

## **Intermodal Transportation Planning for the Environment: Social, Cultural, and Economic Considerations for an Interdisciplinary Solution for Change†**

*[T]he future of air quality and transportation are intertwined . . . when we plan for transportation we have to plan for air quality; and when we plan for air quality we have to look at how our transportation plans are being put together.<sup>1</sup>*

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1. Larry Kallenberger, Deputy Director of the Department of Local Affairs, Denver, Colorado, quoted in *Government Profile 2*, October, 1989.

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**1995] *Intermodal Transportation Planning for the Environment* 239****I. INTRODUCTION**

Today, society generally recognizes the complex interrelationships between transportation and air quality. The highly technical Clean Air Act amendments of 1990 (CAAA)<sup>2</sup> and the labyrinth of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA),<sup>3</sup> enacted to provide the funding for the requirements imposed by the CAAA, evidence the complexity of the recognized interrelationships.

National and state dual interests in economic development and the environment drive the funding process of intermodal transportation projects. The highway bills of the 1950s provide for the national economic interests in interstate commerce and interstate travel. The more recent CAAA and ISTEA address a new national interest in the environment. Congress introduced CAAA and ISTEA to provide sufficient flexibility to address the states' concurrent dual interests.

The incentives provided by the combination of the CAAA and ISTEA provide a significant step in the right direction toward establishing an intermodal system capable of addressing the nation's transportation needs while simultaneously improving the air quality. In their present form, however, they will not achieve either goal.

The existing statutory scheme imposes limitations on the methods of planning and the available funding mechanisms. Relatively modest changes in the law can remove these limitations and will allow the statutory scheme to do what Congress intended it to do, and can simultaneously protect the environmental and economic interests of our nation. This paper analyzes the existing statutory schemes of the federal CAAA and ISTEA and recommends changes that, we believe, are realistic and instrumental to advance the intent of the framers.

**II. BACKGROUND****A. HISTORY**

The federal government's role relative to the nation's transportation system is, as it should be, to protect the national interests. In the 1950s, the national interests included national security and defense, interstate commerce, and interstate travel. The 1990 enactment of the Clean Air Act amendments, and its predecessors, mandated significant action to remedy air quality problems. In essence, this mandate elevated the protection of the environment to the status of a new national interest. To

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2. 42 U.S.C.A. §§ 7401 - 7671q (Supp. V. 1993).

3. Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. No. 102-240, 105 Stat. 1914 (1991). The act is commonly referred to as ISTEA. Some commentators have referred to the act as "Ice Tea" [hereinafter ISTEA].

adequately address this new national interest, at a time when projections indicate a significant trend toward increasing vehicle miles traveled,<sup>4</sup> requires more than the traditional approach to transportation issues. Intermodal transportation systems are generally regarded as being an integral part of the air quality solution.

#### B. THE PROBLEM

Despite the most sophisticated air pollution controls in the world, the EPA has identified 101 locations in the United States, in which some 112 million people reside, that do not meet the National Ambient Air Quality Standards (NAAQS) for ozone.<sup>5</sup> In addition, over 29 million Americans now live in 44 identified areas that exceed NAAQS for carbon monoxide.<sup>6</sup> The source of almost half the ozone and nearly all of the carbon monoxide (CO) air pollution is the 157 million motor vehicles (122 million cars and 35 million light-duty trucks) operated in the United States.<sup>7</sup>

Government projections expect the population of the United States to increase by over 30 million people within the next 20 years, mostly in existing metropolitan areas.<sup>8</sup> This change in population will increase the number of vehicles (mobile sources of pollution) on the road, and thus, aggregate traffic congestion. Increased congestion, in turn, will result in longer traffic delays, and longer periods of operation for pollution emitting-vehicles.

Figure 1 illustrates the interplay between tail-pipe emissions per vehicle mile traveled (VMT) and the number of VMT as projected to the year 2015.<sup>9</sup>

Despite projected additional reductions in tail-pipe emissions, the projected increase in VMT will result in increased automobile related emissions. This offsetting relationship becomes increasingly significant as the reductions in per-vehicle emissions approach their technical limit. Once the per-vehicle emissions have been reduced to their projected asymptotic limit of approximately one gram per mile, the total amount of emissions will be a function solely of the number of VMT.

Congress addressed both the emission and VMT problems in the CAAA.<sup>10</sup> Efforts to reduce emissions focused primarily on enforcing the

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4. See *infra* text accompanying note 8.

5. Based on data compiled between 1986 and 1988. GAO/RCED-90-128 Motor Vehicle Emissions p. 8.

6. *Id.*

7. *Id.* at 2.

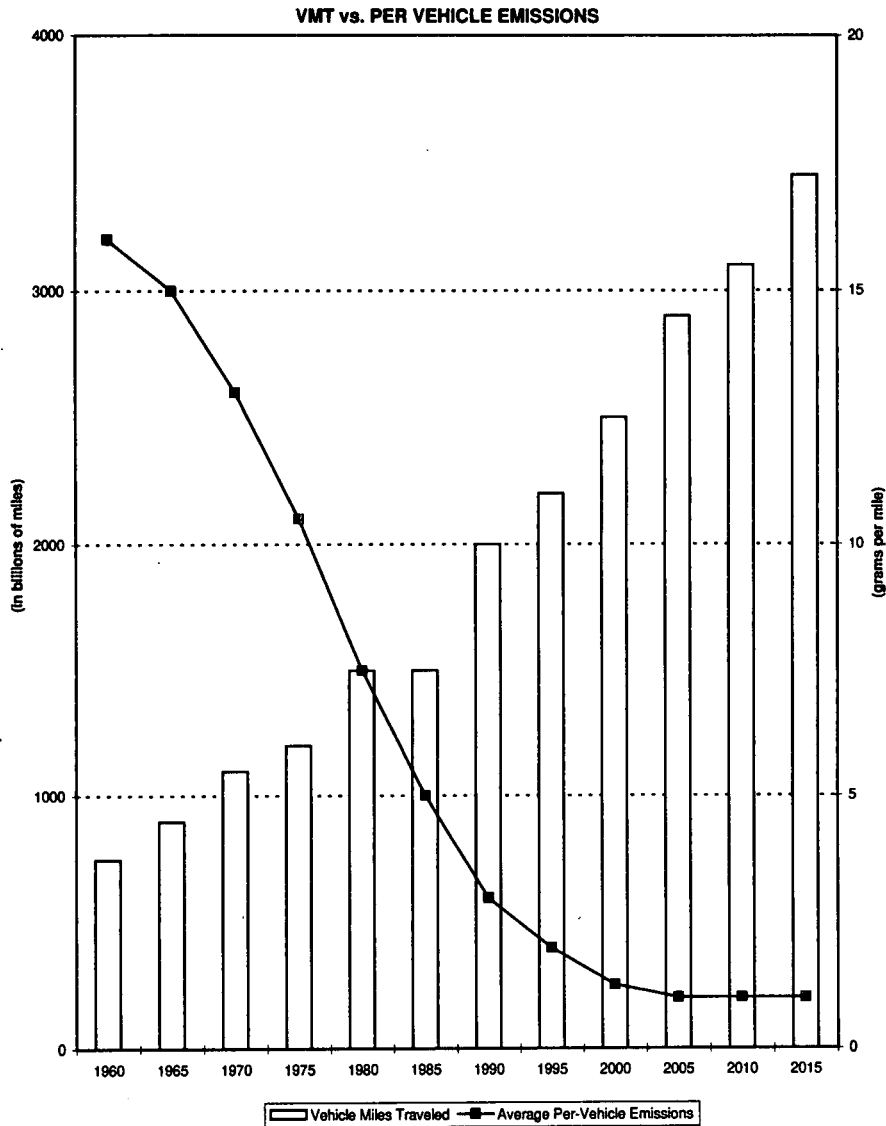
8. ISTEA § 6009(a)(2).

9. *Automobiles and Ozone*, USEPA Office of Mobile Sources, p. 3.

10. See *supra* note 2 and accompanying text.

FIGURE 1

VMT vs. PER VEHICLE EMISSIONS



stringent technical standards for tail-pipe emissions, while the efforts to reduce VMTs centered on the expanded transportation control measures (TCMs) set out in § 108(f)(1)(A).<sup>11</sup> Technology based provisions experience less opposition than the more “cultural” changes imposed by the TCMs designed to reduce VMT.<sup>12</sup> While much of the resentment to TCMs arose from the projected inconvenience, other commentators have observed an economic distinction between TCMs and the more technical provisions, such as “reformulated fuels, inspection and maintenance programs, vapor recovery, and stationary source controls.”<sup>13</sup> “In a purely cost-effective sense, TCMs cost tens of thousands of dollars per ton of emissions reduction.”<sup>14</sup> The more technical provisions targeting the reduction in tail-pipe emissions “are much more cost effective.”<sup>15</sup>

If one presumes that for mandated changes to be effective and long lasting, the voting public must be convinced that the burden imposed by the federal mandate is not only needed and cost-effective, but also the least intrusive means by which the desired result may be obtained, then Figure 2 presents an interesting problem. Figure 2 represents the same data presented in Figure 1, but expressed as a product of emissions per vehicle times the total projected VMT for each represented year. The graphed value, therefore, represents the total mass of emissions from vehicles. Until the asymptotic limit in the reduction of per-vehicle emissions is reached in the year 2005, Figure 2 suggests that the most critical factor in overall pollutants is the level of per-vehicle emissions, not the number of VMT.<sup>16</sup> Technological controls do produce a significant drop in overall emissions despite the dramatic rise in VMT over the same interval of time.

During this period (present to 2005), significant political and popular opposition may confront any attempts to impose the significant costs and hardships that accompany the more expensive, culture altering TCMs. After the year 2005, however, Figure 2 suggests that the gross emissions will again begin to rise. Unlike the rise observed in the 1960s, however,

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11. CAA § 108(f)(1)(A); 42 U.S.C. § 7408 (f)(1)(A) (Supp. V 1993).

12. The use of the term “cultural changes” in association with transportation control measures refers to the general goal of these measures to get people out of their single occupancy vehicles. TCMs encourage higher occupancy vehicle travel either in car pools or some form of mass transit.

13. THEODORE C. TAUB ET AL., TDMS, APFOS, CIPS, CDDS, ICED TEA and Other Terrestrial, C851 ALI-ABA 627, 684.

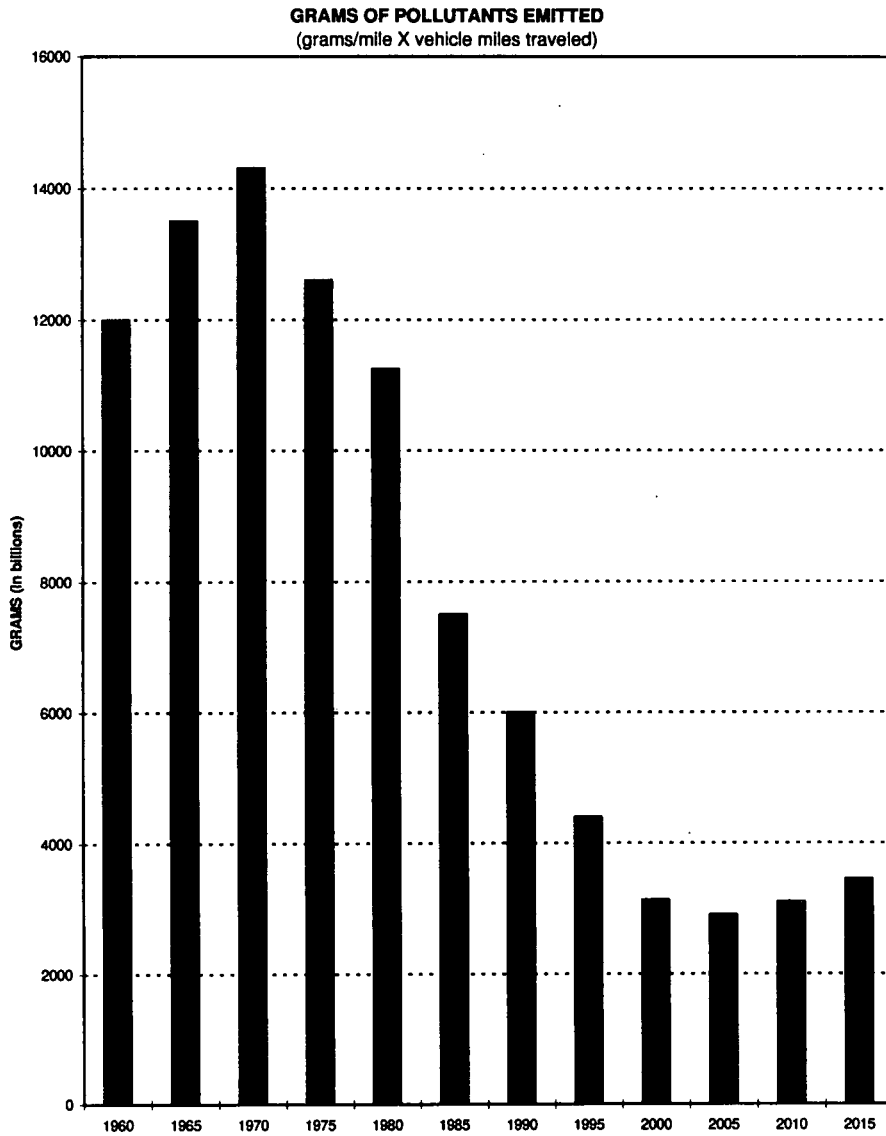
14. *Id.* (quoting Kris Wisniewski, transportation planner in the Statewide Planning and Policy Section of MDOT.)

15. *Id.*

16. This relationship applies to those criteria pollutants, such as ozone and carbon monoxide, that result primarily from tail pipe emissions. This relationship may not be valid for other criteria pollutants, such as particulates, that have other significant sources such as road sand.

FIGURE 2

GRAMS OF POLLUTANTS EMITTED  
(grams/mile X vehicle miles traveled)



we may not be able to stem that rise by dramatically reducing per-vehicle emissions. When we reach this projected juncture in ten years, we will have two options: either reduce the VMT or find ways to further reduce the per-vehicle emissions below the approximate 1.0 gram per mile per vehicle illustrated in Figure 1.

In reality, we are facing that problem today because, with either option, the answer cannot be achieved by simply flipping a switch. The solution for reducing VMT requires the planning, design, construction, and implementation of major alternative transportation systems, realizing the delay in time before such systems become effective. In this sense, Figure 2 suggests that we are susceptible to being the victims of our prior success. In other words, the absence of an immediately critical problem lulls the public attitude into complacency regarding air quality problems, yet the crisis is inevitable and the solutions are costly and time consuming to implement.<sup>17</sup>

The alternative to reducing VMT is to further reduce tail-pipe emissions. To some, efforts to reduce tail-pipe emissions below the projected 1.0 gram per vehicle per mile may seem futile. Several potentially viable techniques, however, are presently being studied. The concept of a "zero tail-pipe emission vehicle" (ZEV)<sup>18</sup> generally involves either an electric vehicle or an "ultra-light hybrid" vehicle.<sup>19</sup> Relying on such technological solutions to mobile source air pollution problems, however, may have significant practical and cultural problems. The practical problems involve the risk that the actual construction of such a vehicle will not achieve the anticipated results. In fact, the developer of the ultra-light hybrid vehicle acknowledges the non-trivial task involved in "putting them together with system optimization and excellent software."<sup>20</sup> Given

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17. For example, the fate of Denver's previously approved expansion of their light-rail system is embroiled in a political dispute. This dispute follows Denver's first year in more than twenty without a single violation of the federal air pollution standards. Al Knight, *Denver Should Celebrate its First Clean-Air Year*, DENVER POST, Jan. 8, 1995, at E1. This trend of improving air quality, and the "Republicans promise to reverse the current tendency to spend huge amounts of money avoiding what appear to be minor environmental risks," *Id.* at E5, illustrate the type and magnitude of opposition that should be anticipated for any type of TCM.

18. A vehicle with some tail-pipe emissions may be considered a ZEM if its emissions are less than the powerplant emission required to refuel an equivalent battery car. *Interview: Amory Lovins Predicts Radical Auto Changes*, GREENWIRE, Nov. 14, 1994.

19. "Ultra-light hybrid" vehicle refers to the vehicle being developed by Amory Lovins of the Rocky Mountain Institute. It is constructed with the ultra-light advanced-composite materials used in military aircraft and powered by electrically driven wheels. The electricity to drive the wheels is generated on-board by burning fuel on an as needed basis. Mr. Lovins claims these vehicles are capable of traveling coast to coast on a single tank of fuel while emitting 100 to 1000 times fewer pollutants than today's cars. *Electric Vehicles: "Supercar" Could Transform Auto Industry*, GREENWIRE, July 22, 1994.

20. *Interview: New Auto Designs have Unsettling Implications*, GREENWIRE, Nov. 15, 1994.



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the emphasis Americans place on safety today, general acceptance of such a vehicle may also encounter cultural barriers regarding the survivability of a crash in an ultra-light hybrid or electric vehicle. The “composite materials” used to construct such vehicles “absorb less force during collisions, transferring more to passengers.”<sup>21</sup> Contrary to the developer’s contention, “[t]here is still a lot of work to do to ensure that the passengers survive.”<sup>22</sup> Significant product liability issues could stall the commercial development of these vehicles well past the 2005 juncture<sup>23</sup> when such emission-reducing vehicles are projected to be needed.

Despite these potential barriers, in 1990 the California Air Resources Board mandated that two percent of new vehicles offered in California be ZEV; the percentage increases to five percent by the year 2001, and to ten percent by 2003.<sup>24</sup>

As with any new technology, the cost to the individual consumer for a ZEV will likely be high. Comparatively, public work projects including mass transportation, such as airports and high-speed rail, may be paid for through funding sources established by Congress that disperse the cost through a wider citizen/user base.

Several components of our “American culture” compound this bleak outlook for the air pollution problems related to mobile sources. First, unlike our European and Asian counterparts, Americans travel primarily in single occupancy vehicles. Second, the rise in popularity of suburban housing has created a shift in population away from higher density urban centers. With increasing numbers of American workers living further from their place of employment and in geographically dispersed areas, the result has been an increase in VMT associated with single occupancy vehicle commuters. Serving the typical American worker with an efficient mass-transit system also becomes more difficult (and less practical) due to this geographic dispersion.

### C. THE ISSUES

Under the CAAA, an intermodal transportation project must be consistent with the state implementation plan (SIP) and demonstrate progress toward attainment of the National Ambient Air Quality Standards (NAAQS). As a result, state and municipal planning organizations (MPOs)<sup>25</sup> throughout the country are asking the following questions: 1)

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21. *Electric Vehicles: “Supercar” Could Transform Auto Industry*, GREENWIRE, July 22, 1994.

22. *Id.*

23. *See* Figure 2.

24. Calif. Air Resources Bd. (1990).

25. A MPO is an organization “designated as being responsible, together with the State, for conducting the continuing, cooperative, and comprehensive planning process under 23 U.S.C.

can the limited capacity of the existing transportation systems be relieved by alternative forms of transportation; 2) does high-speed rail, light-rail, or any other mode of transportation provide an alternative that will reduce the VMT; and 3) are there other, more cost-effective forms or alternative mechanisms to achieve the economic and environmental goals?

The answers to these questions reside in the process of considering the various transportation control measures (TCM) provided for in the CAAA,<sup>26</sup> as opposed to the more technical provisions aimed at reducing the level of tail-pipe emissions. The TCMs contained in the CAAA have a consistent goal of reducing VMT by getting people out of single occupancy vehicles. Accomplishing this reduction in VMT requires more of a cultural change in personal driving habits. Although one commentator suggested that legislative efforts to reduce urban sprawl and the resulting reduction in VMT constitutes "social engineering,"<sup>27</sup> logic requires that all possible alternatives be considered.

Cultural changes are not always susceptible to the "technology forcing" methods Congress imposes on the more technical provisions. When mandating changes in personal driving habits, the legislature should consider an analogy to what constitutes a successful negotiation. To achieve lasting results, a negotiation must result in a mutually beneficial solution.<sup>28</sup> In order for legislatively mandated cultural changes to be long lasting, they must recognize the extent to which such mandates will be tolerated by the American public. Ignoring cultural realities is likely to result in a political backlash, the ousting of the responsible incumbents, a reversal in policy goals, and the wasting of resources already committed to the abandoned policy objectives.<sup>29</sup> Denver's Mayor Webb recently

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134 and 49 U.S.C. 1607. It is the forum for cooperative transportation decision-making." 40 C.F.R. § 93.101.

26. CAA, *supra* note 11.

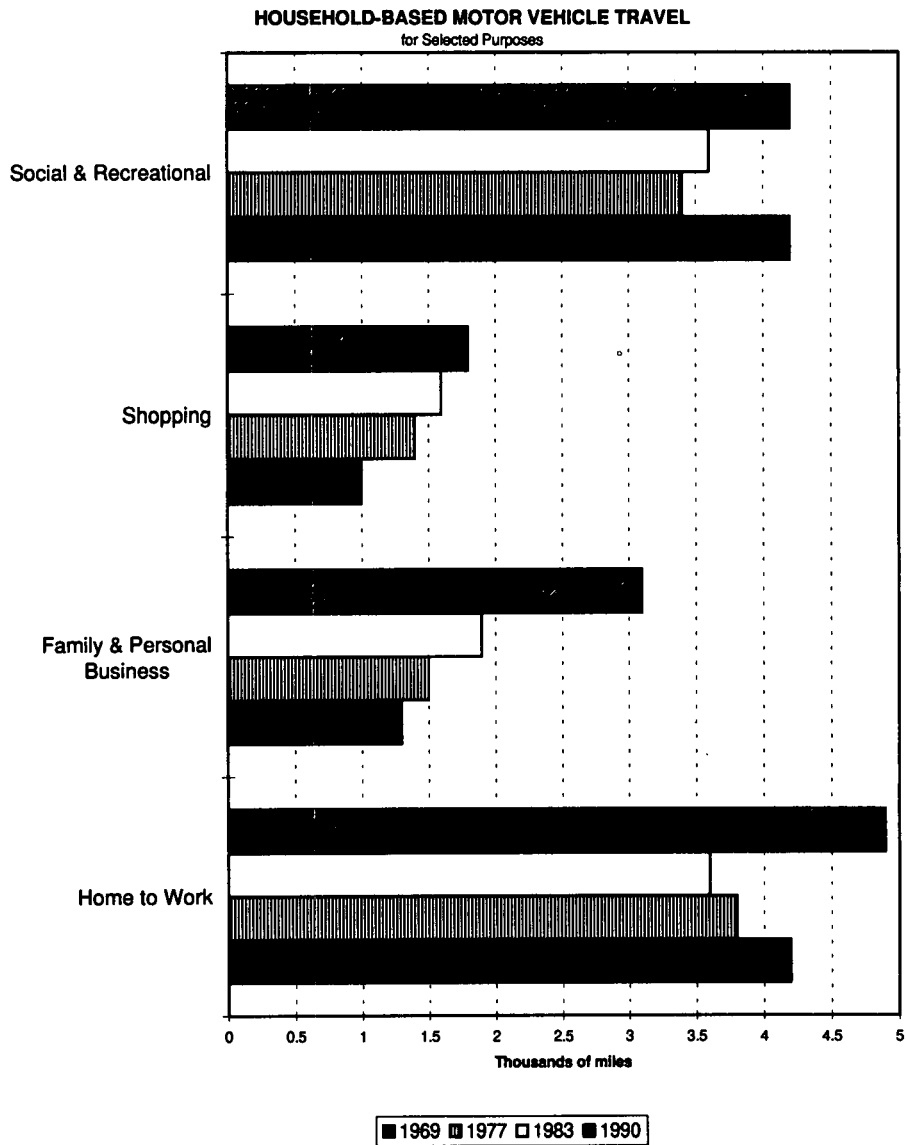
27. Dorthy Coffield [sp], *All Things Considered*, NPR, Transcript No. 1786-5, March 14, 1995.

28. TCMs imposed by EPA, when California refused to submit a SIP for Los Angeles, that included a surcharge of \$3.00 per day on parking, exclusive bus and carpool lanes, pre-construction review of new facilities with more than a certain number of parking spaces, and a gasoline rationing plan to reduce the amount of gasoline used in Los Angeles by over 80% were short lived due to strong popular and political opposition. X JOHN P. C. FOGARTY, *LAW OF ENVIRONMENTAL PROTECTION (ALI)*, § 11.08[3] at 221-23 (ed. 1994).

29. For example, some commentators suggest that the answer to air quality programs is to reduce urban sprawl in favor of high density residential housing projects that are easier and less costly to service with mass-transit programs. TAUB ET AL., *supra* note 13, at 638 (Moving towards compact land use patterns, eliminating further sprawl and emphasizing transportation management systems will be necessary if the Clean Air Act amendments are enforced). The reality of today's housing growth, however, indicate that the areas of fastest growth are in the large planned communities developed by developers in the suburbs. To legislatively deny the public this type of housing option is likely to be very unpopular with that subset of the population responsible for the greatest percentage of home buying. It is hard to imagine that this

FIGURE 3

HOUSEHOLD-BASED MOTOR VEHICLE TRAVEL  
for Selected Purposes



coined the term "transportation whiplash" in response to a threatened reversal of previously approved transportation plans.<sup>30</sup>

We suggest that the best solutions integrating intermodal transportation programs with the air quality goals of the CAAA do not attempt to change the established cultural trends that create urban sprawl, but rather work within the established framework to find creative solutions that are mutually beneficial.<sup>31</sup> It may not be possible to get people to use alternative modes of transportation all of the time. Figure 3 illustrates the relative number of household vehicle miles traveled for selected categories.<sup>32</sup> The two highest categories are "commuting to work" and "social & recreational" travel. The two lowest categories are "shopping" and "family & personal business". To be most effective, efforts to encourage people to get out of their single occupancy vehicle and into some form of mass transit should logically target the commuting and social and recreational traffic. For practical reasons, people may be more receptive to commuting to work by rail or bus than going to shopping centers by such modes. By focusing on reducing commuting miles, policy makers may more realistically weigh the costs against the benefits of alternative modes of transportation.

### III. LEGISLATIVE OVERVIEW

#### A. GENERAL

*Although the CAAA is vitally important, it did not provide significant funding to carry out these programs and projects. That's where the ISTEA comes in.*<sup>33</sup>

Meeting both the environmental and economic development needs of our society is the primary goal in developing an intermodal transportation policy. One factor in accomplishing this goal is efficiency. "Efficiency" means something quite different to those who seek to promote

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subset of home buyers, and the politically powerful developers, would not utilize the electoral process to fight any legislation prohibiting suburban development projects.

30. See Jennifer Gavin, *Metro Leaders Grill RTD Board*, DENVER POST, Jan. 18, 1995, at A1.

31. Even the technically based provisions of the CAAA are susceptible to the same type of grass roots rebellion if they impose too great a burden on the general public. For example, the Governor of Maine suspended the new enhanced I/M provisions only two months after being enacted due to poor acceptance and demands by the public for abolition of the program.

32. *Our Nations Highways: Selected Facts and Figures*, U.S. Dep't of Transp. Publication No. FHWA-PL-92-004.

33. *Air Quality Programs and Provisions of the Intermodal Surface Transportation Efficiency Act of 1991*, U.S. Dep't of Transp. Publication No. FHWA-PD-92-022 HEP-41/8-92 (40M)E at 1-2.

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economic development and those who seek to further environmental protections.

A common definition of transportation efficiency is to move people and goods in the fastest and most convenient manner from point A to point B. Accomplishing this minimizes both the amount of fuel consumed and the time spent traveling. Reducing the quantity of fuel consumption saves money and simultaneously reduces the volume of emissions released to the atmosphere. Minimizing the time spent traveling allows the time saved to be used in more personal, or profitable, endeavors.

The transportation objectives of those seeking to spark economic growth are to: 1) provide efficient modes of transportation; and 2) minimize the financial imposition on developers and companies contemplating establishing business ties with a community. The transportation objective of those who seek to protect the environment is to accommodate the projected increase in population and vehicle miles traveled while reducing overall emission levels. The result of these differing objectives is apparent in the various legislation regarding transportation and environmental issues.

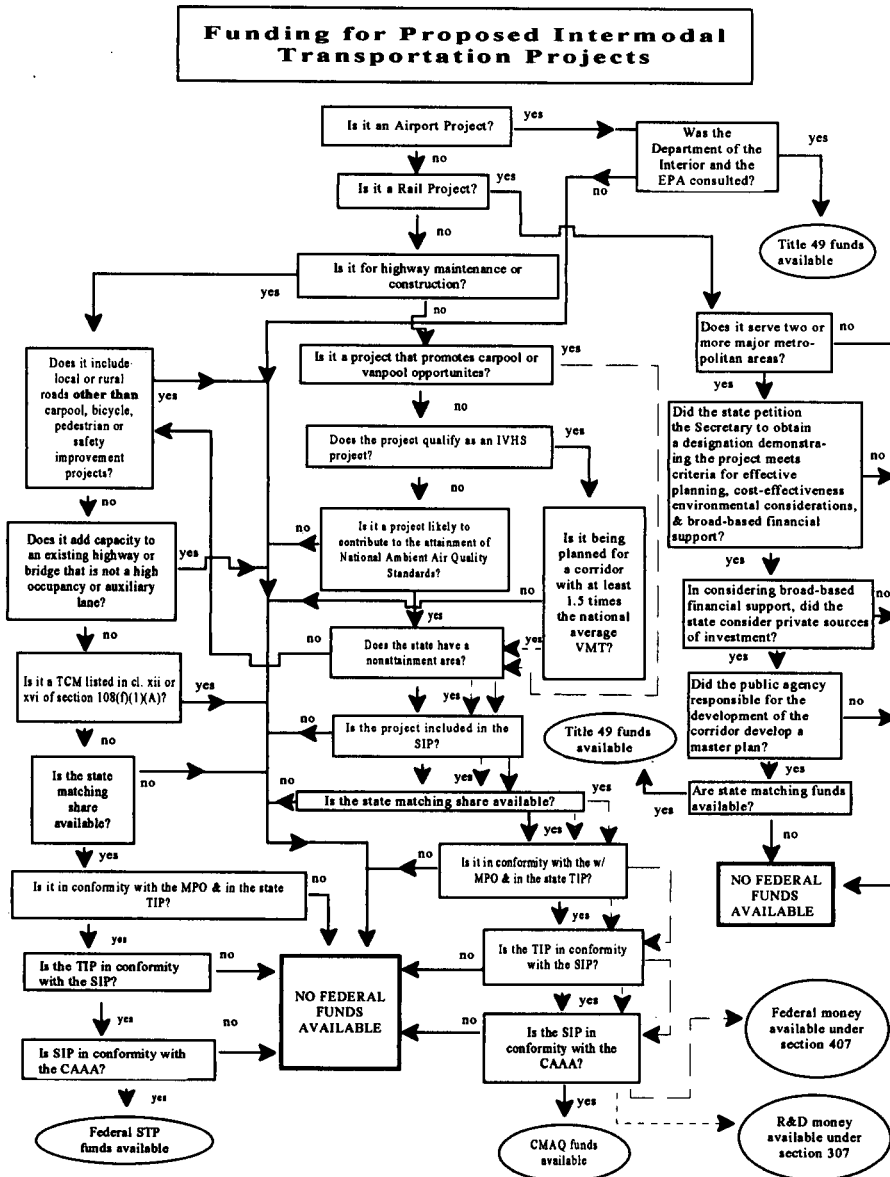
The focus of legislation incorporating intermodal transportation issues, found in various U.S.C. Titles, varies depending on the nature of the underlying legislation. For example, transportation legislation in Title 49, while acknowledging environmental issues, focusses primarily on the economic considerations. Highway legislation in Title 23 is more responsive to the environmental issues. Environmental legislation regarding mobile pollution sources such as the CAAA deals primarily with two issues: 1) reducing tailpipe emissions; and 2) reducing VMT. This section summarizes and synthesizes the most significant of these acts. Part B provides an overview of the funding process, Part C discusses components of the CAAA, and Part D discusses the funding mechanisms available under ISTEA to meet the requirements mandated by the CAAA.

## B. FUNDING OVERVIEW

The CAAA established new mandates for states to comply with certain well-defined air quality standards. Congress attempted to establish the funding mechanism and achieve the requirements of the CAAA through the enactment of ISTEA. Figure 4 illustrates the complexity of ISTEA's funding mechanisms as they relate to the CAAA.

Although ISTEA was designed to establish flexible funding for the states, it is not as flexible as its framers intended. To illustrate the inflexible nature of ISTEA, note that one of the major components of ISTEA, the Surface Transportation Program (STP), dictates how the majority of

FIGURE 4



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federal money is spent. The STP leaves only thirty percent of the federal funds to the states' discretion.<sup>34</sup>

ISTEA was built around the preexisting twenty year-old Federal Aid Highway Program (FAHP). Under the FAHP, states must match federal monies with a local or state share of funds. Most of the federal programs require levels of state and local financial participation ranging from ten to fifty percent.<sup>35</sup> Taxes collected on motor fuel constitute the primary source of revenue under the FAHP.<sup>36</sup> Americans have accepted the appropriation of "user" related taxes to fund highway projects. ISTEA attempts a major shift in this national paradigm by incorporating air quality considerations into our nation's transportation program.<sup>37</sup>

Before ISTEA, funds collected from motor vehicle users paid directly for the nation's infrastructure. This made sense because virtually all of the fuel tax payers used the highway system. Today, however, ISTEA mandates that those funds be used to support the creation of a national intermodal transportation system. People not intending to use the intermodal systems may object to their fuel tax dollars being spent on it. Proponents of the intermodal system, however, are likely to argue that even nonusers benefit from intermodal projects through relieved congestion and improved air quality.

Some intermodal projects eligible for ISTEA funding are highly capital intensive. Due to of these high capital costs, states often cannot meet the law's local matching share requirements. To meet the matching share, under the current FAHP structure, states must consider sources of revenue, such as unpopular taxes, that may inhibit economic development and otherwise place them at an economic disadvantage to their neighboring states.

Another impediment to the implementation of programs under ISTEA is the federal prohibition against new tolls on the interstate highway system.<sup>38</sup> The reasoning for this prohibition is to ensure the free movement of interstate commerce. Many of our nation's interstates, however, bisect major metropolitan areas. These bisecting segments of the interstate system often are sources of metropolitan area air quality problems

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34. *A Summary, Intermodal Surface Transportation Efficiency Act of 1991*, U.S. Dep't of Transp., Publication No. FHWA-PL-92-008.

35. *Id.* at 42. Federal Lands programs are the exception, requiring no state or local matching funds.

36. In FY 1991, the Federal Highway Trust Fund net receipts for motor fuel constituted more than eighty-eight percent of all revenue sources. *Our Nation's Highways, Selected Facts and Figures*, U.S. Dep't of Transp., Publication No. FHWA-PL-92-004 at p. 28. States similarly depend largely on motor fuel receipts for state and federal highway projects that have matching shares requirements.

37. See *supra* part II. A.

38. 23 U.S.C.A. §§ 129, 301 (1994). See also ISTEA, *supra* note 3, at §1012.

resulting from commuter traffic congestion. As a result, the prohibition of tolls designed to encourage "free movement" actually results in traffic congestion because it denies state government a significant source of revenue to fund needed transportation system improvements. One solution is to provide an alternative means of commuting, for example rail, along these corridors; tolls would provide a revenue source to meet the financial needs of alternative modes of transportation.

Although the federal government disallows tolling of interstate highways, it has relaxed its restrictions on the use of toll financing in the FAHP for non-interstate highways.<sup>39</sup> The highway administrator, T.D. Larson, stated:

The President's Executive Order on Privatization of Infrastructure provides the basis for additional Federal support for State and local government efforts toward forging new relationships with the private sector. Provisions of the ISTEA together with new technology make toll financing and public/private partnerships an attractive option by which States can capitalize on private sector resources, such as new capital sources and user charge options.<sup>40</sup>

The only looming limitation here is the continued prohibition on tolling interstate highway segments, regardless of whether they bisect major metropolitan areas. To date, a number of states have taken advantage of public/private toll partnerships.<sup>41</sup> To take advantage of this funding mechanism, however, a state must enact the statutory framework to authorize a state agency to contract with private companies to fund, plan, build, and/or operate private toll facilities. The DOT suggests that the key items to be addressed in such legislation include:

1. how public and private funds are combined;

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39. *Building a Better Partnership: Public/Private Cost-Sharing and Toll Financing Provisions of ISTEA*, U.S. Dep't of Transp. Publication No. FHWA-PL-92-009.

40. *Id.* at i. This publication explains in greater detail other relaxations in federal toll policy.

41. *Id.* at 6, 10. A summary of these projects include:

- (1) The North Atlanta Parkway. A 6.5-mile, six-lane limited access toll highway built with federal, state, local, and private sources;
- (2) The Florida Turnpike. Over 340 miles of highway including some local projects taken over by the state and toll authorities (some include multi-county authorities);
- (3) The Toll Road Corporation of Virginia. A 17-mile limited-access highway connecting the existing Washington Dulles International Airport Toll Road to Leesburg, Virginia. State and local governments granted a company a franchise to build, own, and operate the facility for 30 years, after which the State takes over. The project is financed primarily by private debt to be repaid from toll collection;
- (4) California Demonstration Projects. Total projects' worth is \$2.5 billion, which will be privately planned, funded, financed, built, and operated;
- (5) San Jose Lagoon Bridge. The Puerto Rico Highway Authority contracted the bridge out as a public/private partnership.



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2. the form of procurement;
3. use of state authority regarding rights-of-way;
4. toll or rate-of-return regulation; and
5. limitation of liability.<sup>42</sup>

Projects including public and private partnerships are not unprecedented. The Public Utilities Regulatory Policy Act of 1978 created a means for independent power producers to participate in the utility market. The Act induced the construction of a significant number of new power generation facilities, which, like transportation facilities, are capital intensive.

The benefits of private involvement, other than the obvious alternative source of capital, is the enhanced efficiency and speed. Private developers who are keen to improve their return on investment (ROI) will seek efficient cost-cutting approaches. The allocation of risk is spread to the private sector which may be more willing to take calculated risks that are restrained in the public process. Private developers competing with free roads will strive to offer better service and facilities; privately funded roads may be some of the first highways to apply Intelligent Vehicle Highway System (IVHS) technology.

Another restraint on the states' ability to generate their matching share is inherent in the nature of the funding mechanisms under ISTEA. The funding mechanisms for major intermodal projects presently do not allow states to "bank" the federal money allocated to their intermodal system. If the federal money is not spent within a period ranging from one to four years, the money disappears.<sup>43</sup>

### C. CLEAN AIR ACT AMENDMENTS OF 1990

*[W]ith enactment of the Clean Air Act Amendments of 1990 (CAAA), transportation planners have been challenged . . . to maintain the Nation's mobility while enhancing our air quality.<sup>44</sup>*

The CAAA constitute a set of significantly stricter and more enforceable standards designed to bring the nation's air quality into compliance with the National Ambient Air Quality Standards (NAAQS). To better understand how, when, and where the CAAA affects transportation programs and planning, a brief review of what constitutes a non-attainment area is in order.

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42. *Id.* at 9.

43. *A Summary*, *supra* note 34, at 42.

44. *Transportation Programs and Provisions of the Clean Air Act Amendments of 1990*, U.S. Dep't of Transp. Publication No. FHWA-PD-92-023 HEP-41/10/92 (40M) QE at 1.

### 1. Non-attainment Areas

Following the 1977 amendments to the 1970 Clean Air Act, an area may be classified as either attainment, non-attainment, or unclassifiable<sup>45</sup> with regard to the criteria pollutants for which NAAQS have been promulgated.<sup>46</sup> Because motor vehicles account for almost half the ozone and nearly all the carbon monoxide (CO) air pollution in the United States,<sup>47</sup> they are the two most important pollutants in terms of their impact on transportation issues. One of the significant changes in the 1990 amendments is the breakdown of the non-attainment areas based on the degree of ozone or carbon monoxide pollution.

Following the 1990 amendments, each ozone nonattainment area is further classified as either marginal, moderate, serious, severe, or extreme depending on the measured concentration of ozone.<sup>48</sup> For CO nonattainment areas, the classification consists of two primary categories: moderate and severe.<sup>49</sup> EPA recognized that the areas with regularly higher levels of ozone or CO would be more difficult and take longer to bring into compliance with the NAAQS. EPA, therefore, implemented a staggered set of deadlines that the SIP must meet in attaining the NAAQS.<sup>50</sup>

In theory, the longer time the CAAA allows nonattainment areas

45. An "unclassifiable" area is one that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standards for that pollutant. Unclassified areas are subject to the applicable attainment area requirements. CAA § 107(d), 42 U.S.C. § 7407(d) (Supp. V 1993).

46. The six criteria pollutants are ozone, carbon monoxide, sulfur dioxide, nitrogen oxides, lead and particulate matter.

47. See *supra* text accompanying note 7.

48. Currently, the only "extreme" ozone nonattainment area is Los Angeles.

49. CAA § 186(a)(1), 42 U.S.C. § 7512(a)(1) (Supp.V 1993). These CO areas have until December 31, 1995 (5 years), and December 31, 2000 (10 years), respectively to meet attainment standards. *Id.*

States must submit a comprehensive, accurate, current inventory of actual emissions from all sources for all moderate carbon monoxide nonattainment areas with a design value of 12.7 ppm or less. CAA 187(a)(1), 42 U.S.C. § 7512a(a)(1) (Supp. V 1993). Moderate areas with a design value above 12.7 ppm at the time of classification must submit a plan containing a forecast of VMT for each year up to the year forecast to meet the CO NAAQS. CAA 187(a)(2)(A), 42 U.S.C. § 7512a(a)(2)(A) (Supp. V 1993).

In addition, serious CO nonattainment areas, *Id.*, and the City of Denver, Colorado, *Id.* at § 7512a(a)(2)(B), must submit, by November 15, 1992, a plan that identifies and adopts specific and enforceable TCM to offset any growth in VMT.

Serious CO nonattainment areas must also provide provisions requiring employers to reduce work-related vehicle trips and miles traveled by employees. *Id.* at § 7512a(b)(2).

50. Under these staggered guidelines, an area classified as "marginal" for ozone must be in compliance by November 15, 1993 (3 years following enactment of the revisions); "moderate" by November 15, 1996 (6 years); "serious" by November 15, 1999 (9 years); "severe" by November 15, 2005 (15 years), or by November 15, 2007 under special circumstances; and for the "extreme" ozone non-attainment area by November 15, 2010 (20 years). *Id.* at § 7511(a)(1). Under special

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with more serious pollution to address their problems, should be an incentive to implement long-term solutions rather than quick-fix short-term solutions. However, some evidence indicates that some nonattainment areas may use this structure to delay dealing with their air pollution problems. For example, Denver upgraded to a more serious nonattainment status, not because the technical data warranted such a change, but merely because Denver wanted the increased time to comply with the CAAA.

## 2. Conformity

The conformity provisions of the CAAA requires any transportation plan or program in a nonattainment area funded, developed, or approved under Title 23 or the Federal Transit Act<sup>51</sup> to conform to the SIP.<sup>52</sup> The definition of conformity to an implementation plan is conformity to the plan's purpose of reducing or eliminating the number and severity of violations of the NAAQS. Also, to be in conformity, a new transportation plan must not create any new violations of any standard in any area, increase the severity or frequency of existing violations, or delay attainment of any standard, required interim emission reduction, or other milestones in any area.<sup>53</sup>

The conformity provisions are significant to transportation issues because they prevent any federal agency from approving, accepting, or funding any transportation plan, program, or project until such plan, pro-

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circumstances, a severe area with 186 to 198 ozone design value of 0.190 up to but not including, 0.280 ppm has until November 15, 2007 (17 years) to attain the NAAQS. *Id.* at § 7511(a)(2).

In addition, the CAAA requires moderate, severe, and extreme ozone nonattainment areas to show "reasonable further progress" at specific intervals in time. For example, CAA § 182(b)(1)(A)(i) requires a fifteen percent reduction in volatile organic compounds (VOC) by November 15, 1996, in moderate ozone nonattainment areas. Serious, severe and extreme ozone nonattainment areas are subject to the same "reasonable further progress" requirements pursuant to §§ 182(c), (d) and (e), respectively. In addition to the "further reasonable progress" requirements, serious, severe, and extreme ozone nonattainment areas must reduce VOCs by three percent per year in each year following 1996. This reduction is averaged over each 3 year period after 1996. CAA § 182(c)(2), 42 U.S.C. § 7511a(c)(2) (Supp. V 1993). Under these provisions a serious ozone nonattainment area should reduce its VOC emissions fifteen percent by 1996 and an additional three percent in each year thereafter until a total of twenty-four percent reduction has occurred by its attainment year of 1999. Severe and extreme ozone nonattainment areas must continue to reduce their VOC emissions by three percent per year until they reach their respective attainment years of 2005 and 2010. Section 182(g) requires states to demonstrate, at three year intervals beginning in 1996, that these "milestones" in emission levels have been accomplished in all nonattainment areas worse than moderate. CAA 182(g)(1), 42 U.S.C. § 7511a(g)(1) (Supp. V 1993).

51. 49 U.S.C.A. app. 1601 *et seq.*

52. CAA § 176(c); 42 U.S.C. § 7506(c) (Supp. V 1993).

53. *Id.*

gram, or project has been found to conform to the applicable SIP.<sup>54</sup> In particular, no transportation plan or transportation improvement program may be adopted or found to be in conformity by a metropolitan planning organization (MPO)<sup>55</sup> until a final determination that emissions from such plans or programs are consistent with estimates of motor vehicles and necessary emissions reductions contained in the applicable implementation plan.<sup>56</sup>

Transportation improvement programs must also provide for the timely implementation of TCMs consistent with schedules in the applicable SIP.<sup>57</sup> Transportation projects can be adopted, approved or found to be in conformity by a MPO only if: 1) the project comes from a conforming plan or program; 2) the design and scope of the project has not changed significantly since the determination that the originating plan and project was in conformity; and 3) at the time of the conformity determination, the design and scope of the program was adequate to determine emissions.<sup>58</sup> If a project does not meet these three criteria, it will be deemed to be in conformity only if it is demonstrated that the projected emissions from the project, together with the projected emissions for the conforming transportation plans and programs within the nonattainment area, do not cause emissions to exceed reductions schedules and projections in the applicable SIP.<sup>59</sup> The reapproval requirement is good in theory from an environmental standpoint; however, it restricts a state's ability to use funds that may later become available without significant efforts to document compliance with the SIP.

### 3. *Transportation Control Measures (TCMs)*

EPA's data depicted in Figure 1 illustrates the competing trends toward cleaner vehicles, on the one hand, and the ever-increasing VMT on the other. Based on this data, Congress recognized the need to find additional methods to reduce air pollution from mobile sources to combat the increase in projected VMT. CAAA § 108(f)(1)(A) lists 16 TCMs intended to decrease the public's reliance on the automobile and to use the automobile more efficiently.<sup>60</sup> The CAAA of 1990 requires a graduated

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54. *Id.*

55. As designated under Title 23 or the Federal Transit Act, 49 U.S.C.A. app. § 1601.

56. CAA § 176(c), 42 U.S.C. § 7506(c) (Supp. V 1993).

57. *Id.*

58. *Id.*

59. *Id.*

60. CAA § 108(f)(1)(A); 42 U.S.C. § 7408(f)(1)(A) (Supp. V 1993), states:

(f) Information regarding processes, procedures, and methods to reduce or control pollutants in transportation; reduction of mobile source related pollutants; reduction of impact on public health

(1) The Administrator shall publish and make available to appropriate Federal, State,

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and cumulative implementation of TCMs in states with serious, severe, and extreme ozone nonattainment areas,<sup>61</sup> and for moderate and serious CO nonattainment areas.<sup>62</sup> The implementation of TCMs is cumulative in that each successive ozone<sup>63</sup> and CO<sup>64</sup> nonattainment category incor-

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and local environmental and transportation agencies not later than one year after November 15, 1990, and from time to time thereafter—

(A) information prepared, as appropriate, in consultation with the Secretary of Transportation, and after providing public notice and opportunity for comment, regarding the formulation and emission reduction potential of transportation control measures related to criteria pollutants and their precursors, including, but not limited to—

- (i) programs for improved public transit;
- (ii) restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy [FN1] vehicles;
- (iii) employer-based transportation management plans, including incentives;
- (iv) trip-reduction ordinances;
- (v) traffic flow improvement programs that achieve emission reductions;
- (vi) fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service;
- (vii) programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use;
- (viii) programs for the provision of all forms of high-occupancy, shared-ride services;
- (ix) programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;
- (x) programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
- (xi) programs to control extended idling of vehicles;
- (xii) programs to reduce motor vehicle emissions, consistent with subchapter II of this chapter, which are caused by extreme cold start conditions;
- (xiii) employer-sponsored programs to permit flexible work schedules;
- (xiv) programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;
- (xv) programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest. For purposes of this clause, the Administrator shall also consult with the Secretary of the Interior; and
- (xvi) program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks.

61. CAA § 182; 42 U.S.C. § 7511a (Supp. V 1993).

62. CAA § 187; 42 U.S.C. § 7512a (Supp. V 1993).

63. In serious ozone nonattainment areas, states must submit a demonstration by November 15, 1996 (6 years after implementation) as to whether the current aggregate vehicle mileage, aggregate vehicle emissions, congestion levels, and other relevant parameters are consistent with the area's demonstration of attainment. 42 U.S.C. § 7511a(c)(5)(A) (Supp. V 1993). If the demonstration exceeds the levels projected in the area's attainment demonstration, the state must submit, within 18 months, a revision of the applicable SIP that includes a TCM provision consisting of measures from, but not limited to, the list of 16 TCMs in § 108(f). *Id.* at § 7408(f). In considering such TCM, states are to avoid increasing or merely relocating emissions and congestion rather than reducing them, and should also ensure adequate access to downtown and other commercial and residential areas. *Id.* at § 7511a(c)(5)(A).

Severe ozone nonattainment areas, while subject to all the TCM provisions applicable to serious nonattainment areas, must comply with two additional TCM provisions by November 15, 1992 (2 years after enactment). First, states must identify and adopt specific enforceable TCM to

porates the requirements of the lesser category plus additional requirements.

#### D. INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT OF 1991 (ISTEA)

*[T]o develop a National Intermodal Transportation System that is economically efficient, environmentally sound, provides the foundation for the Nation to compete in the global economy and will move people and goods in an energy efficient manner.<sup>65</sup>*

Following the enactment of the CAAA, Congress passed the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).<sup>66</sup> The Act outlined the formula to create a National Intermodal Transportation System. It stated that such system shall consist "of all forms of transportation in a unified, interconnected manner, including the transportation systems of the future, to reduce energy consumption and air pollution while promoting economic development and supporting the nation's pre-

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offset any growth in emissions from growth in VMT or number of vehicle trips. *Id.* at § 7511a(d)(1)(A). Second, states must require employers in the nonattainment area to implement programs to reduce work-related vehicle trips and miles traveled by employees. At a minimum, these plans must require employers of 100 or more persons to increase average passenger occupancy per vehicle in commuting from home to work during peak travel periods by at least twenty-five percent. *Id.* at § 7511a(d)(1)(B).

Extreme ozone nonattainment areas are subject to all the TCM provisions applicable to severe ozone nonattainment areas. *Id.* at § 7511a(e). In addition, extreme areas are authorized, although not required, to establish TCM measures to reduce the use of high-polluting vehicles or heavy-duty vehicles during heavy traffic hours. *Id.* at § 7511a(e)(4).

64. For moderate CO nonattainment areas with a design classification of 12.7 ppm at the time of classification, states are required to revise their SIP by November 15, 1992 (2 years after enactment), to include a forecast of VMT in the nonattainment area for each year before the year in which the plan projects attainment of the NAAQS for CO. 42 U.S.C. § 7512a(a)(2)(A) (Supp. V 1993). The revision must also provide for annual updates to the VMT forecast and provide reports on the accuracy of previous estimates. *Id.*

A special rule, applicable only to Denver, requires the state of Colorado to submit a revision that includes TCM analogous to the provisions for severe ozone nonattainment areas as defined in § 182(d)(1)(A) except that the revision's purpose is to reduce CO emissions rather than VOC emissions. 42 U.S.C. § 7512a(a)(2)(B) (Supp. V 1993). This special provision requires the identification and adoption of specific enforceable TCM to offset any growth in emissions from growth in VMT or number of vehicle trips in the nonattainment area. *See* 42 U.S.C. § 7511a(d)(1)(A) (Supp. V 1993).

In serious CO nonattainment areas, the special rule for Denver (a moderate nonattainment area) becomes generally applicable. 42 U.S.C. § 7512a(b)(2) (Supp. V 1993). In addition, serious CO nonattainment areas are required to submit a comprehensive, accurate, current inventory of actual emissions from all sources, as described in § 172(c)(3). 42 U.S.C. § 7512a(b)(2) (Supp. V 1993).

65. Policy statement of ISTEA, *supra* note 3.

66. ISTEA, *supra* note 3.

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eminent position in international commerce."<sup>67</sup>

Two purposes stated in the opening premise "economic development" and "reduc[ing] energy consumption and air pollution," are especially worth noting. The transportation system includes rail, motor vehicle, and air. Legislation governing rail and air transportation focuses on economic development, while the motor vehicle legislation focuses on the environmental issues.

The major components of ISTEA were codified in a variety of statutes. The components can be found in Title 23, Highways; Title 42, The Public Health and Welfare;<sup>68</sup> and Title 29, Transportation. A National Intermodal Transportation System (NITS) policy<sup>69</sup> was adopted in 1994. In addition to the general premise of ISTEA stated above, the policy states that, when appropriate, the NITS should be funded by the Highway Trust Fund.<sup>70</sup> This is significant since the primary revenue source of the Highway Trust Fund are taxes paid at the gasoline pumps by consumers. Targeting vehicle users as the major source of funding appears to be consistent with EPA's findings that motor vehicles are the largest single source of ozone and carbon monoxide air pollution.<sup>71</sup> The Office of Intermodalism, established under the Secretary of Transportation, monitors the progress of the NITS objectives and coordinates research and development.<sup>72</sup>

As stated above, most of the federal programs discussed in subsections E, F, and G, *infra*, require levels of state and local financial participation ranging from ten to fifty percent.<sup>73</sup> Some projects under ISTEA are capital intensive requiring large local or state matching shares. States may be discouraged from imposing taxes to generate matching shares due to the likely resultant economic development disadvantage relative to its neighboring states. Federal regulations prevent tolling of interstate high-

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67. *Id.* The Secretary of Transportation is required to report annually to Congress about the progress of various transportation programs. The requirements include: (1) Highway pavement of Federal-aid highways; (2) Bridges on and off Federal-aid highways; (3) Highway safety; (4) Traffic congestion; (5) Public transportation facilities and equipment; and (6) Intermodal transportation facilities and systems. 23 U.S.C.A. § 303 (1994). The report shall include information compiled by the states on issues including traffic-monitoring statistics and intermodal advancements. *Id.* The intermodal requirements established under this section require, in part, that each state must integrate all of its transportation systems by including methods of achieving optimum yield from such systems, methods for increasing productivity in the state, and methods for increasing the use of advanced technologies.

68. 42 U.S.C.A. § 13235 (1994), provides local incentives for encouraging the use of alternative fuels.

69. 49 U.S.C.A. § 5501 (1994).

70. *Id.* at § 5501(b)(8).

71. See *supra* note 5 and accompanying text.

72. 49 U.S.C.A. § 5503 (1994). See also, 49 U.S.C.A. §§ 301, 302 (1994).

73. See *supra* note 3 and accompanying text.

ways that would otherwise be a potential source for the states' matching share.<sup>74</sup>

Recent developments have challenged the structure of the DOT. Section Es through G, *infra*, outline the various components and funding sources that comprise the present structure of the ISTEA legislation.<sup>75</sup>

## E. TITLE 23, HIGHWAYS

### 1. Surface Transportation Program (STP)

The surface transportation program<sup>76</sup> provides funding for a wide range of transportation alternatives in the spirit of ISTEA.<sup>77</sup> It provides up to eighty percent federal funding for new construction or reconstruction projects to accommodate other modes of transportation. It precludes, however, projects related to local or rural roads unless they are carpool, bicycle transportation, pedestrian walkway, or safety improvement-related projects.

Projects approved under the Federal Transit Act, including intracity or intercity bus terminals and facilities,<sup>78</sup> may also be funded under the STP. With exception to clauses (xii) and (xvi), all of the TCMs listed in the Clean Air Act<sup>79</sup> are permitted under this highway program.<sup>80</sup> Additionally, it allows funds to be used for surface transportation "planning" programs and transportation enhancement activities.<sup>81</sup>

### 2. Congestion Mitigation and Air Quality Improvement Program (CMAQ)

The Congestion Mitigation and Air Quality Improvement Program (CMAQ)<sup>82</sup> channels highway funds to projects likely to contribute to the attainment of a NAAQS, whether through reductions in VMT, fuel consumption, or "through other factors."<sup>83</sup> Projects may be eligible under this program if they are included in a state implementation plan (SIP)

74. 23 U.S.C.A. §§ 129, 301 (1994). *See also* ISTEA, *supra* note 3, at § 1012.

75. Following the Republican takeover in Congress, efforts to restructure the DOT have reemerged; now there is an emphasis on block grants which will help resolve the issue of unfunded federal mandates.

76. 23 U.S.C.A. § 133 (1994). Funding for projects listed under this section is provided pursuant to 23 U.S.C.A. § 104(b)(3) (1994).

77. ISTEA, *supra* note 3, at §1007.

78. 23 U.S.C.A. § 133(b) (1994).

79. CAA § 108(f)(1)(A) (Supp. V 1993).

80. *See supra* note 12.

81. 23 U.S.C.A. § 133(b)(7),(8) (1994).

82. 23 U.S.C.A. § 149 (1994). Funding for this program is provided pursuant to 23 U.S.C.A. § 104(b)(2) (1994). *See also*, ISTEA, *supra* note 3, at §1008.

83. 23 U.S.C.A. § 149(b)(1)-(3) (1994).



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approved pursuant to the CAA that will have "air quality benefits."<sup>84</sup> States without nonattainment areas located within their borders can seek financial assistance instead under the surface transportation program (STP).<sup>85</sup>

**3. *Complimentary Provisions***

Two sections of the highway bill provide complementary provisions to the STP and the CMAQ.<sup>86</sup> Section 146 provides funding for projects that promote carpool and van pool opportunities.<sup>87</sup> The other, Section 142, encourages the development, improvement, and use of public mass transportation systems that operate motor vehicles, mainly buses, on federal highways.<sup>88</sup> Additionally, the interstate maintenance program<sup>89</sup> precludes the expansion of capacity of any interstate highway or bridge that are not high-occupancy vehicle or auxiliary lanes. States are required to establish the occupancy requirements of vehicles operating in high-occupancy vehicle lanes.<sup>90</sup> Such requirements shall be no fewer than two occupants, and motorcycles and bicycles shall not be considered single occupant vehicles.<sup>91</sup>

**4. *Intelligent Vehicle Highway Systems (IVHS)***

The Intelligent Vehicle Highway Systems Act of 1991,<sup>92</sup> thought by some to be the "best near-term technology for improving surface transportation,"<sup>93</sup> seeks to improve traffic flow. Intelligent vehicle highway systems (IVHS) means the development or application of electronics, communications, or information processing<sup>94</sup> used singly or in combination to improve the efficiency and safety of surface transportation systems.<sup>95</sup> IVHS plans for a satellite-based system capable of detecting areas of traffic congestion and relaying alternative route information to

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84. *Id.*

85. *See supra* note 9.

86. Funding for all projects under this paragraph is pursuant to 23 U.S.C.A. § 104(b) (1994).

87. *Id.* at § 146.

88. *Id.* at § 142.

89. *Id.* at § 119.

90. *Id.* at § 102. This recognizes the phenomena experienced in California where added lane capacity actually attracted more traffic rather than reducing congestion.

91. *Id.*

92. Part B of Title VI of Pub. L. 102-240, as amended Pub. L. 102-388, Title IV, § 404, Oct. 6, 1992, 106 Stat. 1564 [hereinafter IVHS].

93. 23 U.S.C.A. § 307(a)(6) (1994).

94. IVHS § 6059; 23 U.S.C.A. 307 (1994). Such developments or applications include advanced traffic management systems, commercial vehicle operations, advanced traveler information systems, commercial and advanced vehicle control systems, advanced public transportation systems, satellite vehicle tracking systems, and advanced vehicle communications systems.

95. *Id.*

individual vehicle for purposes of rerouting. The Act established eight goals that, in sum, strive to reduce the societal, economic, and environmental costs associated with traffic congestion.<sup>96</sup>

Section 307, the primary means for funding IVHS, is a research and planning tool. Eligible transportation planning entities<sup>97</sup> may apply for IVHS planning grants<sup>98</sup> or operational testing projects<sup>99</sup> that contribute to the goals and objectives of the Act. The allocation of funding set aside for the IVHS programs reflects Congress' recognition that IVHS technology is the "best near-term" solution to highway congestion. Fifty percent of the available funds under this section must be made available for the development and implementation of IVHS under a scheme that designates priority corridors.<sup>100</sup> Unless a transportation entity is responsible for planning for an area with at least 1.5 times the national average of vehicle miles traveled, it is unlikely that it will be able to secure funding under this section.<sup>101</sup>

One author suggests that it will be difficult to coordinate the regulation of the IVHS since more than 22,000 cities and counties in the United States potentially have regulatory power over the system within their ju-

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96. IVHS § 6052(b), Goals; 23 U.S.C.A. § 307 provides that the goals of the program shall include:

- (1) the widespread implementation of IVHS to enhance the capacity, efficiency, and safety of the Federal-aid highway system and to serve as an alternative to additional physical capacity of the Federal-aid highway system;
- (2) the enhancement, through more efficient use of the Federal-aid highway system, of the efforts of the several States to attain air quality goals established pursuant to the Clean Air Act;
- (3) the enhancement of safe and efficient operation of the Nation's highway systems with a particular emphasis on aspects of systems that will increase safety and identification of aspects of the system that may degrade safety;
- (4) the development and promotion of IVHS and an IVHS industry in the United States, using authority provided under this section of Title 23;
- (5) the reduction of societal, economic, and environmental costs associated with traffic congestion;
- (6) the enhancement of United States industrial and economic competitiveness and productivity by improving the free flow of people and commerce and by establishing a significant United States presence in an emerging field of technology;
- (7) the development of technology base for IVHS and the establishment of the capacity to perform demonstration experiments, using existing national laboratory capabilities where appropriate; and
- (8) the facilitation of the transfer of transportation technology from national laboratories to the private sector.

97. IVHS § 6055(c).

98. *Id.* at § 6055(b).

99. *Id.* at § 6055(d).

100. *Id.* at § 6056. IVHS § 6058 authorizes the appropriation of \$71 million for fiscal year 1992 and \$86 million for each of fiscal years 1993 through 1997 for the "corridors program." An additional \$23 million for 1992 and \$27 million for each of fiscal years 1993 through 1997 was authorized for other IVHS activities. The Federal share is payable at the rate of 80 percent in the same manner as other funds apportioned under Title 23.

101. *Id.* at § 6056(b)(1).

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jurisdictional boundaries.<sup>102</sup> He suggests that a model state statute should be established to clarify the role that local governments, as regulators of IVHS services, should play and that rules should be created for local governments that choose to provide IVHS services in lieu of the private sector.<sup>103</sup> Additionally, he suggests that a statutory regime that creates a level playing field for different emerging technologies should be created.<sup>104</sup>

Although the free flow of ideas relative to emerging technologies may be warranted during the research and development stages of IVHS, allowing multiple divergent technologies would not be in the national interest. The federal government has a legitimate interest in establishing a consistent national standard to ensure uniformity among the states.

### 5. Future Planning

Both the state and metropolitan area levels have primary responsibility for planning. The roles of each level of planning are discussed below.

#### a. Statewide Planning

Statewide planning<sup>105</sup> must consider all modes of transportation and shall coordinate metropolitan area plans to ensure connectivity within transportation systems. Additionally, the state must carry out its responsibilities for the development of the transportation portions of the State implementation plan as required by the CAAA.<sup>106</sup> The planning process must consider a minimum of twenty listed items.<sup>107</sup> It must evaluate the overall social, economic, energy, and environmental effects of the deci-

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102. Michael E. Libonati, *The Law of Intergovernmental Relations: IVHS Opportunities and Constraints*, 22 *TRANSP. L. J.* 225 (1994) [hereinafter Libonati].

103. *Id.* at 249.

104. *Id.*

105. See 23 U.S.C.A. § 135 (1994).

106. *Id.* at § 135(b)-(d).

107. *Id.* at § 135(c) lists:

- (1) The results of the management systems required pursuant to subsection (b).
- (2) Any Federal, State, or local energy use goals, objectives, programs, or requirements.
- (3) Strategies for incorporating bicycle transportation facilities and pedestrian walkways in projects where appropriate throughout the State.
- (4) International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation and scenic areas, monuments and historic sites, and military installations.
- (5) The transportation needs of nonmetropolitan areas through a process that includes consultation with local elected officials with jurisdiction over transportation.
- (6) Any metropolitan area plan developed pursuant to section 134.
- (7) Connectivity between metropolitan areas within the State and with metropolitan areas in other States.
- (8) Recreational travel and tourism.
- (9) Any State plan developed pursuant to the Federal Water Pollution Control Act.

sions made in the planning process. After evaluating this lengthy list of subjective criteria, the state must develop a Transportation Improvement Program (TIP).<sup>108</sup> The TIP must be consistent with metropolitan area planning and must be in conformance<sup>109</sup> with the state implementation plan pursuant to the CAAA for areas of nonattainment.<sup>110</sup> The TIP must not include projects unless "funding can reasonably be anticipated."<sup>111</sup> Finding the funds for capital-intensive projects such as high-speed rail presents a dilemma within the constraints imposed by existing law.

#### b. Metropolitan Planning

Metropolitan planning organizations (MPOs) have the responsibility to develop transportation plans, in cooperation with the state, for urbanized areas of the state.<sup>112</sup> The MPO provisions state that:

*It is in the national interest to encourage and promote the development of transportation systems embracing various modes of transportation in a manner which will efficiently maximize mobility of people and goods within and through urbanized areas and minimize transportation-related fuel consumption and air pollution.*<sup>113</sup>

Here too the planning process requires MPOs to consider all modes of

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(10) Transportation system management and investment strategies designed to make the most efficient use of existing transportation facilities.

(11) The overall social, economic, energy, and environmental effects of transportation decisions.

(12) Methods to reduce traffic congestion and to prevent traffic congestion from developing in areas where it does not yet occur, including methods which reduce motor vehicle travel, particularly single-occupant motor vehicle travel.

(13) Methods to expand and enhance transit services and to increase the use of such services.

(14) The effect of transportation decisions on land use and land development, including the need for consistency between transportation decision making and the provisions of all applicable short-range and long-range land use and development plans.

(15) The transportation needs identified through use of the management systems required by section 303 of this title.

(16) Where appropriate, the use of innovative mechanisms for financing projects, including value capture pricing, tolls, and congestion pricing.

(17) Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way which may be needed for future transportation corridors, and identify those corridors for which action is most needed to prevent destruction or loss.

(18) Long-range needs of the State transportation system.

(19) Methods to enhance the efficient movement of commercial motor vehicles.

(20) The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavement.

108. *Id.* at § 135(f). Funding for § 135 is provided pursuant to 23 U.S.C.A. § 307(c)(1) (1994).

109. *See supra* part III. C.2.

110. *Id.*

111. *Id.*

112. 23 U.S.C.A. § 134 (1994). *See also* ISTEPA, *supra* note 3, at § 1024.

113. *Id.*

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transportation. The membership composition of MPOs must include local elected officials and all transportation agencies within the metropolitan area.<sup>114</sup> Metropolitan area boundaries must include existing urbanized areas and the contiguous areas expected to become urbanized within the 20-year forecast period.<sup>115</sup> CAAA designated nonattainment areas must be included, at a minimum, in the MPO boundaries. Provisions for multistate areas are made under this section.<sup>116</sup>

In developing transportation plans and programs pursuant to this section, MPOs must consider a list of fifteen factors. The majority of factors mirror those listed under the statewide planning considerations above.<sup>117</sup> The most significant added requirement is that MPOs must include the effects of all transportation projects to be undertaken within the metropolitan area, without regard to whether such projects are publicly funded.<sup>118</sup> This stretches MPO authority to indirect sources which may include private real property (e.g. parking lots) or roads (in subdivisions, etc.) that may attract mobile sources of pollution.<sup>119</sup>

In developing long-range plans, MPOs must identify all transportation facilities, giving emphasis to those that serve national and regional transportation functions. In formulating the plan, they must consider all factors listed in subsection (f) of § 134 as such factors relate to a 20-year forecast period.<sup>120</sup> Overcoming congestion-related problems will require that planners to look into the future. The "consideration" of the 20-year plan, however, is loosely enforced. Unlike the statewide planning requirements, MPOs must indicate public and private financial resources together with its recommendations for innovative financing techniques.<sup>121</sup> Additionally, MPO plans must be in coordination with the SIP, and MPOs must ensure that their plans are in compliance with the state TIP. In fact, the TIP must reflect transportation plans for the metropolitan planning area.<sup>122</sup>

## F. TITLE 42, PUBLIC HEALTH AND WELFARE

### 1. *State and Local Incentive Program*

The goal of the State and Local Incentive Program is to introduce

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114. *Id.* at § 134(b).

115. *Id.* at § 134(c).

116. *Id.* at § 134(d).

117. *See supra* note 105.

118. 23 U.S.C.A. § 134(f)(6) (1994).

119. 42 U.S.C.A. § 7410(a)(5)(C) (Supp. V 1993).

120. 23 U.S.C.A. § 134(g)(2) (1994).

121. *Id.* at § 134(g)(2)(B). Innovative financing techniques may include value capture tolls and congestion pricing.

122. *Id.*

“substantial numbers” of alternative-fueled vehicles in such states by the year 2000.<sup>123</sup> The governor of each state may submit a state plan that incorporates provisions to attain this goal,<sup>124</sup> and the plan should include the estimated cost of implementation. The program suggests a number of ways that a state can coordinate with other entities to achieve the objectives of the program. States with approved plans may apply for federal assistance in the form of technical assistance, including model state laws, or grants for the purpose of assisting with the implementation of the plan.<sup>125</sup>

When determining the amount of financial assistance that a state may receive, the following three factors are considered: (1) the energy-related and environmental-related impacts, on a life cycle basis, of the introduction and use of alternative-fueled vehicles included in the plan compared to conventional motor vehicles; (2) the number of alternative fueled vehicles likely to be introduced by the year 2000 as a result of successful implementation of the plan; and (3) such other factors as the Secretary (of Energy) considers appropriate.<sup>126</sup>

Typically, government fleets are better suited for the transition into alternative fuels than the general public. Government fleet operators can provide on-site storage of alternative fuels unlike consumer-dependant gas station operators who may not be able to justify the cost of on site alternative fuel storage. Additionally, government fleet operators may be better equipped to use electrically driven motor vehicles since the distance traveled by most government vehicles is within short geographic areas.

## G. TITLE 49, TRANSPORTATION

### 1. Airports

The general policy statement governing airport development and improvement encourages the development of transportation systems that use various modes of transportation.<sup>127</sup> This intermodal development should serve both states and local communities “efficiently and effectively,” and should protect and enhance natural resources and the quality of the environment.<sup>128</sup> In recognition of the National Transportation Policy, § 47101 states that an intermodal system must transport passengers and property in an “efficient” manner.<sup>129</sup> The focus of “efficiency” ap-

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123. 42 U.S.C.A. § 13235 (1994).

124. *Id.*

125. *Id.*

126. *Id.* at § 13235(b)(2).

127. 49 U.S.C.A. § 47101 (1994).

128. *Id.*

129. *Id.*

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pears to be based on economic grounds, with environmental issues being secondary. The provision states that the future economic direction the United States depends on its "ability to confront," among other items, energy vulnerability and air pollution.<sup>130</sup> Section 47101 also states "[a]ll forms of transportation, including aviation and other transportation systems of the future, will be full partners in the effort to reduce energy consumption and air pollution."<sup>131</sup> Again, however, this environmental partnership attaches to the statement "while promoting economic development."<sup>132</sup>

Section 47101 goes on to state that "intermodality and flexibility are paramount in the process of developing an [intermodal transportation] system<sup>133</sup> that will obtain the optimum yield of United States resources."<sup>134</sup> To achieve this "optimum use of State resources," Section 47101 requires the Secretary of Transportation to cooperate with state and local officials and they shall "consult" with the Department of the Interior and the Environmental Protection Agency. The transportation plans and programs shall be developed with other transportation planning.<sup>135</sup>

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130. *Id.* at § 47101(b).

131. *Id.* at § 47101(b)(4).

132. *Id.*

133. *Id.* at § 47101(b)(5) defines Intermodal Transportation System as: [one that] consists of transportation hubs that connect different forms of appropriate transportation and provides users with the most efficient means of transportation and with access to commercial centers, business locations, population centers, and the vast rural areas of the United States, as well as providing links to other forms of transportation and to intercity connections. Note the use of the term 'appropriate transportation.' Unlike the environmental laws that focus on the reduction of pollution, the term 'appropriate transportation' seems to suggest that efficiency is defined in more than one way, here, taking into account social or cultural choice. Additionally, Congress added an alternative means of transportation to the number of solutions; heliports. *Id.* at § 47101(e)(2). This may be in response to an earlier report prepared by the Committee on Public Works and Transportation stating '[it] is supportive of government and industry efforts to develop tilt rotor aircraft technology for civil purposes' to free up scarce airport capacity in metropolitan areas. House Rep. 102-503, Airport and Airway Safety, Capacity, and Intermodal Transportation Act of 1992.

134. 49 U.S.C.A. § 47101(b)(6) (1994)

135. Other planning, although not stated, should include State Transportation Improvement Plan and MPO planning efforts. Congress noted earlier that in some metropolitan areas, airports have found it difficult to participate fully in the MPO planning process. It stated that "[it] expects[s] airports to be full and effective participants in the MPO process" and that it will monitor the situation, and if necessary, take appropriate further action. House Rep. 102-503, Airport and Airway Safety, Capacity, and Intermodal Transportation Act of 1992. Existing legislation does not note whether this problem persists, however, airport operators should insure that they are aware of all MPO planning initiatives and assert their right to participate in the MPO planning process.

## 2. Rail Terminals

In the spirit of ISTEA, § 5563 allows for financial assistance to convert rail passenger terminals to intermodal transportation terminals.<sup>136</sup> Appropriate modes of transportation included under § 5563 include: (1) motorbus transportation; (2) mass transit (rail or rubber tire); and (3) airline ticket offices and passenger terminals providing direct transportation to area airports.<sup>137</sup> This section of Title 49 does not state specifically that its intent is to provide an efficient transportation system and, thus, a cleaner environment, although it is inferred. At a minimum, it is a cooperative provision which will help achieve the goal of creating an intermodal transportation system. This provides an opportunity, for instance, for airlines to take advantage of additional consumer ticketing locations (an economic opportunity) and for transportation planners to link to systems together for efficiency purposes (an environmental opportunity).

## 3. Rail As An Alternative

### a. Background

Despite heavy early use of rail transportation in the United States, railroad companies were eventually forced to compete with highways and airports that were publicly funded. Increased competition prompted "a change in corporate strategy; the focus shifted from passenger to freight service."<sup>138</sup> As a result, financing dwindled for customer service oriented improvements, "leaving much of the passenger rail facilities in disrepair."<sup>139</sup> The government thus influenced the direction American culture by making automobile and air travel more attractive. Transporting people and goods by rail may be accomplished through the use of various technologies. A few of these technologies include traditional rail service, light intercity rail service, and high-speed ground transportation service (high-speed rail). Traditional rail service by the 1930s provided regularly scheduled intercity service at speeds of 100 miles per hour.<sup>140</sup> Today, however, fewer trains can travel at these speeds because of deteriorating track conditions. Light rail generally provides a means to move people from points within metropolitan areas at slower speeds. High speed rail includes steel on wheel and magnetic levitation systems reaching speeds

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136. 49 U.S.C.A. § 5563 (1994).

137. *Id.*

138. Brian Kingsley Krumm, *High Speed Ground Transportation Systems: A Future Component of America's Intermodal Network?*, 22 *TRANSP. L. J.* 309, (1994) [hereinafter Krumm].

139. *Id.* See also, JOSEPH VRANICH, *SUPERTRAINS — SOLUTIONS TO AMERICA'S TRANSPORTATION GRIDLOCK* 14, at 227 (1991).

140. *Id.*



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above 125 miles per hour. Of the three, high speed rail has received the most attention by Congress.

**b. High Speed Rail**

In the 1990s, American travelers returning from Europe and Japan seem ready to shift the American culture, and get people out of their cars by introducing the alternative of high-speed ground transportation systems.<sup>141</sup> The Legislature responded. The High Speed Rail Development Act (HSRDA) of 1993<sup>142</sup> amended the Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act).<sup>143</sup> It is worth noting that the 4R Act, which merely precluded the extinction of the railroads, was not revised until this cultural prompting occurred nearly twenty years later. While the HSRDA recognizes the importance of high-speed rail, it restricts continued federal subsidies for operation and expenses.<sup>144</sup> Implementation for high speed rail is placed at the state and local level. A new Title X was added to the 4R Act creating a National High Speed Rail Assistance Program to aid state, local, and private sector efforts to improve intercity mobility through development of high speed rail in appropriate intercity corridors.<sup>145</sup>

To be eligible for funding, a rail corridor "must serve two or more major metropolitan areas<sup>146</sup> where the Secretary determines high speed rail offers the potential for cost effective intercity public transportation."<sup>147</sup> A state must petition the Secretary to obtain such a designation, demonstrating that it meets the criteria pertaining to effective planning, cost-effectiveness, environmental considerations, and broad-based financial support.<sup>148</sup> The "broad-based financial support" provision requires a state to consider private sources of investment. This may prove problematic due to long delays in project startups which can diminish the potential return on investment.<sup>149</sup> The public agency responsible for the

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141. Krumm, *supra* note 138, citing: TRANSPORTATION RESEARCH BOARD, NATIONAL RESEARCH COUNCIL, IN PURSUIT OF SPEED: OPTIONS FOR INTERCITY PASSENGER TRANSPORT, SPECIAL REPORT 233, Ch. 3, (1991).

142. S. 839, 103d Cong., 1st Sess. (1993) and H.R. 1919, 103d Cong., 1st Sess. (1993).

143. Railroad Revitalization and Regulatory Reform Act, Pub. L. No. 94-210, 90 Stat. 33 (1976).

144. *Supra* note 63.

145. *See* Krumm, *supra* note 138, at 317; *see also supra* note 74 at § 1.

146. Today six corridors are designated, including: (1) Chicago-Milwaukee-St. Louis-Detroit; (2) Washington, D.C.-Richmond-Raleigh-Charlotte; (3) Miami-Orlando-Tampa; (4) San Diego-Los Angeles-Sacramento; (5) Eugene-Portland-Seattle -Vancouver; and (6) New York-Albany-Buffalo. It is worth noting that these corridors are intercity long-haul routes. 49 U.S.C.A. §309 (1994) requires that potential short-haul markets for HSGT systems should also be examined.

147. *See* Krumm, *supra* note 138, at 317; *see also supra* note 3, at § 1001.

148. *See* Krumm, *supra* note 138, at 317-18.

149. *Id.* at 323.

development of these corridors must develop a master plan.<sup>150</sup> The Secretary may fund up to eighty percent of the eligible costs, providing that the state and local governments fund the other twenty percent.<sup>151</sup>

Congress ultimately charged the Secretary of Transportation with leading an interagency<sup>152</sup> research and development effort of high-speed ground transportation (HSGT) technologies in order to develop the implementation of magnetic levitation and high-speed steel wheel on rail transportation systems as alternatives to existing transportation systems.<sup>153</sup> Section 309 is facilitated primarily by provisions for demonstration projects and research and development agreements. Demonstration projects of advancements in HSGT may submit such proposals to be incorporated into any revenue service HSGT project or system under construction or in operation at the time the application is made.<sup>154</sup> Thus, the proposed technological advancement must be incorporated into one of the designated corridor projects.

Alternatively, to become eligible, a state may seek designated corridor status together with its application for technological advancement funding. Research and development agreements may be entered into by the Secretary for the purpose of conducting research to overcome technical and other barriers<sup>155</sup> to the development and construction of practicable HSGT systems and to help advance the basic generic technologies needed for these systems.<sup>155</sup> By June 1, 1995, the Secretary must submit a report to congress as to the commercial feasibility of constructing one or more HSGT systems in the United States. The study must include: (1) an economic and financial analysis;<sup>156</sup> (2) a technical assessment; and (3) recommendations for model legislation for state and local governments to facilitate construction of HSGT systems. Financing and model legislation for state and local governments must be considered together, and such legislation must be coordinated with the federal programs to ensure that adequate capital will be secured to facilitate HSGT projects.

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150. See ISTEA, *supra* note 3, at § 1002.

151. *Id.*

152. Other agencies include: the Secretaries of Commerce, Energy, and Defense; the Administrator of the Environmental Protection Agency; the Assistant Secretary of the Army for Public Works; and the heads of other "interested" agencies. 49 U.S.C.A. § 309(a) (1994).

153. 49 U.S.C.A. § 309 (1994).

154. *Id.* at § 309(b)(2)(B)(i).

155. *Id.* at § 309(c).

156. The economic and financial analysis includes twelve issues that must be considered. 49 U.S.C.A. § 309(d)(2) (1994). Such considerations in summary are the examination of potential short and long-haul HSGT markets; extent of relief to traffic congestion and to other modes of transportation; availability of rights-of-way; recommendations for funding mechanisms, tax incentives, etc.; recommendations for the roles appropriate for local, state, and regional governments to facilitate construction of HSGT; among other items.

**1995] Intermodal Transportation Planning for the Environment 271****IV. ANALYSIS****A. GENERAL**

As previously discussed, ISTEA is not the flexible funding mechanism the government intended it to be. The sources of the inflexibility include the magnitude of the state-matching share, the inability of states to bank and leverage federal funds (for long terms), the dictates on how FAHP funds must be allocated, and the restrictions on placing tolls on existing interstate highways to generate a state's matching share.

The consequence of this inflexibility is far greater than one may think. ISTEA's internal provisions significantly restrict the state's ability to fund the capital intensive intermodal projects. For instance, if a state imposes a general tax to meet this local obligation, it may depress economic development by discouraging businesses from relocating to these states because of this added tax burden. Thus, local and state planners under the current funding mechanisms are likely to shy away from capital intensive environmental/transportation projects. Also, if a project cannot be funded, MPOs and states are precluded from incorporating such projects into their 20-year plans.<sup>157</sup> The President's Executive Order on Privatization of Infrastructure, creating public/private partnerships, is a positive step toward finding creative ways to finance intermodal projects. The only change that we would suggest here is to lift the federal prohibition on states that prevents them from establishing tolls, particularly on congested segments of interstate highways.

**B. STATE AND LOCAL MATCHING FUND REQUIREMENT**

To receive federal funds for intermodal transportation projects, states must usually contribute a local matching share. The historic rationale for this requirement is that such a matching share demonstrates local support or commitment to the project. Unfortunately, however, most intermodal transportation projects are so capital intensive that even the states' matching share is often prohibitively expensive.

**C. BANKING/STATE INTERMODAL TRUST FUND**

As discussed in the funding section above, the funding mechanisms of ISTEA and the FAHP preclude states from "banking" the federal money allocated to them. If the federal money is not spent within a certain time, a state runs the risk of losing the money. The state, therefore, has the incentive to allocate the money to short-term projects; intermodal projects that require large sums of money are thus left without a funding source if they cannot be built within the time and resource limitations of

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157. See *supra* text accompanying note 133.

the state. If states were allowed to bank federal funds, creating their own intermodal trust funds, they would be able to plan for capital intensive projects that require long-term financial planning. This type of relaxation to the FAHP would provide the states with funds that can reasonably be anticipated,<sup>158</sup> and it would empower MPOs and states to incorporate these projects in their 20-year plans.

#### D. FAHP FUND ALLOCATION DICTATES VS. BLOCK GRANTS

The federal government controls how all but thirty percent of federally allocated dollars are spent.<sup>159</sup> This defeats the intent that ISTEA provide a flexible source of funding for intermodal projects. One method of overcoming this federal funding dictate is to create a block grant program. The arguments for and against block grants are very predictable. States typically argue that they are capable of addressing their needs more efficiently if they are freed of the heavy bureaucracy imposed by the federal oversight of federal allocations. The federal government, on the other hand, is typically concerned that states lack the resources to adequately plan for the efficient use of the federal money. The federal government is also concerned that the states will preferentially spend the federal money on state interests and will not adequately address the national interests.

The following analysis explores possible solutions that satisfy both the state and federal interests. The federal government has a legitimate concern that states spend federal money efficiently to protect the more historic national interests in security and defense, interstate commerce, and interstate travel. These interests are presently provided for by the maintenance of the national highway system and interstate highway system funded under ISTEA.

There is a fundamental difference in the characteristics of the historic national interests and the new national interest in air quality. The characteristics of the historic national interests are more uniform with one another. This uniformity stems from the ability to address all three historic interests by simply maintaining the national and interstate highway systems. In contrast, the new national interest in air quality varies in both its character and in the optimal approach to protecting that interest. For example, City A, with a congestion problem that results in an ozone nonattainment area, may be best served by an intermodal transportation project utilizing an intelligent vehicle system designed to remedy the congestion problem. This same intermodal project will do little, however, to address City B's particulate nonattainment area caused by excessive vehi-

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158. See *supra* text accompanying note 111.

159. See *supra* note 32.

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cle miles traveled. City B would be better served by a program that increases mass transit facilities to reduce the number of vehicle miles traveled. In this regard, states have a legitimate interest in having the autonomy and truly flexible funding sources available to implement intermodal projects that are customized to address their local needs.

Some of the solutions to the new national interest in air quality, however, require a more uniform and consistent national standard in their application. The programs in this category are those that need national uniformity to be effective or to protect the more historic national interests. Examples of this type of project include the alternative fuel vehicle and intelligent vehicle programs. Having a multitude of mutually incompatible alternative fuel vehicles could easily inhibit interstate travel and interstate commerce if all varieties of alternative fuels were not readily available throughout the United States. Likewise, an intelligent vehicle program that utilizes satellites and transponders on individual's vehicles, to identify congested areas and interactively reroute vehicles to alleviate the congestion, would be worthless if all vehicles were not required to utilize a compatible technology.

Not all the high-tech solutions necessarily fall into this category, however. For example, the ultra-light hybrid vehicles, touted as zero tail-pipe emission vehicles, could use standard fuel when the on-board generation of the electricity is needed. If a standard fuel is used, there would be no impediment to the historic national interests and the federal government should not object if multiple divergent technologies develop in this area. If block grants would facilitate the more efficient development of this type of high-tech solution to the protection of the new national interest in air quality, the federal government should encourage the competition.

Obviously, the solution to this problem contains elements of both types of projects: 1) those that should remain under strict federal oversight, such as certain types of intelligent vehicle design and alternative fuel development; and 2) those that do not need the high level of federal oversight and which might actually prosper under the block grant approach. Given this observation, the answer to the optimal funding mechanism may actually be a hybrid approach. The remaining issue then becomes: *How should such a hybrid funding mechanism be designed?* Based on the above discussion, a logical approach to designing a hybrid funding mechanism would be to build it out of three component parts.

The first part would fund those transportation projects that clearly fall within the historic national interests, including conventional maintenance and improvement of the existing national highway and interstate highway systems. These types of national and interstate highway maintenance projects would continue to be administered under the strict federal

oversight in place today. States with interstate highway segments that are in satisfactory condition, however, can certify to this effect, thereby allowing these funds to be used for other intermodal projects.

The second component would fund only those projects that address the new national interest in air quality and require uniformity on the national level to be effective. This represents a significant change in the process. Rather than direct federal supervision of each intermodal transportation project, the federal government would establish a set of regulatory national performance standards for those projects that require uniformity on the national level. In essence, the federal government would be building a set of national standards for an arsenal of intermodal "tools" to be placed on a federal "tool bench." States, in designing their customized intermodal transportation system, could pick and choose from an array of tools on the federal tool bench, provided each such component was in conformity with the national set of performance standards for that particular tool. This approach retains, for the federal government, those aspects of control that are essential to the efficient use of federal funds, but leaves states free to control the macro design of their optimal intermodal transportation system. With the checks and balances provided by the national performance standards, the funds for these projects could be allocated to the states in block grants without the loss of federal oversight. Federal oversight would remain a component of the system through the municipal planning organizations (MPO), transportation improvement plans (TIP), and the state implementation plan (SIP).<sup>160</sup>

The third component of the hybrid funding approach would fund all other projects addressing the new national interest in air quality. Funding under this component would extend to other intermodal transportation projects that are neither essential to the protection of the historic national interests, nor in need of the uniformity provided by national performance standards. Therefore, projects in this third component would be conducive to block grant funding. Figure 5<sup>161</sup> summarizes the relationship between the type of project and the degree of federal oversight.

FEDERAL OVERSIGHT	Maintenance and Improvement of National and Interstate Highway System
BLOCK GRANTS	Intermodal Projects Requiring National Uniformity Via National Performance Standards
	All Other Intermodal Projects

160. See *supra* text accompanying notes 62-68.

161. *Our Nation's Highways: Selected Facts and Figures*, U.S. Dep't of Transp., Publication No. FHWA-PL92-004 at 5.

## E. TOLLS

Under present law, states may not impose tolls on existing interstate highways. These restrict the state's ability to generate their matching share. Many interstate highway segments experience significant congestion problems, particularly where they intersect major metropolitan areas. Tolls collected on these portions of the interstate during the most congested times would encourage drivers to seek alternative routes, thus easing the congestion problem. The tolls would simultaneously provide a funding source for alternative intermodal transportation projects that would further reduce congestion and, depending on the type of project, potentially reduce the number of vehicle miles travelled.

Rather than taxing all motor vehicle users, it makes sense to establish a user tax or a toll along these congested corridors to pay for the high capital costs associated with alternative modes of transportation. By affording an alternative means of transportation, the interstate system may be relieved of congestion. From a cultural standpoint, policy makers will not force vehicle owners to use this alternative means. Instead, they create an incentive, through the implementation of a national policy, that supports intermodal transportation. Vehicle owners may still drive, however, they must pay a toll for making this choice.

A modified version of allowing tolls on segments of the interstate highway system may include congestion pricing schemes. Congestion pricing may include tolling commuters during peak-hour travel only or at a higher rate than during non-peak-travel periods.

## V. CONCLUSION AND RECOMMENDATIONS

The key to an efficient and effective intermodal transportation system is in the ability to fund all such projects. States must be provided with a flexible means to fund capital intensive projects that compliment both the environmental and economic development objectives of ISTEA and the CAAA. In their present form, the combination of the CAAA and ISTEA provide a potentially synergistic mechanism allowing state or local governments to plan for and fund intermodal projects. Several relatively minor problems, however, prevent the full potential of these two statutes from being realized. Based on our analysis, we suggest that the following legislative changes are capable of removing these roadblocks:

1. Remove the state matching share requirement.<sup>162</sup>
2. Allow states to bank federal funds in a state intermodal trust fund for a duration consistent with MPO and state 20-year transportation plans.<sup>163</sup>
3. Implement a hybrid allocation/block grant program consistent with the

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162. See *supra* text accompanying part IV.B.

163. See *supra* text accompanying part IV.C.

- national interests and the need for uniformity.<sup>164</sup>
4. Allow states to implement tolls on congested segments of existing interstate highways in accordance with MPO and state 20-year transportation plans.<sup>165</sup>

Once the funding mechanisms become as flexible as the framers of ISTEA envisioned, numerous intermodal transportation projects will become viable tools for states to incorporate into their long-term plan. Long-term planning promotes efficiency. The efficiency created promotes better air quality and more convenient, cost-effective modes of transportation.

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164. *See supra* text accompanying part IV.D.

165. *See supra* text accompanying Part IV.E.