Nuclear’s Return: The Power Source is Back in the Spotlight with its Low Emissions and Fuel Costs but Safety Concerns Linger*, DENVER POST, Feb. 10, 2008, at K1 (identifying carbon emissions as the primary cause of global warming).

³⁸ Greenhouse Gases, *Climate Change and Energy*, <http://www.eia.doe.gov/oiaf/1605/gccebrow/chapter1.html> (last visited Apr. 18, 2009) (identifying gases other than CO₂ that exhibit atmospheric warming properties).

GHGs are from CO₂ emissions.³⁹ CO₂ emissions from fossil-fuel combustion, or energy-related emissions, account for 98 percent of all GHG emissions.⁴⁰ Hence, an examination of the sources of fossil-fuel CO₂ emissions provides a fairly representative picture of the sources of the GHGs responsible for global warming.⁴¹

A closer look at the sources of these fossil-fuel CO₂ emissions is helpful in understanding the origins of anthropogenic GHGs. In 2005, 21% of energy-related CO₂ emissions were from residences.⁴² That same year, commercial sources accounted for 18% of energy-related CO₂ emissions and industrial sources accounted for 28% of energy-related CO₂ emissions.⁴³ Notably, the largest share of CO₂ emissions in 2005 was from transportation sources, accounting for 33% of all energy-related CO₂ emissions in 2005.⁴⁴ Data recently published by the IPCC supports this dominant role of transportation sources in emitting CO₂ by identifying fossil fuel combustion, the process relied upon to power automobiles and trucks, as the primary culprit in the emitting of increasing levels of CO₂.⁴⁵

A closer examination of the transportation activities responsible for these high emissions levels further elucidates

³⁹ Energy Information Administration, Emissions of Greenhouse Gases in the United States, <http://www.eia.doe.gov/oiaf/1605/ggrrpt/carbon.html> [hereinafter: DEP'T OF ENERGY REPORT] (last visited Apr. 18, 2009).

⁴⁰ *Id.*

⁴¹ The observation that CO₂ emissions are roughly representative of GHGs is a bit of an oversimplification because certain other GHGs are more potent per part than CO₂. Potency is measured by assessing how much warming a particular GHG causes and assigning it a number on a scale. This is the GHGs global warming potential ("GWP"). U.S. ENVTL. PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2007 1.6-1.7, available at <http://epa.gov/climatechange/emissions/downloads09/InventoryUSGhG1990-2007.pdf>. Methane, for example, has 23 times the warming potential than does CO₂. Alexia Elejalde-Ruiz, *Green Alert; Bottled Water Not the Only Everyday Habit that Can Harm the Environment*, CHICAGO TRIBUNE, Dec. 17, 2007, at 6. Notwithstanding this difference in potency, CO₂ is still regarded as the "most important" human-generated GHG. IPCC, SYNTHESIS REPORT SUMMARY, *supra* note 25, at 5 (stating that CO₂ is the most important GHG and supporting this assertion with data on the large quantity of CO₂ emitted).

⁴² DEP'T OF ENERGY REPORT, *supra* note 39.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ IPCC, WORKING GROUP I FAQ, *supra* note 36, Question 7.1 at 23 ("Emissions from fossil fuel combustion, with contributions of cement manufacture, are responsible for more than 75% of the increase in atmospheric CO₂ concentration since pre-industrial times.").

whether a tax credit providing an incentive for mass transit and regional rail and bus travel is a worthwhile approach to combating global warming. Out of all transportation emissions, those resulting from the use of motor gasoline, such as fuel used for automobile and light truck use, account for 60% of CO₂ emissions.⁴⁶ Hence, emissions from vehicles that rely on gasoline for fuel, such as passenger automobiles, overshadow emissions resulting from the use of other types of fuel, such as diesel for commercial truck transportation or jet fuel for air travel. While understanding the cause of global warming is a requisite step to reversing it, it is equally important to gauge what the consequences will be if we leave these causes unchecked and take no action to abate global warming.

Scientists project that the earth will warm at a rate of about 0.2°C per decade over the next twenty years.⁴⁷ If we were able to reduce our current emissions to the level they were at in 2000 and maintain emissions levels at that figure, the temperature would still rise but only at a rate of 0.1°C per decade. As one observer noted: "We are in for a minimum of 90 years of warming no matter what."⁴⁸ In addition to a marked rise in temperature, climate experts anticipate that sea levels will continue to rise and that there will be an increased number of heat waves and instances of heavy precipitation.⁴⁹ To put these meteorological phenomena in more vivid terms, global warming will likely cause storm surges, freezing rain, heat waves, flooding, and an increase in the number and severity of hurricanes.⁵⁰

Along with these global warming-induced weather conditions will come the demand for altered or new infrastructure to

⁴⁶ *Id.* Diesel fuel emissions account for 22% while jet fuel and residual oil emissions each account for only 12% and 3.3% respectively. *Id.*

⁴⁷ IPCC, SYNTHESIS REPORT SUMMARY, *supra* note 25, at 7 (assuming a substantial increase in GHGs, falling somewhere in the range of an increase of 25% to 90%).

⁴⁸ Theresa Begley, *Learning to Love Climate Adaption*, NEWSWEEK, Jan. 7, 2008, at 58.

⁴⁹ IPCC, WORKING GROUP I SUMMARY, *supra* note 8, at 13 (referring to the projections from a model set out in Table SPM.1, which yield increasing sea levels over the remainder of the twenty-first century); IPCC, SYNTHESIS REPORT SUMMARY, *supra* note 25, at 8 (predicting more heat waves and increased precipitation).

⁵⁰ Begley, *supra* note 48; IPCC, WORKING GROUP I SUMMARY, *supra* note 8, at 15 (indicating that it is probable that there will be an increase in hurricanes is as a result of global warming).

accommodate the change in climate. Examples of changes in infrastructure that might be necessary in the future due to climate change include shelters to house displaced environmental refugees whose communities were destroyed by changed weather patterns, new bridges, cooling shelters for the sick or elderly during heat waves, and huge reservoirs and special crops to adjust to prolonged droughts.⁵¹ Some predict increased prevalence of disease and an even higher number of heat-induced deaths from climate change if it is not stopped or mitigated.⁵² While it is apparent that if left unchecked, global warming poses a tremendous threat to human lives and property, it is unclear whether and to what extent climate change can be abated even if we do cease engaging in the GHG emitting activities responsible for climate change.

3. Climate Change: Can it Be Reversed or is it Time for Damage Control?

The consensus among global warming experts seems to be that even if we radically altered our behavior and use of fossil fuels, we would not be able to stop global warming for a period extending at least into the next century.⁵³ However, just because we cannot eradicate global warming does not mean we should not strive to mitigate the damage by decreasing GHG emissions to the greatest extent possible. Doing otherwise invites disaster on a much greater scale than would occur if we successfully reduced the amount of warming generated by our activities.⁵⁴

⁵¹ *Id.*

⁵² Andrew C. Revkin, *UN Draft Cites Humans in Current Effects of Climate Shift*, N.Y. TIMES, Dec. 17, 2007, at 6 (predicting the consequences of global warming if steps are not taken to reduce GHGs and observing that with the onset of global warming all new roads, railways and power plants must be designed with climate change in mind).

⁵³ *Warming Reports Raises Worries, Not Hope*, GRAND RAPID PRESS, Feb. 2, 2007, at A3 (quoting Kevin Trenberth, co-author of the IPCC's Fourth Assessment and summarizing a conclusion from the report predicting that even if we reduce our GHG emissions, global warming will continue for centuries); see also Begley, *supra* note 48 (opining that regardless of what steps we take to combat climate change, global warming will continue for at least the next ninety years).

⁵⁴ IPCC, SYNTHESIS REPORT SUMMARY, *supra* note 25, at 19 ("Unmitigated climate change would, in the long term, be likely to exceed the capacity of natural, managed, and human systems to adapt.").

Furthermore, while it is unlikely that our efforts to reduce GHG emissions will reverse or stop global warming, reductions in GHGs would at least offset projected increases in emissions and could even reduce emissions below current levels.⁵⁵

In regard to the mitigation of emissions from the transportation sector, the IPCC has identified several mitigation options as a way of slowing global warming. Included among these options are improved vehicle efficiency, use of biofuels, and high-occupancy passenger transportation.⁵⁶ In light of the transportation sector's status as the highest contributor to total CO₂ emissions, policies aimed at mitigating global warming should be crafted to reduce this sector's emissions sources ahead of those emissions from other sectors.

4. Global Warming in Summary

Any policy created with the aim of having a significant effect on GHG emissions overall must devote a disproportionate amount of attention to reducing emissions resulting from transportation, since transportation emissions account for a higher percentage of total emissions than emissions from any other sector. Furthermore, in order for such a policy to be effective, it must be tailored to address the predominant source of transportation emissions—CO₂ emissions resulting from the operation of gasoline engines, such as passenger automobiles. Any law drafted with the aim of reducing GHGs must target specific types of emissions in order to be effective. Emissions from automobiles should certainly be among the sources targeted in any policy aimed at reducing GHGs in light of the substantial role such emissions play in causing global warming.

⁵⁵ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers, in CLIMATE CHANGE 2007: MITIGATION OF CLIMATE CHANGE, CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT 9* (2007) [hereinafter IPCC, WORKING GROUP III SUMMARY].

⁵⁶ *Id.* at 13.

B. *Mass and Regional Transportation: An Underutilized Public Resource*

1. The Development of Our Mass-Transit System and How it Can Reduce GHGs

Our modern mass-transit system has its roots in the privately-owned omnibus and streetcar enterprises dating back to the early-nineteenth century.⁵⁷ The first subway began operating in Boston in 1897, and New York and Newark soon followed suit.⁵⁸ However, subways soon fell into disfavor, especially in smaller cities, and bus service became the more dominant mode of public transportation. From the time of the horse-powered omnibus to the ubiquitous streetcar, even through the early years of the automobile, mass transit was operated by private enterprise. Public funding began seemingly as an afterthought in response to mass transit's displacement by the rise of the automobile.⁵⁹ By this time, service and infrastructure had already significantly deteriorated, as demand for public transportation declined. The federal government's support of mass transit began with little fanfare as part of another bill and has fluctuated in intensity since its outset.⁶⁰

The current state of our mass-transit infrastructure reflects this sporadic, irresolute commitment to provide funding to public transportation. In most cities, the public transportation system is outdated, riddled with physical and structural defects, and approaching a state of disrepair.⁶¹ In other metropolitan areas,

⁵⁷ GEORGE M. SMERK, *THE FEDERAL ROLE IN URBAN MASS TRANSPORTATION* 14 (1991).

⁵⁸ ROBERT C. POST, *URBAN MASS TRANSIT* 129 (2007).

⁵⁹ *Id.*

⁶⁰ SMERK, *supra* note 57, at 14, 116 (identifying the first federal support for mass transit as a provision of the Housing Act of 1961 and discussing its next status as a full-fledged program under the Urban Mass Transportation Assistance Act of 1970 through its cutbacks under the Reagan administration).

⁶¹ Jon Hilkevitch, *Fixing Transit to be a Marathon; Infrastructure Repairs, New, Efficient Vehicles Needed*, CHI. TRIB., Jan. 20, 2008, at C1 (lamenting the crumbling structures literally disintegrating under the weight of the L train and the state of disrepair of the CTA generally); *Money Train; Congress Shouldn't Let a Bill to Help Metro Stall Out*, WASH. POST, Aug. 12, 2007, at B6 (pointing to the aging infrastructure of the metro in the nation's capital); John L. Micek, *Pennsylvanians Split on Turnpike Privatization, Poll Shows; Rendell Promises that all Projects in Highway's*

such as Los Angeles and the greater Baltimore area, the mass-transit system was never fully developed and was incapable of rising to the challenge of ameliorating the heavy congestion burdening city roads and highways without a significant increase in funding and construction.⁶² The state of disrepair and cash-strapped predicament of our public-transit system is unremarkable if we examine the rate at which mass transit has been funded in recent years compared to years past. A recent report from the Congressional Budget Office stated that federal funding for mass transit has been at a rate of 3% of all expenditures for the past several years.⁶³ This level of federal support is dwarfed by the rate of 10% earmarked for mass transit during the 1960s.⁶⁴

There is an inextricable connection between mass transit, traffic congestion, urban sprawl, GHG emissions, and climate change.⁶⁵ In a recent study illustrating this complex relationship, the U.S. Department of Transportation found that if mass-transit routes were augmented in areas with a greater population density and if a sufficient number of drivers could be persuaded to switch modes of transportation to alter traffic flows, mass transit could significantly reduce auto-source CO₂ emissions.⁶⁶ A separate study

10-Year Capital Plan Would be Protected, MORNING CALL, May 31, 2007, at A4 (citing the cash-deprived SEPTA metro system in Philadelphia).

⁶² Mary Gail Hare, *Improvements Delayed: Budget Shortfall Means Less Funding for Transportation Ahead of BRAC Expansion*, BALTIMORE SUN, Oct. 5, 2008, at 1G (discussing the extent to which transit projects keep getting pushed into the future and the congestion and transit problems that will likely occur as a result of the delay); Harrison Sheppard, *Legislature OK's \$37 Billion Bond Package*, DAILY NEWS OF LOS ANGELES, May 6, 2006, at N1 (describing the underdeveloped state of mass transit in Los Angeles and the system's inability to enable the city to overcome its perpetual state of gridlock on its throughways).

⁶³ Adrian Florido, *CBO Study Tracks Decreased Transportation Spending*, CONGRESSNOW, Aug. 8, 2007.

⁶⁴ *Id.*

⁶⁵ Larry Carson, *BRAC Report Affirms Plans; Study Highlights Areas County Already Intended to Improve*, BALTIMORE SUN, Dec. 9, 2007, at 1G (discussing a study of traffic problems in Maryland and proposing mass transit as a way of reducing congestion); Steve Kemme, *Suburban Sprawl Spawns Concern*, CINCINNATI INQUIRER, July 9, 2003, at 1C (linking suburban sprawl, traffic congestion and poor urban planning to increased GHG emissions).

⁶⁶ U.S. DEP'T OF TRANSP., *TRANSPORTATION AND GLOBAL CLIMATE CHANGE: A REVIEW AND ANALYSIS OF THE LITERATURE*, http://www.fhwa.dot.gov/environment/glob_c5.pdf [hereinafter *TRANSPORTATION REPORT*] at 40.

conducted by the National Resources Defense Council and the Sierra Club provided stronger support for mass transit's potential for reducing CO₂ emissions, finding that each transit mile replaces 4-to-8 auto miles because of improved land use.⁶⁷ The weight of the evidence shows that mass transit has an important role in our transportation policy as we develop strategies to combat global warming.

2. The Underutilization Puzzle and How Ridership Levels Affect Global Warming

While increasing the frequency of existing transit services and introducing new service to urban areas where none currently exists is an important step in our efforts to reduce CO₂ emissions, we should not overlook the importance of maintaining high levels of ridership on the routes and systems that are already in place. One measure of a mode of transportation's carbon footprint is the amount of energy required, measured in BTUs per capita, to travel one mile.⁶⁸ Our mass-transit systems are significantly underutilized. One national study found that in 1995, only 27 percent of transit passengers indicated that they could not find a seat upon boarding the transit vehicle.⁶⁹ A lack of ridership increases the energy necessary per mile to fuel a public-transit vehicle, as measured per capita, thereby increasing the size of the transit system's carbon footprint and making it less efficient.

The proper response to a lack of ridership is not to eliminate service, as some might advocate, because our transit services have become entrenched institutions that are here to stay, regardless of occasional periods of decreased demand.⁷⁰ Furthermore, for some populations such as the elderly, disabled, poor, and those too young to drive, public transportation is the only means of transportation available, making its elimination impractical.⁷¹ Nonetheless, the inefficiency resulting from underutilization must be addressed. The obligation of maintaining the service for those

⁶⁷ See *id.*

⁶⁸ See TRANSPORTATION REPORT, *supra* note 66, at 13.

⁶⁹ DAVID LEWIS & FRED LAURENCE WILLIAMS, POLICY AND PLANNING AS PUBLIC CHOICE: MASS TRANSIT IN THE UNITED STATES 9 (1999).

⁷⁰ *Id.* at 25.

⁷¹ See TRANSPORTATION REPORT, *supra* note 66, at 13.

segments of the public who have no choice but to rely on it, and the increasingly severe threat of global warming indicates that a more innovative solution than the wholesale elimination of service is necessary to spur more people to forgo driving and choose mass transit.

In recent years, with decreasing ridership and the evaporation of federal funds driving budget shortfalls, smaller government entities such as cities, states, and municipalities have tried to supplant funding for public transportation.⁷² This has fostered little hope and has proven to be an inadequate solution for the economic woes that transit systems are suffering from. The economic downturn paints a gloomy forecast for mass transit's financial situation. Only a robust, modernized mass and regional transportation system will be able to alleviate the traffic congestion and address the urban-growth dilemma underlying the global warming crisis we are confronting.

C. *Global Warming: The Legislative Backdrop*

Although this Note proposes a tax credit for individuals who choose to travel via mass transit or regional rail and common-carrier service, tax instruments are but one option among many legislative and regulatory tools at our disposal to reduce GHG emissions. Other options include government-funded research programs,⁷³ command-and-control mechanisms,⁷⁴ emissions-trading systems,⁷⁵ and direct subsidies.⁷⁶ These policy tools are

⁷² LEWIS & WILLIAMS, *supra* note 69, at 26.

⁷³ One recent example is the FreedomCAR (Cooperative Automotive Research) and Fuel Initiative program under which the Federal Government is funding research to make hydrogen fuel cell technology more widely available for use in automobiles. U.S. DEP'T OF ENERGY, FREEDOMCAR AND FUEL INITIATIVE, <http://www.eere.energy.gov/hydrofuel> (last visited Mar. 10, 2008).

⁷⁴ An example of a command-and-control legislative approach is the California Climate Bill, which mandates that automakers sell only cars with the lowest-possible carbon emissions. John H. Cushman, *California Lawmakers Vote to Lower Emissions*, N.Y. TIMES, Jul. 2, 2002, at A14.

⁷⁵ The United States' most successful foray into emissions trading was the trading program for sulfur dioxide under the Clean Air Act. See Daniel Altman, *Just How Far Can Trading of Emissions Be Extended*, N.Y. TIMES, May 31, 2002, at C1.

⁷⁶ One example of a mass-transit subsidy proposal aimed in part to ease traffic congestion and increase mass-transit ridership was a bill introduced by Connecticut State Senator Donald E. Williams, Jr. Under the proposed bill, elderly residents would ride commuter trains at no charge. See Alison Leigh Cowan, *Cool Reception for*

utilized to abate global warming at all levels of government, including the federal government, states, and local municipalities.

1. Federal Efforts to Combat Global Warming

The most comprehensive federal program enacted to reduce air pollution is the Clean Air Act (“CAA”). In the first 28 years following the Act’s passage, the Environmental Protection Agency (“EPA”), charged with enforcing the CAA, did not even include GHGs among the air pollutants it had the authority to regulate.⁷⁷ In recent years, the CAA has been amended to regulate some GHGs, including nitrous oxide,⁷⁸ but these attempts to improve the Act have been widely criticized for neglecting to include CO₂ among those air pollutants subject to an emissions cap.⁷⁹

There are indications, however, that CO₂ might finally be included among the other GHG gases the EPA regulates.⁸⁰ The EPA recently took its first step toward classifying CO₂ as an air pollutant by issuing a finding that the gas poses a risk to human health.⁸¹ Although the inclusion of CO₂ among the pollutants regulated under the CAA is a step in the right direction, if the EPA’s approach to regulating other air pollutants provides any indication, the regulatory change will not likely lead to a dramatic reduction in GHG emissions. The CAA, as enforced by the EPA, is often considered inadequate to combat global warming because the emissions caps are often set at generously high levels and the timeframe for implementing them is usually too long-term to

Plan to Let Elderly Ride Free, N.Y. TIMES, May 13, 2007, at 31.

⁷⁷ Michael Sugar, *Massachusetts v. Environmental Protection Agency*, 31 HARV. ENVTL. L. REV. 531, 533 (2007) (observing that it was not until 1998 when the EPA determined that it had authority under the CAA to regulate GHGs, in the Cannon Memorandum).

⁷⁸ These changes to the CAA were originally intended to be achieved by passage of The Clear Skies Act of 2003, S. 485, 108th Cong. (2003), which languished in committee and never passed. Ultimately, the Bush Administration amended the CAA by promulgating the Clean Air Interstate Rule. 70 Fed. Reg. 25,152 (May 12, 2005); see also Rick Weiss, *EPA Enacts Long-Awaited Rule to Improve Air Quality, Health*, WASH. POST, Mar. 11, 2005, at A01.

⁷⁹ Kate M. Joyce, *U.S. Energy Policy Since September 2001*, 15 FORDHAM ENVTL. L. REV. 31, 39 (2004).

⁸⁰ Juliet Eilperin, *EPA Says Emissions Are Threat to Public; Finding Could Lead to Greenhouse Gas Limits*, WASH. POST, Apr. 18, 2009, at A01.

⁸¹ *Id.*

carry out the swift reductions necessary to slow global warming.⁸²

Another federal law aimed at reducing air pollutants is the Energy Policy and Conservation Act of 1975, which sets forth the Corporate Average Fuel Economy (“CAFE”) standards.⁸³ The CAFE standards require automakers to adhere to a minimum-fuel efficiency standard for all new automobiles manufactured, thereby decreasing the amount of emissions from vehicles per mile.⁸⁴ Critics complain that the Act’s efficiency standards are not commensurate with currently available technology, which is capable of decreasing even further the amount of fuel expended per mile traveled.⁸⁵

While the federal government may argue that it has made a serious effort to implement a program to reduce GHGs, the government’s attempts to significantly reduce GHGs up to this point have been grossly ineffective.⁸⁶ A number of climate-change policy experts have called on Congress to enact aggressive cap-and-trade, market-based legislation; but, despite many promising proposals, the legislation has proved to be controversial and difficult to enact.⁸⁷ While the outlook for comprehensive climate-change legislation has improved since President Obama took office, the great recession the nation is currently facing makes any dramatic change in U.S. climate policy during Congress’ first

⁸² Joyce, *supra* note 79, at 39.

⁸³ Pub. L. No. 94-163, 89 Stat. 871, 902 (1975).

⁸⁴ 49 U.S.C. § 329 (2000); *see also* Robert R. Nordhaus & Kyle W. Danish, *Assessing the Options for Designing a Mandatory U.S. Greenhouse Gas Reduction Program*, 32 B.C. ENVTL. AFF. L. REV. 97, 104 (2005) (discussing the CAFE standards generally and analyzing why they have become a less potent tool for reducing auto source GHGs).

⁸⁵ Joyce, *supra* note 79, at 57.

⁸⁶ Thomas A. McCann, *Real Change or Just Hot Air? From Statehouses to Capitol Hill Politicians Begin to Talk Global Warming*, 19 LOY. CONSUMER L. REV. 509, 511 (2007) (commenting on how U.S. efforts to reduce GHGs have been almost non-existent apart from recording data on emissions levels and encouraging research).

⁸⁷ Juliet Eilperin, *Gore Urges Cap on Carbon Emissions, Global Climate Pact; He Tells Senators the Situation is Dire*, WASH. POST, Jan. 29, 2009, at A03 (recounting former Vice President Gore’s urging for cap-and-trade legislation); Zachary Coile, *Economy Could Cool Fight on Global Warming; Focus on Global Warming; Fears Grow that Curbing Emissions Could Lose Priority*, S.F. CHRON., Oct. 13, 2008, at A1 (describing how one Senate cap-and-trade bill was pulled from the floor before a final vote because of concerns over the economic ramifications of enacting a sweeping climate change bill and how a new bill still in the drafting stage is much less ambitious in short term its short term targets for capping emissions).

session unlikely.⁸⁸ Under Congressmen Henry Waxman's and Edward Markey's proposed bill, GHG emissions would be capped and industry would be required to pay for every ton of GHG emissions.⁸⁹ Many Republicans still oppose any ambitious climate change legislation and instead favor more modest approaches to combating global warming, such as promoting alternative fuels and encouraging conservation.⁹⁰

Concerns over the economic consequences of aggressive legislation to combat global warming are the most common justification for opposition to new laws aimed at slowing climate change.⁹¹ The economic feasibility of a comprehensive U.S. climate change policy is a highly contentious topic, as evidenced by the adamant opposition of some business leaders and conservative policy organizations to any far-reaching legislation aimed at greatly reducing GHGs in the near future.⁹² Meanwhile, other business leaders, even in the energy sector, are calling on legislators to enact legislation to address global warming.⁹³ A recent study commissioned by the British government warns that, contrary to global warming being too expensive to fight, the costs of inaction would be economically crippling.⁹⁴ The study cautions that if we allow global warming to continue unchecked, its

⁸⁸ Rebekah Kebede, *U.S. Climate Bill Unlikely to Pass This Year: Experts*, ABC NEWS, <http://abcnews.go.com/Politics/wireStory?id=7542171> (summarizing President Obama's approach to climate change legislation and stating that climate change policy experts are doubtful that a climate change bill will pass this year) .

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ See, e.g. Justin Blum, *Senate Rejects Greenhouse Gas Limits*, WASH. POST, Jun. 23, 2005, at A8; Juliet Eilperin & Michael Grunwald, *Internal Rifts Cloud Democrats' Opportunity on Warming*, WASH. POST, Jan. 23, 2007, at A1.

⁹² Clifford Krauss & Jad Mouawad, *Exxon Chief Cautions Against Rapid Action to Cut Carbon Emissions*, N.Y. TIMES, Feb. 14, 2007, at C3 (predicting that energy demand will grow 40 percent by 2030 and that fossil fuels will dominate the supply of the anticipated increase in demand and observing that as of yet, there is no alternative to oil in the coming decades).

⁹³ Scott Malone, *U.S. Needs National Energy Climate Change Policy—GE CEO*, *Climate Policy*, REUTERS, Mar. 10, 2007, <http://www.reuters.com/article/idUSN1027226220070310> (discussing the CEO of General Electric Corp.'s recent call for a national climate change policy).

⁹⁴ Heather Timmons, *Britain Warns of High Costs of Global Warming*, N.Y. TIMES, Oct. 31, 2006, at A8 (quoting Tony Blair's perspective on the British study on the economic consequences of global warming and the "cataclysmic effects" climate change portends for the global economy).

devastative impact could cost as much as 20 percent of the world's GDP.⁹⁵ On the other hand, if we are successful in slowing climate change, we could save approximately \$2.5 trillion per year.⁹⁶

2. State, Regional, and Local Efforts to Reduce Greenhouse Gas Emissions

In response to the political gridlock over global-warming legislation at the national level, states, both individually and collectively, have begun taking matters into their own hands.⁹⁷ In fact, over 300 bills have been introduced in 40 states addressing GHG emissions.⁹⁸ California has been the most vigilant among the states in enacting laws to reduce GHG emissions.⁹⁹ The state recently passed Bill 1493, requiring that its own state agency, the California Air Resources Board ("CARB"), set CO₂ emission caps on motor vehicles sold in the state.¹⁰⁰ Like the federal CAFE standards, these emissions limits will be imposed on auto manufacturers and will only apply to new cars.¹⁰¹ Although the new California law survived challenge in federal court, the EPA denied California the state's waiver to regulate vehicle emissions under § 209(b) of the CAA shortly thereafter.¹⁰² Other states have also devised their own global-warming policies. Michigan and New Hampshire have each created carbon-trading programs.¹⁰³ Massachusetts promulgated regulations aimed at reducing CO₂ emissions from power plants.¹⁰⁴

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ Felicity Barringer & William Yardley, *Bush Splits With Congress and States on Emissions*, N.Y. TIMES, Apr. 4, 2007, at A1 (linking the increasingly active climate change lawmaking on the part of the states to President Bush's unwillingness to shift the administration's policy on regulating CO₂ emissions).

⁹⁸ *Id.*

⁹⁹ See Deborah Keeth, Comment, *The California Climate Law: A State's Cutting-Edge Efforts to Achieve Clean Air*, 30 ECOLOGY L.Q. 715, 716 (2003).

¹⁰⁰ *Id.* at 719.

¹⁰¹ *Id.*

¹⁰² John M. Broder & Felicity Barringer, *EPA Says 17 States Can't Set Greenhouse Gas Rules for Cars*, N.Y. TIMES, Dec. 20, 2007, at A1. The Bush Administration contended that the reason for the denial is the necessity for a national approach to address climate change, not a "patchwork" approach by many states. *Id.*

¹⁰³ Laura Mansnerus, *New Jersey Intends to End Incentive Plan on Pollution*, N.Y. TIMES, Sept. 18, 2002, at B1.

¹⁰⁴ Paul Zielbauer, *Cut Emissions, Rowland to Tell Power Plants*, N.Y. TIMES, May 17,

States have also acted collectively to address global warming by entering into regional agreements to reduce GHG emissions. Currently, there are four such regional climate-change pacts.¹⁰⁵ A group of states in the Northeast came out first with a plan to collectively reduce GHG emissions, and states in the West, Southwest, and Midwest soon followed suit.¹⁰⁶ All of the pacts aim to reduce GHG emissions by relying on a cap-and-trade system.¹⁰⁷ The Northeast's program, the Regional Greenhouse Gas Initiative ("RGGI"), targets GHG emissions from power plants and aims to reduce emissions by 20 percent by the year 2019.¹⁰⁸

Although in their current form, the constitutionality of the programs is unlikely to be called into question, any increase in regulatory or enforcement power—which is currently almost entirely absent from the programs—could very well raise constitutional issues.¹⁰⁹ Although in the case of California's Bill 1493, the state program was able to avert invalidation, state programs regulating GHG emissions are vulnerable to challenge under the federal preemption doctrine. For this reason, along with questions about the effectiveness of state programs¹¹⁰ and concerns over lack of uniformity in environmental policy, it is unclear whether state solutions can adequately mitigate global warming.

D. An Overview of and Historical Look at Section 132's Transit and Parking Exclusions

Section 132(a)(5) of the IRC provides an incentive for

2000, at B1 .

¹⁰⁵ John M. Broder, *Governors Join in Creating Regional Pacts on Climate Change*, N.Y. TIMES, Nov. 15, 2007, at A20.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

¹⁰⁸ Joyce, *supra* note 79.

¹⁰⁹ Agreements between states to reduce GHG emissions are at risk of being found unconstitutional under the Compact Clause under Article I of the U.S. Constitution, particularly if the agreement provides for regulatory or enforcement of its policies. U.S. CONST. art. I, § 10, cl. 3; Michael S. Smith, Note, *Murky Precedent Meets Hazy Air: The Compact Clause and the Regional Greenhouse Gas Initiative*, 34 B.C. ENVTL. AFF. L. REV. 387, 389 (2007).

¹¹⁰ Joyce, *supra* note 79, at 513 (calling into the feasibility of state programs and whether the GHG emissions goals the regional programs set will actually come to fruition).

employees to travel via mass transit and to carpool.¹¹¹ Under this provision, employees may exclude up to \$230 per month from their gross income for transportation to and from work via mass transit or employer-provided car-pooling.¹¹² Section 132 also provides employees with an income exclusion for the value of employer-provided parking up to an amount of \$230 per month.¹¹³ Both exclusions fall under the specified fringe benefits Congress established in Section 132 in order to clearly delineate non-taxable fringe benefits from the taxable fringe benefits included under the definition of gross income in Section 61.¹¹⁴

Unlike the current form of Section 132, the original version of the statute allowed employees to exclude transit-pass benefits under the *de minimis* category of Section 132's specified fringe benefit subsections. This choice reflects Congress' original justification for allowing transit benefits to be excluded from income. Lawmakers recognized that it would be too cumbersome to include small fringe benefits provided by employers in gross income. As Section 132 evolved, however, Congress recognized the potential of creating an incentive for employees to choose public transportation over driving as a way to ease traffic congestion, reduce pollution, and increase mass-transit ridership.¹¹⁵

¹¹¹ 26 U.S.C. §§132(a)(5), 132(f)(2)(A) (2000). The exclusions for mass transit and car pool were added to Section 132 with the passage of the Deficit Reduction Act of 1984. Deficit Reduction Act of 1984, Pub. L. No. 98-369, 98 Stat. 494, 877-80 (1984).

¹¹² The 2009 Stimulus Bill provides that the exclusion allowed for transit passes should be equal in amount to the exclusion allowed for qualified parking. See American Recovery and Reinvestment Act of 2009, Pub. L. No. 115-5, 123 Stat. 115 (2009); see also Rev. Proc. 2008-66, 2008-45 I.R.B. 1107 (increasing the amount previously allowed for qualified parking under Section 132(f)(2)(B) from \$175 to \$230 to adjust for inflation). Because under the 2009 Stimulus Bill, the qualified parking and transit-pass exclusions are to be equal in amount, the maximum amount a commuter receiving transit-pass benefits from an employer may exclude per month is \$230. Rev. Proc. 2008-66, 2008-45 I.R.B. 1107.

¹¹³ § 132(f) (including within the meaning of "qualified transportation fringe" "qualified parking" benefits and transit passes supplied by employers); Rev. Proc. 2008-66, 2008-45 I.R.B. 1107 (increasing the amount previously allowed for qualified parking under Section 132(f)(2) from \$175 to \$230 to adjust for inflation).

¹¹⁴ § 132; Wayne M. Gazur, *Assessing Internal Revenue Code Section 132 After Twenty Years*, 25 VA. TAX REV. 977, 1025 (2006); 26 U.S.C. § 61 (2000) (including fringe benefits within gross income).

¹¹⁵ Senator Alfonse D'Amato spoke at length about the potential for the transit

Hence, although it is clear that from Section 132's inception that the exclusion was intended to embrace transit-pass benefits,¹¹⁶ it seems likely that Congress' intention in implicitly including transit passes under *de minimis* fringe benefits had no greater purpose than its intention to exclude other negligible, low-value benefits from gross income.¹¹⁷ During the transit exclusion's early years, employees could exclude only a maximum of \$21 in transit-pass benefits from gross income.¹¹⁸ The parking exclusion, on the other hand, was categorized as a working condition fringe benefit and did not limit the amount taxpayers could exclude under the provision.¹¹⁹

After the passage of the Energy Policy Act of 1992, Section 132 specifically enumerated transportation fringe benefits.¹²⁰ A little more than a decade after the mass-transit pass became a named exclusion under Section 132, Congress made a substantial increase to the exclusion's ceiling.¹²¹ Notably, Congress also provided for a significant increase in the maximum amount excludable for parking.¹²²

After at least a decade of attempts by lawmakers to make the income exclusion for mass-transit commuters commensurate with

pass exclusion to ease congestion and reduce pollution by encouraging mass-transit ridership. 133 CONG. REC. S.13, 645-155 (daily ed. Sept. 25, 1987) (statement of Sen. D'Amato). Although the bill he introduced, S. 1757, 100th Cong. (1987), was never passed, his proposal was virtually identical to the provision of the Energy Policy Act of 1992 which added the transit pass exclusion to IRC Section 132(a)(5). See Energy Policy Act of 1992, Pub. L. No. 102-486, § 1911, 106 Stat. 2776, 3012-13 (1992).

¹¹⁶ Treas. Reg. § 1.132-6 (1992) (setting out the rules for the exclusion of transit pass benefits under the original Section 132's *de minimis* category).

¹¹⁷ The original Section 132 provided a catchall type exclusion under which employees could exclude miscellaneous, low-value benefits offered to them by their employer. Rev. Rul. 59-58, 1959-1 C.B. 17 (exempting the value of a turkey or ham or other small gifts given by employers at holidays as a gesture of goodwill).

¹¹⁸ Transit passes were not explicitly included in Section 132's definition of fringe benefits when it was first enacted. The maximum amount employees could exclude from income was set out in a corresponding treasury regulation. Initially, the ceiling for transit passes was set at \$15. Temp. Treas. Reg. § 1.132-6T (1989). It was soon increased to \$21. Treas. Reg. § 1.132-6 (1992).

¹¹⁹ Maureen B. Cavanaugh, *On the Road to Incoherence: Congress, Economics, and Taxes*, 49 U.C.L.A. L. REV. 685, 708 (2002).

¹²⁰ Energy Policy Act of 1992, Pub. L. No. 102-486, § 1911, 106 Stat. 3012 (1992).

¹²¹ Transportation Equity Act for the 21st Century, Pub. L. No. 105-178, § 9010, 112 Stat. 107 (1998) (increasing the ceilings of the transit pass and qualified-parking exclusions to \$65 and \$175, respectively).

¹²² *Id.*

the parking exclusion,¹²³ Congress finally amended Section 132 in the American Recovery and Reinvestment Act of 2009.¹²⁴ Consequently, commuters who travel by mass transit may now exclude the same amount of income for mass-transit costs as those who drive and exclude parking costs under the qualified-parking exclusion.¹²⁵

Those advocating these proposals have clearly articulated the importance of equalizing the qualified parking and transit pass exclusions in relation to U.S. environmental and energy policy. One senator rallied for a bill increasing the transit-pass exclusion's ceiling by emphasizing the importance of decreasing our nation's dependence on fossil fuels and reducing GHG emissions.¹²⁶ The recurring title of many of the bills, "The Commuter Equity Act" and other similarly-themed titles, highlights the impetus behind the proposals.¹²⁷ Bringing parity to the qualified parking and mass-transit exclusions under Section 132(f)(2) brings an end to the section's favoring of drivers receiving qualified-parking benefits over commuters who travel by mass transit. However, after the passage of the American Recovery and Reinvestment Act of 2009, we should consider whether an exclusion for mass transit, which is equal in amount to the parking exclusion, will be powerful enough to persuade commuters to choose mass transit over driving.

E. We're Paving Our Paradise with Parking Lots: Section 132's Perverse Parking Incentive

The Section 132 parking exclusion has come under increased scrutiny as legislators, environmentalists, and tax scholars explain

¹²³ The most recent of these proposals was made by Senator Charles Schumer. Commuter Benefits Equity Act of 2007, S. 712, 110th Cong. (2007).

¹²⁴ American Recovery and Reinvestment Act of 2009, Pub. L. No. 115-5, § 1151, 123 Stat. 115 (2009).

¹²⁵ *Id.*

¹²⁶ 152 CONG. REC. S4697 (2006).

¹²⁷ H.R. 3166, 107th Cong. (2001); H.R. 396, 108th Cong. (2003); Commuter Benefits Equity Act of 2003, H.R. 2614, Cong. 108th (2003); S. 661, 108th Cong. (2003); Commuter Benefits Equity Act of 2005, S. 787, 109th Cong. (2005); Highway Reauthorization and Excise Tax Simplification Act of 2005, S. 1230, 109th Cong. (2005); H.R. 5925, 109th Cong. (2006); Clean Edge Act of 2006, S. 2829, 109th Cong. (2006).

how the provision detracts from efforts to abate global warming.¹²⁸ Under the parking exclusion, a taxpayer can exclude from gross income up to \$230 in employer-provided parking benefits per month.¹²⁹ Consequently, the parking exclusion promotes the environmentally-destructive behavior of driving to work.¹³⁰ To the extent that the availability of a tax benefit to drive to work and park reinforces the natural inclination of commuters to drive and park, the parking exclusion might act to discourage commuters from traveling via mass transit.¹³¹ Regrettably, Congress' recent equalization of the mass transit and parking exclusion does little to remedy this problem. Offering *any* tax benefit to commuters who drive to work undermines the legislative goal of encouraging commuters to choose mass transit.

Adopting the SUSTAINED Credit would eliminate the perverse incentive inherent in the current amount of income excludable under the parking exclusion.¹³² Eliminating this perverse incentive is crucial to reducing automobile source GHG gases, particularly in urban centers where GHG emissions are already at heightened levels. In addition, the parking exclusion undermines other federal and state programs aimed at discouraging commuters from driving to work. Finally, it acts as a potent disincentive to

¹²⁸ William Neuman, *Mixed Signals: Driving to Work As a Tax Break*, N.Y. TIMES, Aug. 16, 2007, at A1.

¹²⁹ Rev. Proc. 2007-66, 2007-45 I.R.B. 970 (after adjusting for inflation for the 2008 tax year, the Section 132 maximum monthly exclusions for the transit pass and employer-provided parking are \$115 and \$220, respectively).

¹³⁰ This kind of policy, under which an incentive is provided to engage in environmentally harmful behavior while environmentally friendly conduct is discouraged, is a perverse incentive. ROBERT REPETTO ET AL., GREEN FEES: HOW A TAX SHIFT CAN WORK FOR THE ENVIRONMENT AND THE ECONOMY 71 (1992) (describing environmentally-perverse incentives).

¹³¹ Empirical evidence indicates that people are naturally inclined to drive over taking mass transit. See *Neighborhoods Reborn*, 61-5 CONSUMER REPORTS 24, 24 (May 1996) (stating that numerous transportation studies indicate that people prefer driving except in the most densely-populated areas).

¹³² Of course, eliminating the parking exclusion altogether, in addition to enacting a tax credit for mass transit, would be preferable. Nonetheless, if Congress offered commuters a stronger incentive to take mass transit, the incentive to drive to work provided by the parking exclusion would no longer be as potent. Hence, Congress need not necessarily eliminate the Section 132 parking exclusion in order to vitiate this perverse incentive. It need only enact a mass-transit incentive sufficiently strong to counteract the disincentive effect that the parking exclusion has on environmentally-friendly modes of transportation.

take mass transit because of the weighty role parking costs play in the transit versus auto decision making process.¹³³

Eliminating the perverse incentive created by the parking exclusion is particularly important to addressing the climate change problem in our urban centers.¹³⁴ A high ratio of parking facilities in a city is undesirable because: (1) it detracts from the amount of land that can be dedicated to “green” spaces within the city,¹³⁵ (2) it exacerbates congestion,¹³⁶ and (3) it increases automobile GHG emissions by facilitating the accommodation of more vehicles into a smaller space.¹³⁷ As long as there is a place to park after all of the waiting in traffic, many drivers will still choose parking over mass transit, especially if the parking is provided by employers on a tax-free basis, as Section 132 currently allows.¹³⁸ While the drivers themselves are not forced to bear the costs of this parking-induced congestion, the environment pays a hefty

¹³³ While Congress’ recent step to equalize the parking and transit exclusions changes this calculus somewhat, the continuing availability of a tax benefit for commuters who choose to drive to work directly conflicts with Section 132(f)(5)(A)’s transit exclusion. Moreover, as will be discussed later, the transit exclusion does not provide a strong enough incentive to significantly alter the transit versus auto decision making process. See *infra* Part IV A.

¹³⁴ See Mona L. Hymel, *The Population Crisis: The Stork, the Plow, and the IRS*, 77 N.C. L. REV. 13, 117 (1998) (lamenting the effect that the Section 132 parking exclusion has on urban congestion and pollution).

¹³⁵ From a land-use perspective, parking is an incredibly inefficient use of space in urban areas. As fewer and fewer plots of land become available in urban settings, the proportion of developed land increases as people scramble to find enough space for business and residential use. Consequently, there are fewer spaces to plant trees and vegetation, leading to temperature increases. People in urban areas then rely more on cooling systems, which increases energy consumption and leads to more GHG emissions. ArborDay.org, Urban Heat-Island Effect, <http://www.arborday.org/globalwarming/heatIsland.cfm> (last visited Mar. 30, 2008).

¹³⁶ Kemme, *supra* note 65 (linking traffic congestion to increased levels of automobile GHG emissions).

¹³⁷ JOHN A. JAKLE, LOTS OF PARKING: LAND USE IN A CAR CULTURE 33 (2005) (discussing the role parking facilities play in decreasing the amount of green space in cities by occupying cheap land that might otherwise be suitable for parks or other green spaces).

¹³⁸ The exclusion is a significant factor in employees’ decision to drive to work. Furthermore, there is a clear relationship between the cost of parking and traffic congestion. Alex Kingsbury, *Easing Gridlock in Gotham*, U.S. NEWS AND WORLD REPORT, Jan. 14, 2008, at 24 (referencing an increase in parking fees as one approach to easing traffic congestion). Hence, because the parking exclusion has the effect of making parking less expensive, it likely has the indirect effect of increased traffic congestion.

price.¹³⁹ The amount of GHG emissions from automobiles when traffic slows or halts is much greater than when there is no congestion.¹⁴⁰ Traffic congestion has been recognized as one of the most aggravating factors to auto-source GHG emissions.¹⁴¹

The environmental consequences of the Section 132 parking exclusion extend beyond the direct consequences of urban parking such as the land use and traffic-management difficulties discussed above. The other problems associated with the parking exclusion go more to the heart of why perverse incentives are so destructive. The parking exclusion undermines other important policies by sending mixed messages to the public about driving and the environment. For example, the U.S. Department of Transportation has recently made available \$848 million in grants aimed at assisting cities in discouraging people from driving.¹⁴² Additionally, the exclusion will tip the scales in the commuting decision-making process in favor of driving over more environmentally-friendly modes of transportation.

Within Section 132, the exclusion for the transit pass provides an even more conspicuous example of how the parking exclusion drives up the relative cost of alternative modes of transportation in comparison to driving to work. Parking costs play a very influential role in the transit versus auto decision-making process.¹⁴³ This influence very well might distort a commuter's decision-making process, despite the availability of tax relief for utilizing mass transit equal in amount to the benefit under the qualified parking exclusion. A significant tax incentive for mass transit would at least put mass transit on equal footing with

¹³⁹ *Id.*

¹⁴⁰ When automobiles are stuck in traffic, moving at a slow speed, they emit a larger amount of GHG's than when they are moving freely at a higher speed. See *One Likes it HOT, the Other Does Not*, WASH. POST, Nov. 13, 2003, at T05 (comparing high occupancy toll (HOT) lanes with high occupancy vehicle (HOV) lanes and citing to a California study on HOT lanes that found that HOT lanes reduce GHG emissions because they keep traffic moving at a higher speed and reduce congestion).

¹⁴¹ See *Curbing the Car*, ECONOMIST, Jun. 22, 1996, at 19 (noting that automobiles stuck traffic pollute three times as much as those on the open road).

¹⁴² Neuman, *supra* note 128 (discussing the way in which the parking exclusion weakens other programs aimed at discouraging commuters from driving to work).

¹⁴³ Mann, *supra* note 18, at 636 (identifying parking cost as a very influential factor in the choice between driving and traveling via mass transit). See generally DONALD C. SHOUP, THE HIGH COST OF FREE PARKING (2005).

parking, and has the potential, if strong enough, to spur more commuters to choose public transportation over driving.

III. A PROPOSAL FOR A MASS-TRANSIT TAX INCENTIVE: THE SUSTAINED CREDIT

This Note proposes a uniform refundable tax credit, the SUSTAINED Credit, for the cost of travel by mass transit, regional rail service or travel by common-carrier bus. The credit would only apply to regional rail or common-carrier bus travel for non-business purposes. Travel for business by regional rail service or by common-carrier bus service would be governed by Section 162 (treatment of deductions for business expenses).¹⁴⁴ Under the SUSTAINED credit, a taxpayer is eligible to receive 40 percent of total dollars spent on mass transit and regional rail and common-carrier bus service against the taxpayer's tax liability. The aim of the credit is to maximize the incentive provided by the credit for taxpayers to choose mass transit, regional rail or common carrier bus service over driving at the lowest cost possible.

The SUSTAINED Credit would have a ceiling of \$2,760 per year of mass transit and regional rail and common-carrier bus expenses, amounting to a maximum tax credit at year end of \$1,104. This ceiling, if prorated by month, would allow a taxpayer to spend \$230 per month on travel expenses for trips made via mass transit, regional rail or common-carrier bus service. In the 2009 tax year, \$230 is the maximum amount of money per month a taxpayer may exclude from gross income under Section 132 for the cost of qualified parking or transit pass benefits. If Congress wishes to send a clear message to taxpayers about the importance of choosing mass transit over driving, it is crucial that the SUSTAINED Credit at least be commensurate with the Section 132 parking exclusion.¹⁴⁵

A. Why a Stronger Incentive is Needed

A stronger incentive is needed to influence individuals' transportation choices in order to reduce auto-source GHG

¹⁴⁴ See 26 U.S.C. § 162 (2000).

¹⁴⁵ See *supra* Part II.E (discussing the importance of eliminating the perverse parking incentive under Section 132).

emissions because of an environmentally-destructive confluence of factors. First, the rate of climate change is accelerating at a rate at which it cannot be stopped entirely even if we exert a considerable amount of effort to reduce GHG emissions.¹⁴⁶ While global warming cannot be eradicated in the near future, successful mitigation of climate change would likely save a significant number of lives and would substantially reduce global warming's negative economic consequences.¹⁴⁷ Furthermore, because emissions from transportation account for such a large share of total GHG emissions and transportation emissions are expected to grow over the next few decades, a targeted, powerful incentive is needed to specifically mitigate transportation GHG emissions. Finally, the mass-transit infrastructure in U.S. cities is either in disrepair or is woefully underdeveloped. Based on the data on levels of public ridership, too few individuals are choosing mass transit.¹⁴⁸ A stronger incentive could increase the level of ridership on U.S. mass-transit systems, resulting in an indirect increase in funding to mass-transit authorities through increased fares. Such an increase in ridership could also have the peripheral benefit of more efficient land use, because mass transit tends to cause urban areas to have increased population density.

B. The SUSTAINED Credit: A More Effective and Efficient Policy Solution

The SUSTAINED Credit provides the immediate incentive needed to address the global warming problem now. The credit, if given serious consideration by our lawmakers, would likely not languish in the political deadlock like other more comprehensive climate-change proposals have. The credit would fill an environmental legislative void by targeting individual GHG emissions instead of institutional emitters and would reduce

¹⁴⁶ See *supra* Part II.A.

¹⁴⁷ *Id.*

¹⁴⁸ LEWIS & WILLIAMS, *supra* note 69, at 25 (observing that ridership has remained flat despite increases in population and travel and that few Americans use transit services); *but see* TRANSPORTATION RESEARCH BOARD OF THE NATIONAL ACADEMIES, TRANSIT COOPERATIVE RESEARCH PROGRAM REPORT 122 24 (2008) (noting that, although ridership has actually increased over the past ten years, an increase in the frequency of travel and urban sprawl have made it difficult for transit agencies to attract and retain riders at a rate commensurate with increased travel).

emissions more effectively than command-and-control and positive tax alternatives. In addition, the SUSTAINED Credit would have the added advantage of moving the tax code one step closer toward greater efficiency because of the distinctive economic benefits of uniform refundable tax credits.

The SUSTAINED Credit would function as a tax subsidy by reducing the tax liability of taxpayers who choose to travel via mass transit. Such an incentive is a more viable and effective inducement for achieving a policy goal than other policy instruments that aim to alter behavior by exacting a penalty.¹⁴⁹ Examples of policy instruments that exact punishment in order to shape behavior include regulations, positive taxes such as excise taxes, and fees such as congestion tolls. Regulations are costly to enforce and provide no incentive for polluters to reduce pollution beyond what is required under the law.¹⁵⁰ Taxes and tolls aimed at reducing gas consumption and highway congestion are politically unpopular and often are met by vehement public opposition.¹⁵¹

In contrast, empirical data suggests that an income-tax credit would be more successful at changing individual behavior than taxes. Not only would an incentive likely be more effective than a penalty, an incentive also has the potential to change the attitudes about environmental issues.¹⁵² A change in attitudes among consumers has the benefit of a long-term reduction in emissions, since the taxpayer whose mind has been changed will continue to engage in the environmentally sound course of conduct even if the incentive is eliminated. Even if we believe the command-and-control and positive tax policy alternatives are an effective way to

¹⁴⁹ Julie A. Lockhart & Marguerite R. Hutton, *Special-Purpose Tax Subsidies: Effective Tools in Promoting Environmental Goals*, in CRITICAL ISSUES IN INTERNATIONAL ENVIRONMENTAL TAXATION: INSIGHTS AND ANALYSIS FOR ACHIEVING ENVIRONMENTAL GOALS THROUGH TAX POLICY, 523, 524 (Lawrence A. Kreiser ed., 2002) (describing the potential of tax subsidies to motivate environmentally-sound decision-making); see Robert W. Hahn & Robert N. Stavins, *The Incentive-Based Environmental Regulation: A New Era from an Old Idea?*, 18 ECOLOGY L.Q. 1, 12 (1991) (observing that incentives provide a more powerful incentive than do command-and-control approaches in the context of industrial polluters).

¹⁵⁰ See Stephen M. Jonson, *Economics v. Equity: Do Market-Based Environmental Reforms Exacerbate Environmental Injustice?*, 56 WASH. & LEE L. REV. 111, 112 (1999) (noting some common critiques of command-and-control policies).

¹⁵¹ See Lockhart & Hutton, *supra* note 149, at 526.

¹⁵² See *id.* at 530.

tackle the global-warming problem, we need not select these tools to the exclusion of incentives. Some scholars have advocated using tax credits to supplement our other policy efforts when doing so would be advantageous in particular contexts.¹⁵³ Because the place of the automobile is ingrained in the American consciousness, the problem of auto emissions is an ideal candidate for employing a tax credit to compliment other existing policies aimed at reducing transportation source emissions.

In order to fully reap the advantages of enacting an incentive to reduce auto GHG emissions, the policy should target the ultimate decision-makers behind the wheel: the drivers.¹⁵⁴ Although numerous federal tax-incentives are geared toward institutional behavior, there is a dearth of incentives aimed at altering individual behavior.¹⁵⁵ Our current national air-quality programs are almost entirely aimed at institutional polluters.¹⁵⁶ Enacting the SUSTAINED Credit would help fill this legislative void. Because of the substantial proportion of emissions attributable to individual behavior,¹⁵⁷ it is imperative that our climate-change mitigation strategy include provisions that aim to encourage individuals to make environmentally sound decisions.

Some scholars have raised concerns about the potential for environmental tax-incentives to “crowd out” altruism from the environmental decision-making calculus.¹⁵⁸ This concern seems

¹⁵³ See *id.* at 527 (advocating for tax subsidies to be used as a supplement to existing programs aimed at achieving environmental policy goals).

¹⁵⁴ Michael P. Vandenberg & Anne C. Steinemann, *The Carbon Neutral Individual*, 82 N.Y.U. L. Rev. 1673, 1676, 1698 (2007) (observing that targeting individual GHG emissions is essential to abating global warming and that auto emissions account for the largest amount of total individual GHG emissions).

¹⁵⁵ Roberta F. Mann & Mona Hymel, *Getting Into the Act: Enticing Consumers to Become “Green” Through Tax Incentives*, 36 ENVTL. L. INST. 10419 (2006) (pointing to the scarcity of demand-side tax incentives and arguing that more tax incentives should be enacted that aim to influence individuals’ environmental decisions).

¹⁵⁶ A notable recent example of a program aimed at improving air quality but which only regulates industrial polluters is the most recent iteration of the Clean Air Act, Pub. L. No. 88-206, 77 Stat. 392 (1963), the Clean Air Act of 1990. Pub. L. No. 101-549, 104 Stat. 2399 (1990).

¹⁵⁷ Susan Aschoff, *Are You Bad for the Environment?*, ST. PETERSBURG TIMES, May 11, 2006, at 1E (reporting that twenty percent of CO₂ emissions in the United States are from vehicles owned by individuals and discussing other individual decisions contributing to global warming including waste practices and food choices).

¹⁵⁸ See Holly Doremus, *Shaping the Future: The Dialectic of Law and Environmental Values*, 37 U.C. DAVIS L. REV. 233, 267 (expressing concern that incentives may have

less troubling in a mass-transit automobile context. In many urban centers where traffic congestion is unbearable and parking is exorbitantly expensive, commuters still choose to drive to work. Because of the cultural premium placed upon driving, commuters often make the irrational choice to drive instead of traveling via mass transit. The lower cost, reduced stress, and sometimes shorter commute time do not provide great enough incentives to get many commuters out of their cars and onto mass transportation.

At the same time, Americans are becoming more aware of the global-warming problem and more supportive of efforts to reduce GHG emissions.¹⁵⁹ By sending a clear message about the environmentally destructive effects of auto-source GHG emissions, the SUSTAINED Credit would provide the nudge necessary to persuade commuters to choose mass transit over driving.¹⁶⁰ Furthermore, because drivers would realize the benefits of commuting via mass transit in the form of a shorter, less expensive and less stressful commute, the incentive would likely not crowd out the taxpayer's altruistic motives.¹⁶¹ Instead, commuters benefitting from the SUSTAINED Credit would likely observe a synergy between environmentally sound behavior and their own self-interest.

the indirect consequence of eliciting environmentally responsible behavior in exchange for reward instead out of notion of social duty); *contra* Clamon, *supra* note 6, at 99 (arguing that a tax credit may have the potential to arouse altruistic behavior in the context of encouraging blood and organ donations).

¹⁵⁹ Marilyn Elias, *Actions Don't Match 'Green' Attitudes; Survey Shows There's a Lot Left to Do*, USA TODAY, Jan. 31, 2008, at 11B (citing a survey finding that a majority of Americans view global warming as a "very serious problem," but lamenting the rampant inaction among Americans).

¹⁶⁰ See Mann & Hymel, *supra* note 155, at 1 (describing the way in which tax incentives can prod consumers to make environmentally sound decisions); *contra* Andrew Green, *You Can't Pay Them Enough: Subsidies, Environmental Law and Social Norms*, 30 HARV. ENVTL. L. REV. 407 (2006) (arguing that while subsidies may have some influence on individual environmental choice in the short run, in the long term subsidies may have a weak or even negative effect on individuals' environmental choices).

¹⁶¹ The benefits mass-transit subscribers realize will not be from the incentive, but instead are a natural consequence of forgoing driving. Hence, the mass-transit subscribers will not be conditioned to choosing the environmentally sound mode of transportation just for the subsidy they are receiving, but may find that mass transit is in their own self-interest for reasons apart from the tax subsidy. Under these circumstances, a "crowding out" effect seems less likely.

The SUSTAINED Credit is not only more effective at reducing source GHG emissions, it is also more a more efficient policy tool than its alternatives. Efficiency is measured by considering how well a tax instrument achieves its policy goals and how this change in behavior affects overall economic output.¹⁶² Regulatory approaches often cost too much in proportion to the amount of pollutants they successfully eliminate.¹⁶³ Positive tax proposals aimed at reducing auto-source GHG emissions, such as an increased gasoline excise tax, are frequently met with trepidation because of their potential to squelch productivity by keeping people immobilized in their homes out of fear of high gas costs instead of getting out and engaging in profit-seeking activities.

Concerns over costs outweighing benefits and stifling productivity are less vexing in the context of the SUSTAINED Credit. Administrative and compliance costs for refundable tax credits are likely to be small and are not likely to detract from the credit's potential benefits.¹⁶⁴ Similarly, concerns over a decrease in productivity are misplaced in the context of the SUSTAINED Credit. Unlike an excise tax, the SUSTAINED Credit does not provide an inducement for commuters to forgo income-earning opportunities and stay at home. Instead, the credit provides an incentive for commuters to incorporate mass transit into their travel plans when doing so is feasible. The commuter loses nothing by driving and only stands to gain by traveling via mass transit.¹⁶⁵ There are additional efficiency benefits resulting from

¹⁶² C. EUGENE STEUERLE, CONTEMPORARY U.S. TAX POLICY 12 (2004).

¹⁶³ Carol M. Rose, *Hot Spots in the Legislative Climate Change Proposals*, 102 NW U. L. REV. COLLOQUY 189, 189-90 (2008) (discussing the high cost of traditional command-and-control regulation as a factor in the decision to move to a market-based regulatory approach for the regulation of sulfur dioxide emissions); BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, SB/93-13, STATISTICAL BRIEF: MEASURING THE PRODUCTIVITY IMPACT OF POLLUTION ABATEMENT 1, 2 (Nov. 1993), available at http://www.census.gov/apsd/www/statbrief/sb93_13.pdf.

¹⁶⁴ Lily Batchelder et. al., *Efficiency and Tax Incentives: The Case for Refundable Tax Credits*, 59 STAN. L. REV. 23, 69 (2007).

¹⁶⁵ Certainly a commuter who lives in an area served by mass transit but chooses never to use it could be said to incur a loss in some respect. In this type of scenario, the relative cost of driving does increase. However, unlike in the gasoline excise tax scenario, the driver who wants to engage in income-generating activities is not left with a choice between staying home and incurring additional expenses. The driver can travel by mass transit and incur no additional expense. Furthermore, driving is not foreclosed as a choice for commuters who wish to reap the tax benefits from the

the use of a tax incentive like the SUSTAINED Credit to persuade individuals to forgo driving.

The SUSTAINED Credit has several other characteristics that make it an efficient approach to reducing auto GHG emissions. The credit is uniform across income groups and refundable.¹⁶⁶ Several commentators have argued that uniform refundable tax credits are distinctly well-suited to efficiently correct for positive externalities.¹⁶⁷ The current transit-pass incentive under Section 132 is structured as an exclusion. As such, it provides tax relief only to taxpayers realizing a certain income and is not refundable. The SUSTAINED Credit is better equipped to reduce auto GHG emissions in a more efficient manner than the current Section 132 transit-pass exclusion.

IV. SECTION 132'S IMPOTENT TRANSIT-PASS EXCLUSION AND PERVERSE PARKING INCENTIVE: A CALL FOR REFORM

The transit-pass exclusion under Section 132 was included in the IRC almost as an afterthought.¹⁶⁸ The provision provides a weak incentive for only a circumscribed group of taxpayers to choose mass transit over driving. In order to provide a meaningful incentive to persuade commuters to choose mass transit over driving, Congress must enact a more ambitious and farther-reaching tax incentive expressly designed to this end. Attempts to breathe life into the Section 132 transit-pass exclusion are unlikely to produce a strong enough incentive to get commuters out of their cars and affect the significant reductions in GHGs we desperately need to abate global warming.

A. A More Powerful Incentive

The SUSTAINED credit would provide a more potent inducement than the current exclusion under Section 132. The credit would provide a greater amount of tax relief to a greater

SUSTAINED Credit. Commuters need only use mass transit to the point at which they can benefit under the credit. It need not be their *only* mode of transport.

¹⁶⁶ See *supra* Part III.

¹⁶⁷ Lily Batchelder et. al., *supra* note 164, at 57-66. The authors also argue that the refundable tax credit is a more efficient vehicle for achieving social goals than deductions and exclusions. *Id.* at 28-29.

¹⁶⁸ See *supra* Part II.D.

number of taxpayers. In addition, the SUSTAINED Credit, unlike the current exclusion, would allow taxpayers to receive a reduction in their tax liability for expenses incurred from travel by regional rail and common-carrier bus service. Furthermore, the credit would apply uniformly across all income groups and geographical areas while still targeting areas that have the highest levels of GHG emissions.

1. A Credit Provides More Tax Relief to More Taxpayers Than an Exclusion

Under the credit proposed in this Note, taxpayers would receive more tax relief, as measured by the reduction of total tax liability per taxpayer, and a greater number of taxpayers would benefit from the incentive than do under the current exclusion. The credit would provide more relief than the exclusion because it expands the reach of the incentive currently provided under the exclusion in Section 132 to include tax relief for not only mass-transit travel, but also for travel by regional transportation services such as rail and common-carrier travel.¹⁶⁹ Lastly, the credit would put this incentive in the hands of those making travel decisions: individual taxpayers.

First, a mass-transit tax credit would be available to a greater number of taxpayers than the current exclusion under Section 132. The exclusion for mass transit under Section 132 is administered by employers and is available only to those taxpayers whose employers offer mass-transit passes as part of the employees' fringe benefits.¹⁷⁰ Consequently, the credit would be available to a much larger group of taxpayers than the exclusion because the taxpayer seeking to reap the benefits need not be employed by an organization offering mass-transit passes as part of its fringe benefits. In fact, the taxpayer need not even be employed to receive tax relief for choosing to travel via mass transit, as the incentive is self-administered as part of the preparation of every taxpayer's tax return. Hence, full-time college students, stay-at-home parents, self-employed persons and many other types of taxpayers who would not be able to reap the

¹⁶⁹ See *supra* Part III.

¹⁷⁰ 26 U.S.C. § 132(f)(1) (2000) (providing for an exclusion for the cost of mass-transit passes only when such passes are "provided by an employer").

benefit of the mass-transit exclusion under Section 132 would be able to do so under the SUSTAINED Credit.¹⁷¹

More importantly, if the proposed credit were adopted, the incentive implicit in the tax code under Section 132 to choose mass transit over travel by automobile would no longer be provided only to those taxpayers who are employed by an organization providing the mass-transit fringe benefit. Such a limitation under the existing exclusion is not sensible because it is not only this group of taxpayers, namely the “employees” designated under Section 132, who drive automobiles that emit GHGs. All taxpayers who drive automobiles are responsible for the CO₂ being emitted from their vehicles and any tax incentive aimed at reducing such emissions should take this into account.

The number of taxpayers who would be eligible for tax relief under the credit would be greater than under the Section 132 exclusion for another reason: A credit, unlike an exclusion, is deducted from a taxpayer’s tax liability after the taxpayer’s taxable income has already been calculated. Thus, the value of the credit is the same for all taxpayers whereas the value of an exclusion depends on the taxpayer’s marginal tax rate. High-income taxpayers benefit more from an exclusion than do low-income taxpayers.

In order to benefit from an exclusion, a taxpayer’s income must be above the lowest level for which the government taxes incomes for that particular tax year. For example, for the 2008 tax year, persons taking the standard deduction with incomes below \$8,951 had no taxable income.¹⁷² Therefore, those single taxpayers making less than \$8,951 in 2007 would receive no tax relief for the environmentally-conscious decision to refrain from driving. The current exclusion fails to provide any incentive for an entire income group to choose mass transit over the more environmentally-destructive option of driving. Implementing a

¹⁷¹ Bruce McClain et al., *Examining the Environmental Friendliness of Qualified Transportation Fringe Benefits*, in CRITICAL ISSUES IN INTERNATIONAL ENVIRONMENTAL TAXATION: INSIGHTS AND ANALYSIS FOR ACHIEVING ENVIRONMENTAL GOALS THROUGH TAX POLICY, 473, 477 (Lawrence A. Kreiser ed., 2002) (pointing to the narrow scope of persons eligible to exclude mass-transit expenses from income because of Section 132’s requirement that taxpayers who receive a tax benefit under the section be receiving transit benefits from an employer).

¹⁷² Rev. Proc. 2007-66, 2007-45 I.R.B. 970.

refundable credit would remedy this shortcoming because all taxpayers traveling by mass transit would be eligible to receive tax relief for expenses incurred for such travel regardless of the amount of their income.

The credit would also provide a greater incentive for travel by mass transit in terms of the amount of tax relief available under the incentive. Assuming the tax credit was uniform across income groups and refundable, as proposed above, even a modest credit for mass-transit expenses would provide a greater amount of tax relief, as measured by the amount of reduction in income-tax dollars spent per taxpayer than the current exclusion provides.

The current exclusion allows a taxpayer whose employer provides mass-transit passes to exclude up to \$230 per month in costs incurred from the purchase of such passes from the taxpayer's taxable income.¹⁷³ Assuming employees spent the maximum amount for which they could be eligible to exclude from their taxable income under the exclusion, the total yearly amount of income that employees could exclude under the current exclusion would be \$2,760. However, only those taxpayers in the highest-income groups would benefit in any significant degree from the exclusion because the marginal rate at which they are taxed is much higher for income culled off the top under the exclusion than the marginal rate of taxpayers with lower incomes benefiting from the exclusion.¹⁷⁴ Many lower-income

¹⁷³ Rev. Proc. 2008-66, 2008-45 I.R.B. 1107.

¹⁷⁴ To illustrate this point, consider the hypothetical example of taxpayers Marta and Bart. Fictional tax rules will be used to more clearly demonstrate the disproportionate benefit conferred upon higher-income earners by application of the exclusion for transit expenses in a progressive-income tax regime. Marta and Bart each incur \$1,000 in transit expenses annually. Marta has \$20,000 in taxable income and is subject to a marginal tax rate of 10%. Thus Marta's tax liability is \$2,000 before application of the exclusion for transit expenses and \$1,900 thereafter based on the exclusion of \$1,000 from taxation at a marginal rate of 10%. Hence, Marta received a benefit of \$100 for choosing mass transit, recouping 10% of her transit expenses. Bart, on the other hand, has \$100,000 in taxable income and is subject to a marginal tax rate of 30%. Thus, Bart's tax liability is \$30,000 before application of the exclusion for transit expenses and \$300 less thereafter based on the exclusion of \$1,000 from taxation at a marginal rate of 30%. Hence, Bart received a benefit of \$300 for choosing mass transit, recouping 30% of his transit expenses. Thus, two taxpayers choosing to engage in the same socially-conscious behavior, and incurring the same absolute amount of expenses, receive substantially disparate benefits based solely upon their respective levels on income. The disparity in benefits is even more pronounced considering that Marta expended 5% of her

taxpayers benefiting from the current exclusion are provided such a small monetary incentive that the amount of tax relief is almost negligible.¹⁷⁵

Hence, on average, as measured by the reduction in the amount of income tax owed per taxpayer under the exclusion compared to the amount owed under the credit, the mass-transit tax credit would provide a greater incentive to taxpayers to refrain from driving and to choose public transportation. Although the tax credit may cost more than the current exclusion under Section 132, the credit could be implemented on a revenue-neutral basis by eliminating other, non-environmentally sound tax credits currently given to industry.¹⁷⁶ Even if the tax credit could not be implemented without incurring some additional tax burden, the cost over the long-term would presumably be equalized because of the reduction of the targeted externality: GHG emissions.

2. The Rise of the Megalopolis: Development and GHG Emissions Unleashed

Any policy instrument aimed at reducing auto emissions must take into account the birth of the twenty-first century's successor to the city: the megalopolis. A natural consequence of the "urban sprawl effect," the megalopolis encompasses at least several cities, all of the suburbs in between and sometimes even crosses over national borders.¹⁷⁷ Because the Section 132 mass-transit exclusion applies only to travel by mass transit and does not allow taxpayers to reap a tax benefit when they travel by regional rail and bus service,¹⁷⁸ the current exclusion does not adequately address the large amount of GHG emissions resulting from automobile travel

otherwise taxable income to receive a benefit one-third the size Bart's, who only had to expend 1% of his otherwise taxable income.

¹⁷⁵ Brian H. Jenn refers to this characteristic as an "upside-down benefit" in his discussion of how tax expenditures operate across different income groups in the context of deductions. See Brian H. Jenn, *The Case for Tax Credits*, 61 TAX LAW. 549, 556 (2008).

¹⁷⁶ See *supra* Part II.

¹⁷⁷ Richard Florida, *The New Megalopolis*, NEWSWEEK INT'L, July 3-10, 2006, available at <http://www.newsweek.com/id/46126>.

¹⁷⁸ 26 U.S.C. § 132(f)(5) (2000) (defining "transit pass" as a token, voucher or fare which entitles a person to travel to transportation on "mass transit facilities").

in our urban corridors.

Mounting evidence is demonstrating that auto emissions are a serious threat not only in cities, but also to the larger metropolitan areas surrounding cities.¹⁷⁹ The need for an incentive to persuade intercity travelers to choose regional rail or bus service over driving is evident by looking at the proportion of travelers who opt to travel by car in comparison to other, more environmentally-friendly modes of transportation in order to get from one city to another. In 2000, as measured by miles traveled between cities, travelers selected rail service for intercity travel for 5.5 billion passenger miles compared to a whopping 2.5 trillion passenger miles by car.¹⁸⁰ Slightly more travelers chose to go by bus than by train, traversing 37.9 billion passenger miles by bus for intercity travel in 2000.¹⁸¹

The disparity between miles traveled by car and miles traveled by regional bus and train travel for intercity travel is tremendous. Taxpayers should be eligible to receive tax relief for costs incurred for such travel when they choose to travel by a more environmentally-friendly mode of transportation such as regional bus and rail service. Doing so, as is proposed in this Note's mass-transit credit, would make for a more powerful incentive than the current exclusion under Section 132 and would lead to a significant reduction in auto source CO₂ emissions.¹⁸²

¹⁷⁹ Richard Lacayo, *The Brawl over Sprawl*, TIME, Mar. 22, 1999, at 44 (discussing the link between sprawl, car emissions, global warming, and traffic emissions in several U.S. cities).

¹⁸⁰ CONGRESSIONAL BUDGET OFFICE, THE PAST AND FUTURE OF U.S. PASSENGER RAIL SERVICE 29-31 (2003), available at <http://www.cbo.gov/ftpdoc.cfm?index=4571&type=0&sequence=4>.

¹⁸¹ *Id.*

¹⁸² The average private vehicle emits approximately one pound of CO₂ carbon dioxide per mile. TODD DAVIS & MONICA HALE, AMERICAN PUBLIC TRANSPORTATION ASSOCIATION, PUBLIC TRANSPORTATION'S CONTRIBUTION TO GREENHOUSE GAS REDUCTION 14 (2007), available at http://www.apta.com/research/info/online/documents/climate_change.pdf. Hence, total CO₂ emissions from intercity automobile travel account for approximately 2.5 trillion pounds of total auto source emissions. To the extent that a tax incentive, such as the proposed credit, could successfully persuade travelers to choose rail or bus service to travel between cities rather than driving, the incentive could significantly contribute to a reduction in total GHG emissions.

3. Uniform Incentive, Targeted Effect

Not only does the mass-transit credit provide a greater incentive for taxpayers to rely on mass transit in place of driving than the current exclusion under Section 132, it also is uniform in its application among all taxpayers and is targeted in its impact to those places in the country where auto emissions are the greatest. SUSTAINED Credit would fully utilize this distinctive feature of uniformity by allowing all taxpayers, regardless of income, to receive a credit on their income tax liability for expenses incurred traveling by mass and regional rail and bus service. The uniform application of the tax credit across income groups is particularly beneficial because of its potential to reduce our nation's dependence on the automobile. Furthermore, because the credit will only result in a loss of tax revenue to the extent taxpayers actually use mass transit, the tax credit uniformly provides an incentive to all taxpayers, regardless of geographic location and does not needlessly expend resources on individuals who will not utilize mass transit.¹⁸³

V. CONCLUSION

Our efforts to stop climate change and to reduce GHGs must not be limited to one front. In order to be effective in our fight against global warming, we must attack all sources of GHGs, starting with those sources responsible for the greatest amount of emissions. Emissions from automobiles account for a very large share of total GHG emissions and thus should be given priority as we develop legislative strategies to address greenhouse gases. However, as great as our need is to focus on the largest sources of GHGs, we cannot ignore the political obstacles inherent in enacting policies which have great economic and commercial ramifications and require significant structural changes. A tax

¹⁸³ In contrast, consider a uniform mass-transit subsidy to municipalities. A mass-transit subsidy disbursed uniformly across the United States to municipalities would not have this feature. Some municipalities might offer a new service that never attracted riders. The funds devoted to transit through the subsidy in this situation would be wasted because an insufficient number of riders would subscribe to the service. The SUSTAINED Credit would be available regardless of geographic location but, unlike the uniform subsidy example above, would not cost beyond the extent to which the taxpayers utilized mass transit.

credit designed to provide an incentive to reduce auto emissions by choosing mass transit in our urban centers, where auto GHG emissions pose the greatest threat, is a politically-viable solution for an environmental problem mired in industry interests and political contention. Furthermore, the SUSTAINED Credit has the potential of creating a substantial decrease in auto GHGs because it would change the relative price of driving and make mass transit more desirable. Finally, the secondary benefits to enacting a tax credit that provides an incentive for utilizing mass transit include reducing congestion, raising awareness about global warming generally and providing a larger revenue base for mass transit systems so that routes can be expanded and service improvements can be made.

