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**Title:** Incentives for Intermodalism in U.S Federal Legislation – Examining the Impact

**Abstract:**

In 1991, the first President Bush signed into law the Intermodal Surface Transportation Efficiency Act (ISTEA), which was the first federal authorization of highway and transit spending in the U.S. to explicitly recognize and encourage intermodalism. Since that time President Clinton signed a six-year reauthorization of a similar bill in 1998 (TEA-21), and Congress is currently working on final passage of yet another six-year bill that follows the same basic legislative framework (SAFETEA). Each of these two subsequent reauthorization bills has also attempted to facilitate intermodalism. Two important changes to prior law were part of this attempt – one was aimed at financing and the other at planning.

The finance issue was dealt with primarily via the Surface Transportation Program (STP) fund, which, as part of this legislation, allows funds collected from gas taxes to be used for either highways or transit as each state sees fit. This provides states with additional guaranteed revenue streams for intermodal projects. The new legislation also tried to encourage intermodalism by amending the federally mandated planning process. New laws directed Metropolitan Planning Organizations (MPOs) to specifically include intermodalism in their short and long-range plans.

This paper will examine those legislative attempts at intermodalism in detail. It looks at how the legislation is crafted, and reviews the data on its impact on intermodalism. The data includes quantitative information on how much money has been “flexed” in STP from highways to transit in recent years. The paper will also consider the results of interviews with one State Department of Transportation (New York) as a case study. The results should show the impact of this legislation on encouraging intermodalism, and hopefully provide some insight for European nations that are seeking to do the same.

## **Introduction**

When signed into law in 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) represented a landmark change in federal surface transportation policy. Although federal spending on mass transit had been funded with taxes on gasoline since 1982, never before had the federal government allowed State Departments of Transportation (DOTs) to increase that transfer of funding at their own discretion. Moreover, ISTEA provided planning guidelines and mandates that encouraged intermodalism at an unprecedented level.

ISTEA was followed by the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21), and Congress is currently working on the next version which is termed the Safe Accountable, Flexible and Efficient Transportation Equity Act (SAFETEA). Taken together these three bills represent a shift in transportation policy towards intermodalism. Their contribution can be separated into two categories: financing and planning.

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This paper will examine those legislative attempts at intermodalism in detail. The first section of the paper shows the background and history of these large pieces of legislation. Next the paper examines the data on how federal legislation has impacted intermodalism across the country. The data shows how much money has been “flexed” in STP from highways to transit since 2000. Finally, the paper considers the results of interviews with one official in the New York State Department of Transportation as a case study. The results should show the impact of this legislation on encouraging intermodalism, and hopefully provide some insight for other nations that are seeking to do the same.

## **History and Background**

The U.S. federal highway program is funded through a national fuel tax of 18.4 cents per gallon. Federal gas taxes are placed in the Highway Trust Fund (HTF). The HTF was originally created to impose a ceiling on federal highway spending, and serves much the same purpose today. However, a portion of the HTF, approximately 20%, is sent to the Mass Transit Account (MTA) and is devoted specifically to federal transit programs. Some money from the general fund, meaning funds collected from other sources, is used to help supplement mass transit funding.

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<sup>1</sup> The Congestion Mitigation and Air Quality program (CMAQ) also provided the opportunity for states to transfer highway funding to transit, but this program is smaller in size than STP and is not explicitly analyzed here.

The HTF was initially created in 1956 by the Federal Aid Highway Act to help build the Interstate System, a series of limited access highways designed to specific federal standards and funded 90% by the federal government. However, by 1990 that system was nearing completion, and what had been the focus on federal transportation policy for over forty years was now obsolete. Congress took that opportunity to shift the focus towards maintenance of the existing system, and intermodalism.

In 1991, Congress passed the Intermodal Surface Transportation Efficiency Act, termed ISTEA (pronounced like “ice tea”), which authorized \$150 billion in spending on highway and transit programs for the next six years. ISTEA was viewed as creating a new intermodal perspective in federal transportation policy (Miller 1992, Fiore and Stafford 1995). Unlike prior legislation, it provided for a comprehensive surface transportation practice that recognized the utility of alternatives to the automobile.

Some critics charged that the new policy simply reinforced the deficit problem facing transit owners and operators nationwide by providing additional subsidies (Winston and Shirley, 1998). Others have noted that the new policy was unlikely to have a substantial impact on most U.S. cities as they had already been developed in a manner that did not favor transit (Nivola and Crandall, 1995).

However, other analysts argue that ISTEA has had a substantial impact on intermodalism and comprehensive planning. DiStefano and Raimi (1996) actually give 110 examples of places where ISTEA has made a difference along these lines. Hoffman and Paulson (1997) also provide examples. It is likely that these analyses have some political motivations, as they were performed around the time that Congress was reauthorizing ISTEA. Unfortunately, there are few independent academic analyses of how federal transportation policy has impacted intermodalism.

ISTEA repackaged federal highway policy into five core programs: the National Highway System (NHS), Interstate Maintenance (IM), Surface Transportation Policy (STP), Congestion Mitigation and Air Quality (CMAQ), and Bridge Replacement and Rehabilitation (BRR). Of these programs, NHS, IM, and STP are by far the largest. For example, in the current proposed legislation these programs are funded at \$30 billion or more over five years, while CMAQ is funded at \$10 billion and most other minor programs are funded at half of that or less. NHS, IM, and BRR are all exclusively focused on various aspects of the highway system. Both STP and CMAQ represent a departure from the single-mode focus as they both provide funds that can be used for alternatives to the automobile. Moreover, the funds they provide are those that would otherwise be designated strictly for highways – that is they do not come from the Mass Transit Account of the HTF.

The STP authorizes flexible funds that may be used for highways, a bridges, and transit capital projects. There are some restrictions as 10% of the funds must be used for safety-related construction, and 10% must be used for Transportation Enhancements (TE). The

safety program and TE are both multi-modal, so 100% of STP funding can be used on intermodal or multimodal projects.

CMAQ provides funding for any transportation project on any mode that could potentially help a state meet the requirements of prior federal legislation mandating air quality standards. Funding is distributed based on a state's percentage of people living in non-attainment areas, weighted by the severity and quantity of pollutants.

ISTEA also changed the way that transportation planning was performed with federal dollars. Although Metropolitan Planning Organizations (MPOs) for urban areas had existed for some time, ISTEA strengthened their role, responsibility and funding. MPOs were originally created in 1973 to help solve regional planning problems and counterbalance against State DOTs (which were very auto-centric), but remained largely ineffective until ISTEA. ISTEA doubled their funding and required them to evaluate multiple alternatives in providing solutions to transportation problems. In other words, ISTEA strengthened the possibility for intermodal and multimodal planning through MPOs.

The basic structure of ISTEA was so popular with State DOTs, interest groups, and members of Congress that its basic structure remains unchanged to this day. TEA-21, its successor, did little to alter that structure and current attempts at another six-year surface transportation bill do the same. Congress is expected to pass the most recent reauthorization in the next few months, and the same intermodal incentives are still in there. If anything those incentives have been strengthened.

### **Financial Incentives**

The primary financial incentive towards intermodalism in ISTEA and subsequent legislation is the flexibility provided to states via the STP formula. Of course, this flexibility has little usefulness in promoting intermodalism if the states fail to utilize it. Therefore, it is helpful to examine to what extent the states have taken advantage of this new flexibility in order to evaluate this program.

The STP program allows money to be spent on at least fourteen different specific activities. The innovation here is that only one of these activities, albeit the first one listed in the law<sup>2</sup>, involves projects that encourage only single-mode (namely automobile) use. This activity is highway construction and maintenance, which although it can be multi-modal, is typically used, in the U.S. at least, by people driving alone. The other purposes are all multi-modal in nature and thus allow STP money to be spent on intermodal projects. These purposes include transit capital projects, surface transportation planning, highway and transit research, and Intelligent Transportation Systems (ITS), just to name a few.

Prior legislation involving the financing of non-highway modes did not provide this level of flexibility. There was money specifically allocated for mass transit, and money

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<sup>2</sup> See Appendix A for actual language.

specifically allocated to highways, but states could not mix these pots around. STP allowed for billions of dollars to be spent at the each state's discretion with respect to modes.

One potential measure of how well this flexibility has encouraged intermodalism could be how much each state has taken advantage of it. If states are flexing a considerable portion of their funding to non-highway modes, this would indicate a shift towards intermodalism as a direct result of the new flexibility. The data is examined below.

Data obtained from the U.S. Department of Transportation (U.S. Department of Transportation, 2005) enables us to look at the percentage of funds each state has shifted from Federal Highway Administration (FHWA) to Federal Transit Administration (FTA) allocations from 2000-2005<sup>3</sup>. The first thing that is obvious from looking at the data is that there is a large variety among states in terms of how much this provision is used. In fact, the majority of states use the provision very little or not at all.

**Chart 1: Average State Transfers of STP Funding, 2000-2005**

STATE	2000-2005 AVERAGE	STATE	2000-2005 AVERAGE
CALIFORNIA	31.16%	NEW JERSEY	0.61%
OREGON	20.14%	TENNESSEE	0.48%
ALASKA	15.37%	MAINE	0.31%
WASHINGTON	14.75%	OHIO	0.28%
PENNSYLVANIA	12.88%	HAWAII	0.26%
MINNESOTA	9.91%	KANSAS	0.22%
NEW YORK	7.71%	LOUISIANA	0.22%
GEORGIA	6.11%	IDAHO	0.22%
VIRGINIA	5.38%	SOUTH CAROLINA	0.15%
VERMONT	5.20%	WISCONSIN	0.10%
ARIZONA	5.14%	ILLINOIS	0.10%
MASSACHUSETTS	3.97%	RHODE ISLAND	0.08%
FLORIDA	2.71%	MONTANA	0.02%
CONNECTICUT	2.45%	DELAWARE	0.00%
IOWA	2.01%	DIST. OF COL.	0.00%
COLORADO	1.53%	KENTUCKY	0.00%
MISSOURI	1.50%	MARYLAND	0.00%
NEW MEXICO	1.30%	MISSISSIPPI	0.00%
ARKANSAS	1.13%	NEBRASKA	0.00%
UTAH	1.03%	NEW HAMPSHIRE	0.00%
NORTH CAROLINA	0.96%	NORTH DAKOTA	0.00%
NEVADA	0.95%	OKLAHOMA	0.00%
MICHIGAN	0.89%	SOUTH DAKOTA	0.00%
INDIANA	0.85%	WEST VIRGINIA	0.00%
TEXAS	0.64%	WYOMING	0.00%
ALABAMA	0.63%	<b>NATIONWIDE</b>	<b>5.53%</b>

<sup>3</sup> Note that all 2005 data are incomplete but are accurate through April 2005.

As Chart 1 shows, very few states have taken advantage of this program in a substantial way, relative to their highway spending. The majority of states use less than one percent of their STP funds on transit. However, note that the most populous states, such as California (1<sup>st</sup> in population), Pennsylvania (6<sup>th</sup>), and New York (3<sup>rd</sup>), are all in the top ten for transferring funds (U.S. Census, 2000). Moreover, because these states are more populous, their STP funding shares are greater to begin with. Therefore, a larger total amount of funding is being transferred to transit than may be immediately apparent by looking at Chart 1.

**Chart 2: Total State Transfers of STP Funding, 2000-2005**

<b>STATE</b>	<b>DOLLARS FLEXED, 2000-2005</b>		
<b>CALIFORNIA</b>	\$1,117,921,057	<b>UTAH</b>	\$3,104,119
<b>PENNSYLVANIA</b>	\$172,272,476	<b>NEVADA</b>	\$2,500,000
<b>NEW YORK</b>	\$113,483,152	<b>ILLINOIS</b>	\$1,314,250
<b>WASHINGTON</b>	\$104,217,697	<b>LOUISIANA</b>	\$1,300,000
<b>OREGON</b>	\$99,919,708	<b>KANSAS</b>	\$1,246,178
<b>GEORGIA</b>	\$89,552,720	<b>SOUTH CAROLINA</b>	\$1,055,997
<b>MINNESOTA</b>	\$71,896,864	<b>WISCONSIN</b>	\$880,000
<b>VIRGINIA</b>	\$55,350,607	<b>MAINE</b>	\$621,280
<b>FLORIDA</b>	\$53,639,410	<b>IDAHO</b>	\$546,000
<b>ALASKA</b>	\$45,960,165	<b>HAWAII</b>	\$500,000
<b>ARIZONA</b>	\$35,985,549	<b>RHODE ISLAND</b>	\$152,800
<b>MASSACHUSETTS</b>	\$24,868,000	<b>MONTANA</b>	\$45,713
<b>TEXAS</b>	\$21,283,646	<b>DELAWARE</b>	\$0
<b>MISSOURI</b>	\$13,903,373	<b>DIST. OF COL.</b>	\$0
<b>MICHIGAN</b>	\$12,114,055	<b>KENTUCKY</b>	\$0
<b>NORTH CAROLINA</b>	\$10,498,174	<b>MARYLAND</b>	\$0
<b>IOWA</b>	\$10,351,782	<b>MISSISSIPPI</b>	\$0
<b>CONNECTICUT</b>	\$9,807,280	<b>NEBRASKA</b>	\$0
<b>VERMONT</b>	\$9,424,696	<b>NEW HAMPSHIRE</b>	\$0
<b>COLORADO</b>	\$8,645,439	<b>NORTH DAKOTA</b>	\$0
<b>INDIANA</b>	\$8,568,604	<b>OKLAHOMA</b>	\$0
<b>ARKANSAS</b>	\$6,065,354	<b>SOUTH DAKOTA</b>	\$0
<b>NEW JERSEY</b>	\$5,195,000	<b>WEST VIRGINIA</b>	\$0
<b>ALABAMA</b>	\$4,859,451	<b>WYOMING</b>	\$0
<b>NEW MEXICO</b>	\$4,300,000	<b>PUERTO RICO</b>	\$0
<b>TENNESSEE</b>	\$4,046,673	<b>VIRGIN ISLAND</b>	\$0
<b>OHIO</b>	\$3,748,364	<b>TOTAL</b>	\$2,131,145,633

As Chart 2 shows, substantial funding that would otherwise have been devoted exclusively to highways was used by states to fund transit projects in the last five years. A total of over \$2 billion dollars has been used in this manner. Although this is only five percent of the total STP funding available during that time, it still represents a substantial

movement by states to invest additional monies in transit considering that average transit use nationwide is approximately 4.6% (Federal Highway Administration, 2002)<sup>4</sup>.

The data show that states have taken advantage of this ability to foster intermodalism, and they have done so at a rate that is higher than might be expected. However, a remaining issue is how this policy is performing over time.

### Chart 3: Nationwide Percentages over Time

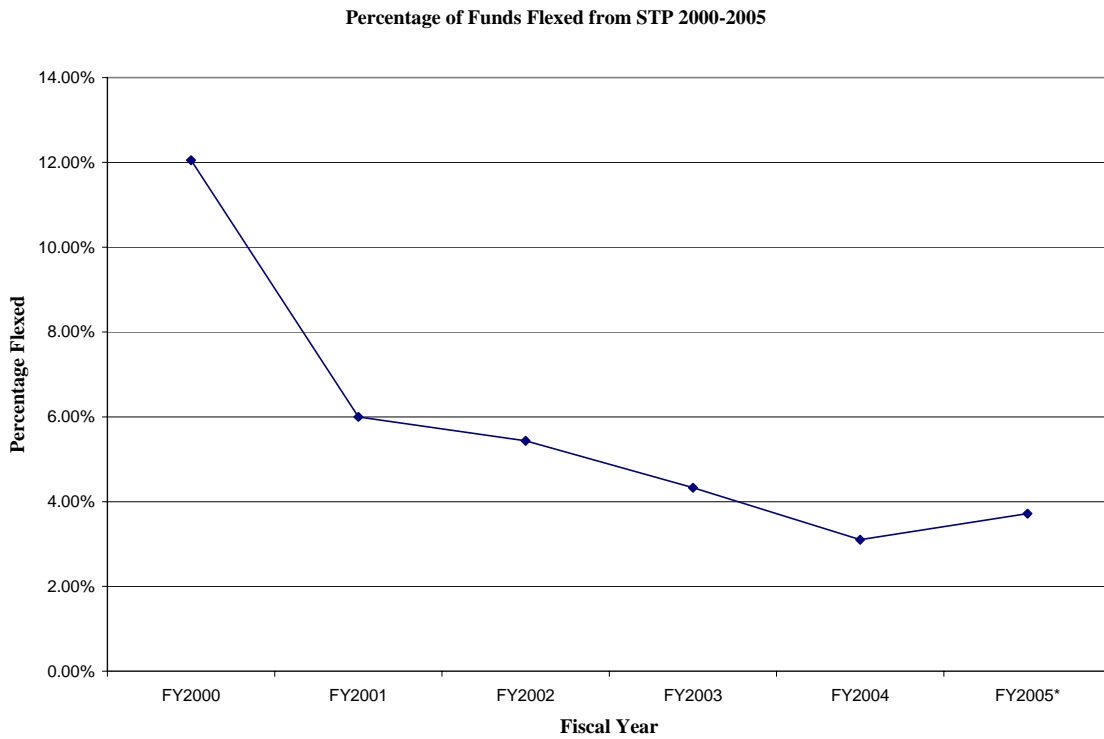


Chart 3 shows that in the last five years, the percentage of funds states are transferring from highways to transit has been declining. The data for 2005 is not complete, and otherwise the percentage has fallen every year since 2000. There are several possible explanations for this. One is that the economic downswing has made it necessary for states to take care of highways, which the vast majority of their constituents are likely to use, before moving money to transit projects. Another possibility is that states were hedging their bets about the reauthorization of the federal legislation, which expired in 2003 and has yet to be reauthorized. While Congress has continually extended the previous legislation, states are probably less confident about committing funds to transit projects. Finally, September 11<sup>th</sup> may account for the precipitous drop in flexing between 2000 and 2001. States may have reverted to more conservative projects as a result of the terrorist attacks.

<sup>4</sup> This figure represents transit's commute share based on census data from 1990-2000.

## **The Human Element**

The statistics above show that many states have taken advantage of the flexibility now permitted in the Surface Transportation program. However, it is useful to examine how this new flexibility has affected an individual state department of transportation through an interview with a key official.

Nancy Ross is the Director of Federal Affairs for the New York State Department of Transportation (NYSDOT). She has worked at NYSDOT for 23 years in various capacities, and has always been active in state and federal policy issues (Ross, 2005). Although much of the increased emphasis on intermodalism in federal planning policy was a result of legislation aimed at MPOs, New York State has a very strong Department of Transportation that largely usurps its MPOs responsibilities. As a result, NYSDOT better understands how new legislation has impacted intermodalism than any MPO in the state.

New York State played a somewhat unique role in crafting ISTEA. New York State Senator Daniel Patrick Moynihan was the chairman of the Environment and Public Works Committee when ISTEA was written, and thus he was primarily responsible for writing the bill. Although Moynihan certainly cared about intermodalism independent of what NYSDOT wanted, his home state played a large role in helping him craft ISTEA in general and its intermodal aspects in particular. Therefore, ISTEA represented much of what NYSDOT was looking for in terms of federal transportation legislation.

Ms. Ross outlined three key ways that ISTEA helped encourage intermodalism within New York State: 1) funding flexibility, 2) increased participation, and 3) designation of the National Highway System (NHS).

### *Funding Flexibility*

According to Ms. Ross, ISTEA allowed New York to spend more federal money on transit and intermodalism than ever before. In particular, the Congestion Mitigation and Air Quality (CMAQ) program has allowed new funding that can be used for any project that can potentially improve air quality. In New York State, where there are many areas that do not meet federal air quality standards, this has meant increased spending on transit and intermodal projects. This is funding that would have otherwise not been available were it not for ISTEA. Also, as noted above, New York State also took advantage of the ability to transfer funds to transit and intermodal projects through the STP program.

### *Increased Participation*

ISTEA made several changes in the planning process that helped to encourage the involvement of groups that had previously been excluded. One key change was the creation of the Transportation Enhancements (TE) program. This program, funded as a 10% set-aside from STP, mandates spending on non-highway modes. It is specifically designed to encourage facilities for bicyclists and pedestrians. Not only did this increase

the amount of funding available for such intermodal projects, but it brought bicycle, pedestrian and other environmental groups to the table for negotiations on spending. This meant that members of Congress were more likely to designate environmentally sensitive projects and projects that encourage intermodalism, as High Priority Projects (HPPs). HPPs are specific line-items in the federal bill that require states to use funding on a specific project, and the number of intermodal HPPs increased dramatically after ISTEA.

### *Designation of NHS*

The NHS determines which highways are eligible for a large portion of federal funding. ISTEA required states to designate major intermodal connectors on as part of the designation of NHS. This meant that when the NHS Act of 1995 was passed and set the NHS system in stone, these intermodal connectors were explicitly recognized. This has led to a greater emphasis on intermodalism in other aspects on federal transportation legislation. For example, the current transportation bill includes a new program called freight intermodal connectors that is intended to provide specific funding for the intermodal connectors that were designated.

### **Conclusions**

From an outsider's perspective, it may appear that ISTEA did not drastically change federal transportation policy. When compared to much of the rest of the world, the U.S. still has a long way to go in encouraging intermodalism. Our overall federal transportation policy still vastly favors the automobile by approximately 4 to 1<sup>5</sup> and shows few signs of changing.

Nonetheless, ISTEA made progress as evidenced by the data shown above. In the last five years, over \$2 billion has been flexed by states from highways to transit spending. This represents a substantial amount of spending on transit, and potentially intermodalism, which would not have been possible otherwise. This funding level does not even account for other funds made available for intermodal projects by CMAQ. Although transfers from STP have been declining, it is unlikely that this trend is permanent and it will probably turn around once new legislation is authorized.

Also, as the interview with NYSDOT official Nancy Ross showed, ISTEA encouraged intermodalism in two ways that were independent of actual funding availability. ISTEA explicitly recognized the value of intermodalism and as a result brought new constituencies to the negotiating table. ISTEA also designated specific intermodal centers that are now being provided with exclusive funding.

U.S. federal transportation policy still heavily favors the automobile. ISTEA made great progress in encouraging intermodalism, but much more needs to be done to sustain that interest and increase it. Nonetheless, there are certainly ideas from U.S. federal legislation for increasing intermodalism that other nations might find useful. It may

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<sup>5</sup> About 80% of all federal surface transportation funding is allocated to highways and the rest is allocated to transit.

make sense to combine transit and highway funding into one package, as this increases the constituency for assuring passage. Also, the U.S example shows the value of allowing localities flexibility, as this by itself may increase the prevalence of intermodal projects. Finally, this example shows the value of explicitly recognizing the value of intermodalism at the national level. This emphasis can help to bring all interest groups to the negotiating table, and make intermodal projects eligible for new pots of funding.

## Appendix A

### § 133. Surface transportation program

(a) ESTABLISHMENT.—The Secretary shall establish a surface transportation program in accordance with this section.

(b) ELIGIBLE PROJECTS.—A State may obligate funds apportioned to it under section 104(b)(3) for the surface transportation program only for the following:

- (1) Construction, reconstruction, rehabilitation, resurfacing, restoration, and operational improvements for highways (including Interstate highways) and bridges (including bridges on public roads of all functional classifications), including any such construction or reconstruction necessary to accommodate other transportation modes, and including the seismic retrofit and painting of and application of calcium magnesium acetate, sodium acetate/formate, or other environmentally acceptable, minimally corrosive anti-icing and de-icing compositions on bridges and approaches thereto and other elevated structures, mitigation of damage to wildlife, habitat, and ecosystems caused by a transportation project funded under this title.
- (2) Capital costs for transit projects eligible for assistance under chapter 53 of title 49, including vehicles and facilities, whether publicly or privately owned, that are used to provide intercity passenger service by bus.
- (3) Carpool projects, fringe and corridor parking facilities and programs, bicycle transportation and pedestrian walkways in accordance with section 217, and the modification of public sidewalks to comply with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.).
- (4) Highway and transit safety infrastructure improvements and programs, hazard eliminations, projects to mitigate hazards caused by wildlife, and railway-highway grade crossings.
- (5) Highway and transit research and development and technology transfer programs.
- (6) Capital and operating costs for traffic monitoring, management, and control facilities and programs.
- (7) Surface transportation planning programs.
- (8) Transportation enhancement activities.
- (9) Transportation control measures listed in section 108(f)(1)(A) (other than clause (xvi)) of the Clean Air Act (42 U.S.C. 7408(f)(1)(A)).
- (10) Development and establishment of management systems under section 303.
- (11) In accordance with all applicable Federal law and regulations, participation in natural habitat and wetlands mitigation efforts related to projects funded under this title, which may include participation in natural habitat and wetlands mitigation banks; contributions to statewide and regional efforts to conserve, restore, enhance, and create natural habitats and wetlands; and development of statewide and regional natural habitat and wetlands conservation and mitigation plans, including any such banks, efforts, and plans authorized pursuant to the Water Resources Development Act of 1990 (including crediting provisions). Contributions to such mitigation efforts may take place concurrent with or in advance of project construction.

Contributions toward these efforts may occur in advance of project construction only if such efforts are consistent with all applicable requirements of Federal law and regulations and State transportation planning processes. With respect to participation in a natural habitat or wetland mitigation effort related to a project funded under this title that has an impact that occurs within the service area of a mitigation bank, preference shall be given, to the maximum extent practicable, to the use of the mitigation bank if the bank contains sufficient available credits to offset the impact and the bank is approved in accordance with the Federal Guidance for the Establishment, Use and Operation of Mitigation Banks (60 Fed. Reg. 58605 (November 28, 1995)) or other applicable Federal law (including regulations).

(13) Infrastructure-based intelligent transportation systems capital improvements.

(14) Environmental restoration and pollution abatement projects (including the retrofit or construction of storm water treatment systems) to address water pollution or environmental degradation caused or contributed to by transportation facilities, which projects shall be carried out when the transportation facilities are undergoing reconstruction, rehabilitation, resurfacing, or restoration; except that the expenditure of funds under this section for any such environmental restoration or pollution abatement project shall not exceed 20 percent of the total cost of the reconstruction, rehabilitation, resurfacing, or restoration project.

(c) LOCATION OF PROJECTS.—Except as provided in subsection (b)(1), surface transportation program projects (other than those described in subsections (b) (3) and (4)) may not be undertaken on roads functionally classified as local or rural minor collectors, unless such roads are on a Federal-aid highway system on January 1, 1991, and except as approved by the Secretary.

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