America—On the Road to Mass Transit

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I. INTRODUCTION

In the beginning, mass transit was an American standard. From stage coaches to trolley cars to railroads, Americans travelled in groups. But this era ended with the advent of the automobile. The car has come to symbolize American individualism and the ability to come and go at whim.

The days of lone adventurism are coming to a close. Americans still love their cars, but other, perhaps more important factors, give rise to a new attitude toward mass transit. The need to protect the environment from automobile carbon monoxide emissions, to decrease American dependence on foreign oil, and to decrease traffic congestion in urban areas, are such considerations.

More and more, communities are turning to mass transit systems to alleviate these problems. Yet, current transportation systems are inadequate. Few American metropolitan cities have fixed-rail mass transit systems, and those that do have them are not using them efficiently and effectively.

This paper will explore the transportation situation affecting our cities by examining the sources of the problem. It begins with a discussion of current transportation policy and controlling federal laws. The second section sets forth alternative transit systems and ways for local govern-

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ments to increase ridership. Funding sources for municipalities considering mass transit systems is the focus of the next section. Finally, a cost-benefit analysis provides a comparison between continued use of funds for highway projects and use of funds for mass transit systems.

II. FEDERAL AND STATE TRANSIT POLICY

A. *FEDERAL TRANSPORTATION POLICY*

On March 8, 1990, the Bush Administration released its first federal transportation policy. Policy measures included increased flexibility of use of federal funds, a reduction of barriers to private transportation investment, and a concentration of federal funds on transportation systems of national significance.[1]

A theme in the transportation policy, and one that is echoed in the Urban Mass Transportation Act,[2] is encouragement of joint efforts between local, state and federal governments as well as encouragement of private participation in transportation projects.[3]

Transportation Secretary Samuel Skinner said that the policy emphasizes transportation safety, research and development and greater reliance on "user fees" like highway tolls and mass transit fares. The budget includes $18 billion for capital investments in highway, transit and aviation infrastructure.[4]

The ideals behind federal policy statements are usually followed by the states. However, policy statements do not mandate change. Change comes only through passage of legislation. So, nearly one year after the Bush administration announced its national transportation policy, the Surface Transportation Assistance Act was unveiled.[5]

Provisions of the Act include an increase in the overall level of funding for highway and mass transit and is consistent with the 1990 policy in that the federal government's share of the costs is decreased.[6] The $105 billion program is designed to expand and improve the nation's deteriorating bridges and highways. It also "encourages" the construction of

1. 1990 Newsday, March 9, 1990.

2. The Act reads that among its purposes is "the cooperation of mass transportation companies both public and private." 49 U.S.C. § 1601 (1964).

3. *Dateline: Washington*, States News Service, March 1, 1990. The budget also includes $776 million for drug enforcement.

4. *Id.*

5. *Administration Transit Bill Not Consistent With National Goals: National Coalition Faults Transportation Proposal for Inconsistency*, PR Newswire Assoc., Inc., Feb. 13, 1991.

6. *President Unveils Surface Transportation Plan That Would Raise States' Cost Share*, Daily Rpt. for Execs. (BNA), at A-17 (Feb. 14, 1991).

urban mass transit systems.[7]

However, the Act is unlikely to pass Congressional scrutiny in its current form. Already there is growing opposition to the thrust of the program which emphasizes highway and bridge construction, that is, cars at the expense of mass transit.[8]

Officials from public transit agencies threatened to band together if the proposed Act becomes law.[9] These officials in particular are annoyed with the administration's plan to cut all mass transit operating subsidies. Without operating subsidies, transit agencies would be forced to hike fares by as much as 25%,[10] possibly resulting in decreased ridership.

Numerous arguments exist against the proposal: it does not relieve traffic congestion, pollution, or oil consumption.[11] The plan does nothing to further the administration's environmental policy. In fact, the Bush plan would change the allocation of federal funding to the point that states which consume the most gasoline would receive increased federal funding.[12] That is, each state's share of federal highway funds would be based largely on its fuel consumption, as reflected by fuel tax figures.[13] This factor could jeopardize air quality improvements in large urban areas such as Los Angeles.[14]

As in the 1990 transportation policy, the Surface Transportation Assistance Act shifts funding from the federal government to the states. The rationale for this decision was provided by Secretary of Transportation Samuel Skinner, who said: "States have a tendency to treat federal transportation funds as 'free money.' "[15] Representative Robert Roe, chairman of the House Public Works and Transportation Committee retorted: "I don't know how the states, with all their financial problems, are going to come up with the money that's needed."[16]

The future of mass transit will be in limbo if the states do not come up with the necessary funding. And, if mass transit is not funded—just "encouraged"—then the pollution, congestion and foreign oil dependence obstacles will become ever-escalating problems.

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7. *Bush Proposes a Five-Year, $105 Billion Highway Plan*, L.A. Times, Feb. 14, 1991, Pt. A, at 1, col. 5.

8. *Id.*

9. *Bush Plan Threatens Public Transportation, Transit Officials Say*, Chicago Trib., Feb. 20, 1991, at 2.

10. *Id.*

11. *U.S. Transportation Plan Emphasizes Roads*, Boston Globe, Feb. 14, 1991, at 1.

12. *Id.*

13. *Bush Proposes A Five-Year, $105 Billion Highway Plan, supra* note 7.

14. *Id.*

15. *President Unveils Surface Transportation Plan That Would Raise States' Cost Share, supra* note 6.

16. *Bush Proposes a Five-Year, $105 Billion Highway Plan, supra* note 7.

Before discussing the major reasons for needing effective mass transit systems, it is necessary to discuss the evolution of transportation policies, and specific legislation passed effecting urban mass transportation.

B. Pertinent Transportation Legislation: The Urban Mass Transit Act and The Department of Transportation Act

In 1964 the Urban Mass Transit Act was passed.[17] The Act established a comprehensive program of federal assistance to states for urban mass transportation.[18] The purpose of the Act was to:

> (1) assist in the development of improved mass transportation facilities, equipment, techniques and methods with the cooperation of [private and public mass transportation companies]; (2) encourage the planning and establishment of area-wide urban mass transportation systems needed for economic and desirable urban development; and (3) provide assistance to state and local governments and their instrumentalities in financing such systems, to be operated by public or private mass transportation companies as determined by local needs.[19]

In 1966 the Act was amended to direct the secretary of transportation to establish a comprehensive research program that would improve the convenience, speed, safety and cleanliness of urban mass transportation.[20]

The Urban Mass Transportation Assistance Act of 1970 was a result of a conviction in Congress that a new mass transportation program must be financed and that it should include a substantially longer period of assured federal funding. The Act also created the Urban Mass Transportation Administration (UMTA) which provides consolidated management of all federal mass transit programs. The 1970 Act provides for a greater role for private enterprise.[21]

In 1974 the Act was again amended to establish a six year program that includes assistance for both capital and operating expenses.[22]

In 1973, Congress passed the Federal-Aid Highway Act. The 1973 Act permits flexibility in the use of highway funds for mass transportation facilities and equipment. The Act sets aside funds for use in either construction of primary highways in urbanized areas or mass transit

17. Urban Mass Transit Act of 1964, Pub. L. No. 88-365, 78 Stat. 302 (codified at 49 U.S.C. § 1601 [1976]).

18. P. Dempsey & W. Thoms, Law and Economic Regulation in Transportation (1986), at 312.

19. 49 U.S.C. § 1601 (1964).

20. Law and Economic Regulation, *supra* note 18, at 312.

21. Urban Mass Transportation Assistance Act of 1970, Pub. L. No. 91-453, 84 Stat. 962.

22. National Mass Transportation Assistance Act of 1974, Pub. L. No. 93-503, 88 Stat. 1565 (codified at 49 U.S.C. § 1601-1605 [1976 & Supp. 1982]).

projects.[23]

According to the Act, local officials may choose to substitute a transit project for an urban highway project as long as the state certifies the project's priority within the overall urban transportation plan. Under the Act, upon approval by the secretary of transportation, a transit project is substituted for the highway project and receives the same federal share (75% of the total project cost) as it would have if it were used for highway construction.[24]

Since these acts were passed, transportation needs have changed. Cities have grown in both population and square miles. Shifts in commuting patterns and the increased number of commuters have resulted from the demographic changes. As a result, cities are faced with worsening pollution and traffic congestion. The following section outlines the current situation.

III. THE CURRENT TRANSPORTATION PROBLEM

A. AIR POLLUTION IN THE NATION'S METROPOLITAN CITIES

Mass transit is one solution to the nation's air pollution situation. In cities such as Los Angeles, where the air is heavily polluted, mass transit systems are being built to alleviate the carbon monoxide buildup. In Denver, where carbon monoxide levels are consistently high, city and state officials are searching for ways to fund a fixed-rail mass transit system.[25]

Beginning in the 1970s, Congress mandated that states treat their pollution problems. Much of the nation's air pollution is created by automobiles (mobile sources) which emit carbon monoxide. The Clean Air Act (CAA), for example, deals specifically with automobile-related pollution.[26]

Section 202 of the CAA gave the Environmental Protection Agency (EPA) authority to set emission standards for new motor vehicles. Other sections of the CAA ensure that new cars, once purchased, continue to meet emission standards.[27] Section 110(a) authorizes states to include "transportation control plans" (TCPs) and regulation of "indirect sources" of air pollution (e.g., parking garages) in their state implementation plans (SIPs).[28]

Today, states are not compelled to adopt TCPs, but many metropoli-

23. Federal-Aid Highway Act of 1973, Pub. L. No. 91-605, 84 Stat. 1713.

24. LAW AND ECONOMIC REGULATION, *supra* note 18, at 318.

25. Knudson, *Western Cities Move Aggressively to Clear Up Smoggy Skies*, N.Y. Times, Nov. 24, 1987, at 16, col. 2.

26. The Clean Air Act, 42 U.S.C.A. § 1857 (1970).

27. J. LAITOS, NATURAL RESOURCE LAW (1985), at 145.

28. 42 U.S.C.A. § 7410(a).

tan cities have adopted programs designed to decrease air pollution caused by mobile sources. Some cities ask that citizens voluntarily leave their cars at home one day a week. Other cities have high-occupancy vehicle (HOV) lanes for use only by cars with two or more passengers. Still other cities have desirable mass transit systems that citizens choose to ride in lieu of driving.[29]

In addition to monitoring mobile sources, the EPA, pursuant to the CAA, sets National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, including carbon monoxide and particulates.[30] In "non-attainment" areas, continued violations of EPA standards can result in the loss of federal highway funds.[31]

Continued funding of new highway projects actually worsens the pollution problem because it makes long distance travel more convenient. As a result, automobile traffic, and consequently air pollution, increases. For instance, future population growth, driving habits, fuel costs and the level of urban sprawl will cause vehicle miles travelled (VMTs) to increase 90% by the year 2010.[32]

Health officials around the country say that long-term air quality improvements will only come with increased use and construction of mass transit systems and a heavy dose of public education.[33] Denver, for instance, does not have a fixed-rail mass transit system and has among the worst carbon monoxide and particulate pollution in the country and routinely violates federal standards for carbon monoxide.[34]

Many of the country's mayors believe that a light-rail system combined with laws requiring employers at new commercial developments to reduce their workers' travel are the best transportation strategies for reducing pollution.[35]

United States Senators are pressuring administration officials to press for mass transit in order to alleviate air pollution problems. Senator Frank Lautenberg (D.-N.J.) blasted Transportation Secretary Samuel Skinner for endorsing deep cuts in federal mass transit funding at a time when Congress was struggling to pass clean air legislation: "You know and I know, Mr. Secretary, that every time someone uses mass transit, it means one less car on our congested highways and less automobile ex-

29. *Denver Dips to No. 2 Behind Los Angeles for Worst Monoxide*, Rocky Mtn News, April 9, 1987, at 7.

30. NATURAL RESOURCE LAW, *supra* note 27, at 120.

31. *Sprawl May Foul Efforts to Clean Area Air*, Rocky Mtn News, Oct. 19, 1986, at 8.

32. *Future Worries Based on Iffy Traffic Figures*, The Denver Post, Nov. 5, 1989, at H1.

33. *Sprawl May Foul Efforts to Clean Area Air, supra* note 31.

34. *Western Cities Move Aggressively to Clear Up Smoggy Skies, supra* note 25.

35. *Commuters Love Cars But Hate Brown Cloud*, The Denver Post, Oct. 29, 1989, at 4B.

haust polluting our air."[36]

The Bush administration chose not to abide by environmental considerations when it announced its 1991 Transportation Act. Notably, much of the funding for the bill would come from the federal Highway Trust Fund, which is supported by motor fuel taxes.[37] The result of this kind of funding, according to a spokesperson for the Environmental Defense Fund, would be that "[s]tates that reduce gasoline consumption through ride pools, HOV lanes, transit and other creative measures, would actually be penalized by receiving a reduced share of federal highway funds."[38]

Yet, states must comply with the CAA. In order to comply, the states' largest cities must develop alternatives to the one-person, one-car phenomenon. Building new super-highways is not the answer. This results in more people living further from where they work, thus increasing the VMTs and air pollution. Mass transit, therefore, is a viable alternative to compliance with the CAA.

B. Current Highways and Freeways are not Equipped to Handle Increased Traffic

Gone are the days when one could walk to work. Today, people "commute." The daily hustle from home to work and back often takes the better part of an hour, and most commuters choose to drive their 30-plus miles alone. When many cars converge, gridlock and traffic congestion occurs. While sitting in the car idly waiting for the light to change, the car is idling—and emitting exhaust through its tailpipe.

Transportation experts point out that getting commuters on public transportation is the only way to solve congestion and other problems.[39]

Commuters around the country, frustrated by growing traffic problems, are encouraging the passage of advisory measures asking officials to consider mass transit.[40] Transportation planners listen because they know that not enough space exists to add more urban highways.[41]

C. Effective Mass Transit is Imperative to Economic Growth

The Urban Mass Transportation Act was passed, in part, due to a Congressional finding that:

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36. *Dateline: Washington, supra* note 3.

37. *Bush Proposes a Five-Year, $105 Billion Highway Plan, supra* note 7.

38. *Id.*

39. *Westway Bout, Round 2: Carbon Monoxide, Cost*, Crain's New York Business, Nov. 21, 1988, at 10.

40. *Will We Ever Ride the Rails?*, The Seattle Times, Jan. 18, 1990, at A1.

41. *Congressional Obligation Ceilings Reduce Transportation Prospects*, Eng'g News Record, Jan. 21, 1988, at 96.

> the welfare and vitality of urban areas, the satisfactory movement of people and goods within such areas . . . are being jeopardized by the deterioration or inadequate provision of urban transportation facilities . . . the intensification of traffic congestion, and the lack of coordinated transportation . . . on a comprehensive and continuing basis.[42]

Congress' findings in the 1964 Act hold true today. Among the provisions of the Bush Administration's 1990 transportation policy is a shift in focus from building basic infrastructure to adapting and modernizing transportation systems to support economic growth.[43]

Traffic congestion caused by more drivers travelling further to converge upon the same land mass has far-reaching effects. America's ability to compete in the world marketplace depends upon our ability to move people and products quickly, safely and cheaply.[44] It stands to reason that American reliance on foreign oil will decrease if more people use mass transit.

The best way to meet the challenges of improving air quality, lessening congestion, and enabling local economies to compete across the nation and worldwide, is to create in every major metropolitan area a coordinated, centrally operated mass transit commission that works with all transit systems currently available. We must make use of railroad rights of way, make better use of roads and highways and continue to invest in technological improvements that will take us into the Twenty First Century and beyond.

Such a metropolitan area transit commission must take into consideration local realities such as geography, population, climate, funding sources, political atmosphere and the needs of the population. The result must be a comprehensive transit system that utilizes different types of technology.

IV. ALTERNATIVE TRANSIT SYSTEMS

Mass transit is currently defined as "transportation by bus, rail or other conveyance, either publicly or privately owned, which provides to the public general or special service (but not including school buses or charter or sightseeing service) on a regular basis."[45] Whether this definition will be expanded to include the numerous types of transit being considered remains to be seen. This section discusses the wide range of mass transit alternatives currently available, and what will be available in

42. 49 U.S.C. § 1601(a)(2).

43. HIGHWAY USERS FEDERATION FOR SAFETY AND MOBILITY, Newsletter, March 8, 1990.

44. *Smart Cars, Smart Highways: Toward More Efficient, Safer Driving*, Paper Presented by the Highway/Vehicle Technology Committee, Highway Users Federation.

45. Housing and Urban Development Act, Pub. L. No. 90-448, § 702, 802 Stat. 476 (1968).

the future. Ironically, the first type of mass transit option to be discussed is cars!

A. SMART CARS AND SMART HIGHWAYS

The automobile remains a part of the American psyche and until mass transit is more convenient than cars, we will continue to drive. Cars are more fuel efficient than ever and remain an affordable means of transportation. For these reasons, automobiles must be incorporated into any effective mass transit system.

Americans have consistently demonstrated a preference for private automobiles. The convenience, flexibility and affordability of cars and trucks have fostered richly diverse suburban transportation destinations.[46]

Cars are more useful than buses or fixed-rail systems as mass transportation in sprawling western cities because rail systems are geared to carry riders from the suburbs to the city and the most significant change in commuting patterns in this decade has been the increase in the number of people travelling from suburb to suburb.[47] Moreover, people prefer cars because mass transit is not as convenient as cars; it does not depart from one's home and end up at the door to one's destination. It is sometimes also difficult to find a seat on mass transit and on some systems, there is a fear for personal security.[48]

The "smart car" systems of the future will keep the driver informed of his or her current location, suggest the best route to the destination and alternate routes in case of traffic tie-ups and may eventually include systems for automatic vehicle spacing and collision-avoidance.[49]

The automobile of the future will respond to sensors along the freeway, automatically set the ideal speed for conditions and keep the driver at a safe distance from other cars. In the meantime, changeable electronic message signs will keep drivers alert to the traffic situation ahead.[50]

Most "smart car" technology already exists in the form of short-range communications, variable electronic message signs, automatic toll systems, in-vehicle computers and twenty-four hour optical guidance systems.[51]

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46. Report of the Secretary of Transportation to the United States Congress: *The Status of the Nation's Local Mass Transportation: Performance and Conditions* (June, 1987).

47. Lemov, *Buck Rogers Doesn't Live Here Anymore*, GOVERNING, Nov. 1989 at 4.

48. Lave, *Transportation and Energy: Some Current Myths*, (Inst. of Transportation Studies, Univ. of Calif. Berkeley).

49. *Smart Cars, supra* note 44.

50. *Id.* You could also proceed through Vehicle Identification toll lanes which will automatically deduct appropriate fees from, for instance, your Visa Card.

51. *Id.*

Europe and Japan already have smart car programs in operation. In this country, the California Department of Transportation and the Federal Highway Administration are sponsoring a demonstration project in Southern California along the Santa Monica Freeway.[52]

Advantages to the smart car system include: (1) use of existing highways; (2) decreased use of federal funds; (3) less traffic congestion; and (4) less carbon monoxide exhaust.[53]

One disadvantage is the high cost of a fully computerized, state-of-the-art vehicle. Even if there is a way to subsidize individuals so that more people can operate these cars, prospects for the project occurring in the near future are slim. Indeed, most transportation experts predict that another twenty years will elapse before systems of this type are commonplace.[54]

B. Bus Systems

All metropolitan areas utilize bus systems. Buses are most effective when used in areas with a widely dispersed population. Buses use less operating energy than either cars or the new generation of rail transit.[55] The problem is how to increase bus patronage.

Despite its availability, bus riding has never caught on. In order to catch a bus, one must walk to a stop and wait outside. When the bus arrives there is no guarantee of a seat. The bus will make numerous stops before reaching its destination and then it is necessary to walk to your final destination. Most people, given the choice between a car and a bus, will likely choose a car.

Marketing busing by transit authorities might help. Many people complain that they do not know which bus to catch or where the bus stops. Until fixed-rail systems are widely available, busing remains the most useful form of mass transit.

C. Light-Rail

Across the nation, cities are building or are considering light-rail as an alternative transit system. Baltimore will soon begin construction on a twenty two mile light-rail line.[56] The Metropolitan Area Express (MAX) light-rail system in Portland, Oregon, is widely credited with the down-

52. *Id.*

53. *Id.*

54. Interview with Joe Sullivan, transportation researcher at the Center for the New West, a Denver-based think-tank dedicated to western-states' issues (May 21, 1990).

55. Lave, *supra* note 48, at 10.

56. *Cities Tracking Light Rail as Urban Transit Solution*, City and State, March 13, 1989, at 1.

town's rebirth.[57] The San Diego Trolley is the most financially successful transit system in the country, with lines to the Mexican border and through bedroom communities to the east.[58] Even Los Angeles, the bastion of automobile autonomy, is building a light-rail line from downtown to Long Beach.[59]

UMTA officials say cities now believe having a rail system is a mark of civic pride, like a professional sports team or a domed stadium.[60] It doesn't pollute, it's clean, it's quiet.

This may be why so many cities consider light-rail systems. Other cities with light-rail systems operating or in the works are Buffalo, New York, Sacramento and San Jose. In addition, Philadelphia, Pittsburgh and San Francisco have converted their turn-of-the-century trolley lines into light-rails.[61]

Light-rail has become trendy and everyone wants one.[62] Unfortunately, the down-side to light-rail is two-fold: it is expensive and few people ride it.

For example, Portland began a light-rail system in 1983. The total cost of the project once completed was $266 million; the projected cost was $172 million. And, while projected ridership was 42,500, only 19,700 people actually ride the rail on a daily basis.[63] Pittsburgh's light-rail system covers ten miles and cost $622 million dollars; 30,600 people ride the system daily. The projected ridership was 90,500—three times the actual ridership.[64] The situation in Miami is even bleaker. Miami's light-rail system cost over a billion dollars and only 35,000 people ride it daily, although projected ridership was 239,900![65]

Projected ridership figures were obviously overly optimistic and city officials may have been persuaded to build the system based on these unreasonably high projections. Estimated projected costs were low for the same reasons. Yet, despite high costs and low turnout, cities continue to consider light-rail.

Given the above statistics, why do cities continue to consider light-

57. *Id.*

58. *California Has Been Driven to Mass Transit: In Some Cities, Automobiles are Being Ridden Out of Town on a Rail*, Washington Post, April 9-15, 1990, at 32 (weekly ed).

59. *Congressional Obligation Ceilings Reduce Transportation Prospects, supra* note 41, at 96.

60. *Will We Ever Ride the Rails?, supra* note 40.

61. *Cities Tracking Light Rail, supra* note 56.

62. Jonathan Richmond, an engineer at the Massachusetts Institute of Technology, subtitled his recent paper on the tendency of Western cities to seek their own rail lines as "Penis Envy in Los Angeles."

63. *Will We Ever Ride the Rails?, supra* note 40.

64. *Id.*

65. *Id.*

rail as a form of mass transit? One reason is public demand. People in metropolitan areas, tired of the pollution and tired of the congestion, demand that city leaders consider alternative forms of mass transit. But, once cities comply with these demands, no one rides the system. The reason: the public expects their neighbors to use mass transit, but not themselves.[66]

Another reason for considering light-rail has to do with civic pride. Every metropolitan area wants to attract new business and one way to sell a city is to show how progressive it is—what a model city it is for the future. In cities like Portland, the light-rail system may have served this purpose. In Portland, downtown business is rebounding, a number of historic old buildings have been restored for office and retail use and The Rouse Company, based in Maryland, is building a major mixed-use development adjacent to the MAX line.[67]

There is also genuine concern for the environment. Los Angeles, with its high carbon monoxide level, has partially completed a light-rail and subway system that, combined, will span 150 miles.[68] The Los Angeles system is also efficient in that commuters coming out of the subway station's two exits can connect with twenty Southern California Rapid Transit buses.[69] Officials are hopeful about the number of people using the system, which is up to 24,000 on weekdays.[70]

Cities also view light-rail as a means of lessening traffic congestion on the freeways and in the city. However, if more people do not start using the systems available to them, none of these goals will be achieved.

D. HEAVY-RAIL

In 1970 Congress declared that "modern, efficient, intercity railroad passenger service is a necessary part of a balanced transportation system." Accordingly, Congress passed the 1970 Rail Passenger Service Act.[71] Congress found that the public convenience and necessity required the improvement of such service and that federal financial assistance, as well as private investment capital, was needed to establish a national rail passenger system.

Although Amtrak has never been profitable, ridership is up, and it seems to be turning the corner. The railroad has a goal of becoming self-

66. *Commuters Love Cars But Hate Brown Cloud, supra* note 35.

67. *Cities Tracking Light Rail, supra* note 56.

68. *California Has Been Driven to Mass Transit, supra* note 58.

69. *After 35 Years, The Subway Makes A Comeback in L.A.*, L.A. Times, Feb. 16, 1991, Pt B, at 3, col. 1.

70. *Id.*

71. LAW AND ECONOMIC REGULATION, *supra* note 18, at 56-57.

sufficient by the year 2000.[72]

Indeed, on June 5, 1990, polls indicated that Californians will approve bond issues totalling roughly $3 billion in the first year to expand trolley mass transit and Amtrak service throughout the state. If the bond issues pass, California will spend more for railroad expansion than the total amount the federal government spent on the national Amtrak system in the past four years.[73]

The difference between a light-rail system and a heavy-rail system is that a heavy-rail line typically draws power from an electrified third rail, meaning the line must be totally separated from automobile and pedestrian traffic. In contrast, light-rail cars are smaller and generally powered by overhead wires, which enable them to run at street level with automobile traffic travelling alongside.[74]

Light-rail and heavy-rail are not in competition the way light-rail competes with buses. Heavy-rail is used most often to move traffic between metropolitan areas, say, from Baltimore to Washington, or from San Diego to Los Angeles. If California's initiative is any example, then heavy-rail will continue to be a viable mass transit source, easing traffic on the nation's interstate highways.

E. Other Alternatives

Many other alternatives to mass transit have been proposed. Ideas range from magnetically levitated trains to monorails running down freeway medians to monorails that run in river and flood control channels.[75]

Combining alternatives is the best system. Transit planners see the future of mass transit as analogous to the present communications network: combining all known and available sources of transportation into a coordinated system which uses every link to its fullest potential.[76]

Mass transit systems will not continue to get funding unless present systems increase ridership. The following section provides methods for transit authorities to accomplish this goal.

F. Increasing Ridership

One obstacle to effective mass transit is persuading people to use the system. This is particularly true in the West where cities are spread

72. *Dateline: Washington, supra* note 3.

73. *California Has Been Driven to Mass Transit, supra* note 58.

74. *Cities Tracking Light Rail, supra* note 56.

75. *Postscript/Jeffrey A. Perlman: Mass Transit Ideas from the Man on the Street*, L.A. Times, April 6, 1990, at 4, col. 1.

76. Interview with Joe Sullivan, *supra* note 54.

out and mass transit is a relatively recent phenomena. Getting people out of their cars may be more taxing than getting funds for the system itself.

Unfortunately, the belief that one is more "free" when one has a car at her disposal is perpetuated by public figures.[77] Colorado Governor Roy Romer recently stated that he is "open to all alternatives to reduce air pollution from cars that don't result in a loss of freedom or have prohibitive costs. One of the great privileges of being human is to be free."[78]

Rebuttably, a mass transit system that runs on schedule and is convenient does not make a person less free. In fact, time is utilized more efficiently because mass transit frees a passenger to read the newspaper or do work, rather than concentrate on driving.

Given a choice between transit alternatives, passengers seem to prefer rail to buses, so these systems attract more commuters to public transportation.[79]

For instance, San Diego's light-rail system has exceeded its ridership forecast. Officials projected daily ridership of 9,000, but instead found ridership averaging 11,000 daily.[80] This may be due to the fact that San Diego's weather is warm year round so weather does not deter people from using the system. Also, cities which build their systems around the area's points of interest have higher ridership rates than others.[81]

In fact, "rail revival" has been effective throughout California because steeply rising land prices have forced the typical resident to live farther from work in order to afford a single family home. The automobile, once the symbol of freedom, has become a trap on crowded freeways.[82] Increasingly, these people turn to mass transit.

Providing incentive for people to use mass transit is one way of getting people out of their cars. Transportation planners increasingly use HOV lanes open only to carpools and buses. Use of these lanes by single commuters can result in large fines.[83]

Other planners favor mandatory programs to make employers give their workers incentives to break the one-person, one-car habit.[84]

Senators from eastern states suggest using tax incentives. Currently,

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77. For instance, in Chicago, RTA board members may use the system for free. However, only one board member actively uses the RTA system. Other members use private automobiles while the RTA chairman maintains a chauffeur-driven limousine at public expense. Lowenstein, *The Need for Limitations on Federal Mass Transit Operating Subsidies: The Chicago Example*, 12 TRANSP. L.J. 265 (1982).

78. *Commuters Love Cars but Hate Brown Cloud, supra* note 35.

79. *Cities Tracking Light Rail, supra* note 56.

80. *Id.*

81. *Id.*

82. *California Has Been Driven to Mass Transit, supra* note 58.

83. *Commuters Love Cars But Hate Brown Cloud, supra* note 35.

84. *Id.*

workers do not pay taxes on parking paid by their employer, but they do pay taxes on money their employer gives them to use on mass transit. Changing the law so that mass transit users get the tax benefit provides further incentive.

Transportation officials must also try to coordinate different types of transit modes to make commuting as effortless as possible. Considering mass transit as a convenience rather than a hassle will make people more likely to utilize the system.

Lastly, planners must think about transit systems in the long term. It is unwise to put a light-rail system in one area if the growth area is somewhere else. Continuing to expend funds for busing is infeasible if light-rail attracts more passengers and if rights of way for rail are available.

Once state and local officials decide that a mass transit system, such as light-rail, is necessary, and that the community will use the system, the scramble for funding begins.

VI. FUNDING

A. *FEDERAL FUNDING*

The principal source of federal financial assistance comes from the Urban Mass Transportation Administration (UMTA).[85] Programs under the UMTA include (1) technical study grants; (2) discretionary capital improvement grants; (3) formula assistance grants; and (4) managerial training grants.[86]

The UMTA provides capital grants or loans to states for (1) construction, acquisition or improvement of mass transit facilities and equipment; (2) coordination of mass transit services with highways and other transportation; and (3) establishment and organization of public transit corridor development corporations.[87] Capital grant programs are based on a matching arrangement, with the federal government paying 75% to 80%, and state and local governments, 20% to 25%.[88]

The formula grant program permits the use of funds for operating as well as for capital assistance.[89]

The Federal-Aid Highway Act of 1973[90] made highway trust funds available for mass transportation facilities and equipment. If a local proposal to substitute a transit project for an urban highway project is approved by the secretary of transportation, the transit project will receive

85. LAW AND ECONOMIC REGULATION, *supra* note 18, at 313.
86. LAW AND ECONOMIC REGULATION, *supra* note 18, at 314.
87. 49 U.S.C. § 1602(a)(1) (Supp. 1982).
88. *Cities Tracking Light Rail as Urban Transit Solution, supra* note 56.
89. 49 U.S.C. §§ 1601-1605 (Supp. 1982).
90. Federal-Aid Highway Act of 1973, Pub. L. No. 91-605, 84 Stat. 173.

75% of the total project cost.[91]

Federal cutbacks, however, have lead to the discretionary allocation of federal funds. Under present transportation policy, only transit systems of national importance (as yet, undefined) will receive substantial federal funding.[92] Of the $440 million a year the government is spending on new transit, much of that money is given to projects in Los Angeles, Baltimore and Atlanta.[93]

The current administration's budget reduces funding for the UMTA by $600 million, cutting UMTA's budget from $3.1 billion to $2.5 billion in 1991.[94] Such drastic cuts force local governments to either reduce service or go to the farebox or the state for funding.[95]

Professor Henry Lowenstein points out that federal funding for local mass transit is not necessarily a good thing because it leads to too much federal involvement in matters of local importance.[96] Lowenstein argues that in the Chicago area, federal funds have contributed to inefficient operations.[97]

Too often, according to Lowenstein, federal transit monies are not used to fundamentally improve transit services to the public. Rather, government subsidies at all levels are spent to cover unreasonable labor costs, excessive administrative overhead, the maintenance of artificially low fares and costly, inefficient route systems.[98]

Others, however, take a diametrically opposing view to Lowenstein.[99] Commentators Hemily and Meyer argue that federal funds for capital and operating costs are a necessity because local governments cannot make up the difference.[100]

B. State and Local Funding

Federal funding is hard to come by and may lead to unwanted federal control. Therefore, some cities refuse to accept federal money. For instance, the successful light-rail system in San Diego was built largely with money raised locally.[101]

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91. Law and Economic Regulation, *supra* note 18, at 318.
92. *Metro Rail Funds Near OK Despite Federal Cutbacks*, L.A. Times, Nov. 18, 1987, at 1, col. 4.
93. *Will We Ever Ride The Rails, supra* note 40.
94. *Dateline: Washington, supra* note 3.
95. *Id.*
96. Lowenstein, *supra* note 77, at 266.
97. *Id.*, at 272.
98. *Id.*, at 280.
99. Hemily & Meyer, *The Future of Urban Public Transportation: The Problems and Opportunities of a Changing Federal Role*, 12 Transp. L.J. 287 (1982).
100. *Id.*, at 288-289.
101. Lowenstein, *supra* note 77, at 284.

Traditionally, the UMTA provided 75% of the cost of transit systems. UMTA now expects cities to pay at least half the costs of new transit systems.[102]

Secretary Skinner contends that Washington cannot solve local problems and further argues that increased state and local funding will result in better, more efficient transportation programs. Critics argue that higher user fees are essentially hidden taxes.[103]

The National Association of Regional Councils also advocate increased state and local funding resulting in "increased flexibility and control over decisions."[104]

Although the trend is to advocate local funding of mass transit, the problems that arise due to federal cuts are many. For instance, when federal funding is cut, fares are often raised and such an increase falls disproportionately on the poor.[105]

One way that cities are able to keep operating costs of new light-rail systems down is by using existing rail lines that were abandoned by the railroads and then turned over or sold at a relatively low cost to the local governments.[106]

San Diego is an example of an effective system that can be built and operated with a minimum of federal funding. However, other proposed projects, such as the one in Seattle, may not ever be built because it is not a system of national importance and because the state may not be able to raise the required funds. Therefore, another source of funding must be found. The administration and others argue that increased use of private funds is such a source.

C. *Cost Privatization*

The Bush administration's mass transit policy encourages use of innovative financing options such as benefit assessments, joint public-private initiatives and other means for capturing the value of transportation projects.[107]

One example of private money funding transportation projects is found in Iowa. Here, money for grants came from $29 million in refunds the state received from oil companies for overcharges to their Iowa customers in the 1970s.[108]

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102. *Will We Ever Ride the Rails?*, *supra* note 40.

103. *Dateline: Washington*, *supra* note 3.

104. National Ass'n of Regional Councils, *Meeting Our Transportation Needs in the 21st Century*, Newsletter (1990).

105. Hemily & Meyer, *supra* note 99, at 295-296.

106. *Cities Tracking Light Rail as Urban Transit Solution*, *supra* note 56.

107. National Transportation Policy, released March 8, 1990.

108. *Mass Transit Grants Awarded to 16 Systems*, UPI, Aug. 26, 1986.

In Chicago, dissatisfaction with the Regional Transit Association's (RTA) management of the transit system stimulated the search for alternative methods of transportation by commuters. Private charter bus services to Chicago from western suburbs are springing up and some private employers are supplying employee shuttle buses between key commuter railroad stations and downtown Chicago. These private, non-subsidized carriers operate only premium rush hour service, yet charge a fare 20% to 50% below that of RTA. Ironically, at this lower fare level, these carriers provide high quality service while breaking even or in some instances, showing a profit.[109]

On the other hand, some argue that privatization of mass transit may actually be harmful.[110] The Economic Policy Institute recently released a study which focuses on mass transit. The study—The Emperor's New Clothes: Transit Privatization and Public Policy—finds that UMTA's policies "force" communities to contract out operations to the private sector. The private operators then often become major political players whose interests do not always coincide with the community's interests.[111] Another effect of privatization is that the "stranglehold of unions" has been broken.[112] This results in private companies paying salaries to mass transit employees that are unreasonably low.

D. Farebox Funding

Funding from the farebox continues to be a major source of funding, primarily covering operating costs. In Chicago, the RTA operates with a budget of $834.4 million. Of that amount, approximately 39% is derived from farebox revenues.[113] Portland's MAX system met about 59% of its operating costs through fares in 1988.[114]

E. Other Funding Sources

The final funding source comes from the taxpayers. Voter initiatives around the country are being structured to provide funding for construction of mass transit systems through, for instance, gas taxes. In Denver, the light-rail line proposed in the 1990 legislative session was to be funded by a gas tax levied upon Denver-area taxpayers pursuant to the taxing authority granted the Regional Transportation District. The bill

109. Lowenstein, *supra* note 77, at 280.

110. *Privatization Harmful to Public Transit, Study Says*, City and State, Oct. 9, 1989, at 4.

111. *Id.* Such a situation may ultimately parallel the dilemmas besetting the airline industry following deregulation.

112. *Id.* This point is echoed in Lowenstein's article which stresses that high union salaries keep mass transit fares high.

113. Lowenstein, *supra* note 77, at 269.

114. *Cities Tracking Light Rail*, *supra* note 56.

failed largely because of concerns by rural legislators that their communities would not receive funding in the future.[115] Gas taxes, however, remain a viable source of funding in other localities, and perhaps in Colorado eventually.

VI. COST-BENEFIT ANALYSIS

A. GENERALLY

Some transportation experts argue that the cost of an effective fixed-rail mass transit system is prohibitive and that not enough people use current systems. Whatever the costs of building and maintaining a mass transit system, the long-term benefits will often outweigh the costs. At a time when the nation's infrastructure is badly in need of repair, many states and municipalities must make a decision whether to devote limited financial resources to highway projects or mass transit.[116]

B. MASS TRANSIT COSTS

The costs of building either a light- or heavy-rail system are initially high, but there are ways to mitigate the construction costs. For instance, heavy rails and rights-of-way are often already in place, so that the only cost incurred is that of the trains and operating costs.

Ironically, while the UMTA disparages cities from considering light-rail systems, light-rail can move more passengers at a lower operating cost per passenger than can buses. This is because light-rail lines are cheaper to operate than buses and a light-rail system can meet a larger portion of its operating costs through the farebox than can a bus system.[117]

C. MASS TRANSIT COSTS COMPARED TO HIGHWAY COSTS

Typically, if a state wants to build an interstate highway, the cost per mile runs anywhere from $50 million to $100 million a mile, not including the acquisition of the right of way. A new subway system costs about $200 million per mile to build. With a light-rail line running at street level or on a private right of way, if one is available, the cost comes down to $20 million to $25 million a mile.[118]

At a time when many metropolitan areas are considering the option

115. *Committee Cuts Gas Tax from MTA Bill*, The Denver Post, April 22, 1990, at 1B.

116. White House Press Secretary Marlin Fitzwater recently remarked regarding a possibility of "shortchanging" mass transit in favor of highway improvements: "This is an age old kind of concern and a trade-off that they have had to make since Day One." *Bush Proposes a Five-Year, $105 Billion Highway Plan*, *supra* note 7.

117. *Cities Tracking Light Rail as Urban Transit Solution*, *supra* note 56.

118. *Id.*

of mass transit systems despite the high cost, Congress has cut infrastructure expenses due to the federal budget deficit. The budget for fiscal 1988 represented a 5% cut from 1987 and stemmed from a "budget summit" between the President and congressional leaders.[119]

As previously discussed, funding from the federal government may lead to unwanted federal involvement. The federal government sometimes uses funding as a method of coercing states into compliance with administration objectives. An example of such coercion occurred during the Reagan administration. The administration wanted states to lower their drinking age; when states would not comply, the government threatened to cut off federal highway funds.[120]

The Urban Mass Transportation Assistance Act of 1971 gives metropolitan areas the option of using the funds for highway projects or using some of the funds for mass transit. In New York City, officials have the option of dividing funds between a six lane at-grade roadway and mass transit. City planning officials use the money to fund mass transit, pointing out that getting commuters onto public transportation is the only way to solve the city's gridlock and other traffic problems.[121]

The federal government, however, is not the only source for funding a highway project. In particular, the state of Colorado has turned to public and private financing to build E-470, a toll road looping around the east side of Denver. Other states will advance plans to build sections of toll roads under the Federal Highway Administration's pilot program announced in 1987. The program allows states to use their federal funds for up to 35% of the toll road projects' cost.[122]

Although construction costs of light- and heavy-rail systems may seem initially prohibitive, there are a number of advantages which outweigh the costs in the long run. One of the primary benefits from mass transit is its effect on the environment.

D. Environmental Benefits of a Mass Transit System

One of the most important benefits of mass transit systems is the decrease in air pollution. If state and federal funds are spent on highway projects, people will continue to drive to work, usually with one passenger per car.[123] For example, the majority of commuters in Denver—84%, according to a recent poll by the Metropolitan Transportation Develop-

119. *Id.*

120. UPI, April 4, 1987. *See also*, UPI, April 14, 1988.

121. *Westway Bout, Round 2: Carbon Monoxide, Cost*, Crain's New York Business, Nov. 21, 1988, at 10.

122. *Congressional Obligation Ceilings Reduce Transportation Prospects, supra* note 41.

123. *Commuters Love Cars but Hate the Brown Cloud, supra* note 35.

ment Commission—drive alone on city and suburban byways.[124]

The problem is that motor vehicles are perhaps the most significant source of air pollution, especially in the nation's cities. Four of the six major criteria pollutants—carbon monoxide, hydrocarbons, nitrogen oxides and photochemical oxidants (ozone)—are chiefly caused by the passenger auto.[125]

One of the main reasons city officials are being drawn to light-rail systems rather than continuing to fund highway projects is the environmental advantages[126] and compliance with the CAA may prove costlier than a new rail system. For cities like Denver and Phoenix, which have among the worst carbon monoxide and particulate pollution in the country and continually violate federal standards for carbon monoxide, continued violations could cost the state $33 million in federal highway funds,[127] not to mention the negative health effects on citizens forced to breathe carbon monoxide fumes. Putting a price tag on health benefits is impossible.

Although it is difficult to attach an accurate dollar figure to the air pollution harm, in the late 1970s the Council on Environmental Quality estimated that air pollution was costing the country $21.4 billion per year.[128] From 1972 to 1979, a total of $65.2 billion was spent on air pollution abatement.[129]

Construction of urban mass transit systems such as light- and heavy-rail can therefore provide an important catalyst for improving air quality within metropolitan areas. Cities which do not presently have mass transit systems are being fined for violating the CAA. A mass transit system will decrease pollution levels within a city, freeing up funds for more important uses.

E. *Mass Transit Leads to Better Use of Diminishing Downtown Property*

In addition to the environmental advantages, many cities find that switching to mass transit results in more efficient use of land because of the decreased need for parking lots and parking garages. As cities grow, downtown real estate becomes too valuable to be devoted solely to park-

124. *Id.*

125. NATURAL RESOURCES LAW, *supra* note 27, at 145.

126. *Cities Tracking Light Rail as Urban Transit Solution*, *supra* note 56.

127. *See, e.g., Sprawl May Foul Efforts to Clean Area Air*, Rocky Mtn News, Oct. 19, 1986, at 8, and *Denver Dips to No. 2 Behind Los Angeles For Worst Monoxide*, Rocky Mtn News, April 9, 1987, at 7.

128. NATURAL RESOURCES LAW, *supra* note 27, at 118, *quoting* the Tenth Annual Report of the Council on Environmental Quality 44-50 (1979).

129. NATURAL RESOURCES LAW, *supra* note 27, at 118, *quoting* N.Y. Times, April 12, 1982, at 16.

ing.[130] Consequently, the downtown area benefits aesthetically and ultimately may lure more customers and businesses back to the downtown area.[131]

F. Mass Transit Alleviates Gridlock

Mass transit systems provide other unique benefits that highways cannot provide. Gridlock is created by the large number of automobiles on the highways converging upon a central area. Mass transit alleviates such gridlock. Outside of the automobile industry, there is a consensus that urban highways cannot cope with many more vehicles. There is not space to add any more lanes in most downtown areas. For this reason, transportation planners are showing more interest in rails to move people into and through cities.[132]

G. Mass Transit Systems Contribute to Economic Growth

"Infrastructure is essential to economic growth. Without transportation, communications and energy, prosperity is unattainable."[133]

In 1974, Atlanta began building its heavy-rail system. The reason for building the system was due largely to the concern that the region was being kept from reaching its fullest potential due to traffic conditions. Regional planners were concerned that serious traffic conditions, congestion and mass transportation deficiencies, would increasingly impede the cultural and social development of the area.[134] Today, Atlanta is a thriving metropolis and the heart of the new South.

On a national scale, groups such as the National Association of Regional Councils are concerned about the viability of the United States in the world marketplace. On the one hand, they praise the interstate highway system which has provided mobility between regions. On the other hand, the Council cites a failure to develop a system that provides a comparable level of mobility within regions. If the United States is to continue to compete in the international marketplace, it must rely on the economic viability of each and every region of the country.[135] American competition cannot be enhanced if it is struck in traffic.

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130. *Cities Tracking Light-Rail as Urban Transit Solution, supra* note 56.

131. In downtown Denver an historic building is being torn down to accommodate a parking lot. *Wrecking Ball Speeds Toward Historic Bank*, The Denver Post, May 14, 1990, at 1.

132. *Congressional Obligation Ceilings Reduce Transportation Prospects, supra* note 41.

133. LAW AND ECONOMIC REGULATION, *supra* note 18.

134. Inman Park Restoration v. Urban Mass Transp. Admin., 414 F. Supp. 99 (1976).

135. National Ass'n of Regional Councils, *Meeting Our Transportation Needs in the 21st Century*, Newsletter (1990).

H. Mass Transit Represents an Aesthetic Improvement

When you think of Denver, what do you think of? The mountains? No—you think of mountains obscured by a brown cloud. When you picture Los Angeles, do you think of movie stars cloaked in golden sun? No—you think of miles of stretch limos hidden by radiating exhaust emissions. Not a pretty picture.

For years Colorado residents have been telling public opinion pollsters that their concerns over air pollution are related to three things: public health, aesthetics and the fact that some business are reluctant to move to the Denver area because of the brown cloud.[136]

Overall, mass transit represents an improvement over status quo, and local governments may be able to shift some funding from highway projects to mass transit systems. Each metropolitan area must decide which system is most useful to their particular area based on considerations such as those outlined in this section. Decisions made on the local level will determine the future of transportation across the country.

I. Use of Mass Transit Can Lead to a Decrease in American Dependence on Foreign Oil

Recent events in the Persian Gulf have demonstrated that America's dependence on foreign oil can lead to disastrous results. However, not since the 1970's has there been a concerted effort to conserve oil and gas, thus lessening our overall need for foreign oil.[137] In particular, the Bush administration, during the height of Iraqi-American aggressions, released an energy policy that indignantly continued to stress consumption, rather than conservation, of energy.[138] The nation currently imports 42% of its oil, and according to the President, "will continue to import energy for years to come."[139]

The Bush policy favors development of nuclear energy and domestic oil reserves, but fails to emphasize energy efficiency.[140] The administration's energy policy, like its 1991 proposed Surface Transportation Assistance Act, is unlikely to be passed by Congress in its current form unless it is amended to include higher fuel efficiency standards for automobiles.[141] A comprehensive energy strategy must conform to the administration's environmental and transportation policies and must in-

136. *Clean Air Drive Changes Direction*, The Denver Post, Nov. 5, 1989, at H1.

137. *Bush's Energy Plan Emphasizes Gains in Output Over Efficiency*, N.Y. Times, Feb. 9, 1991, at 1, col. 1.

138. *Energy Strategy Gets Cool Reception*, Daily Rpt. for Execs. (BNA) (Feb. 22, 1991).

139. *Bush Unveils Energy Strategy; Plan Seeks to Stabilize Oil Imports*, Daily Rpt. for Execs. (BNA) (Feb. 21, 1991).

140. UPI, Feb. 16, 1991.

141. *Energy Strategy Gets Cool Reception*, *supra* note 138.

clude the potential for energy efficiency. This is because the nation's transportation sector currently accounts for more than 60% of the oil consumed in the United States.[142]

Maintaining our current dependence on foreign oil will not provide the incentive for Americans to utilize mass transit and thereby accrue environmental and economic benefits. Currently, two-thirds of the petroleum used in the United States goes to fuel cars and light trucks.[143] If Americans are encouraged to drive less, dependence on imported oil will necessarily decrease.

VII. CONCLUSION

American metropolitan cities face a transportation crisis. Pollution and traffic congestion have lead voters to call for mass transit systems. However, once cities comply with these demands, citizens fail to use the system. What is needed is a concerted effort by federal, state and local governments to develop incentives designed to increase mass transit use.

Areas that do not already have fixed-rail or other types of mass transit must consider changing their current transportation scheme. If fixed-rail is cost prohibitive, local governments must use present busing systems more effectively and provide incentives for people to ride the bus.

Mass transit in the future should combine all methods of transportation into one central transportation system, coordinating systems to work harmoniously, thereby, inspiring use by commuters.

For the sake of the environment, alleviating traffic congestion, aiding local economies and decreasing our dependence on imported oil, the one-person, one-car phenomenon must cease. America must start looking toward the future and more effective mass transportation is the beginning.

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142. *Id.*

143. *Watkins Takes Energy Plan to Congress*, Gannett News Serv., Feb. 21, 1991.