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GREENHOUSE GAS EMISSION TARGETS AND MASS TRANSIT: CAN THE GOVERNMENT SUCCESSFULLY ACCOMPLISH BOTH WITHOUT A CONFLICT?

Darren A. Prum* and Sarah L. Catz**

Our vast progress in transportation, past and future, is only a symbol of the progress that is possible by constantly striving toward new horizons in every human activity. Who can say what new horizons lie before us if we can but maintain the initiative and develop the imagination to penetrate them—new economic horizons, new horizons in the art of government, new social horizons, new horizons expanding in all directions, to the end that greater degrees of wellbeing may be enjoyed by every one, everywhere.¹

I. INTRODUCTION

In a swift change in public policy and to comply with a United States Supreme Court mandate,² the Obama Administration altered the course of the federal government by addressing climate change and greenhouse gas emissions quickly after taking office. In looking to the transportation sector to return meaningful and rapid results, one of the components that could create a dual impact arises out of dependable, affordable, and convenient public transit alternatives. By encouraging the public to reduce their driving habits and to switch modes for their various

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* Assistant Professor, The Florida State University. In memoriam of Amy Corwin (1984–2009), the Class of 2009 Santa Clara University School of Law student who aspired to join the profession but was tragically unable to complete her studies.

** Director, Center for Urban Infrastructure; Research Associate, Institute of Transportation Studies, University of California, Irvine.

transportation needs, the government could accomplish many different goals, such as reducing greenhouse gases, reducing congestion, and improving our national security by depending less on foreign oil.

Transportation agencies across the country, however, are sharply cutting services in the face of harsh fiscal constraints from all levels. These measures are the latest sign of the fiscal woes in many state and local agencies across the country that threaten to derail the Obama Administration's policy change.

At the same time, decades-old policies that create vicious cycles for more highways and greenhouse gas emissions require revamping to meet the new paradigm of today's reality. Much of our current transportation policy originates from decisions made over a half century ago. Congress revisits and adjusts these plans every six years, but the current policy fails to account for modern environmental issues like global warming and neglects many parts of the country that need assistance in reducing greenhouse gas emissions.

Recognizing the threat from climate change and seeking solutions of their own, several states individually and collectively have begun searching for short and long term solutions. Some states, like Florida, directly mandate that local governments evaluate the impact of transportation on greenhouse gases, while California uses an environmental agency to develop specific targets for emission reductions based on pollution sources.

4. Id.
7. FLA. STAT. ANN. § 163.3177(6)(b) (West 2010).
In another interesting turn of events and due to a lack of action by the federal government in the past to create a comprehensive national approach, regional compacts amongst states and provinces now occur across North America to combat climate change. These regional compacts look to create "cap-and-trade" zones with regard to the emissions of greenhouse gases in their jurisdictions so that uniformity occurs over a broad geographic region.

With this complex situation in mind, this article will explore the various climate change and mass transit initiatives around the nation and propose measures for adoption to accomplish both goals. Part I examines the initiatives to reduce greenhouse gas emissions from the transportation sector on both the federal and state levels. Part II evaluates the various federal government obstacles to reducing greenhouse gases via the United States Constitution through the Commerce Clause and Preemption before considering the regulatory and funding issues. Part III investigates other factors that influence current transit choices such as regulations and funding issues. Finally, Part IV proposes ways to accomplish the dual goals of (1) reducing greenhouse gas emissions while promoting transit alternatives on the federal and state governmental levels, and (2) partnering with private industry.

II. INITIATIVES TO REDUCE GREENHOUSE GASES

Over the past decade, a number of issues have collided to thrust environmental concerns over greenhouse gas emissions into the national spotlight. Many of these issues concern emissions from transportation, which affects mass transit options. Because these two areas occur within both federal and state jurisdictions, and also on the legislative and


10. Id. A "cap-and-trade" program occurs when the government sets a limitation on emissions through permits from a given set of sources and then allows the emitters to trade the licenses amongst participants to achieve predetermined pollution targets on a geographic based market. See CAL. AIR RES. BD., STATE OF CAL., CLIMATE CHANGE PROPOSED SCOPING PLAN: A FRAMEWORK FOR CHANGE, 33–38 (2008) [hereinafter SCOPING PLAN], available at http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm.
administrative levels, all of these aspects must be examined to understand these complex issues.

a. Federal Government

Following the change in presidential administrations in 2009, concerns over greenhouse gas emissions became an important part of President Obama's agenda. Despite these concerns, Congress has yet to act on comprehensive “cap-and-trade” legislation. The House of Representatives passed the “Cap and Trade” bill, HR 2454, on June 26, 2009, but it remains stalled in the Senate. In the absence of new legislation, the Obama Administration plans to take action on the executive side of the government until Congress acts.

When evaluating the regulation of greenhouse gases in relation to transportation issues on the federal level, both the Environmental Protection Agency (EPA) and the Department of Transportation (DOT) play pivotal roles.

i. EPA

Following the National Academy of Science's 2001 report on global warming, President George W. Bush and his administration took the position that scientists had not empirically proven whether human activity caused an increase in greenhouse gases in our atmosphere. Accordingly, the EPA followed this direction and refused to further regulate greenhouse gases as pollutants under the Clean Air Act.

In response to the Bush Administration's approach, a group of environmental, renewable energy, and other private organizations requested that the EPA, pursuant to the Clean

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13. See Mufson & Fahrenthold, supra note 11.
Air Act, begin regulating four greenhouse gases.\textsuperscript{16} However, the EPA declined because it believed that Congress did not authorize it to address global climate change issues and that no scientific correlation between greenhouse gases and global warming was conclusive.\textsuperscript{17} This caused a consortium of state and local governments to appeal the EPA's contention to the United States Supreme Court.\textsuperscript{18} The Court held that greenhouse gases are pollutants as defined in the Clean Air Act.\textsuperscript{19} The Court further ordered the EPA's Administrator to evaluate whether emissions of greenhouse gases cause or contribute to air pollution that may reasonably endanger the public's health or welfare.\textsuperscript{20}

In compliance with the U.S. Supreme Court's directive, the Administrator of the EPA served notice to the public on April 24, 2009, that the agency proposed to find that greenhouse gases in the atmosphere jeopardize the public health and welfare of current and future generations of American citizens.\textsuperscript{21} The EPA began a sixty-day open comment period for the public to participate and submit meaningful data to the agency and also held two open hearings in Arlington, Virginia, and Seattle, Washington that

\begin{itemize}
\item \textsuperscript{16} \textit{Id.} at 505. The organizations encompassed: Center for Biological Diversity, Center for Food Safety, Conservation Law Foundation, Environmental Advocates, Environmental Defense, Friends of the Earth, Greenpeace, International Center for Technology Assessment, National Environmental Trust, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists, and U. S. Public Interest Research Group. \textit{Id.} at 505 n.4.
\item \textsuperscript{17} \textit{Id.} at 505.
\item \textsuperscript{18} \textit{Id.} The states that appealed the EPA's determination included: California, Connecticut, Illinois, Maine, Massachusetts, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, and Washington. \textit{Id.} at 505 n.2. The local governments were: District of Columbia, American Samoa, New York City, and Baltimore. \textit{Id.} at 505 n.3.
\item \textsuperscript{19} \textit{Id.} at 527–29. More specifically, the Court's opinion included the specific language under interpretation—Clean Air Act section 202(a)(1):
\begin{quote}
The [EPA] Administrator shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare . . . .
\end{quote}
\textit{Id.} at 506.
\item \textsuperscript{20} \textit{Id.} at 533–36.
\item \textsuperscript{21} Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 18,886 (Apr. 24, 2009).
\end{itemize}
would give others an opportunity to speak about this proposal. After closing the comment period on June 23, 2009, the EPA began evaluating the responses and testimony to make a final determination. On December 15, 2009, with all of the comments in mind, the EPA announced its finding that greenhouse gases pose an endangerment to the public health and welfare.

In response to the EPA's declaration, some members of the public are concerned that a new tool will be developed that will allow the federal government to regulate emissions in a variety of different directions. In fact, in the context of fleet transportation, the EPA began developing strategies to establish a carbon metric and regulation of those emissions from mobile sources via its SmartWay Transport Partnership. Thus, as expressed and indicated by the EPA, this recent finding may now be applied to more than just

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22. Id.

23. Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009). In fact, the EPA explained that it received over 380,000 comments and that about 370,000 were from mass-mailing campaigns. Id. at 66,500. Of the mass-mailing comments received, the EPA estimated two-thirds supported the proposal; those disagreeing with the proposal mostly opposed for either economic reasons or took issue with the viewpoint that atmospheric greenhouse gas concentrations jeopardize public health and welfare. Id. Finally, the EPA rebutted requests to further delay the determination because the initial request to regulate greenhouse gases came over ten years prior, the United States Supreme Court decision came two and a half years earlier, and "there is good reason to act now given the urgency of the threat of climate change and the compelling scientific evidence." Id.

24. Id. at 66,496. This EPA decision raised the ire of many members of Congress. After the EPA's finding, Senator Lisa Murkowski immediately announced that she plans to seek a Resolution of Disapproval to prevent the EPA from regulating greenhouse gas emissions under the Clean Air Act. Nick Snow, Prospects Uncertain for U.S. Climate-Change Legislation, OIL & GAS J., Dec. 21, 2009, at 28, available at 2009 WLNR 26394431. This procedural action gives Congress the ability to overturn regulations by referring the matter to the appropriate committee and then to the full Senate should no action occur within thirty days. Congressional Review Act, Pub. L. No. 104-121 (1996) (incorporated into the Contract with America Advancement Act of 1996, codified at 5 U.S.C. §§ 801–808 (2010)). The President may veto the resolution, but a two-thirds vote by both chambers of Congress can ultimately override it. Id.


vehicles because the agency can now limit emissions from a more diverse and larger set of polluters.  

\[ \text{ii. DOT} \]

The DOT will undoubtedly become involved in the newly broadened scope of the EPA's transportation-related limits on greenhouse gases. Within the DOT, the National Highway Traffic Safety Administration (NHTSA), the Federal Transit Administration (FTA), and the Federal Railroad Administration (FRA) each affect public policy with regard to greenhouse gases and transit options. The NHTSA already provides the principle administrative oversight for vehicle fuel efficiency and safety standards across the country, and the FRA regulates passenger rail service. Such regulation entails promoting national railroad transportation policy and safety enforcement. Alternatively, the FTA's mission directly involves public transit assistance through financial support by the federal government. While each may have its own distinct statutory framework to administrate with regard to transportation issues, they are all interconnected when considering approaches to reducing greenhouse gases from transportation and will most likely work in collaboration with the EPA on setting standards.

\[ \text{1. National Highway Safety Administration} \]

Case in point, the EPA and NHTSA began a joint initiative in 2009 under which the two agencies signaled an upcoming collaborative effort to limit greenhouse gases predicated on the pending outcome of the EPA's "endangerment" investigation. The EPA, pursuant to its administrative authority under the Clean Air Act, announced details of its plans to introduce regulations limiting the release of carbon dioxide from vehicles. The NHTSA planned

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27. See Talley, supra note 12.
to enact coordinating standards under its Corporate Average Fuel Economy (CAFE) program to limit tailpipe emissions from vehicles.\footnote{32} Following this joint announcement, the two agencies made the official proposal on September 28, 2009 and began a comment period ending November 27, 2009.\footnote{33}

In the notice, the agencies explained that 31.5 percent of all greenhouse gases come from transportation sources, including automobiles, highway heavy-duty trucks, airplanes, railroads, marine vessels and a variety of other sources, which represent the fastest growing sector of emissions.\footnote{34} These agencies believe that, by working together, the National Program can achieve emissions reductions of "approximately 950 million metric tons of total carbon dioxide equivalent emission reductions and approximately 1.8 billion barrels of oil savings over the lifetime of vehicles sold in model years 2012 through 2016."\footnote{35} Thus, the agencies explain that the new regulations will provide a uniform approach to the sale of vehicles that would otherwise require those in the vehicle industry to follow a patchwork of directives from three different regulatory bodies.\footnote{36}

Through this initiative, the federal executive branch appears to simultaneously promote three different goals: lower greenhouse gas emissions, lessened use of petroleum-based products, and better vehicle performance standards. However, unlike the program by the California Air Resources Board discussed later, the EPA and NHTSA’s new national program does not appear to directly affect mass transit’s ability to release greenhouse gases because the majority of

\footnote{32} Id. at 24,008. In the notice, the Agencies explained:
Together, these vehicle categories, which include passenger cars, sport utility vehicles, minivans, and pickup trucks, are responsible for almost 60 percent of all U.S. transportation-related greenhouse gas emissions. If ultimately adopted, these standards would represent a harmonized and consistent national policy pursuant to the separate statutory frameworks under which EPA and DOT operate.

\footnote{33} Id. at 24,007.


\footnote{35} Id. at 49,508. In looking at all sources of greenhouse gas emissions in the United States, transportation is second only to the electricity generation sector at 33.7 percent. Id.

\footnote{36} Id. at 49,460.

\footnote{36} Id. The three agencies include the EPA, NHTSA, and the California Air Resources Board, which is discussed later in the article. Id.
the means of transportation used will not fall within the types of vehicles covered.

2.Federal Railroad Administration

As the principal federal agency overseeing the nation's rail service, the FRA squarely sits at another intersection between efforts to reduce greenhouse gases and the promotion of mass transit options to the public. The FRA oversees many of the traditional areas considered part of mass transit, such as passenger rail service, but it also includes many of the most relied upon systems in the urban setting, like light rail and subways. Moreover, it also plays a crucial role in bringing the latest technology in this field to our country through high-speed passenger rail service. Accordingly, this entire area started receiving more attention when the Obama Administration highlighted it as an area in which the country can make immediate improvements on the fronts of energy efficiency, environmental awareness, and quality of life issues, as well as economic investment within the country.

While the EPA and NHTSA are working collaboratively on vehicle emission standards, the FRA yields to the EPA in setting the pollution standards for non-road engines, such as locomotives. The EPA's Office of Transportation and Air Quality put into place a two-pronged strategy to reduce emissions from the fuel aspect as well as by the engines used in locomotives. In June 2004, the EPA adopted the "Control of Emissions of Air Pollution From Nonroad Diesel Engines and Fuel," which virtually eliminated the sulfur content in the fuels used by locomotive engines starting in the middle of

2007. In this regulatory action, the EPA tightened emission standards on existing engines that are remanufactured while setting new standards for engines manufactured in the near term and those in later years that can take advantage of "high-efficiency catalytic aftertreatment technology." Based on this approach, the EPA believes that by 2030 the reduction in Nitrous Oxide and Particulate Matter will be approximately 800,000 and 27,000 tons, respectively.

Following these EPA actions, the Administrator of the FRA published the Preliminary National Rail Plan in which he repeatedly explained that, when compared on a relative cost, reduction of vehicle congestion, and emissions basis, rail will provide a net reduction in greenhouse gases. Moreover, the administrator also testified before a congressional subcommittee explaining that, through the latest high-speed rail initiatives, implementing this mode of transportation will also "[r]einforce efforts to foster energy independence and renewable energy, and reduce pollutants and greenhouse gas emissions." Thus, while the FRA may not primarily regulate emissions created by locomotives on the existing rail system, the agency plays a central role in fostering and bringing to fruition alternatives like high-speed rail, which can supplant traditional passenger service without the same greenhouse gas issues.

3. Federal Transit Administration

Unlike the other two DOT agencies that promulgate regulations over specific aspects of the national transportation system, the FTA only provides assistance and

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43. Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less than 30 Liters per Cylinder, 73 Fed. Reg. 37,096 (June 30, 2008).
44. Id.
45. Id.
46. FED. R.R. ADMIN., PRELIMINARY NATIONAL RAIL PLAN (2009).
oversight to the government’s spending to promote transit alternatives nationwide. The agency completes this mission by increasing the public transportation industry’s knowledge of new and existing solutions for sustainability issues while providing financial and technical help. It accomplishes these mandates on many levels and primarily provides an avenue to integrate environmental policy into planning and decision-making. For instance, the FTA maintains a repository for transit-related compliance under the National Environmental Protection Act of 1969 and other Executive Orders, regulations, policy statements, and technical manuals concerning the environment and transit.

At other times, Congress uses the agency to develop a policy pathway, which will entice state and municipal governments to take this route based on financial incentives. For example, the Omnibus Appropriations Act of 2009 instructed the FTA to develop and present an action plan for green transit facilities across the country to Congress. Based on its expertise, the agency noted that transit buildings do not expend a large portion of energy in comparison to trains and buses. However, the FTA explained that it impacted similar concerns during the 1990s when the agency played an important role in developing and transitioning diesel bus engines to meet the elevated and more rigorous emission requirements under the Clean Air

48. See FED. TRANSIT ADMIN., supra note 30.
49. FED. TRANSIT ADMIN., REPORT TO CONGRESS: TRANSIT GREEN BUILDING ACTION PLAN 8 (2009).
51. Id.
52. FED. TRANSIT ADMIN., supra note 49, at 8. The actual directive stated:
Transit facility green building plan.—FTA should be a more active partner and proactively work with grantees to explore green building options for transit facilities. FTA is directed to submit a transit facility green building action plan to the House and Senate Committees on Appropriations within 90 days of enactment. The plan should include: an overview of certified green building transit projects; an analysis of green rating systems that would be suitable for transit projects; planned FTA actions, timelines and resources to encourage green building in FTA programs; and, an inventory of relevant assistance that could be provided to transit authorities.

Id.
53. Id. at 8.
Act. Moreover, it also recently made available federal funds to enable the purchase of 4,000 hybrid-electric buses to reduce pollution and energy consumption.

Similar to the green transit building strategy, the FTA, along with other organizations, gave support to the Urban Land Institute’s Moving Color initiative to objectively study different strategies that will reduce greenhouse gases in transit. While other reports focused on transportation and climate change issues separately, this research tried to predict the influence of utilizing different policy tools to affect emissions and travel choices available. In joining this initiative, the agency showed that it funds research that will help decision-makers form an unbiased and objective perspective and will bring forth the various trade-offs when making policy decisions.

While the FTA does not directly regulate greenhouse gas emissions from mass transit, it does play an important role for end users seeking navigation expertise in the complex area where environmental and transportation goals collide. To this end, the agency’s primary focus in reducing greenhouse gas emissions comes through research and fostering implementation strategies that minimize the carbon footprint in both the construction and operation phases of public transportation.

Thus, the federal government appears to now utilize a multifaceted approach to the environment in the context of mass transit. While the EPA appears to provide the central regulatory framework for all things causing pollution, the DOT’s agencies also get involved when impacted. As previously illustrated, the EPA will take the lead in situations such as locomotives and work together in others like those of CAFE standards. In contrast, the FTA appears

54. Id.
55. Id. at 9.
57. CAMBRIDGE SYSTEMATICS, INC., MOVING COOLER: AN ANALYSIS OF TRANSPORTATION STRATEGIES FOR REDUCING GREENHOUSE GAS EMISSIONS 14 (Urban Land Institute 2009).
58. FED. TRANSIT ADMIN., HIGHLIGHTS OF THE FEDERAL TRANSIT ADMINISTRATION’S IMPACT ON PUBLIC TRANSPORTATION IN THE UNITED STATES (2008).
as the agency that offers incentives to state and local authorities by providing financial assistance at the federal level to support those public transportation options that meet the government’s policy objectives, like the reduction of greenhouse gases.

Accordingly, the federal government currently appears to separate the regulatory emissions components from the safety, operational, and public policy directives that influence the public's transportation choices. Through the EPA’s recent determination that greenhouse gases pose a risk to the public health and welfare, however, it obtained authority in enforcing the Clean Air Act that exceeds the areas that Congress originally considered, including areas traditionally left to other parts of the government to implement.

b. State

With the Bush Administration’s decision to abandon the federal government’s leadership position on national environmental policy, a new opportunity arose for states to satisfy this absence of direction within their jurisdictions. Many states realized that climate change would affect their economies and natural environments, so they began to recognize and assume a new responsibility in setting their own policies to affect change. California and many other states routinely decided over the past years to make use of their own authority by enacting legislation that called for greater environmental protection than those allowed under federal law.

i. California

Based on the tone taken at the federal level under the Bush Administration against regulating greenhouse gases, California Governor Arnold Schwarzenegger led the state down a different path than President Bush when he declared

60. Id. at 1367.
61. See, e.g., Patrick Parenteau, Lead, Follow, or Get Out of the Way: The States Tackle Climate Change with Little Help from Washington, 40 CONN. L. REV. 1453, 1455, 1467–68 (2008) (noting that California has set its own stricter vehicle emissions standards under § 209(b) of the Clean Air Act and that sixteen states have adopted California’s standards).
in front of the United Nations World Environment Day Conference that "today, California will be a leader in the fight against global warming." He further proclaimed, "I say the debate is over. We know the science, we see the threat and we know the time for action is now." Subsequently, the State of California enacted landmark legislation to reduce greenhouse gas emissions.

1. AB 32—The Global Warming Solutions Act of 2006

Following Governor Schwarzenegger’s assertion, the California Legislature passed AB 32, The Global Warming Solutions Act of 2006. AB 32 requires California to reduce its greenhouse gas emissions so that by 2020 California’s

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63. Id.
65. Recently, those who perceive a fundamental conflict between economic growth and environmental protection began attacking AB 32 and SB 375. See Margot Roosevelt, Bid to Suspend California’s Global Warming Law Qualifies for November Ballot, L.A. TIMES, June 23, 2010, available at http://articles.latimes.com/2010/jun/23/local/la-me-climate-initiative-20100623. These groups rely on the predictions by some economists that regulatory curbs on GHG emissions could raise energy prices for California consumers and businesses, which will in turn make the state less competitive and therefore damage the prospects for an economic recovery from the current recession. Id. Based on these beliefs, the groups placed Proposition 23 on the November, 2010 statewide ballot in California and were defeated. See Margot Roosevelt, Prop. 23 Campaign Concedes Defeat, L.A. TIMES, Nov. 3, 2010, available at http://latimesblogs.latimes.com/greenspace/2010/11/prop-23-defeat-global-warming-climate-change.html. Had it been approved by the voters, the proposition would have suspended implementation of AB 32 until long-term unemployment in California reached a pre-recession level of 5.5 percent for at least four consecutive quarters. Margot Roosevelt, Effort Underway to Suspend California’s Global Warming Law, L.A. TIMES, Feb. 6, 2010, available at http://articles.latimes.com/2010/feb/06/local/la-me-ballot-warming6-2010feb06. Furthermore, Proposition 23 would have also put SB 375 into jeopardy because the two pieces of legislation are highly interdependent.
emissions levels are below its 1990 levels. The legislation tries to accomplish this mission by giving the California Air Resources Board (CARB) broad responsibility to monitor and regulate any source of greenhouse gas emissions. As a result, the act directs CARB to adopt regulations that compel participation in its program to reduce greenhouse gas emissions and to monitor compliance within the statewide limits.

In carrying out these mandates, CARB must first determine greenhouse gas emission target levels for the entire state centered on a 1990 baseline, which also required the establishment of pollution levels at that time. Then, CARB must develop a program via the notice and comment rulemaking approach to adopt the target levels and utilize cost-effective solutions that maximize the use of available technology. The legislation also addressed practical aspects of the initiative, such as market-based compliance mechanisms and enforcement. However, the legislature left most of the details—like promulgation of regulations and penalties for violations—to CARB’s discretion so long as the agency avoids environmental injustice.

With this framework in place, CARB began carrying out its mandate under AB 32 by adopting its first rules in December 2007. It determined that the 1990 baseline emissions for California were at 427 million metric tons of carbon dioxide equivalents. CARB also issued new compulsory reporting requirements for the State’s largest industrial and commercial stationary sources, but specifically allowed the tracking of transportation through the system already in place. This signaled CARB’s unwillingness to

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67. Id.
68. CAL. HEALTH & SAFETY CODE § 38560 (West 2006).
69. Id. § 38562.
70. Id. § 38561.
71. Id.
72. See generally, Id. §§ 38560–38574.
74. Id. Interestingly, CARB projected the 2020 levels to be at 600 million metric tons of carbon dioxide equivalents, which means the State must prevent emissions of 173 million metric tons to meet AB 32’s mandate. Id.
75. Id. CARB explained that these sources encompass 94 percent of the greenhouse gas emissions and will affect:
directly regulate the transportation sector under AB 32, despite the recommendations of its Market Advisory Committee.  

Later, CARB put forward and approved a Scoping Plan with respect to the intended implementation of AB 32 across the State. While the plan outlines CARB's intention to reduce greenhouse gases across numerous different sources, it also affects mass transit by setting targets for regional transportation-related land use at five million metric tons of carbon dioxide equivalents; for low carbon fuel standards at fifteen million metric tons of carbon dioxide equivalents; for medium and heavy duty vehicles through aerodynamic efficiencies and hybridization at 1.4 million metric tons of carbon dioxide equivalents; and for high speed rail at one million metric tons of carbon dioxide equivalents.

Interestingly, the plan includes a footnote and subsequent discussion regarding these regional transportation-related land use reductions. CARB begins by disclaiming the land use targets as applied and required under a subsequent law named SB 375, but continues to elaborate on its position by detailing how regional transportation can reach the target, as well as the benefits it will confer. From this standpoint, CARB explains that

about 800 separate sources that fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of carbon dioxide each year from on-site stationary source combustions such as large furnaces. This last category includes a diverse range of facilities such as food processing, glass container manufacturers, oil and gas production and mineral processing. Backup generators, schools and hospitals are excluded from the requirements.


78. See SCOPING PLAN, supra note 10, at ES-5, 17.

79. Id. at 17 n.16, 49.

80. Id. at 17 n.16, 47–51. The California Legislature passed SB 375 and AB 32 to work concurrently in creating regional thresholds for lowering greenhouse gas emissions from passenger vehicles. Id. One set of commentators points out
these targets also serve as incentives to guide planning and development in such a manner as to provide more integrated land-use patterns and transportation infrastructure. The plan points out that regional and local planning efforts allow for community involvement while giving municipal governments the opportunity to design new developments in a manner that leads to the reduction of greenhouse gases. With these beliefs in mind, the board makes clear that a two-pronged strategy of improved public transit service in conjunction with greater incentives harness the powerful influences of land use development—in such a manner as to persuade more people to take advantage of these new transportation systems and play a critical role in accomplishing the achievement of the regional targets.

As for forecasting the benefits of these regional targets, the plan references a 2008 U.C. Berkeley study that determined that a reduction in vehicle miles traveled occurs when land use and improved public transit service strategies are implemented. As a result, the plan acknowledges that the targets set forth under SB 375 will ultimately establish the size of reductions in greenhouse gases from passenger vehicles based on the regionally-approved strategy.

In other parts of the Scoping Plan, CARB supports the implementation of high-speed rail as approved by California voters in November 2008. The plan extrapolates the ridership projections that estimate between 86 and 117 million riders will switch travel modes by 2030, and forecasts the 2020 greenhouse gas reduction target based on its initial phase of San Francisco to Anaheim at 26 percent of the full system ridership. Consequently, CARB notes that the high-

that, by the taking this action, CARB essentially shows that the agency does not believe SB 375 will contribute to meeting the AB 32 mandates by 2020. See Malaczynski & Duane, supra note 8.

81. SCOPING PLAN, supra note 10, at 19–20, 47–51.
82. Id. at 47–48.
83. Id.
84. Id. at 49–50.
85. Id. at 50.
86. Id. at 56. California voters passed Proposition 1A, the Safe, Reliable High-Speed Passenger Train Bond Act for the twenty-first Century, in November 2008. Id. The plan includes a 700 mile dedicated and separated rail system utilizing automated control technology capable of speeds over 200 miles per hour. Id.
87. SCOPING PLAN, supra note 10, at 56.
speed rail system will deliver more reductions in greenhouse gases over time as new lines are completed and as land use strategies are incorporated into this new infrastructure. 88

Finally, the plan sets forth targets for medium and heavy-duty vehicles. 89 The board points out that these vehicles account for about 20 percent of transportation-related greenhouse gas emissions. 90 To achieve reductions in this area, the plan proposes tackling the issue by requiring retrofits of existing fleets and replacing current vehicles with new hybrid ones. 91 The plan explains that the overall effect of the retrofits will lead to increased mileage performance and greater aerodynamic performance while reducing friction with the road. 92 Moreover, by increasing the deployment of hybrid vehicles in transit situations, the greatest benefits will occur very rapidly due to the stop-and-go nature of these activities like picking up and dropping off passengers. 93

Ultimately, the Scoping Plan is merely the beginning of the process, and represents a method for determining the plausibility of setting targets for different sources. By 2012, CARB will have issued extensive regulations for virtually every sector of California’s economy across all geographic regions that set forth specific actions for the reduction of greenhouse gas emissions. This undoubtedly will have a great impact upon the strategies for accomplishing mass transit objectives. Without the inclusion of a “state implementation plan,” however, AB 32 provides little overall change to the goal of reducing greenhouse gas emissions. 94

2. SB 375

Following the passage of AB 32, the California Legislature also decided to connect land use and transportation policy to the State’s efforts to reduce greenhouse gas emissions through SB 375. 95 Under SB 375,
the California Legislature enlisted the regional transportation planning system on three different levels.\textsuperscript{96}

First, it looked to the regional transportation planning system for assistance in accomplishing the goals of AB 32.\textsuperscript{97}

Second, it incentivized the regional transportation planning system to encourage residential developments that promote greenhouse gas reductions by creating a streamlining process within the California Environmental Quality Act (CEQA).\textsuperscript{98}

Lastly, it looked to the regional transportation planning process to deliver greater coordination and distribution of housing needs within its jurisdiction.\textsuperscript{99}

Under SB 375, the California Legislature assigned the authority for setting greenhouse gas emission reduction goals on a regional basis to CARB.\textsuperscript{100} It further requires the agency to review each set of regional plans for feasibility.\textsuperscript{101} This action ensures that every Metropolitan Planning Organization (MPO) includes a practicable plan for attaining its directed reductions in greenhouse gas emissions from cars and light trucks.\textsuperscript{102}

In setting regional goals, CARB is required to take specific actions prior to and during the process.\textsuperscript{103} While the MPOs may recommend a regional target,\textsuperscript{104} CARB must exchange technical information with each organization and the affected air district prior to setting the reduction goals.\textsuperscript{105} Moreover, CARB is required to take into account the expected decreases in greenhouse gas emissions from raising mileage standards and the application of low carbon fuels.\textsuperscript{106}

\textsuperscript{96} Id. at 2.

\textsuperscript{97} Id.

\textsuperscript{98} Id.

\textsuperscript{99} Id.

\textsuperscript{100} CAL. GOV'T CODE § 65080(b)(2)(A) (Deering 2009). In the AB 32 Scoping Plan, CARB received many responses suggesting that CARB should set the pollution goals but handle the enforcement aspect through the various government agencies. See Memorandum from Bill Higgins, supra note 95.

\textsuperscript{101} Gov't Code § 65080(b)(2)(A).

\textsuperscript{102} Id. This legislation affects the eighteen MPOs in California. See Memorandum from Bill Higgins, supra note 95, at 2–3.

\textsuperscript{103} Gov't Code § 65080(b)(2)(A). CARB needs to revisit the plan before four years have elapsed and must update it every eight years. Id. § 65080(b)(2)(A)(iv).

\textsuperscript{104} See id. § 65080(b)(2)(A)(v).

\textsuperscript{105} Id. § 65080(b)(2)(A)(ii).

\textsuperscript{106} Id. § 65080(b)(2)(A)(iii).
Then, after CARB approves the regional reduction plans,\textsuperscript{107} the CEQA incentive portion of the legislation streamlines the projects' enticement.\textsuperscript{108} Two types of projects qualify under this incentive. One type includes residential projects that CARB agrees will assist in attaining the greenhouse gas targets for the region, if implemented,\textsuperscript{109} and the other allows for Transit Priority Projects (TPP).\textsuperscript{110}

Under the TPP classification, a new project may qualify for a full or partial exemption.\textsuperscript{111} In the full exemption category, the project must conform to the statutory requirements by containing at least 50 percent residential use, have a floor area ratio of no less than 0.75 for any commercial use,\textsuperscript{112} have a minimum net density of twenty units per acre, and have its location within one-half mile of a "major transit stop" or "high quality transit corridor" recognized by a Regional Transportation Plan (RTP).\textsuperscript{113} Moreover, the TPP must satisfy the enumerated criteria put

\textsuperscript{107} Id. § 65080(b)(2)(I)(ii).
\textsuperscript{108} CAL. PUB. RES. CODE §§ 21155.1, 21159.28 (Deering 2008).
\textsuperscript{109} GOV'T. § 65080(b)(2)(I).
\textsuperscript{110} PUB. RES. §§ 21155–21155.3
\textsuperscript{111} Id.
\textsuperscript{112} A floor area ratio or FAR measures the total floor area covered by the structures on a site as compared to the gross site area of land. See General Plan—Glossary, CITY OF REDLANDS, Appendix A (1995, as amended 1997), available at: http://www.ci.redlands.ca.us/community/general_plan_gloss.htm#F (last visited Feb. 25, 2011).
\textsuperscript{113} PUB. RES. §§ 21155–21155.3. The California Public Resources Code defines a "major transit stop" as:

- a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

\textsuperscript{Id. § 21064.3.}

The California Public Resources Code defines a "high quality transit corridor" as:

- a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. A project shall be considered to be within one-half mile of a major transit stop or high-quality transit corridor if all parcels within the project have no more than 25 percent of their area farther than one-half mile from the stop or corridor and if not more than 10 percent of the residential units or 100 units, whichever is less, in the project are farther than one-half mile from the stop or corridor.

\textsuperscript{Id. § 21155(b).}
forward under the statute to receive the total CEQA exemption.\footnote{114. \textit{Id.} \textsection 21155.1. Among the long list of criteria, the statute includes a limitation to not exceed eight acres of land with not more than 200 residential units, the ability to get service from existing utilities, the lack of effect on historical resources, to achieve 15 percent more efficiency in the buildings and 25 percent less water consumption over existing code requirements. Additionally, the project must meet one of the following three criteria: (1) supplies a minimum of five acres of open space per 1,000 residents; (2)(a) 20 percent or more of the housing will be sold to moderate income families, or 10 percent or more of the housing will be sold to low income families, or 5 percent or more of the housing will be sold to very low income families; or (2)(b) the developer commits sufficient units as rentals for low-income households; or (3) the project developer will pay fees sufficient to result in an equivalent number of units that would otherwise be required pursuant to option 2. \textit{Id.} \textsection 21155.1(c).}

For those projects that fail to meet the allowance for a complete exemption, a TPP may also qualify for a sustainable communities environmental assessment or a traffic mitigation measures allowance.\footnote{115. \textit{Id.} \textsections 21155.2, 221155.3. To obtain the exemption using this method, the Transit Priority Project will then need to either complete an acceptable study for submission and approval by a government agency or an environmental impact report. \textit{Id.}} To qualify as a sustainable communities environmental assessment, the project must take into account earlier environmental impact reports and encompass all realistic mitigation requirements, performance standards, or conditions.\footnote{116. \textit{Id.} \textsection 21155.2.} Alternatively, the traffic mitigation measures allow for a local jurisdiction to qualify a project by requiring it to include such additional features like "the installation of traffic control improvements, street or road improvements, and contributions to road improvement or transit funds, transit passes for future residents, or other measures that will avoid or mitigate the traffic impacts of those transit priority projects."\footnote{117. \textit{Id.} \textsection 21155.3.}

In addition, SB 375 compels the MPOs to incorporate the approved greenhouse gas emission goals calculated for their region for automobiles and light trucks into the subsequent iteration of their RTP.\footnote{118. \textit{CAL. GOV'T. CODE} \textsections 65080(b)(2)(B) (Deering 2009).} While the MPOs already must prepare an RTP under federal and state law, SB 375 adds a new component called a Sustainable Community Strategy (SCS). SCS sets forth a plan for attaining the established reductions or an Alternative Planning Strategy (APS) to show
how a region would achieve the goal if the SCS does not.\textsuperscript{119} These requirements provide the key governmental links between the existing land use provisions, the regional transportation system, and greenhouse gas emission reduction plans.\textsuperscript{120} Essentially, California added an additional component to the existing RTP to now include environmental considerations as part of the process.\textsuperscript{121}

Hence, SB 375 places strong limitations upon CARB in shaping the achievement of the greenhouse gas emission targets.\textsuperscript{122} Through the SCS or APS, the MPO puts forward its plan for review by CARB.\textsuperscript{123} CARB's only role in this instance is to confirm the accuracy of the approach and whether or not it will achieve the desired goals.\textsuperscript{124} In the end, the legislation leaves the policy decisions regarding greenhouse gas reductions to the MPOs, but uses CARB as the enforcement mechanism.

In the context of the two pieces of legislation, AB 32 and SB 375 attempt to provide a system that encourages land use and transportation planning without resorting to mandatory regulatory schemes. However, because their approach lacks the necessary new funding for transit projects, public agencies face an uphill battle to accomplish targets set forth by CARB.\textsuperscript{125}

\textit{ii. Other States' Efforts}

In considering the efforts by other states with respect to greenhouse gas emissions and transit, three main strategies emerge. Some states take action on their own while others choose to band together for a regional approach or some

\textsuperscript{119} Id. §§ 65080(b)(2)(B), 65080(b)(2)(H). When a MPO determines that it cannot attain the regional targets put forth by CARB, the organization must complete an APS. Id. § 65080(b)(2)(D). While not needed federally, this document is required in California and gets adopted concurrently with the RTP. Id. It explains the difference in how an MPO can achieve the regional targets set by CARB despite the feasible goals set forth in the SCS. Id.


\textsuperscript{121} Id. at 2. The current RTP requirements include sections for policy, finance, and action. Id.

\textsuperscript{122} GOV'T § 65080(b)(2)(A).

\textsuperscript{123} Id. § 65080(b)(2)(B).

\textsuperscript{124} Id.

\textsuperscript{125} See Malaczynski & Duane, supra note 8.
combination of both applications occurs. Accordingly, both require examination.

1. State Initiatives

Following California's lead, many other states decided to exercise their own authority to protect their jurisdictions against climate change. The government strategies that tackle greenhouse gases in the context of transit tend to get grouped into four different categories: Technology, Fuels, Travel Activity, and Vehicle/System Operations.\(^\text{126}\)

In the context of this examination, the effect of technology on greenhouse gas emissions remains largely a federal one and mainly affects transit indirectly. States have two options with regard to vehicle emissions. Should the State of California satisfy its special exception requirements under the Clean Air Act,\(^\text{127}\) other states may choose between adopting the baseline federal level or the more stringent California one. Recently, many states began selecting the California approach with sixteen states already announcing adoption of the California approach or the intention to proceed in that direction.\(^\text{128}\) Interestingly, the federal

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126. See, e.g., Vicki Arroyo, Georgetown State-Fed. Climate Res. Ctr., State Roles in Reducing Greenhouse Gas Emissions from Transportation (2009); Cambridge Systematics, Inc., supra note 57, at 14. To further explain these factors, "Technology" refers to the implementation of technologies to attain more efficient fleets. Cambridge Systematics, Inc., supra note 57, at 14. "Fuels" explains the attempts to reduce carbon content by promoting alternatives. Id. "Travel Activity" covers initiatives to reduce VMTs or change the mode to a more efficient one. Id. "Vehicle/System Operations" describes the maximization of enhancements to the transportation system that create conditions for optimal utilization. Id.

127. See California Greenhouse Gas Waiver Request, U.S. Envtl Prot. Agency, http://www.epa.gov/oms/climate/ca-waiver.htm (last visited Feb. 25, 2011). The State of California received special authority to set its own vehicle emissions levels, so long as the standard chosen meets or exceeds the federal one and the EPA grants a waiver. Id. Recently, the waiver became a point of contention when, under President Bush's guidance, the request was denied by the EPA for the first time in forty years. See Arroyo, supra note 126, at 3–5. When President Obama took office, the EPA restored California's longtime ability to create more stringent vehicle emission levels. Id.

government also agreed to match the California standards by 2017, which makes the state regulatory aspect a nonfactor.

From a fuels perspective, many states have adopted different standards to limit carbon content, which will reduce greenhouse gas emissions on a per-mile-driven basis. Correspondingly, thirty-eight different states decided to encourage the use and production of this alternative through tax exemptions, credits, or grants. Taking this approach to a higher level, thirteen states created a unique blend of fuel for its jurisdiction. While the different fuel standards will lower greenhouse gas pollution, their greatest impact will occur with emissions emanating from automobiles and light duty trucks. Furthermore, the blends will affect some forms of transit, like buses, but will have essentially no direct effect on the delivery of transit options from a state regulatory aspect.

Finally, many states took action to limit their jurisdiction's growth of vehicle miles traveled (VMT), which comes from both the travel activity and vehicle/system operations factors. In this area, the state and local governments can cause a reduction in greenhouse gases by encouraging changes in habits like idling less, fewer trips, and traveling shorter distances through their various policy.

129. See ARROYO, supra note 126, at 3–5.
130. Id. at 6–9.
131. See Mandates and Incentives Promoting Biofuels, PEW CTR. ON GLOBAL CLIMATE CHANGE, http://www.pewclimate.org/what_s_being_done/in_the_states/map_ethanol.cfm (last visited Feb. 25, 2011). This includes all states with the exception of Alabama, Delaware, Georgia, Nebraska, New Hampshire, New Jersey, Nevada, Rhode Island, Tennessee, Utah, Vermont, and West Virginia.
tools. In short, many states choose to promote these changes by setting goals or targets for reducing VMT, and sometimes a jurisdiction adopts "smart growth" policies as well.

As previously discussed in the SB 375 section, "smart growth" regulations that link land use with transportation systems can reduce greenhouse gas emissions. State legislatures use these "smart growth" strategies to create initiatives to reprioritize land use, promote alternative modes of transportation, create individual incentives, and foster system efficiencies to achieve their emission goals. Based on these understandings (and aside from California's legislation), other states have enacted smart growth laws that directly impact transit and mention environmental concerns; but these states' approaches seldom take the added step of tying these goals directly to land use strategies with mandates to reduce greenhouse gas emissions.

For instance, the State of Washington's legislature passed the Growth Management Act in 1990 because the legislature found that,

uncoordinated and unplanned growth, together with a lack of common goals... pose a threat to the environment, sustainable economic development, and the health, safety, and high quality of life enjoyed by residents of this state. It is in the public interest that citizens, communities, local governments, and the private sector cooperate and

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134. See ARROYO, supra note 126. In fact, the Urban Land Institute's recent study showed that an aggressive implementation of these different local and state policy tools can reduce the greenhouse gas emissions from VMTs somewhere from 18 to 24 percent by 2050 when looking at the "aggressive" and "maximum" deployment levels. See CAMBRIDGE SYSTEMATICS, INC., supra note 57.

135. See VMT-Related Policies and Incentives, supra note 133.

136. See ARROYO, supra note 126.

137. See, e.g., MD. CODE ANN. § 3.05(a)(4)(iii)(2) (West 2009) (requiring the comprehensive plan to contain a transportation element that must "[p]rovide for bicycle and pedestrian access and travelways"); S.C. CODE ANN. § 6-29-510(D)(8) (2009) (requiring "a transportation element that considers transportation facilities, including ... pedestrian and bicycle projects... "); WIS. STAT. § 66.1001(2)(c) (2009) (defining the transportation element as a "compilation of objectives, policies, goals, maps and programs to guide the future development of the various modes of transportation, including ... transit, ... bicycles, ... [and] walking..."); VMT-Related Policies and Incentives, supra note 133.

138. See generally MD. CODE ANN. § 3.05(a)(4)(iii)(2); S.C. CODE ANN. § 6-29-510(D)(8); WIS. STAT. § 66.1001(2)(c).

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coordinate with one another in comprehensive land use planning.\textsuperscript{139}

From this starting point, the legislation specifically mandated ecological goals that encompass comprehensive plans while including development regulations to protect the environment, boost the State's high quality of life, encourage different modes of transportation, and improve air and water quality.\textsuperscript{140} In accordance with the legislative goals, the act mandated transit-oriented site planning, including traffic demand management programs, because the new "fully contained communities," major industrial developments in master planned locations, and areas planned for multiple industrial sites outside urban growth areas will most likely create significant greenhouse gas emissions by requiring individuals to commute great distances.\textsuperscript{141} While the act sought to prevent uncoordinated and unplanned growth in Washington,\textsuperscript{142} it stopped short of mandating greenhouse gas emission targets, like the comparable legislation in California, despite recent recommendations from studies conducted by two governmental agencies in Washington.\textsuperscript{143}

Likewise, Florida passed legislation in 2008 that requires local comprehensive plans to take into account supporting energy efficient development patterns and schemes that dissuade urban sprawl.\textsuperscript{144} The statute also includes a unique directive for local governments to adopt "transportation strategies to address reduction in greenhouse gas emissions from the transportation sector."\textsuperscript{145} This means that the plans must encourage walking and bicycling while requiring the

\begin{footnotesize}
\footnotemark{139} WASH. REV. CODE § 36.70A.010 (2009).
\footnotemark{140} Id. § 36.70A.020.
\footnotemark{141} Id. § 36.70A.350, 365, 367.
\footnotemark{142} Id. § 36.70A.010.
\footnotemark{144} FLA. STAT. § 163.3177(6)(a) (2009).
\footnotemark{145} Id. § 163.3177(6)(b).
\end{footnotesize}
establishment of “transportation demand management programs” that reduce per capita VMTs.146

Thus, many states try to challenge global climate change through Technology, Fuels, Travel Activity, and Vehicle/Systems Operations. Nonetheless, the California legislation provides a groundbreaking approach, unmatched by other states, that now ties the existing travel activity category with broad greenhouse gas emission targets and land use plans in order to assemble a comprehensive effort to combat climate change.

2. Regional Approaches

Aside from each states’ individual approaches, many states have decided to pursue the reduction of greenhouse gases in conjunction with other jurisdictions. Through this strategy, these states can increase efficiency because more uniform regulatory settings occur and duplicative efforts are removed.147

One of the earliest programs to try this approach was the Regional Greenhouse Gas Initiative (RGGI) formed by several states in the Northeast.148 The plan began with a Memorandum of Understanding, which was signed by seven governors in December 2005 with the goal of reversing global warming.149 Following the RGGI approach, several Western states formed the Western Climate Initiative in February 2007,150 and several states in the Midwest created the

147. See PEW CTR. ON GLOBAL CLIMATE CHANGE, supra note 9.
Midwestern Regional Greenhouse Gas Reduction Accord in November 2007.151 Interestingly, the State of Florida initially planned to implement its own program, but may instead join another association or foster one within the Southeastern region.152

In reviewing these initiatives, their main emphasis includes the creation of programs to lower carbon dioxide emissions from the existing production of electricity, to expand the generation of power from renewable sources, to collect data on renewable energy credits, and to conduct research and develop guidelines for carbon sequestration.153 The RGGI approaches its mission through a “cap-and-trade” type of program aimed solely at electrical generation.154 The other initiatives, however, augment the “cap-and-trade” by including industrial combustion and processing sources along with fuels used by residential, industrial, and commercial buildings, as well as in transportation.155

While each of these regional programs target the reduction of greenhouse gas emissions, they only indirectly affect transportation. The programs that include cleaner burning fuels will facilitate a reduction in greenhouse gas emissions, but do little to impact the pollution caused by inefficient and outdated technology used by many buses and trains. Other transit sources—like subways, monorails, and magnetic levitation trains—require electricity to power their motors, so their demands will become aggregated with other consumers and receive indirect regulation through their power providers. Hence, the current regional greenhouse gas

and Tamaulipas. Id.

151. See MIDWESTERN REG'L GREENHOUSE GAS REDUCTION ACCORD, http://midwesternaccord.org/ (last visited Feb. 25, 2011) [hereinafter MRGGRA]. The signatories to this compact include: Iowa, Illinois, Kansas, Michigan, Minnesota, and Wisconsin, as well as the Canadian Province of Manitoba. Id.

152. See PEW CTR. ON GLOBAL CLIMATE CHANGE, supra note 9.

153. See id.


reduction initiatives will have little direct impact upon mass transit and its ability to deliver environmentally friendly transportation options to the public.

III. GOVERNMENT OBSTACLES TO REDUCING GREENHOUSE GASES

While reducing greenhouse gas emissions across the nation appears to be a national priority, many of the country's past policies and methods of regulating and incentivizing the public provide actual and potential pitfalls. These obstacles occur through the United States Constitution and arise as a result of past policy decisions as well as through the systems devised at federal and state levels to regulate and fund environmental and transportation priorities.

a. Constitutional Issues

In the struggle to combat greenhouse gas emissions and climate change, the dark cloud of Congress forever looms over state actions. Congress can immediately overturn a state's actions by merely inserting language into legislation asserting its superior authority through the Commerce Clause or invoking its preemption powers.156

i. Commerce Clause

Under its enumerated powers, Congress may, "regulate Commerce with foreign Nations, and among the several States . . . ."157 From its numerous interpretations of this clause, the Supreme Court created definitions from two different perspectives: federal regulation of state and local commerce, and state and local regulation of interstate commerce.158 Consequently, the Supreme Court has struggled to define "interstate commerce" over the years;159 however, in recent opinions on the subject, the Court repeated its present viewpoint that "where economic activity

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156. U.S. CONST. art. I, § 8, cl. 3; U.S. CONST. art. VI, § 1, cl. 2.
substantially affects interstate commerce, legislation regulating that activity will be sustained.\textsuperscript{160} As applied to the area of environmental law, three cases directly impact Congress’s authority to rightfully enact legislation via the commerce clause.\textsuperscript{161} While Congress actively passed ecologically friendly legislation during the 1970s and 1980s,\textsuperscript{162} the main case to test Congress’s authority for the plethora of subsequent regulations associated with all of the environmental laws was \textit{Chevron v. Natural Resources Defense Council}.\textsuperscript{163} Known mainly for its administrative law implications, this case instructs a court first to ascertain the ambiguity of a statute.\textsuperscript{164} Should this inquiry reveal that the statute is unambiguous, the inquiry ceases and the regulation obtains the effect and intent given by Congress.\textsuperscript{165} Otherwise, the court must give deference to the regulations unless “they are arbitrary, capricious, or manifestly contrary to the statute.”\textsuperscript{166} As a result, \textit{Chevron} lessened the number of administrative reversals and became a primary means for upholding regulations that interpret environmental legislation where the Commerce Clause provided the main basis for authority.\textsuperscript{167}

More recently, the Supreme Court revisited this area in a case examining the Migratory Bird Rule of The Clean Water Act.\textsuperscript{168} In \textit{SWANCC}, the Court held that “where an otherwise acceptable construction of a statute would raise serious constitutional problems, the Court will construe the statute to avoid such problems unless such construction is plainly contrary to the intent of Congress.”\textsuperscript{169}

\begin{footnotesize}
\begin{enumerate}
\item 162. \textit{Id.} at 1052.
\item 163. \textit{Id.} at 1054 n.13.
\item 165. \textit{Id.} at 842–43.
\item 166. \textit{Id.} at 844.
\item 167. See Tanabe, \textit{supra} note 161, at 1059.
\end{enumerate}
\end{footnotesize}
Following this approach, the EPA declined to regulate greenhouse gases until ordered to do so based on the lack of an explicit directive from Congress.\textsuperscript{170} Nonetheless, the Supreme Court determined that Congress gave the EPA statutory authority to regulate the emissions from vehicles under The Clean Air Act to address global warming, and that the agency must comply with its legislative mandate.\textsuperscript{171}

From this Court directive, new efforts from the EPA to regulate greenhouse gas emissions with regard to all forms of transportation becomes a logical progression. The EPA already began lowering emission standards on locomotives and could easily fill the gap between its current proposal for the automobile/light trucks category and heavy-duty trucks/buses group. This type of movement will further the EPA's approach in targeting individual emitters, but lacks a comprehensive solution to a complex national issue.

Nevertheless, Congress and the EPA will need to look for a more comprehensive approach, which will undoubtedly affect interstate commerce. With this in mind, Congress could pass legislation to create its own unique solution given that greenhouse gas emissions correlate very strongly to interstate commerce. For example, a national "cap-and-trade" program would create uniformity across the country because the regulatory environment of the Bush Administration encouraged the development of a patchwork of regional initiatives.

Another option is that the federal government could adopt the California model with AB 32 and SB 375 on a national basis.\textsuperscript{172} The federal government already sets regional clean air standards and requires Regional Transportation Plans (RTPs) from the Metropolitan Planning Organizations (MPOs), so an additional document explaining how to meet greenhouse gas emission targets appears as a logical step within the constructs of the current regulatory structure.

Therefore, by virtue of the directive from the Supreme Court relating to greenhouse gas emissions, followed by the

\textsuperscript{171} Id.
EPA's recent determination, Congress and the EPA's authority under the commerce clause will provide an avenue to directly regulate all types of transportation emissions and give the agency the wherewithal to overturn any state actions contrary to the direction the federal government wishes to proceed.

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**ii. Preemption**

Another constitutional obstacle in tackling these issues includes the Preemption Doctrine, which creates complications for state and local regulation. This doctrine traces its roots to the Supremacy Clause in Article VI of the Constitution that makes the federal law the "supreme law of the land." Congress may preempt state legislation in three different ways, and the executive branch of the government may trigger preemption while conducting foreign affairs.

The first and most direct approach occurs when Congress chooses to insert language into a statute that directly and expressly preempts state laws concerning a specific area of regulation. Another type of preemption may occur if Congress passes all-encompassing legislation that leaves no room for additional regulations, such that a court will find that the federal government exclusively occupies the field. Lastly, preemption may take place when a conflict occurs between federal and state laws that makes it impossible to comply with both. In such circumstances, the Supreme

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173. *Id.* at 78–88.
174. U.S. CONST. art. VI § 1, cl. 2. "This Constitution, and the Laws of the United States which shall be made in Pursuance thereof . . . shall be the supreme Law of the Land . . . any Thing in the Constitution or Law of any State to the Contrary notwithstanding." *Id.*
177. *Fidelity Fed. Sav. & Loan Ass'n v. de la Cuesta*, 458 U.S. 141, 152–53 (1982). Further refining this type of preemption, the Supreme Court applies a two-part analysis for determining whether federal laws will trigger "field" preemption over state regulations. *Id.* The first part requires the courts to ascertain Congress's purpose for passing the law. *Id.* After completing this examination, the court must evaluate whether the state law encompasses "a field in which the federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject." *Id.* (quoting *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947)).
Court explains that the state laws "stand[] as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."  

Notwithstanding any type of congressional engagement, preemption may also occur in the context of foreign affairs by the executive branch. The Supreme Court explained that in the scope of traditional areas of foreign policy, a state must yield to the valid "exercise of the federal executive authority . . . where . . . there is evidence of clear conflict between the policies adopted by the two."  

Accordingly, the state and local governments must enact laws with stronger requirements or apply them in a broader manner while not disturbing the existing federal legislation that was set as a base level to avoid the effects of the preemption doctrine. Recognizing these possible threats, and in conformity with these requirements, many states enacted legislation to protect their economies and natural environments.  

However, given the recent finding by the EPA that greenhouse gases pose an endangerment to the public health and welfare, the EPA could effortlessly invoke the preemption doctrine through regulations that make state compliance an obstacle to complying federally, or by asserting the preemption doctrine through the Clean Air Act. As the lead agency in this area, the EPA could expand the endangerment finding very easily into many different aspects of industry and daily life. While unintended consequences will occur in other areas, the epicenter will start with the transportation sector because the original finding began with the emissions of greenhouse gases from vehicles.  

Moreover, as Congress continues to evaluate the priority for creating a national "cap-and-trade" system for dealing

181. See Schramm, supra note 172, at 78. In fact, another set of commentators explain that if a state should choose to take this type of action, it faces a serious risk that the federal government will preempt its actions. See Bogoshian & Alex, supra note 64, at 347. They point to California's previous experience with its energy crisis and the devastating effect that occurred and sound a warning that an analogous situation may happen with greenhouse gas emissions as well. Id.
182. See Carlarne, supra note 59, at 1367.
with greenhouse gas emissions,\textsuperscript{184} a countrywide mandate could easily force a different solution upon the states and supplant any system already in place through preemption. Any of the three preemption approaches in direct legislation would most likely withstand constitutional muster, but it could also allow an agency to occupy the entire field or create regulations that turn the state approaches into an obstacle to accomplishing the federal goal.

Because the current battleground against climate change appears to be developing on a state and regional level, each part of these programs will undoubtedly address an area's own unique economic and physical characteristics, which may contain meaningful differences.\textsuperscript{185} With this in mind, a uniform approach may provide the nation with a better solution than patchwork regulations and could upend the systems that individual states and regions have implemented to reduce greenhouse gas emissions.

Furthermore, many of the regional initiatives also include provinces in Canada and states in Mexico.\textsuperscript{186} In the absence of a foreign policy regarding greenhouse gas reduction with our North American neighbors, these regional initiatives comply with the preemption doctrine. However, as foreign policy evolves with these two nations and others with regard to environmental issues on global warming, preemption may occur and prevail over the regional compacts and force a change.

Thus, an act of Congress, a program put forward by an agency like the EPA to create a uniform national approach to benefit the entire country, or a change in foreign policy by the president each could easily terminate most, if not all, of the state and regional initiatives previously described.

\textit{b. Regulatory and Funding Issues}

In looking at other obstacles posed by the government with regard to reducing greenhouse gas emissions and their impact on transit, both funding and regulatory issues have an

\begin{itemize}
\item \textsuperscript{184} See Talley, supra note 12.
\item \textsuperscript{185} For example, as a major corn producing region, the Midwest favors corn-based alternative fuels to bolster their economies and provide environmental benefits while other regions prefer different types of alternative fuels that take advantage of their natural resources.
\item \textsuperscript{186} History, supra note 150; MRGGRA, supra note 151.
\end{itemize}
impact and need to be addressed. This begins with the manner in which the federal government distributes money, both as a carrot for incentives and as a stick in requiring outcomes.

Customarily, Congress funds transportation across the country via legislation that distributes money directly to the states.\textsuperscript{187} This approach tends to either implement the process of planning too late to become a factor, or focus on procedures in lieu of outcomes.\textsuperscript{188} Federal dollars spent on transportation do not generally require performance standards from those receiving the federal monies.\textsuperscript{189} The regulations put forth by the DOT require states and MPOs to consider certain planning aspects during their analyses, but do not make them compulsory.\textsuperscript{190} This creates a situation where the DOT is unable to demand a particular outcome or result, which essentially becomes an open-ended check on the State or MPOs by the federal government.\textsuperscript{191} The States or MPOs must certify to the government that the planning factors received consideration, but the DOT's supervision of compliance with these requirements receives little enforcement, if any.\textsuperscript{192}

Furthermore, past allocations of transportation funds to the states generally occurred based on VMT, fuel used, and lane miles.\textsuperscript{193} This policy ends up promoting VMT because, the more of each of these factors a state can demonstrate, the more federal funding they will receive.\textsuperscript{194} In turn, more VMT increases states' collection of gas taxes, which then intensifies the counterproductive and endless cycle of revenue generation, the need for more infrastructure, and again, an

\textsuperscript{187} See Reid Ewing et al., supra note 5, at 131.
\textsuperscript{188} Id.
\textsuperscript{189} Id. In most other areas of federal spending like education, public housing and welfare, the federal government sets performance-based standards in order to receive the money. Id.
\textsuperscript{190} Id. These commentators point out that the situation in real terms is one where the planning factors only become suggestions. Id. To further illustrate the lack of enforcement for compliance, these same observers note that federal law does allow the public to file a complaint because a state or MPO failed to consider the planning factors. Id.
\textsuperscript{191} Id.
\textsuperscript{192} Id.
\textsuperscript{193} See Reid Ewing et al., supra note 5, at 132.
\textsuperscript{194} Id.
increase in VMT.\textsuperscript{195} This formulaic funding system favors highways, which ultimately results in greater greenhouse gas emissions, rather than promoting less VMT, reduced emissions, or transit alternatives.\textsuperscript{196}

In addition, past funding by the federal government with regard to transportation strongly prefers new road projects over other options.\textsuperscript{197} For example, when state and MPOs received a choice between getting 80 or 90 percent funding from the federal government versus far less for transit alternatives, the decision makers easily chose the government incentive for new or expanded roads.\textsuperscript{198} While the Intermodal Surface Transportation Efficiency Act tried to address this inequity by leveling the funding gap between highways and transit choices, the legislation came up short by not making this requirement compulsory.\textsuperscript{199} As a result, the DOT continues its funding formulas with highways usually receiving 80 percent while transit alternatives seldom achieve the 50 percent level.\textsuperscript{200} Thus, the current system used to develop and fund transportation on a federal level provides systemic difficulties through the planning process, as well as financial disincentives to consider and utilize transit options as a tool or alternative in reducing greenhouse gas emissions.

IV. FACTORS THAT INFLUENCE CURRENT TRANSIT CHOICES

With the vast number of jurisdictions pursuing the goal of greenhouse gas reductions through transit policies, many of the studies on this topic characterized the four key strategies for an all encompassing solution to include technology, fuels, travel activity, and vehicle/system operations as the main methods used to accomplish the lofty goal of making significant greenhouse gas emissions reductions from the transportation sector.\textsuperscript{201} While these areas may provide the basic strategies for achieving a goal, other factors play a huge role in convincing users to switch

\textsuperscript{195} Id.
\textsuperscript{196} Id.
\textsuperscript{197} Id.
\textsuperscript{198} Id. In many cases, the funding dropped to as little as 50 percent. Id. at 132–33.
\textsuperscript{199} See Reid Ewing et al., supra note 5, at 132–33.
\textsuperscript{200} Id.
\textsuperscript{201} See Cambridge Systematics, Inc., supra note 57; Arroyo, supra note 126.
transit modes, which can then translate into real greenhouse gas reductions and also require consideration.

a. Market Factors

Often times, the consumer must make either a direct or subconscious decision between different alternatives with respect to transportation needs. This determination between viable transportation choices and financial incentives competes within an individual's traditional comfort zone for a temporary and long-term solution.

In looking at the basic premise used by economists when making such choices, an individual will tend to maximize the use of scarce resources to consistently select alternatives that satisfy personal wants. While some will interpret this to mean that the consumer chooses the absolute lowest price, the reality may show a different picture because the person making the decision may place a greater weight on factors other than those quantified monetarily.

Within the context of transit (and depending on the consumer's location), the ability to select between viable substitutes becomes an issue where policy makers wish to use transit options as part of an overall greenhouse gas reduction program. Personal freedom and cost play a large role in guiding the consumer's preferences, but those preferences begin to change when certain population densities and price points make mass transit more competitive with other readily available alternatives.

In achieving the proper price point for mass transit, the expense of constructing the project and the on-going operational costs can overburden these options, making them unaffordable choices in the consumer's eyes when other important factors, such as population density, weigh against them. However, in these situations, the government can


204. See Vellotta, supra note 202.

205. Id. In fact, the privately owned and funded Las Vegas Monorail ultimately filed for bankruptcy protection in January, 2010 due to a variety of factors like heavy debt from its initial construction, reduced ridership due to the
strategically provide financial incentives that can level the opportunity costs and give consumers viable alternatives, despite the drawbacks from other important aspects.206

Thus, a variety of market factors like personal freedom, population density, and cost must reach critical levels whereby consumers are willing to consider meaningful substitute modes; but the financial model for the entity providing the service needs to be viable, with adequate funding from all of its sources.

b. Local Funding Issues

As previously discussed, the methodologies or formulas for doling out funds from the federal government to the states mainly encourages programs that create continual expansion of greenhouse gases through transportation.207 However, the level of overall financial support to the local agencies providing the immediate alternatives in transit also encourages consumer outcomes that may not decrease emissions.

Frequently, the local transit agencies explain that their current funding sources contain too many restrictions. This begins with the strict segregation of funding between capital and operational needs that can limit the ability of management to shift resources based on desired outcomes or needs.208 Accordingly, the funding for capital improvements generally comes from federal sources while operational monies emanate from state and local budgets.209 This leaves many transit agencies with the unique situation where the economic downturn, competition from government backed transit agencies, and the lack of government financial assistance. Kyle Hansen, *Las Vegas Monorail Files for Bankruptcy Protection*, LAS VEGAS SUN, Jan. 13, 2010, http://www.lasvegassun.com/news/2010/jan/13/las-vegas-monorail-files-bankruptcy-protection/.

207. See *supra* Part III.b.
208. Alec MacGillis, *Funding Rules Fuel Clash Within Mass Transit World*, WASH. POST, June 11, 2010, at A16, available at http://www.washingtonpost.com/wp-dyn/content/article/2010/06/10/AR2010061005535_pf.html. Interestingly, Congress began providing funds for mass transit operations in the 1960s but decided to follow a different approach during the 1980s when it determined that capital allocations would receive more support. *Id.* In 1998, Congress completely excluded the use of federal monies toward operations with the exception of systems serving fewer than 200,000 people. *Id.*
209. *Id.*
funding pays for new equipment for a specific purpose even though they have no budget to operate it.\(^{210}\) As a result, some smaller and mid-size cities face looming service cutbacks and reductions in their labor force despite having available funds from the federal government.\(^{211}\)

Recently, the American Public Transportation Association (APTA) completed a survey of the local agencies to assess the current budgetary situation and any consequential actions since January 1, 2009.\(^{212}\) In its survey, APTA found that almost all of the participating agencies reported flat or decreased state and local funding, with over two-thirds expecting a budget deficit in the upcoming year.\(^{213}\) As a result, 84 percent of the agencies plan to use a combination of service reductions or fare increases to offset the shortfall while 59 percent already took such actions.\(^{214}\)

Finally, the regions of the country with the biggest need and who supply the most tax revenue to the federal transportation highway budget regularly receive less than their contribution.\(^{215}\) The current methods for collecting and allocating federal funds favor large metropolitan areas with existing and established infrastructure that have developed into extensive transit systems, whereas cities in the southern

\(^{210}\) Id. During the 2008 spike in fuel prices, transit agencies were required to handle these unanticipated costs through the operational funding and could not shift federal monies despite the need.

\(^{211}\) Id.

\(^{212}\) See APTA, supra note 3. This survey included responses from 151 different transit agencies across the country, which represents more than 80 percent of the riders on public transportation across the United States. Id. It is intended to follow up with the transit agencies and differentiate the management responses from the economic downturn versus prior challenges like the spike in fuel prices during 2008. Id.

\(^{213}\) Id.

\(^{214}\) Id.

\(^{215}\) See Gas Tax Losers, supra note 6. In completing this study, the researchers found that rural areas significantly benefitted over urban centers in the states of Arizona, California, Colorado, Florida, Louisiana, and Texas. Id. In the forty-three states where researchers could analyze the rural benefit as compared to its urban counterpart, twenty-nine jurisdictions favored the nonmetropolitan areas to a total difference of $10.8 billion. Id.

In looking for a root cause, the researchers attributed this approach to the legacy of the Interstate Highway construction phase of the twentieth century and the continuation of Washington politics. Id. They also point out that the system of favoring rural interests over urban needs remains in many state agencies directed by politicians from nonmetropolitan settings who carry the viewpoint that building new highways creates jobs for their constituents. Id.
and western part of the country that rely heavily on the movement of cars instead of people received less than they contributed. Researchers found this policy approach created increases in overall congestion and commuter times for those locations funded below their contribution level whereas those major metropolitan areas that became financial beneficiaries more effectively managed overcrowding during peak times to only a marginal level. Hence, those individuals located in the less developed and more car-centered cities spend more time in congestion with fewer transit options, thus creating more greenhouse gases.

Consequently, any serious discussion to bring transit answers into the fold as a solution to reduce greenhouse gas emissions must also include a discussion on how to allocate and distribute precious transit funding sources. This needs to be done to ensure that the locations with the greatest need and impact will receive the resources to affect change amongst consumers and not merely supply jurisdictions with the greatest amount of political clout at the expense of others.

Any viable plan to tackle greenhouse gases through transportation must also address some of the most critical underlying factors like those within the market and the counterproductive consequences created by the system that is used to fund transit.

V. RECOMMENDATIONS: CAPS FOR ACCOMPLISHING THE DUAL GOALS

Because federal, state and local governments continue towards policies to accomplish their goal of greenhouse gas emission reductions through the transportation sector, we propose a course of action that requires strategic actions by these collective governments on a variety of levels in conjunction with valuable incentives for the business community to work together in achieving the dual goals.

a. Federal

In looking at the federal government to set a direction, Congress must take action to generate visible and tangible

\[216. \text{Id.}\]
\[217. \text{Id.}\]
\[218. \text{Id.}\]
outcomes. It must begin looking at specific policies to accomplish greenhouse gas reductions through transportation sources and then execute national priorities rather than prioritizing represented constituencies or party affiliation. This begins with setting a national policy followed by the appropriate strategic funding to areas in need so that all parts of the country can accomplish this goal.

i. National Policy Instead of Regional Patchwork

Traditionally, the national transportation policy emanates from the congressional political process and allows each state to create its own version so long as its approach does not trigger a conflict with the previously discussed Commerce Clause or preemption doctrine. The last major initiative in developing a national transportation policy occurred half a century ago when Congress revolutionized our travel habits and the construction of our communities by launching the interstate highway network and our aviation system—the latter of which was designed to seamlessly and efficiently handle the country’s emerging air traffic. These plans are revisited every six years when congressional legislation reauthorizes the nation’s federal transportation planning and funding. Nevertheless, Congress addresses and modernizes many of the different modes of transportation, but continually ignores intercity passenger rail.

In addition to and as mentioned previously, federal funding tends to reward established systems that already satisfy an existing need, but fail to address parts of the country experiencing growth. Some attribute this

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219. See Reid Ewing et al., supra note 5, at 135.
220. Id. at 130. These authors cite a book that explains the past legislation from Congress that addressed “linking the nation with interstate highways (1956), providing for mass transit (1964), facilitating metropolitan planning (1973), and promoting system efficiency (1991).” Id.
221. Id. at 135. While Amtrak is a semipublic national rail agency, it must purchase rights of way from existing freight railroads, which precludes it from operating a business model that maximizes service, profits, and equipment. Id.
222. See supra Part IV.b.
223. See Gas Tax Losers, supra note 6. Recent research by the Brookings Institute’s Metropolitan Policy Program explained that the southwestern portion of the Intermountain West is the fastest growing region in the country yet it faces daunting obstacles. See Brookings Metropolitan Policy Program, Mountain Megas: America’s Newest Metropolitan Places and
phenomenon to the manner in which Congress doles out the funding on a state-by-state basis whereby some jurisdictions become donors and others recipients. While this produces a national equity issue, the funding for each state also goes through another level of prioritizing because the money flows directly to it from the federal government and then gets passed out to the localities based on the second stage of designations. Hence, these multiple levels of assigning priorities with the limited funds generate a patchwork of goals across the country that in turn fashion an approach that lacks cohesion.

With this in mind, we strongly advocate the need to redirect the funding directly to the MPOs, and for the federal government to get serious and launch an overhaul to the passenger rail system across the country. By directly funding MPOs for specific projects, the federal government would eliminate the involvement of state legislatures or their Departments of Transportation (as well as their conflicting motivations) while providing a more direct distribution based on congressional intent. As a result, the federal government could more directly target regions with the most need that could provide the greatest amount of greenhouse gas reductions based on the best value for the assistance.

For example, when many of the transportation decisions occurred in the 1950s, the national planners determined that “the Intermountain West would have little need for direct linkages from city to city or for metropolitan beltways.” Yet the subsequent updates failed to address the rapid growth and needs of the region. As a result, intercity passenger rail service in the Intermountain West connects to

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A Federal Partnership to Help Them Prosper 47–50 (The Brookings Institution 2008) [hereinafter BROOKINGS]. One of the largest obstacles to this region of the country that is quickly gaining a more influential role on a national basis is the lack of infrastructure, specifically surface transportation. Id. Due to the heavy burden required to keep in step with rapid growth, this region feels tremendous pressures that weaken our national economy due to the lack of infrastructure in these vital CANAMEX corridors. Id. Because of its distance between major metropolitan areas, this region could strongly benefit from high speed rail and could easily and affordably implement local transit solutions while communities are being built. Id.

224. See Gas Tax Losers, supra note 6.
225. Id.
226. BROOKINGS, supra note 223, at 29.
227. Id.
its neighbors in the East and West, but, unlike in other parts of the country, the railways provide few transportation alternatives within the region.\footnote{228}

Furthermore, a strengthened and renewed national passenger rail service would provide an opportunity to reinvigorate local mass transit options on a regional basis where needed. Currently, one third of all flights out of Phoenix, Arizona's Sky Harbor International Airport fly to Southern California and similar numbers occur out of Las Vegas, Nevada.\footnote{229} Shifting these intraregional commuting trips as well as long-distance ones from auto and air to high-speed rail will also lead to a net reduction in greenhouse gases.

As a result, new and expanded regional transit hubs combined with high-speed rail service and increased local connections will also expand the geographical reach of "high-quality transit corridors" while providing opportunities for "transit priority" housing projects that reduce regional VMT and greenhouse gas emissions.

Thus, our proposed strategy could alleviate past transportation inequities across the country by promoting transit alternatives in needed locations while revamping our nation's passenger rail service to reflect current technology. In doing so, this strategy will help achieve the coequal goal of reducing greenhouse gas emissions.

\textit{ii. Funding}

As the most crucial aspect to accomplishing the twin goals of reducing greenhouse gases while encouraging transit alternatives, funding from the federal government ultimately will set the stage for success or failure. With this in mind, we propose changes to federal funding so local agencies are not given new equipment without the operational budget, that equity occurs amongst jurisdictions so that areas contributing the tax revenue receive equivalent financial benefits instead of becoming "donor" states or regions, and that the seed money from the stimulus bill does not get wasted on projects that will never get completed.

\footnote{228}{Id.}
\footnote{229}{Id. at 50.}
Accordingly, the federal government needs to revisit its decades-old policy that funds capital requests, but leaves financing of operations to local agencies. While this federal policy aims to prevent state and local governments from becoming reliant on continual subsidies, it also creates situations where an agency may obtain new or more environmentally friendly equipment despite not having sufficient backing to operate them.

With the recent economic situation, many state and local governments face daunting budget shortfalls, rising operational costs, a historically high unemployment rate, and the inability to generate revenue to operate capital improvements. Such circumstances put transit officials into decision-making circumstances that can be avoided by allowing flexibility with the funding contingencies. As a result, many of the opportunities to promote transit alternatives whereby the transportation sector could reduce traffic and help decrease greenhouse gas emissions are squandered by an arcane and inflexible policy set forth by Congress.

Moreover, we urge that federal funding should provide for a direct one-for-one regional correspondence between the generation of transportation funds and their distribution. No jurisdiction should be considered a donor state and asked to foot the bill of another's transportation needs on a federal basis.

While some locations with aging and established systems may need more money for maintenance and upkeep, other parts of the country experiencing rapid and unanticipated growth face the equally daunting challenges in just starting or expanding mass transit options. Those regions dealing with growth issues need more investment by the federal government to overcome the population migration because their political clout will lag the reality of their expansion.

Finally, the federal government needs to continue funding transportation initiatives started under the stimulus bill. In January 2010, President Obama announced the recipients of an unprecedented $8 billion federal stimulus grant that will jumpstart high-speed rail service on thirteen corridors across the United States. California is to receive the largest share of any state, $2.34 billion, with $2.25 billion allocated to a dedicated high-speed rail system (to be matched
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by state funds), and the remainder allocated toward regional transit projects. Secretary of Transportation Ray LaHood recently asserted in a press release that high-speed rail will "not only . . . create good jobs and reinvigorate our manufacturing base, it's also going to reduce our dependence on fossil fuels and help create livable communities. I have no doubt that building the next generation of rail service in this country will help change our society for the better."231

Excited by the potential of this investment for their constituents, many key political leaders are already touting the myriad of benefits of a fast, convenient, and efficient intercity rail system, including lower carbon emissions, improved mobility, jobs and economic revitalization, and less dependence on foreign oil. These benefits will strengthen our national security. The policies for the country must ensure that money and effort are not wasted because encouraging transit options like high-speed rail further numerous objectives at once.

Hence, these changes to the existing federal funding methods provide a starting point for easing budgetary restrictions on state and local governments. These changes will also help create a level playing field for all jurisdictions that need financial assistance. Moreover, this approach completes the leadership direction taken by our elected officials to encourage transit alternatives and reduce greenhouse gas through projects like high-speed rail. Therefore, the federal government may set the tone for other jurisdictions to follow by altering our national policies and funding strategies to get the biggest impact out of both the transportation sector and greenhouse gas emissions reductions.

b. State & Local

As part of our recommendations, we also expect the state and local governments to partner with businesses to lay the foundation for accomplishing both goals of encouraging mass

231. Id.
transit and reducing greenhouse gas emissions. We believe a solution must utilize the strongest tools available to government through its ability to strategically fund projects and transit operations as well as exercise its authority over land use and zoning in ways that do not run afoul of the constitutional challenges presented by the commerce clause or preemption.

i. Funding

On a state and local level, changes must also occur to accomplish the twin goals of encouraging mass transit options while reducing greenhouse gas emissions. This begins with policymakers realigning state and local governments’ funding mechanisms for transportation to include environmental concerns as part of the measurement component.

A majority of states’ transportation revenue emanates from motor fuel taxes. The states will take one of two approaches in allowing for expenditure of these monies. One of these methods, which is undertaken by thirty states, strictly limits these revenues for use only in highway development, maintenance and administration. This generally occurs either by statute, as in eight states, or as part of the state constitution, as in the remaining twenty-two states. Usually, there is unambiguous language concerning the restrictions. In the other twenty states, the approach is multimodal and allows for the use of these funds towards general transportation purposes, including mass transit.

In addition, the formula for distribution in some states creates inequities between rural and urban locations based on statutory provisions. Interestingly, this study found that only eleven states diverted more than 5 percent of the gas tax revenue to mass transit. In Connecticut, Maryland, New York, and Rhode Island, the percentage rose to over 15 percent, but this only occurred due to statutes mandating a significant portion to fund mass transit.

233. Id.
234. Id.
235. Id.
236. Id. Interestingly, this study found that only eleven states diverted more than 5 percent of the gas tax revenue to mass transit. Id. In Connecticut, Maryland, New York, and Rhode Island, the percentage rose to over 15 percent, but this only occurred due to statutes mandating a significant portion to fund mass transit. Id.
237. Id. at 12.
regions within their jurisdiction through either the allocation process or direct local transfers. To distribute the gas tax monies, the jurisdictions first classify roadways as either state or locally managed, and then apply a funding formula.

In considering the first classification, rural areas tend to have few locally maintained auxiliary roads in relation to those that the state manages. Conversely, many urban areas contain few state highways in comparison to the numerous local roads.

To deal with this inequity, some states then turn to a funding formula based on some combination of resident population, registered motor vehicles, and highway miles. In some states, the distribution occurs evenly amongst the counties, which then causes a disparity between those receiving funds and those bearing the burden. Other states try to avoid these inequities by using redistribution formulas. Ultimately, a large proportion of the gas tax comes out of the urban centers but goes to the state for distribution to rural locations, but sometimes this inequity is corrected.

With this in mind, we urge all states to adjust their transportation budgets to allow for funding for all modes by eliminating any policies, statutes, or constitutional provisions that require the monies collected to go solely to highways. By ending this practice, transportation budgets would be able to find many other uses, like paying for mass transit in strategic locations or paying the operational portion not covered by federal funds. This could also reduce greenhouse gas emissions by allowing for more environmentally friendly mass transit options in places frequented by congestion and

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238. PUENTES & PRINCE, supra note 232. The researchers explained that they found evidence of this occurring in Colorado, Missouri, Ohio, and Washington, but that they suspect many other states also follow the same model. Id.
239. Id. at 13.
240. Id.
241. Id.
242. Id.
243. Id. These states include Alabama, Arkansas, Ohio, and Tennessee. Id.
244. PUENTES & PRINCE, supra note 232. California, Colorado, and Washington attempt to redistribute funds. Id. According to the researchers, the programs in California and Washington appear to solve the issue better than the one in Colorado. Id.
pollution where consumers would favorably receive the choice of modes.

Similar to our earlier position on federal inequities across the country, states should also look at redistribution formulas within their jurisdiction. By ending the transfer of urban-generated taxes to rural appropriations, state governments could use existing and local revenue to solve their transportation issues. Because the political might associated with growing areas takes time to develop, this would also allow locations within a state to address immediate needs rather than creating an adversarial situation down the road when a beneficiary region loses its funding. With these changes in place, states could easily encourage mass transit options within their jurisdictions while also reducing greenhouse gas emissions and solving some of the difficult issues associated with growth, traffic, and congestion.

ii. Land Use and Zoning

As explained earlier, the current system in many states frequently favors development in areas with less established infrastructure over those with heavily-developed infrastructure, such as the urban core. Suburban governments looking to increase their tax base subsidize the endeavor by providing new infrastructure, like roads, sewers, and schools, which further promotes the use of automobiles and fails to give transit options.

To break this cycle, the most direct way for states to encourage comprehensive planning that focuses on reducing greenhouse gas emissions through transportation is to include language in their enabling statutes that expressly requires consideration of these dual goals. Most state statutes already compel the states to develop and implement zoning regulations in line with a comprehensive land use plan. The complying plans usually bring together a common vision for the future growth and development by addressing relevant essentials with regard to housing, public

245. See supra Part IV.b.
As a starting point, these enabling statutes need to look at the California or Florida models for the next step. Those models take different approaches in requiring transportation strategies that address the reduction of greenhouse gases from the transportation sector. While Florida takes a more direct approach and California uses its environmental legislation to force the discussion and complete a plan with specific targets, they both take the extra step of mandating that local governments take action on this subject. Consequently, our proposal asserts that states should either amend their enabling statutes or pass supplementary legislation that gives other agencies oversight, similar to California's method, to mandate that each plan include a scheme to incorporate transit approaches that reduce greenhouse gases from their local transportation sector.

Depending on the proposed plans, this comprehensive land use design may also tend to follow the conventional Euclidean zoning that separates residential, commercial, and industrial parcels into separate districts, or mixed-use zoning that allows the siting of compatible purposes within close proximities. However, some commentators assert that the combination of Euclidean zoning and the growth of the highway system greatly enhanced the suburban lifestyle found in the United States by allowing the location of residences outside and away from congested cities. Through this phenomenon that allowed the suburban communities to flourish in conjunction with transportation improvements that made it easier to commute longer distances, the practicality of walking or riding a bicycle from home to a location of interest became unrealistic. Accordingly, land-use regulations for cities and suburbs need to make the reliance on automobiles an important part of the


strategy when trying to accomplish a reduction in greenhouse gases.

To assist with reversing many of these effects on a local level, the government and private developers must embrace traditional neighborhood design, pedestrian-oriented development, and transit-oriented development. These types of development design systems will reduce dependency on automobiles and expand transportation options, which will lessen the creation of greenhouse gases and contribute to cleaner air.

To accomplish these types of projects voluntarily from private developers, the local governments need to consider the different policy tools available, such as developer fees, density bonuses, tax incentives, and other nonmonetary methods. Frequently, the local governments will look to developers to either directly fund the projects, or provide financial support through developer fees. This funding may come directly from the developer, or may be passed on to the end customer through special land use zones known as improvement districts. The monies collected then become available to the applicable jurisdiction to fund ancillary needs like schools, parks, flood control, and, in this case, environmentally friendly transit. New construction could then fund the expensive infrastructure costs while providing transit options that would get integrated into a community's master plan.

In other situations, governments turn to tax incentives as an inducement to get developers to voluntarily further a policy goal. Recently, several states used this strategy to further induce green building construction, and one state tried it to promote alternative fuel vehicles.

251. The three different design systems each have some similarities and differences. Traditional neighborhood design (TND) tries to recreate the planning system used in the past that utilized smaller homes and incorporated pedestrian-friendly features. *Traditional Neighborhood Development*, MUN. RESEARCH AND SERV. CTR. OF WASH. (June 2009), http://www.mrsc.org/Subjects/Transpo/TraditionalDev.aspx. Pedestrian-oriented development uses many of the same principles as TND but emphasizes pedestrian access to commercial and transit centers. *Id.* Finally, transit-oriented development seeks to reduce automobile reliance by encouraging increased densities in transit corridors that allow for walking access to destinations. *Id.*

In most states, the popular programs successfully benefited the environment with expected impacts to state budgets while Nevada’s approach provided extremely generous benefits that created a critical financial response by the legislature similar to Arizona’s Alternative Fuel Credit fiasco.253

However, all of the different programs’ successes showed many consumers are willing to switch to more environmentally friendly practices, so long as it makes financial sense. Hence, in suggesting this type of incentive, the state and local governments need to understand their tax base before foregoing a revenue stream, fully investigate the impacts on the jurisdiction, and narrowly target the incentive so that the desired outcomes will induce a reduction in greenhouse gas emissions while promoting transit options.

Finally, another approach that some governments have used when financial incentives are infeasible includes the use of expedited permit processing for developers. The State of Hawaii took this approach when trying to incentivize green building within its jurisdiction.254 Under Hawaii’s program, the State recognized that by allowing projects that meet certain policy goals to incur shorter wait times between their conception and the certificate of occupancy, a developer could gain something of value from the government in terms of their scheduling, or avoid costly delays without impacting the taxpayer.255 With this in mind, state and local governments could also utilize this approach for developments within their jurisdictions that further transit and environmental policy goals.

Thus, a state and local government approach to land use and zoning must begin with strong enabling statutes that compel servient jurisdictions to address and incorporate strategies that advance transportation options. The approach also needs to simultaneously reduce greenhouse gases and encourage policymakers to find the correct mix of targeted

253. *Id.* The different state programs’ successes showed in New York where seven projects claimed the entire $25 million in tax credits set aside by the government, and Nevada saw a rise over two years in the number of green buildings from fourteen to ninety-two with revenues of $940 million. *Id.*
254. *Id.* at 197.
255. *Id.* at 198.
incentives that motivate private developers to build transit-oriented communities that benefit the environment.

The funding priorities and ensuing management decisions adopted by the government at all levels are one of the most influential aspects on the nation’s transportation system. Accordingly, these decisions greatly impact the transit choices available to consumers. These available options, in turn, set the stage for the scope and origin of greenhouse gas emissions.

VI. CONCLUSION

To accomplish the national and local goals of reducing greenhouse gas emissions through the transportation sector, government at all levels and industry must attempt to change course. Mass transit options are the most effective tools available to promote aggressive environmental policies within the transportation sector. However, the approach to mass transit requires new strategies and changes to long established processes.

While the federal government appears as a late participant, many states have taken leadership positions to forge ahead towards a solution. The approaches taken by Florida and California to force local governments to directly evaluate and determine environmental impacts from transportation sources that require reductions in VMTs demonstrate that the dual goals are compatible. California takes these requirements a step further by monitoring compliance against identifiable targets. The approaches of both Florida and California show regulatory actions can start the process of identifying the best opportunities for mass transit alternatives and reducing greenhouse gas emissions.

Likewise, the regional “cap-and-trade” initiatives demonstrate the willingness across international borders and amongst states to work collectively to affect climate change. While the current targets for decreasing greenhouse gas emissions mainly focus on electricity generators, the indirect benefit for some mass transit alternatives, such as fixed guideway systems, will also contribute.

Meanwhile, the federal government still holds all of the cards from a legal perspective. Upon considering the constitutional aspects, Congress could easily render the actions taken by states meaningless by passing its own
legislation and then enforcing it by either the commerce clause or preemption. Likewise, many of the federal agencies may do the same through their regulatory functions and by setting policies that conflict with aggressive actions taken by the states.

Depending on the mode selected for implementation, naysayers will undoubtedly criticize such projects by citing the exorbitant capital costs required to complete these projects and the lack of reductions in greenhouse gases. In some cases, their arguments will prove truthful; but, in other situations, their points will merely impede needed infrastructure investments, as demonstrated by The Brookings Institute's study on the Intermountain West. Many parts of the country need the investment now as the population migration occurs and when entry costs and access right of ways are relatively easy to obtain at affordable prices.

Interestingly, this debate centers around the fact that successful mass transit systems are obtainable without advancements in technology. Current technology will adequately satisfy the mass transit needs; however, the real prerequisite for success will come from desire. The public and government must have a desire to achieve serious greenhouse gas reductions from the transportation sector. This desire will derive from the personal gains that are made from trading an automobile for a mass transit solution. Ultimately, however, there is much work still to do to accomplish both goals successfully.

257. See BROOKINGS, supra note 223.