BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Deteriorating Highways And Lagging Revenues: A Need To Reassess The Federal Highway Program

The condition of our Nation's highways is declining. The Interstate System has seen the most serious decline--its percentage of miles in poor condition more than doubled over the last 3 reporting years. Billions of dollars will be needed to preserve these roads, and if timely action is not taken, deterioration will accelerate and even more money will be needed for reconstruction. The increasing costs to complete the Interstate System and to continue other highway programs will cost additional billions.

Mounting costs of highway construction and maintenance and lagging State and Federal highway revenues are compounding these problems. Although the States have taken a number of actions to increase highway revenues--primarily by raising motor fuel taxes--there has been no Federal action.

The Congress needs to reassess the Federal highway program. Among other things, it should consider priority funding for preserving existing roads, assessing the goal of completing the Interstate as now defined, and revising the Federal motor fuel tax to be more responsive to inflation.

CED-81-42

MARCH 5, 1981

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E R R A T A

To the recipients of the Comptroller General's report to the Congress entitled "Deteriorating Highways and Lagging Revenues: A Need to Reassess the Federal Highway Program" (CED-81-42):

The words "that do not do so." were inadvertently omitted from the end of the last sentence on page ii of the digest.

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

B-198986

To the President of the Senate and the
Speaker of the House of Representatives

This report summarizes the results of our review of recent trends in State and Federal highway financing, the effects of these trends on State highway programs, and the actions taken or proposed to obtain additional financing. The report also discusses the need to reassess the Federal-aid highway program.

We made this review because the Federal Government has a considerable investment in the Nation's highway network and States are experiencing increasing difficulties in financing the work necessary to preserve it.

Copies of this report are being sent to the Director, Office of Management and Budget; the Secretary of Transportation; interested congressional committees; and other parties.

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

DETERIORATING HIGHWAYS AND LAGGING REVENUES: A NEED TO REASSESS THE FEDERAL HIGHWAY PROGRAM

D I G E S T

The Congress needs to revamp the Federal-aid highway program to meet the challenge of the 1980's. The Nation's highways are deteriorating, the Interstates most rapidly. Billions of dollars will be required to solve the problem, and if timely action is not taken, the cost will be much greater. To complete the Interstate Highway System and continue other highway programs will cost additional billions. These formidable tasks are compounded by escalating construction and maintenance costs and lagging State and Federal revenue growth.

HIGHWAYS ARE DETERIORATING AND PRESERVATION IS NEEDED

The percentage of pavement in good condition has declined for all Federal-aid highway systems (Interstate, Primary, Secondary, and Urban). At the same time, the proportion of pavement in fair condition has been increasing to the extent that 50 percent or more of the mileage for each type of highway, except Interstates, was in fair condition by 1978. The overall mileage in poor condition has remained relatively stable for these same systems. In addition, it is estimated that well over 100,000 of the Nation's bridges are deficient and will require replacement or rehabilitation.

According to the latest data available, the Interstate System shows the most recent wear and tear. In 1975 about 73 percent of Interstate mileage was in good condition. By 1978 this figure had dropped to about 62 percent, with the percent in fair condition increasing to about 29 percent. Even more disturbing is that the percentage of mileage in the poor category and in need of capital improvement, such as resurfacing or

reconstruction, had more than doubled. By 1978, about 9 percent of Interstate mileage was in poor condition. (See pp. 10 and 42.)

Roads in fair condition deteriorate faster than those in good condition. Therefore, the increasing proportion of pavement now in fair condition, plus the increase of pavement in poor condition, foretells a need to increase funds for rehabilitation. That is, more money now or tremendous amounts later if this vital transportation system is to be maintained. (See p. 41.)

Energy costs also increase as highway deterioration increases. A Department of Transportation study reported that fuel consumption increases an average of 34 percent for vehicles traveling at 40 miles per hour on a badly broken, patched asphalt road as compared to traveling on high quality pavement. (See p. 13.)

In 1977 the Federal Highway Administration estimated that, at a minimum, a total capital investment of $14 billion (in constant 1975 dollars) would be needed annually by all levels of Government to keep the Nation's highways in their 1975 condition over the next 15 years. However, capital outlays are not meeting these needs, as demonstrated by the 1979 investment of only $8.5 billion in 1975 constant dollars. In 1980 the Highway Administration estimated that about $1.4 billion annually will be required for major preservation work on the Interstate System over the next 10 years after taking care of a current backlog of $7 billion. The cost to replace or rehabilitate the Nation's deficient bridges is estimated to be $33.2 billion. (See pp. 42 and 43.)

PRESERVATION POLICIES SHOULD BE CLARIFIED

Federal highway legislation requires States to adequately maintain highways built with Federal assistance. The Secretary of Transportation is required to withhold funds for future Federal highway projects in States

GAO believes that the Federal Highway Administration has incorrectly interpreted the law as authorizing these sanctions only when the highways become unsafe or unserviceable. The Secretary should modify the basis for imposing these sanctions to include the failure to perform routine preventive maintenance on a continual and timely basis. GAO recognizes that the existing sanctions could be counterproductive in that some of the Federal program funds withheld could be for restoration work. Accordingly, the Secretary should submit a legislative proposal to exempt restoration work from the sanction. (See pp. 49 and 55.)

When major segments of a highway become severely deteriorated, as some sections of the Interstate System already have, routine maintenance is no longer effective. At this stage, capital improvements are needed to resurface, restore, or rehabilitate the road. While the States are responsible for this work, there is no specific sanction for failing to perform the necessary work. (See p. 53.)

COSTS OUTPACE REVENUE

Since 1970 construction and maintenance costs have increased 145 and 105 percent, respectively, while revenues related to highway programs have only increased 60 percent. The effects of inflation can be demonstrated by two similar projects to add lanes to a Virginia highway. The first project in 1973 cost $381,000 per mile while the second in 1979 cost $677,000 per mile. (See pp. 16 and 18.)

States and the Federal Government derive their highway revenue primarily from fixed cents-per-gallon motor fuel taxes. In the past, revenue from this source increased as fuel consumption increased, thus keeping pace with increased highway costs. However, revenue is no longer keeping pace with cost. The change began with the 1973 fuel embargo and has become more pronounced in the last few years as fuel prices, highway costs, and the overall inflation rate have increased

while fuel consumption and the related tax revenues have not kept pace. Other factors affecting revenues are the elimination or reduction of fuel taxes on gasohol and increased use of highway revenues for highway patrol, administration, and bond interest. (See pp. 16 to 20, and 27.)

ACTIONS TO INCREASE REVENUES

While the price of motor fuel has increased dramatically, the average State tax on it has increased very little and the Federal tax has not changed at all. Twenty years ago the average State and Federal gasoline taxes were 19 and 13 percent, respectively, of the retail price of gasoline; today they are 7 and 3 percent.

States are trying to increase highway revenues in a variety of ways, but there has been little action to increase Federal highway taxes.

Most State efforts to increase revenues are directed toward the motor fuel tax. Eleven States approved increases in their motor fuel tax in 1979 and at least 8 approved increases in 1980. About 22 States were reported to have considered a variable motor fuel tax that automatically increases as prices or other factors increase. Most States and the Federal Government now use the fixed cents-per-gallon tax. (See pp. 27, 28, and 35.)

INTERSTATE COMPLETION COSTS HAVE INCREASED

Although 94 percent of the Interstate System is open to traffic, the cost as of January 1980 to complete the system is estimated at $53.8 billion, nearly double the initial estimate for the entire system.

Only 53 percent of the estimated completion cost is for building the 2,500 or so miles needed to close gaps in the system. The remainder is for improvements defined as initial construction on segments already serving traffic. These improvements include

several categories of upgrading and additional features such as noise-abatement measures, fringe parking areas, and preferential lanes for buses and vanpools.

If the $53.8 billion estimate is reasonable and if highway construction costs continue to increase at about 17 percent annually (the average rate for the past 10 years), the current Federal annual Interstate funding of about $3.5 billion clearly will not cover the Federal share of the remaining costs--about $48.6 billion. An estimated average of $10.4 billion annually would be needed to complete the system in 10 years, assuming no additions and an annual inflation rate of 17 percent.

Considering the magnitude of completion needs and the additional need for preservation work, the goal of completion, as now defined, may not be practical. (See pp. 44 to 48.)

A CONGRESSIONAL REASSESSMENT IS NEEDED

The cumulative effects of the increasing need for highway preservation, increased costs of Interstate completion, inflationary trends in highway construction and maintenance, and lagging revenues necessitate that the Congress reassess the Federal-aid highway program. It will be a matter for the Congress to decide the Federal-aid highway categorical programs that are to be retained, modified, deleted, or added; the respective funding levels; the method used to acquire the necessary funds; and the States' responsibilities including matching ratios. (See p. 62.)

The Congress' reassessment should specifically address:

--Giving priority to preserving existing highways with emphasis on the Interstate System.

--Determining whether current preservation policy needs to be modified to ensure that necessary resurfacing, restoration, and rehabilitation work on Federal-aid highways is carried out.

--Eliminating restoration funds from sanctions.

--Assessing the goal of Interstate completion as currently defined, possibly giving priority to funding essential gaps.

--Analyzing State efforts and capabilities to increase highway revenues and to preserve highways.

--Using highway revenues to fund the Federal-aid highway program.

--Revising the Federal motor fuel tax and other highway revenue sources to be more responsive to highway needs and the inflationary trends in highway costs. (See p. 63.)

STATE COMMENTS

GAO asked the heads of the highway programs in the nine States reviewed to comment on those chapters of the draft report relating to their operations. Five of the States responded. In some cases, their comments added support to or warranted further clarification of the report, and appropriate changes have been included in the report. (See appendixes III to VII.)

AGENCY COMMENTS

In commenting on the draft report, the Department of Transportation stated that the report presented a reasonable and balanced presentation of several major Federal highway program issues and that GAO's recommendation to the Congress raised significant questions that the administration and the Congress will consider as part of the 1981 legislative cycle. (See appendix VIII.)

Contents

ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
DOT	Department of Transportation
FHWA	Federal Highway Administration
GAO	General Accounting Office
3R	Interstate Resurfacing, Restoration and Rehabilitation Program

CHAPTER 1

INTRODUCTION

As the 1980's begin, State and Federal highway programs are at a major crossroads. Needs seem to be shifting from constructing new highway capacity to taking care of what already exists. Highway costs are increasing even faster than the overall inflation rate, and available funding is not keeping pace with costs.

The United States has a vast network of highways ranging from dirt roads to multilane, limited-access freeways. These roads are vital to our national transportation system, not only as the primary means of moving people but also as an important means of moving goods. Americans have paid a high price for their highways. Over the last 60 years, Federal, State, and local governments, who share the responsibility for building, maintaining, and operating these highways, have spent more than $600 billion. Although sizable, this investment is small when compared with the cost of replacing the network--estimated from $1 trillion to $3 trillion.

THE HIGHWAY SYSTEM AND ITS IMPORTANCE

The Nation's highway network encompasses almost 4 million miles of roads. Although State and local governments have the primary responsibility for highways, the Federal Government provides aid for certain highways called Federal-aid highways. These highways comprise about one-fifth of the national highways and include Interstate, Primary, Secondary, and Urban Highway Systems. Interstate highways are the best known of the Federal-aid highways, and although they represent only 1 percent of the Nation's roads, they handle almost 20 percent of the traffic. The following table shows the mileage and the amount of travel on the various highway systems for 1979.

	Mileage		Vehicle miles of travel	
	Number	Percent	Number (millions)	Percent
Federal-aid:				
Interstate	40,448	1	293,049	19
Non-Interstate:				
Primary	259,870	7	448,457	29
Secondary	396,489	10	133,349	9
Urban	128,474	3	334,568	22
Total Federal-aid	825,281	21	1,209,423	79
Non-Federal-aid	3,069,851	79	319,710	21
Total	3,895,132	100	1,529,133	100

The Primary System consists of rural arterials and their extensions in urban areas. Interstates are technically part of the Primary System but are generally referred to as a separate system. Arterials are those routes that enable the quick movement of large numbers of vehicles from one place to another and are characterized by long-distance travel, high volumes, and high speeds. The Secondary System consists of rural major collector routes, which funnel traffic to and from the arterial highways. The Urban System consists of urban arterials and collector routes not on the Primary System.

Highways are and will continue to be an important element of the Nation's total transportation system. Nearly 90 percent of the intercity passenger miles traveled occurs on highways--more than eight times the volume of aviation, the next most frequently used mode. More.than one-fourth of the ton-miles of intercity freight is shipped on the Nation's highways. Between 1970 and 1978, automobile and truck travel increased 31 and 62 percent, respectively.

More than half of all public transit passenger miles are by bus. Department of Transportation (DOT) data shows that there are about 500,000 buses nationally and that the number will probably increase. Even in urban areas having subways or elevated trains, buses provide passenger-access to rail transit systems.

THE COOPERATIVE FEDERAL/STATE PROGRAM

The Federal Government did not become actively involved in providing financial aid for the Nation's highways until early in the 20th century. Through Federal highway legislation, this aid evolved from a $6 million annual program into the current series of Federal-aid highway programs funded at about $9 billion annually. These programs are a cooperative effort of Federal and State governments.

Federal involvement

The Federal Government did not have a significant role in highway programs until the Federal-Aid Road Act of 1916 was passed. This legislation started the Federal-aid program and established many of the elements underlying the present program. In addition to providing financial aid, the act established certain requirements the States must follow to obtain assistance. The act

--required each State to have a highway department to qualify for Federal assistance,

--established the basic Federal/State relationship under which States own the highways and are responsible for both construction and maintenance,

--required States to match Federal funding at legislatively determined rates, and

--distributed funding among the States by a formula.

Initially, the program was administered by the Department of Agriculture and totaled $6 million. By 1957 it was authorized $2 billion and included specific funding for the Interstate program, non-Interstate Federal-aid highways, and six additional programs. By 1980 financial aid totaling $9 billion was authorized under about 36 categorical programs 1/ for a wide variety of purposes. Since 1967 the program has been administered by DOT's Federal Highway Administration (FHWA).

One of the most significant events for the highway program occurred in 1956 when the Congress created the

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1/Appendix I lists these categorical programs and indicates the source of funding.

Federal Highway Trust Fund. 1/ Previously, highway programs had been funded from general tax revenues and had to compete with other Federal programs for available revenues. When it established the trust fund, the Congress increased some existing taxes and imposed new taxes relating to highway use and ownership of highway vehicles. These taxes were channeled into the trust fund to be spent only for highway-related activities, thus designating specific tax revenues for highway programs.

However, the trust fund is only a funding mechanism. Separate Federal-aid highway legislation (generally passed every 2 to 4 years) establishes specific programs, funding levels, and other criteria for carrying out programs.

Program responsibility

The Federal-aid highway program is actually a federally assisted State program. The Congress has clearly stated that States own Federal-aid highways within their respective boundaries and are solely responsible for selecting highway improvements and their construction. However, to receive funding for the Federal share of eligible costs, States must build projects according to Federal standards. States must agree to maintain any highway built with Federal highway funds or risk losing future funds.

Funding eligibility

Federal-aid funding may be used for building new highways on new locations, relocating existing highways, reconstructing highways to add lanes or interchanges, and for associated safety or other eligible purposes. States also have been able to use Federal funding for major rehabilitation of non-Interstate facilities, but 1978 was the first year specific funds were provided for Interstate rehabilitation. 2/ States cannot use Federal-aid funds for routine maintenance such as sealing cracks, patching potholes, mowing grass, removing debris, or plowing snow.

1/Appendix II describes the trust fund in detail and how the Federal-aid highway program provides financial aid to the States.

2/Federal-aid Primary funds can be used to either rehabilitate or totally reconstruct Interstate highways.

Sources of highway revenue

In 1979 Federal, State, and local governments provided about 28, 50, and 22 percent, respectively, of all highway revenues. These percentages have remained relatively constant over the last 10 years.

Federal and State governments obtain 60 percent of their money for highway programs from highway-user taxes. The principal user tax is the fuel tax on gasoline and diesel fuel levied by the Federal Government and all States. For example, during 1978 State and Federal fuel taxes generated $13.8 billion of the total $20.5 billion user revenues. Other user taxes such as vehicle registration fees; excise taxes on commercial vehicles, tires, parts, accessories, and lubricating oil; and vehicle-weight taxes generate the remainder of the user revenue. Federal and State governments also use general tax funds as a source of highway financing.

OBJECTIVES, SCOPE, AND METHODOLOGY

State and Federal officials have been concerned for several years that revenues related to highway programs (highway revenues) are not keeping pace with costs. Accordingly, we wanted to examine current highway conditions, Federal legislative requirements for States to preserve highways, recent trends in financing highway programs and their effect on State highway programs, and actions States are taking or proposing to increase highway revenue. We did not try to evaluate individual State needs for additional funding or whether more or less Federal funding should be provided. Under the program, States--not FHWA--decide what work is to be performed. Perceived needs, therefore, may vary widely depending on the individual States.

We reviewed highway finance reports prepared by FHWA, the Transportation Research Board of the National Research Council, the Highway User Federation, and the Congressional Research Service. To obtain current information on various legislative changes in highway financing in States, we reviewed reports published by the American Association of State Highway and Transportation Officials (AASHTO) and the Highway User Federation in 1979 and 1980. We then compiled, analyzed, and summarized the results.

To obtain current first-hand information from specific States, we judgmentally selected nine States that (1) used different methods of financing highways or made recent changes to increase their highway revenues and (2) had wide geographic representation. The States were Connecticut,

Maryand, Missouri, New Mexico, New York, Pennsylvania, Texas, Virginia, and Washington. To obtain similar information on highway conditions, financing trends, and recent changes adopted or being considered in the nine States, we developed questions for use in interviewing officials or in examining records or reports. Records and reports examined included financial information on receipts and expenditures for highways, legislative proposals and reports, budget requests, program plans, needs reports, and records or reports on highway conditions and maintenance.

We contacted regional and division FHWA officials responsible for Federal-aid highway programs in each of the States reviewed to apprise them of our review and to obtain their views. We also contacted regional representatives of DOT's Office of the Inspector General and representatives of State auditors to coordinate our review with their audit work.

To obtain a national perspective, we talked to FHWA headquarters officials and examined records and reports about highway conditions, needs, and financing. We reviewed Federal legislative requirements for States to preserve highways. We also reviewed and analyzed national highway statistics published by FHWA on financing for the period 1970-79.

HANDLING STATE COMMENTS

We asked the heads of the highway programs in the nine States we reviewed to comment on those chapters of our draft report relating to their operations.

We received responses from five of the nine States. Generally, they agreed with our draft report as it applied to their States. In some cases, their comments added support to or warranted further clarification of our report, and appropriate changes have been incorporated in the report. The State responses are included in appendixes III through VII.

CHAPTER 2

HIGHWAY CONDITIONS ARE DECLINING

Although the condition of the Nation's highways varies from State to State, generally their condition is declining. The most serious decline has occurred on the Interstate System where the percentage of miles rated in poor condition has more than doubled between 1975 and 1978. These highways must be preserved to ensure the adequacy of this vital highway system. Deteriorating highways also adversely affect fuel economy. Broken and patched roads reduce fuel efficiency and, by one estimate, cost $7 billion annually in excess fuel consumption.

PAVEMENT CONDITIONS HAVE DECLINED SINCE 1972

A draft of a 1980 DOT report to the Congress entitled "The Status of the Nation's Highways: Conditions and Performance" reported changes in highway conditions from 1972 to 1978. The draft concluded that pavement conditions had declined during this period but that little change had occurred in overall system performance.

Pavement rated in good condition would represent new or nearly new pavement. Pavement in fair condition would have some degree of serviceability remaining while that in poor condition would be beyond its life expectancy and would be in need of some type of capital improvement. The following figures show, by type of highway, the pavement condition and the percentage of mileage in each condition category for several years as contained in DOT's draft report. FHWA did not report on the condition of the Interstate System in 1972.

CHART 1

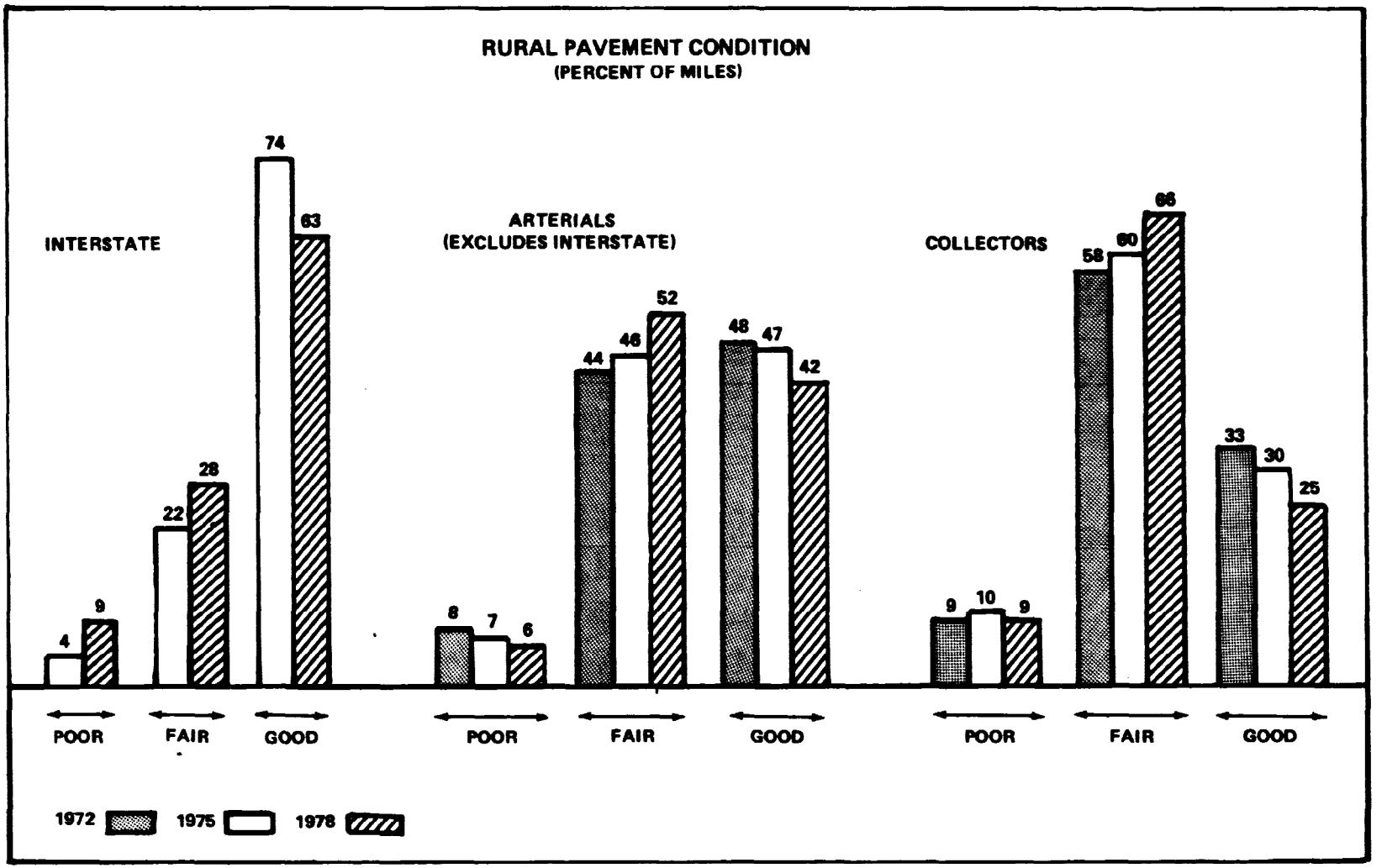
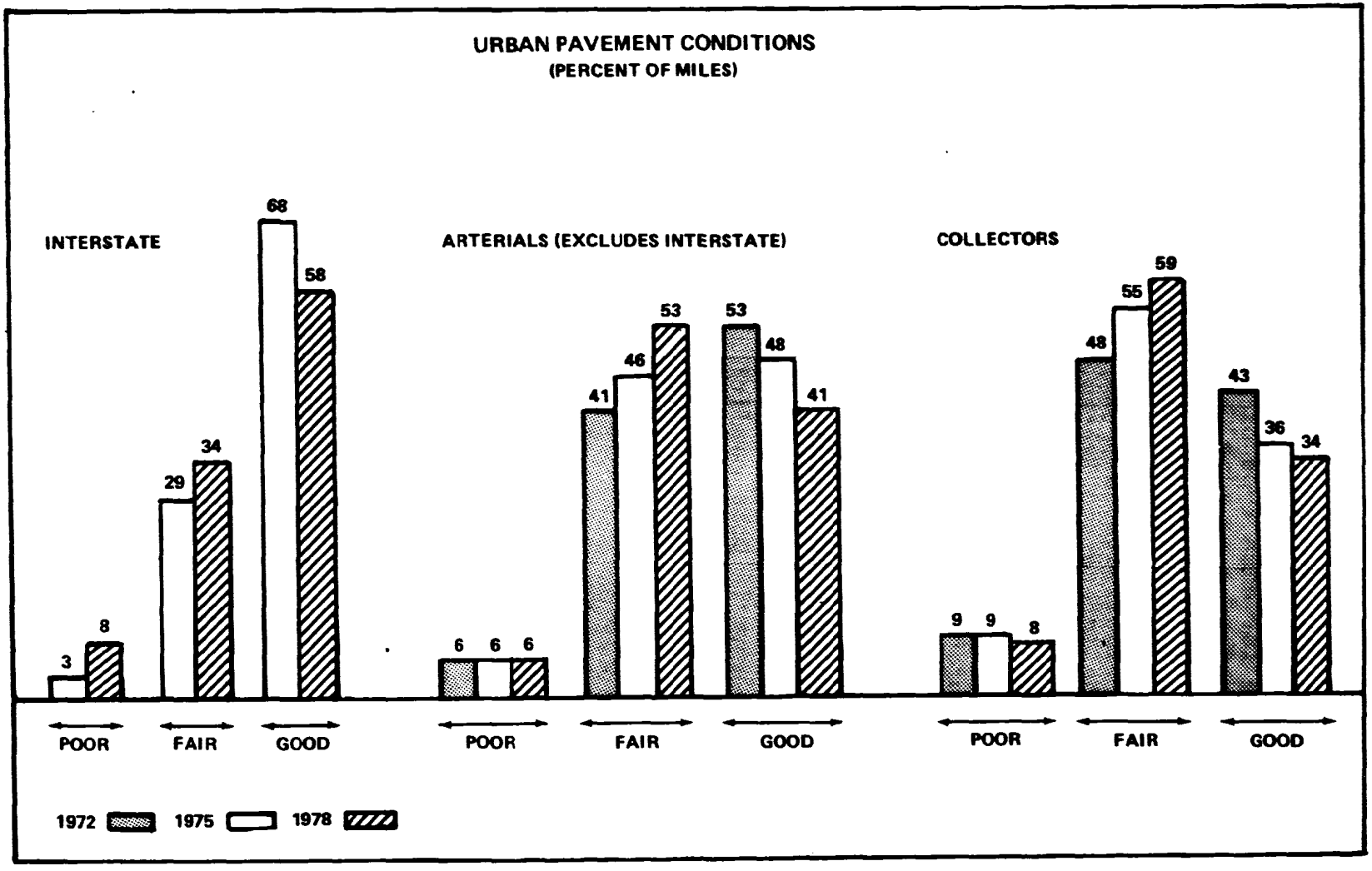

RURAL PAVEMENT CONDITION
(PERCENT OF MILES)
INTERSTATE
ARTERIALS
(EXCLUDES INTERSTATE)
COLLECTORS
4
9
22
28
74
63
8
7
6
44
46
52
48
47
42
9
10
9
58
60
66
33
30
25
POOR
FAIR
GOOD
POOR
FAIR
GOOD
POOR
FAIR
GOOD
1972
1975
1978

CHART 2


URBAN PAVEMENT CONDITIONS
(PERCENT OF MILES)
INTERSTATE
ARTERIALS (EXCLUDES INTERSTATE)
COLLECTORS
3
8
29
34
68
58
6
6
6
41
46
53
53
48
41
9
9
8
48
55
59
43
36
34
POOR
FAIR
GOOD
POOR
FAIR
GOOD
POOR
FAIR
GOOD
1972
1975
1978

These figures show that for all systems the percentage of pavement in good condition has declined. The corresponding change is that the percentage of pavement in fair condition has been increasing to the extent that 50 percent or more of the mileage for each type of highway, except Interstate, was in fair condition by 1978. However, the percentage of mileage in poor condition has remained relatively stable, except for the Interstate System.

The most significant changes in pavement condition occurred on the Interstate System. In 1975, 74 percent of rural and 68 percent of urban Interstate mileage was in good condition. By 1978 these figures had dropped to 63 and 58 percent, respectively. Even more disturbing, however, is that the percentage of mileage in the poor category and in need of capital improvement, such as resurfacing or reconstruction, has more than doubled. By 1978, 9 percent of rural Interstate and 8 percent of urban Interstate miles were in poor condition.

DOT's draft report concluded that because pavement deterioration accelerates as pavement reaches fair condition, the significant portion now in fair condition means that pavement improvement must be accelerated in the immediate future if pavement in poor condition is to be stabilized. However, FHWA concluded that no significant change occurred in overall system performance during the study period.

STATE HIGHWAY OFFICIALS CONFIRM HIGHWAY DETERIORATION

Although highway conditions vary widely among the States, reports we reviewed and highway officials we talked to confirmed the national trend of declining highway conditions and expressed the need for additional funding for resurfacing, restoration, and rehabilitation. Highway officials in eight of the nine States noted that the condition of their highways was declining or that they anticipated a decline in the near future. A Virginia official said that Virginia's highways currently were in a stable condition. Following are examples of information and views from the various State officials on highway conditions and financial needs.

New York

A State study conducted in connection with the fiscal year 1981 budget shows that the number of miles of deficient highways had increased dramatically since 1975 as follows. 1/

1/An unknown portion of the increase may be due to increased survey coverage or coverage of different mileage.

Year	Miles surveyed	Percent of total miles surveyed	Deficient miles
1975	11,777	75	1,577
1976	11,976	76	2,791
1977	14,448	92	3,880

The number of miles identified as deficient (in need of repair or restoration) was determined based on rideability. New York State officials estimated that from 1980 through 1989 they would need $965 million to rehabilitate their highways.

New Mexico

State highway officials reported that the condition of their highways was declining. The State has been spending $5 million to $7 million annually to resurface about 146 high-volume non-Interstate miles. At that rate, the non-Interstate highways could be resurfaced once every 28 years. However, State officials said that to combat deterioration they should resurface these highways once every 10 years or at least resurface 410 miles a year. New Mexico obtained substantially increased funding for these highways for fiscal year 1981 from the State Legislature. A highway official said that the State will be able to resurface them once every 14 years. As the following table shows, New Mexico's available resources also fall short of its estimated needs for Interstate resurfacing.

Year	Interstate miles	Resurfacing needs	Federal-aid and State matching funds available
		(millions)	
1980	70	$ 18.4	$4.0
1981	32	8.7	6.2
1982	58	15.0	a/5.7
1983-1994	617	151.0	Not available
Total	777	$193.1	

a/Federal funds only.

Maryland

Maryland highway officials also said that they are not meeting their resurfacing needs. Maryland anticipates the

need to resurface 56 miles of its Interstate highways during the next 5 years. This resurfacing will cost an estimated $6 million a year, but Maryland expects to receive only about $2 million a year in Federal funds for such work.

Maryland officials estimate that they should spend about $34 million annually for non-Interstate resurfacing. They only spend about $10 million annually.

Pennsylvania

In a January 1980 presentation to DOT, Pennsylvania highway officials discussed their alarm over the extensive and rapid deterioration of Pennsylvania's Interstate Highway System. They noted that well over $1 billion would be required over the next 6 to 7 years to modernize older segments to meet Interstate standards and another half billion dollars would be required just to keep the Interstate System operational. Further, they noted that the remaining Federal authorizations under the 1978 Highway Act for the Interstate Resurfacing, Restoration, and Rehabilitation Program (3R) would provide only $20 million, but the total cost to restore worn out pavements is estimated at $470 million.

The officials also noted that required modernization and restoration of the Interstate Highway System under existing Federal programs, funding levels, and matching ratios will require more than $225 million in State matching funds, a requirement beyond the State's financial capability. The State believes the magnitude of the problem is fast reaching crisis proportions.

Texas

A Texas official, in commenting on the deterioration of Texas' highways, especially its Interstate System, stated that the last Interstate rehabilitation estimate showed that Texas needed about $100 million annually to keep the Interstate System up to acceptable standards. He stated further that although Texas had been using Federal Primary System funds, Federal Interstate 3R funds, and State funds for Interstate rehabilitation, these sources provided less than half of the amount needed annually.

DETERIORATION HURTS FUEL EFFICIENCY

A 1977 DOT study, "Energy Conservation in Ground Transportation," compiled findings of numerous transportation and energy-related studies. It reported that if pavement deterioration continues to exceed repavement efforts at current rates, vehicle fuel efficiency in 1985 could decrease

by 2.4 percent. Also, fuel consumption increases by 34 percent for vehicles traveling at 40 miles per hour on a badly broken, patched asphalt road as compared with traveling on high quality pavement.

In addition, a Utah Department of Transportation study showed that fuel consumption increases as much as 40 percent as pavement conditions deteriorate. Finally, a 1977 study by The Road Information Program organization estimated that rough roads cost motorists $7 billion annually in excess fuel consumption.

CONCLUSIONS

Highway pavement conditions vary among the States, but national studies have shown and State officials have confirmed that highway conditions are declining. The decline has been most pronounced on the Interstate System, where the percentage of miles in poor condition has more than doubled over the last 3 years. The percentage of other highway systems in poor condition has remained relatively stable, but there has been a decline from good to fair condition; in 1978 about 50 percent of these roads were in fair condition. Deteriorating highways also adversely effect fuel economy. Highway conditions will continue to decline and at an even more rapid rate unless corrective action is taken.

CHAPTER 3

HIGHWAY REVENUE IS NOT KEEPING PACE WITH COSTS

Highway revenue is not keeping pace with the rapidly rising costs of highway construction and maintenance, which have increased faster than the national inflation rate. In addition, an increasing portion of highway revenues is being used for other highway-related purposes such as highway patrol, administration, and bond interest and bond retirement. In constant dollars, capital outlays for construction have fallen dramatically while maintenance spending has increased slightly. Maintenance has become a much larger portion of total expenditures. Even though they are spending more money for maintenance, some States find it is not enough and are deferring maintenance. States are also reducing highway personnel and construction projects that are totally State-financed. Some States also anticipate difficulty in matching available Federal funds, thus compounding their highway financing problems.

STATE HIGHWAY FINANCING IN PERSPECTIVE

Highway financial activity is centered at the State level. States generate the major portion of the total highway revenue and also serve as the primary recipient of Federal financial aid for highways. They also incur a similar percent of total highway cost. States finance their highway programs from a variety of sources, including highway-user taxes such as motor fuel taxes and tolls, general funds, and Federal financial aid. Most expenditures are for constructing and maintaining highways and bridges. The following table shows the sources and uses of State highway financing as reported by FHWA.

State Receipts and Disbursements For State-Administered Highways and Local Government Roads and Streets - 1979

Receipts	(billions)	Disbursements	(billions)
Motor fuel taxes	$ 9.1	Capital outlay-roads and bridges (note a)	$13.0
Motor vehicle and carrier taxes	4.6	Maintenance and traffic services	4.4
Tolls	1.2	Administration and miscellaneous	1.5
Appropriations from general funds	0.8	Highway law enforcement and safety	1.8
Other State motor vehicle-use taxes	0.3	Bond interest	1.0
Miscellaneous receipts	1.0	Grants to local governments	3.8
Federal highway funds	8.1	Bond retirement	1.3
Counties and townships	0.1		
Municipalities	0.1		
Bond issues	1.0		
Total	26.3		
Decrease in reserves for current highway work and debt service	0.5		
Total	$26.8		$26.8

a/Capital outlays include expenditures for constructing highways on new locations plus improving and reconstructing existing highways.

Motor fuel taxes are the largest single source of highway financing. Since 1929 all States have had motor fuel taxes. These taxes may be a straight cents-per-gallon tax,

that is, the same cost per gallon independent of the cost of a gallon of gasoline. The taxes can also be variable, that is, they may be based on a fixed percent of the price of a gallon of gasoline like a sales tax, or they may be based on an index such as a construction cost index or the Consumer Price Index. Most States have a fixed cents-per-gallon tax with only a few having some type of variable tax.

Federal funds are the next largest source of highway revenue for States. States receive Federal funds from FHWA, which distributes them to the States from the Federal Highway Trust Fund generally in accordance with either legislatively or administratively determined formulas. For more information on the operation and status of the highway trust fund, see appendix II.

Although general funds are not now a large source of highway revenues, they are becoming increasingly important. General funds are derived from general tax revenues and are appropriated by State legislatures to various programs as they see fit.

According to FHWA, the major uses of highway revenues are for capital outlays and maintenance and traffic services. Capital outlays are expenditures for new construction and major repairs such as reconstruction and resurfacing. Maintenance includes activities such as routine patching, joint sealing, repairs, and bridge painting. Traffic services include snow removal, sanding, traffic control, service facilities, and operating toll roads and bridges.

COSTS HAVE INCREASED RAPIDLY AND REVENUE GROWTH HAS NOT KEPT PACE

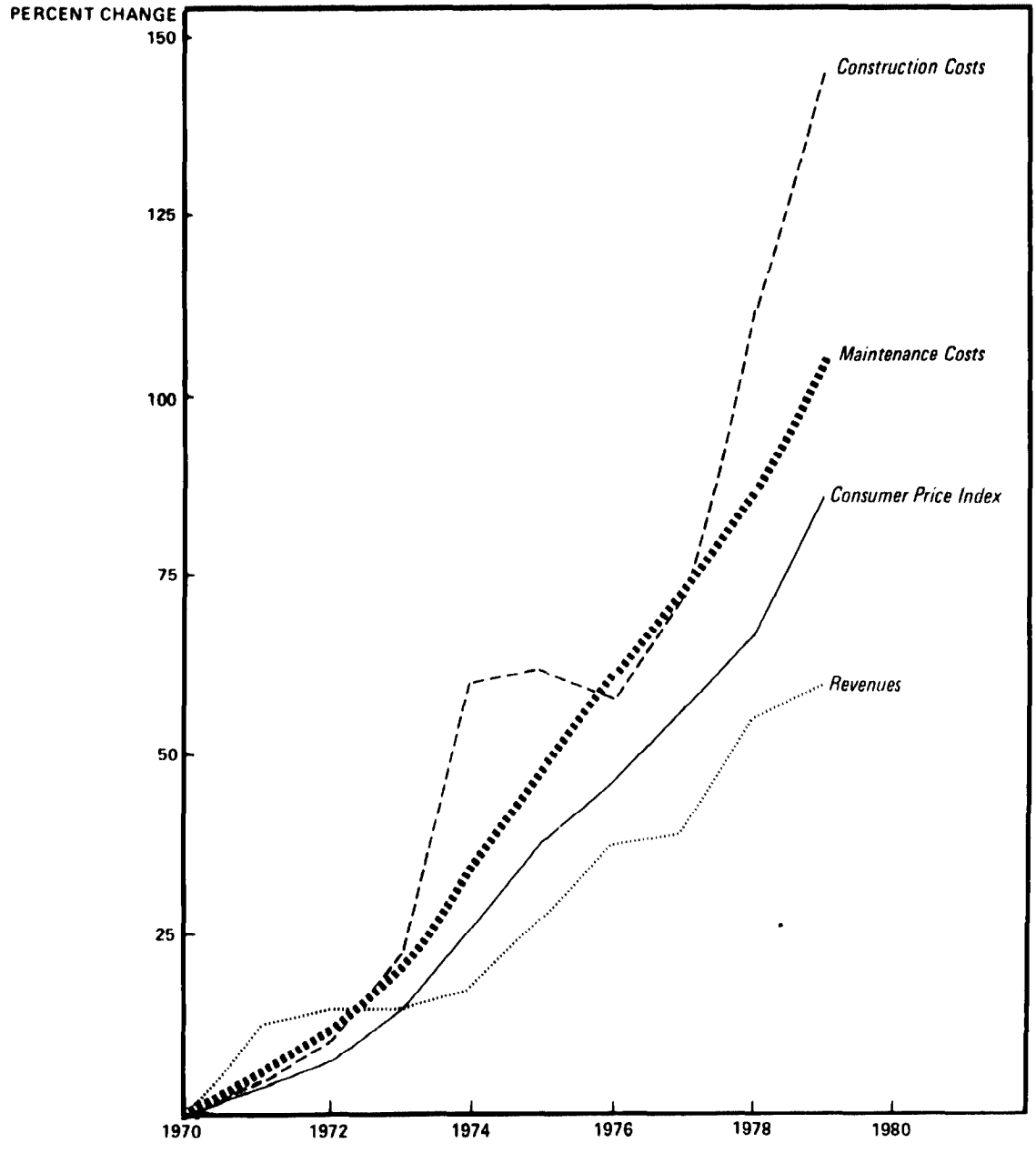
Highway construction and maintenance costs have increased rapidly over the last several years. Although highway revenue has increased, it has not kept pace with rising highway costs because of the decreasing rate of fuel consumption and the total or partial exemption of gasohol from the fuel tax. As a result, the States' ability to make highway improvements has diminished.

Inflation in highway construction

Highway construction and maintenance costs have increased much faster than the Nation's general inflation rate as represented by the Consumer Price Index. From 1970 to 1979 these highway costs have increased 145 and 105 percent, respectively, while the Consumer Price Index has increased only 87 percent. This information is illustrated on the following chart.

CHART 3

GROWTH OF HIGHWAY CONSTRUCTION AND MAINTENANCE COSTS,
CONSUMER PRICES AND HIGHWAY REVENUES 1970 - 1979



The following examples demonstrate the effects of inflation on State highway projects.

--Virginia highway officials provided project costs for two comparable highway construction projects, one awarded in 1973 and the other in 1979. Both projects were to add a parallel lane to Route 17 in eastern Virginia. The 1973 project for about 10.6 miles cost about $4 million, or about $381,000 per mile. The latter project for 4 miles cost $2.7 million, or $677,000 per mile. State officials said that it was appropriate to conclude that the 78-percent cost increase was due mostly to inflation since the two facilities were comparable.

--Connecticut highway officials said that the estimated cost of a new expressway, delayed for several years, increased from $26.9 million in 1973 to $48.3 million in 1979. The increase was due primarily to inflation.

Revenue growth has not kept pace with costs

States derive their revenues for highways from a variety of sources but rely primarily on State cents-per-gallon motor fuel taxes and Federal aid. However, revenues have not kept pace with rapidly rising highway costs. During 1970-79 revenues increased only 60 percent while construction costs rose 145 percent.

Revenue derived from motor fuel tax increases as consumption increases and in the past has kept pace with increasing highway costs. However, this is no longer true as inflation has outpaced revenue. The change began with the 1973 fuel embargo and has become more pronounced in the last few years as fuel prices and highway costs have increased while fuel consumption has not kept pace. The war between Iran and Iraq will most likely reduce petroleum production and ultimately have an additional impact on fuel consumption and prices. Moreover, consumption probably will not resume its previous growth because:

--Federal legislation has mandated fuel-efficient cars and may continue to do so; Americans are buying more fuel-efficient cars; and there is dramatic competition by manufacturers to produce even more fuel-efficient cars.

--Rising fuel prices inhibit increased consumption and fuel is not always as readily available as it once was.

--Carpooling and mass transit have increased.

The use of gasohol--a mixture of 90 percent gasoline and 10 percent alcohol--has also diminished highway revenues because a number of States have either reduced or eliminated motor fuel taxes on it to encourage its use to save gasoline. Gasohol had been exempted or taxed at a lower rate in 15 States as of January 1980. Four of the States totally exempted gasohol from fuel taxes, and 11 had a lower tax on gasohol than on gasoline.

Sixteen other States were also considering legislative proposals to provide incentives to produce and use gasohol. States are not, however, lowering or eliminating the fuel tax on gasohol without considering the loss of highway revenue. Kansas, Montana, and South Carolina, for example, tax gasohol at a lower rate, but legislation provides for increasing the rate later. Iowa's total exemption of gasohol from its 10-cents-per-gallon motor fuel tax costs the State about $12 million annually; however, proposed legislation would reduce the loss of highway revenues by imposing a 3-cents-per-gallon tax immediately and gradually increasing it to 7 cents by 1983.

The next largest source of revenue for State highway programs is Federal aid. Similar factors (decreased fuel consumption and total exemption of gasohol from the Federal tax) have also slowed the growth of Federal Highway Trust Fund revenue, the major source of Federal highway aid to the States. During the 1970's, highway-user revenues (the major trust fund receipts) increased at about 5 percent annually, but the Department of the Treasury's annual report on fiscal year 1979 highway trust fund operations estimates that between 1979 and 1984 revenues will increase by only 1.5 percent annually. The report further estimates that revenues for 1980 and 1981 will be below those for 1979. The principal source of trust fund revenue is a cents-per-gallon motor fuel tax that has not been increased in more than 20 years.

Highway revenues used for other purposes

Another factor diminishing highway revenues available for highway construction and maintenance has been the increased use of such revenues for other highway-related purposes. These include highway patrol, administration, grants to local governments, and bond interest and retirement. Of $26.3 billion in highway revenues received by States in 1979, $9.4 billion was used for these other purposes, as shown on page 15. Nationally, the percentage of funds classified as highway expenditures for functions other than State maintenance and construction increased from 32 percent in 1970 to 35 percent in 1979.

The greatest increase nationally has been for highway patrol functions, which increased from 5 percent in 1970 to 7 percent in 1979. In several of the States we reviewed, highway officials expressed concern about the increasing costs of the highway patrol. For example, Texas has been concerned about the increasing use of highway revenues for its Department of Public Safety and now limits such use to the same dollar amount annually.

Missouri's Chief Engineer, in commenting on our report, noted that some Federal requirements also reduce user revenue available for highway maintenance and construction. He stated that the added costs of several Federal requirements such as noise abatement considerations and historical and archeological reviews have reduced the amount of highway-user revenues available for highway operation, maintenance, and improvement. He concluded that although some of these are worthy endeavors and certainly have merit, the funding for such features that are not exactly highway-user related should come from a source other than highway-user funds.

REDUCTIONS IN HIGHWAY FINANCING

Although State highway financing has increased in actual dollars, it has been reduced substantially in constant dollars. Capital outlays have fallen dramatically while maintenance spending has increased somewhat with some States deferring needed maintenance. In addition, States are cutting costs and accomplishing fewer State-financed projects, and some States anticipate difficulty in matching Federal highway funds. This is primarily because highway revenue has not kept pace with inflation as explained earlier in this chapter.

Effect of reduced financing on State maintenance and construction spending

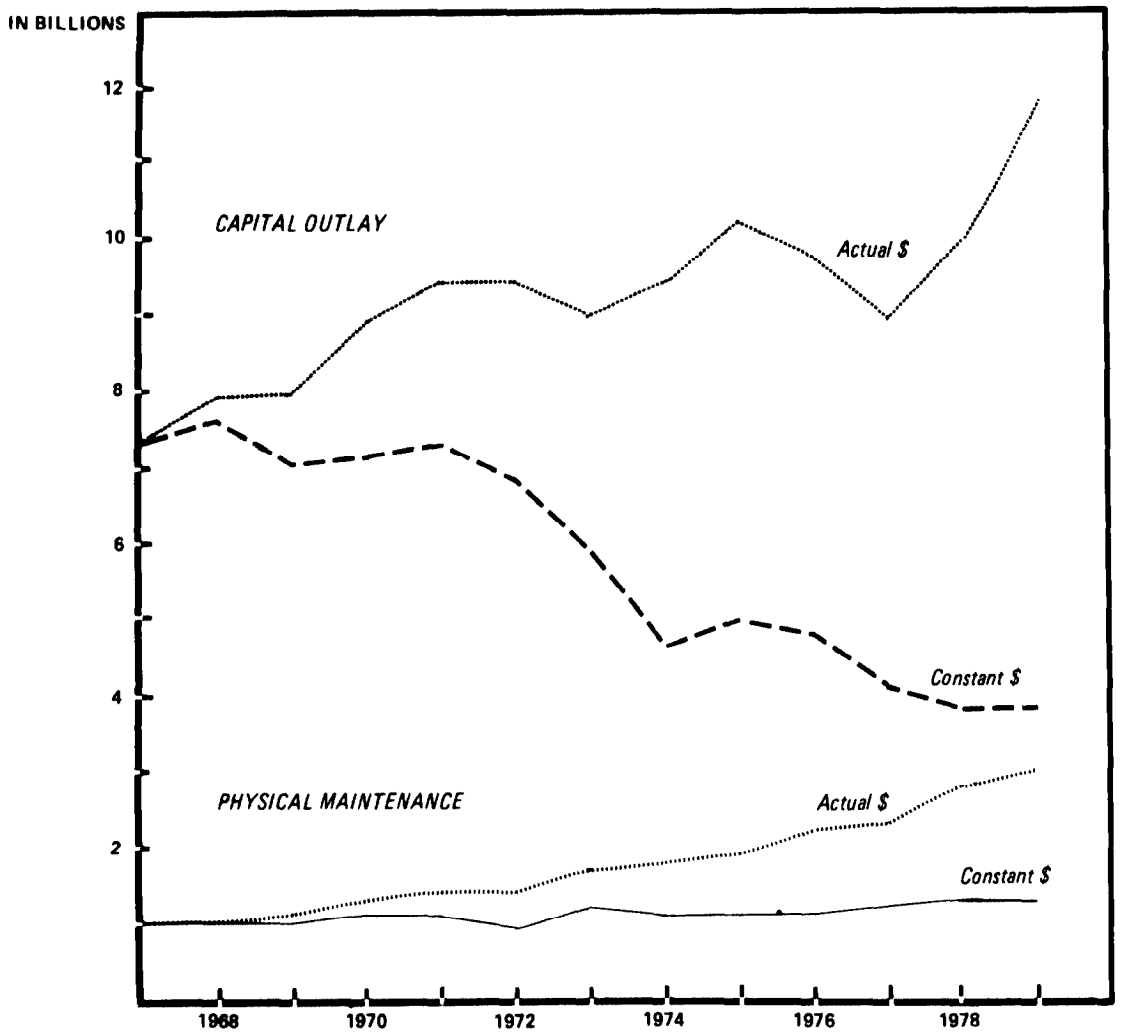
From 1970 to 1978, State highway capital outlays and maintenance disbursements 1/ increased about 12 and 115 percent, respectively. However, as the chart on page 22 shows, in constant 1967 dollars, capital outlays decreased 46 percent from $7.1 billion to $3.8 billion while maintenance disbursements increased about 18 percent from $1.1 billion to $1.3 billion. The table on page 23 shows for 1975 and 1978 maintenance and construction expenditures for five of the States we reviewed where comparable data was available.

Moreover, maintenance expenditures are becoming a much larger portion of smaller total expenditures for maintenance and construction. Maintenance represented about $2.9 billion, or about 22 percent, of the total $13.1 billion spent in 1975. But in constant dollars, 1978 maintenance expenditures of $3.2 billion represented about 29 percent of the $10.9 billion spent.

1/Includes maintenance of highways but not traffic services such as snow removal, sanding, traffic control, services facilities, and operating toll roads and bridges.

CHART 4

DISBURSEMENTS FOR STATE ADMINISTERED HIGHWAYS
(ACTUAL DOLLARS AND CONSTANT 1967 DOLLARS)



Maintenance and Construction Expenditures Nationally and in Selected States

	Fiscal years			
	1975	1978	1978 Expenditures in constant 1975 dollars	Percent of change in constant 1975 dollars
	(million)			(decrease)
National (note a)				
Construction	$10,168.6	$10,015.6	$ 7,705.7	(24)
Maintenance	2,946.2	4,037.8	3,192.6	8
Total	$13,114.8	$14,053.4	$10,898.3	
Maryland				
Construction	$ 156.3	$ 101.8	$ 78.3	(50)
Maintenance	31.0	39.7	31.4	1
Missouri				
Construction	263.4	248.4	191.1	(27)
Maintenance	100.5	105.7	83.6	(17)
New Mexico				
Construction	73.5	71.7	55.2	(25)
Maintenance	26.8	33.3	26.3	(2)
Texas				
Construction	626.6	685.9	527.7	(16)
Maintenance	141.4	176.6	139.6	(1)
Connecticut				
Construction	26.1	31.1	23.9	(8)
Maintenance	34.8	42.4	33.5	(4)

a/FHWA-compiled national data for State-administered highways is for calendar years.

Although States are spending more to maintain their highways, some States told us that they are not spending enough. Our report entitled "Excessive Truck Weight: An Expensive Burden We Can No Longer Support" (CED-79-94, July 16, 1979) pointed out that because money for maintenance is almost always limited, highway officials must decide which highways will not get needed attention. The report showed State responses to a nationwide questionnaire on highway maintenance needs. Forty-nine of the 50 State highway departments reported that inflation was a problem contributing to the need to defer maintenance.

Deferring highway maintenance results in deteriorated roads that eventually need major reconstruction. Four States told us that they have deferred maintenance.

--In Maryland, because of reduced funding, maintenance activities that consume large amounts of material, such as permanent and continuous patching, surface treatment, and joint sealing, are being deferred. Maryland officials stated that deferring maintenance would lead to significantly higher costs for emergency repairs and/or reconstruction in the future.

--Connecticut officials said that they are not able to do all the maintenance work they feel is necessary because they lack funds. They also reported that unless their highway maintenance and restoration program receives more funding, their highways will deteriorate to the point where they will need complete reconstruction, which will be more costly.

--Pennsylvania officials estimated that their maintenance backlog in April 1976 was $858 million. As of January 1981, they said that this backlog had increased to $4 billion due to insufficient revenues, inflation, and modifications to design and construction standards to ensure permanent improvement.

--A New York State official said that essentially the State is maintaining its roads by reconstruction since little preventive maintenance is being done. A 1979 FHWA maintenance report on New York stated FHWA's concern about the State's declining maintenance funding, its lack of routine preventive maintenance, and its decreasing bridge-maintenance funding. FHWA officials pointed out that New York was deferring necessary maintenance to a point where only costly and inconvenient major reconstruction and rehabilitation would satisfy needs.

Five of the States we reviewed, however, reported little or no deferred maintenance. Texas officials told us that no routine maintenance had been deferred since 1978. Virginia and New Mexico officials stated that they had little deferred maintenance. Missouri and Washington officials said that they had cut back on activities such as mowing but reported no significant deferred maintenance.

States are reducing maintenance personnel and State-financed projects to cut costs

Reduced highway funding has also limited the number of highway personnel States employ. To cut costs, some States have modified their labor force or reduced their highway department personnel. New York has reduced its maintenance staff 18 percent since 1970. Texas has reduced its maintenance and engineering personnel by more than 20 percent since 1974. Pennsylvania reduced its maintenance staff by 7 percent from 1976 to 1978. Maryland and Connecticut are using contracted labor to offset staff reductions. State highway officials believe contract labor is cost-beneficial because of seasonal changes in labor demand.

Most States reviewed have also curtailed or eliminated construction projects that are totally State-financed. New York, New Mexico, Connecticut, and Missouri officials said that they are spending less on totally State-financed projects while Pennsylvania has discontinued 100-percent State financing of major highway construction.

Matching Federal funds could be difficult

Another result of reduced highway funding is its effect on State's ability to match Federal funds. Of the States reviewed, only Pennsylvania had failed to match Federal funds, allowing $415 million in Federal Interstate aid and Appalachian Development Highway funds to go unused in 1978 and 1979. State officials said, however, that these funds were reallocated to other States. Missouri and Connecticut anticipated difficulties within a few years unless they received additional revenues. Texas and Maryland were the only States reviewed that anticipated no difficulties in matching funds.

CONCLUSIONS

A rapid rise in maintenance and construction costs together with lagging revenues have reduced highway financing. Inflation has increased highway costs while fuel consumption, on which revenues are in part dependent, is declining. Moreover, motor fuel tax reductions or exemptions to encourage gasohol use have further reduced revenues. Construction spending in constant dollars has dropped while maintenance spending has increased slightly and now represents a far greater portion of the reduced highway financing. Although maintenance spending has increased, some States are deferring maintenance and reducing highway maintenance

personnel. Although these actions have reduced current costs, they may increase future costs for rehabilitation and construction.

It seems likely that if these trends continue, further changes in highway programs and their financing will be needed. The degree and nature of these changes will likely depend on the kind of highways and tax burden the public will accept. We believe, however, that with severely reduced purchasing power, States will need to continue to give increasing priority to preserving existing highways over building new ones.

As we discuss in subsequent chapters, many States have taken or are planning legislative actions to offset these trends.

CHAPTER 4

ACTIONS TO INCREASE HIGHWAY REVENUES

In response to rapidly rising costs and lagging revenue growth, States are trying to increase highway revenues by increasing motor fuel taxes, traditionally the primary source of highway revenues. Some States are also using general tax revenues for highway purposes or raising registration, license fees, or other related fees. Moreover, many States are also seeking innovative ways to link highway revenues to rapidly rising costs. Although these actions have helped, most of the State highway agencies we talked with foresee the need for further steps to increase revenues. States' highway financing difficulties have been the subject of two studies--one by FHWA and one by the Transportation Research Board.

The Federal highway revenue picture is not too different from that of the States. As in the case of the States, the primary source of revenue is the motor fuel tax; but unlike the State tax, the Federal tax has not been increased in 20 years. However, at least one congressional proposal was made in the last Congress for changing the motor fuel tax--from a cents-per-gallon tax to a percent tax that would tie into inflation changes.

STATE FUEL TAX INCREASES

Motor fuel taxes, the major source of highway revenue, have not kept pace with inflation. While the price of motor fuel, which is one of many inflation indicators, has increased dramatically, the average State motor fuel tax has increased very little, about 2 cents per gallon. For example, in 1960 the average State gasoline tax of 5.9 cents was 19 percent of the price of gasoline, but by 1980 the tax of about 8.3 cents was only 7 percent of the gasoline price. Recently, however, there has been increasing activity to raise motor fuel taxes.

Despite widespread public resistance to tax increases, 11 of 26 legislatures considering motor fuel tax increases in 1979 approved them. According to reports by AASHTO and the Highway User Federation and information obtained during our review, at least 30 States considered increasing the motor fuel tax in 1980. On the other hand, 1980 proposals to divert highway revenues from highway improvement to other State programs would be considered in at least five States. The following table shows that most of the States that increased motor fuel taxes in 1979 increased the cents-per-gallon tax. But in 1980 more States were considering

a variable tax that rises with the price of motor fuel, while some were considering both methods of tax increase.

Method of increase	Number of States Adopted 1979	Considered 1980
Cents-per-gallon	8	18
Variable	3	22
Total	11	a/ 40

a/Only 30 States considered increases, but 10 are considering both methods of increase and therefore are counted twice. An additional four States not proposing increases are proposing a change to a variable tax. At least eight States adopted tax changes in 1980.

The variable motor fuel tax is more attractive than the straight cents-per-gallon tax because it is tied to fuel prices that rise with inflation, like highway costs do. The straight cents-per-gallon tax is tied to consumption, which is not increasing with inflation and, as a matter of fact, is currently decreasing. Variable motor fuel taxes may be based on a fixed percent of the sale price of fuel, like a sales tax, or they may be indexed to fuel prices. Indexing, for example, might provide that each 10-cent increase in the average fuel price results in a 1-cent-per-gallon increase in the motor fuel tax. Or, indexing could be based on changes in the Consumer Price Index or a construction cost index. Naturally, the variable tax would be tied into highway needs.

The States reviewed had adopted in 1979 or were considering in 1980 straight cents-per-gallon and variable increases in the motor fuel tax as follows.

State	Motor fuel tax increases	
	Cents per gallon	Variable
Connecticut	Considered	Considered
Maryland	Considered	Considered
Missouri		Considered
New Mexico		Adopted
New York		Considered
Pennsylvania	Adopted	Considered
Texas		
Virginia	a/Adopted	a/Adopted
Washington		b/Adopted

a/Adopted 1980
b/Adopted 1977

Eight of the nine States reviewed have adopted some type of variable motor fuel tax or were considering it for 1980. Washington, for example, replaced its flat cents-per-gallon motor fuel tax in 1977 with a variable tax based on the price of motor fuel. New Mexico adopted a variable tax in 1979. Virginia adopted a flat 2-cents-per-gallon increase and added an additional 4 percent tax to gasoline sales in Northern Virginia to help finance the Washington, D.C., metropolitan area transit operations.

Washington

In 1977 Washington replaced a 9-cents-per-gallon tax with a variable tax. Washington's variable tax is 21.5 percent of the average retail price before taxes, subject to a 9-cents-per-gallon floor and a 12-cents-per-gallon ceiling. The tax was variable only until it reached its allowable maximum on July 1, 1979. Since then, it has in effect reverted to a traditional cents-per-gallon tax, which is no longer responsive to fuel price increases. Washington's variable motor fuel tax was also designed to provide a second element of variability. After the State Legislature determined how much it wished to spend on highways in a given biennium, the maximum permissible fuel tax revenue would be determined by subtracting nonfuel-tax highway revenues from highway appropriations. If the existing tax rate would yield too much revenue, the tax would be adjusted downward at 6-month intervals to stay within the maximum permissible revenue. No provision was included, however, to cause a rise in the tax rate if revenues based on the percentage rate were insufficient to fully fund the highway programs. According to a State official, the tax was intended to be a temporary

remedy and will not provide sufficient revenue in the long term. He said that the State transportation department has considered a number of alternatives but none have been formally proposed. He expects the legislature to consider an increase in fuel taxes in 1981.

New Mexico

New Mexico adopted a variable fuel tax in 1979, effective July 1, 1980. The tax provides for a 1-cent increase in the tax for each 10-cent increase in the average wholesale price of fuel. The annual increase, however, is restricted to 1 cent regardless of the increase in the fuel price. The tax will increase from 7 to 8 cents per gallon and provide an additional $8 million for fiscal year 1981. Even so, a New Mexico highway official told us that the new tax alone will not provide sufficient revenues for highways.

Several other States not included in our review were reported to have variable taxes as follows:

Kentucky

Effective July 1, 1980, the motor fuel tax rate is reestablished quarterly at 9 percent of the computed weighted average per gallon wholesale tank wagon price of gasoline. The law specifies a $1.00-per-gallon floor and $1.50-per-gallon ceiling for the computed average price of motor fuel. This is equivalent to a 9-cents-per-gallon tax floor and a 13.5-cents-per-gallon tax ceiling. The maximum average wholesale price change from fiscal year to fiscal year is 10 percent. Additionally, the law establishes a 2-percent surtax on motor fuel sales to heavy equipment motor carriers.

Indiana

Effective July 1, 1980, the "license tax rate" for motor fuel is to be reestablished semiannually at 8 percent of the computed weighted average retail price of gasoline. Maximum average weighted retail price is $1.50 per gallon for 1980, $1.75 for 1981, and $2.00 after 1981, which establishes maximum tax rates of 12, 14, and 16 cents per gallon, respectively. A tax-rate floor is not specified. A vehicle registration fee increase of about 25 percent, depending on the class of vehicle, was also enacted.

Massachusetts

Effective August 1, 1980, the motor fuel tax rate is to be reestablished quarterly at 10 percent of the average

wholesale price of motor fuel. No tax rate floor or ceiling was enacted. Because the law lacks specificity, the Massachusetts Commissioner of Revenue will suggest changes at the next session of the legislature.

Nebraska

Effective October 1, 1980, the motor fuel tax rate is to include a surcharge of 2 percent of the average price the Nebraska State government pays for motor fuel computed on a pennies-per-gallon basis. The surcharge rate is to be effective through fiscal year 1981 and then is to be adjusted by the State Board of Equalization based on the additional State funds required to fund appropriation levels established by the legislature. Additionally, the law establishes a 1-cent-per-gallon increase in the motor fuel tax, with receipts divided equally between cities and counties.

OTHER WAYS OF INCREASING HIGHWAY REVENUES

All nine of the States we reviewed were also considering or had adopted other ways to increase highway revenues. According to reports by AASHTO and the Highway User Federation, six States enacted nine legislative changes in 1979 to use general funds for highway programs or to increase registration, license, or other related fees. Some 25 States were reported to be considering 35 such changes for 1980. The following table shows the number of changes adopted or being considered:

Method	Number of changes Adopted 1979	Considered 1980
Using general funds by:		
Direct appropriation	3	4
Earmarking specific tax revenues	3	13
Increasing registration, license, or other fees	3	18
Total	9	35

The nine States we reviewed had adopted in 1979 or were considering in 1980 measures as shown in the following table.

	Other changes		
	Using general funds		
	Direct appropriations	Earmarking specific revenues	Increasing registration, license, or other fees
Connecticut	(a)	-	-
Maryland	-	Considered	Considered
Missouri	-	Adopted	-
New Mexico	-	b/Adopted	c/Adopted
New York	(a)	-	-
Pennsylvania	-	-	c/Adopted
Texas	(d)	-	-
Virginia	-	-	c/Adopted
Washington	-	-	Considered

a/States already funding highways primarily from general funds.

b/Adopted 1979 and 1980.

c/Adopted 1980.

d/Used to supplement motor fuel and other taxes since 1977.

Use of general funds

General funds may be used for highways either by direct appropriation from the general fund or by earmarking specific general tax revenues such as motor vehicle sales taxes for highways. General funds can also be used indirectly by transferring a previously highway revenue-funded activity such as the highway patrol to general funding, thereby making more highway revenues available for direct highway use.

The National Governors' Association and the National Association of State Budget Officers indicate that an unobligated surplus equal to 5 percent of general expenditures is a reasonable fiscal condition for a State. However, the number of States meeting or exceeding this ratio will decline from 35 in 1979 to an estimated 18 in 1980. Thus, the financial condition of the States is declining and most likely will have an adverse effect on the future use of general funds for highway purposes.

Six of the nine States reviewed were using or were considering using general funds for purposes that previously had been financed from motor fuel taxes. Two States reviewed rely primarily on general funds rather than specific user revenues such as the motor fuel tax to fund

their highways. In 1976 Connecticut elected to fund its highways from general fund revenues, and the traditional highway revenues simply became sources of general revenue. New York also has financed its highway program from general revenues for many years. Some States use general funds in a different way by earmarking for highway use general tax revenues that may be highway-related. Four States reviewed have either earmarked or are considering earmarking for highway use certain revenues now going to the general fund. For example:

--Missouri approved a constitutional amendment in 1979 to use one-half of the motor vehicle sales tax for roads, streets, and transportation, taxes that previously went into the general fund. As a result, the State highway department will receive an additional estimated $18 million annually, about 6 percent of the $312 million in highway revenues received in 1979. Missouri highway officials said that these additional revenues will help but other measures will likely be needed. According to a State official, the highway department had furnished an interim committee of the State Legislature with some suggestions for obtaining additional revenue, but the final decision must come from the legislature.

--In 1979 New Mexico approved using one-fourth of the motor vehicle sales tax for highway use. State highway officials estimate that this measure will yield about $4.5 million annually. In 1980 New Mexico also approved several other changes whereby highway-related revenues in the general fund would be for highway use, including (1) using the remaining three-fourths of the motor vehicle sales tax, yielding about $14 million annually and (2) the interest earned by the State's road fund, estimated to be about $1 million annually. Also approved for highway use were $25 million in bonds to be paid from severance taxes on extraction of coal, oil, and gas. In 1980 the State also approved transferring the $4.3 million annual funding of motor vehicle registration and licensing activities from the State's road fund to the general fund, thus making more road funds available for highways.

Texas links highway revenues to highway costs with general funds

Texas has used general funds to offset inflation and declining highway revenue growth. A base funding level was established and yearly adjustments will be made by means of

a cost index approved by a State committee. The weighted combined costs of highway operations, maintenance, and construction are used in determining the index. Thus, as the cost of these highway program elements increases, related taxes and fees are supplemented with general funds to provide total revenues in the amounts needed to match costs. The amount of general funds needed is determined by subtracting motor fuel taxes, sales tax on lubricants, and license fees from the established funding level ($750 million in fiscal year 1979).

With this innovation, Texas has established its highway financing in constant dollar terms, enabling the State to compensate for the effects of inflation and declining growth in motor fuel consumption. During 1978, the first year of operation under the new system, $114 million, or about 9 percent, of highway department receipts was transferred from the general fund. The success of this method, however, depends upon how well highway programs are rated in comparison with other programs in the competition for available funding.

Increasing vehicle registration, licenses, and other related fees

Increasing vehicle registration, licenses, and other related fees is another way to increase highway revenues. Of the nine States reviewed, two were considering increasing such fees in 1980. Maryland, for example, was considering raising registration fees for motor vehicles and increasing commercial registration fees to yield an additional $20.3 million annually.

User charges promote economy and efficiency

In March 1980 we issued a report 1/ on the application of user charges by Federal agencies. That report pointed out that user charges promote economy and efficiency in Government operations. User charges, such as fuel taxes, that collect the total cost of a program, such as the Federal-aid highway program, place the program costs on those who benefit, rather than on other taxpayers who do not. Also, user charges allocate the cost to those who value the programs most highly (and perhaps to those best able to afford

---

1/"The Congress Should Consider Exploring Opportunities To Expand And Improve The Application Of User Charges By Federal Agencies," (PAD-80-25, Mar. 28, 1980).

them). Thus, it appears that highway revenues should continue to be used to fund the Federal-aid highway program.

Federal highway tax changes

The primary source of funds used in the Federal-aid highway program is the 4-cents-per-gallon gasoline tax that comprises about 70 percent of the trust fund tax revenue. Other sources include taxes on diesel fuel, tires and tread rubber; trucks, buses, and trailers; special-use vehicles; parts and accessories; and lubricating oils.

The tax on gasoline has not changed in 20 years. The last time it changed, the tax was 13 percent of the retail price of gasoline, but now it is about 3 percent and will be less with future gasoline price increases. A congressional proposal was made to change the 4-cents-per-gallon tax to a 4-percent tax on the wholesale price. Since the wholesale price of gasoline is around a dollar, this change would not be an immediate tax increase, but highway revenues would increase in accordance with any future gasoline price increases. This change would help to combat future inflation but might not be sufficient to handle the present problem of increasing highway deterioration.

The last time other Federal highway-related taxes were increased was in 1961. These taxes in total make up about 30 percent of the tax revenue dedicated to the highway trust fund. However, the revenue from taxes on lubricating oils and truck parts and accessories, which formerly went to the general fund, was transferred in 1966 to the trust fund. Taxes on new automobiles and automobile parts and accessories have been repealed, but they never went into the trust fund in the first place. Most of the taxes are at a fixed amount based on weight or volume. There is a variable tax on the sales prices of some trucks. Appendix II provides more detailed information on Federal highway revenue and the operation and condition of the trust fund.

In the Surface Transportation Assistance Act of 1978, the Congress required two studies dealing with Federal highway taxes. The first is a study of the existing highway tax structure by the Treasury Department and will focus on the ease or difficulty of administering and complying with each excise tax. A report on this study is due on or before April 15, 1982. The second is a cost-allocation study to determine whether different types of vehicles are paying their proportionate share of the costs of Federal-aid highways. This study is being done by DOT and the final report is due no later than January 15, 1982, so that the Congress may consider its finding when the question of

extending the highway trust fund comes up again. This 1978 act extended the termination date of the fund to September 30, 1985.

RECENT STUDIES ON STATE HIGHWAY FINANCING

Two recent studies address the State highway financing problem. They include a July 1978 study by FHWA entitled "The State Highway Finance Outlook" and an August 1979 study by the Transportation Research Board of the National Research Council entitled "State Resources for Financing Transportation Programs."

FHWA study

This study contends that additional highway revenues should be provided by increased user taxes. The study concludes that motor fuel consumption will not likely generate the revenues needed and that adjustments should be made in tax rates. The study cites the following as evidence that users are willing to accept tax increases:

> "--Toll charges on major toll roads convert to a mile rate twice the combined State and Federal gas-tax rate.
>
> --The [cost] of highways represents less than 10 percent of the cost of owning and operating a motor vehicle.
>
> --Motor-fuel consumption continues to grow despite an increase of 85 percent in the price of gasoline. [1/]
>
> --The public would support user-tax increases if it were adequately apprised of the need."

The study points out that although the price of motor fuel has increased dramatically, the average State gasoline tax has increased very little and the Federal gasoline tax has not changed. It compared State gasoline tax rates with gasoline prices from 1960 to 1976. We updated the comparison with more recent figures as shown in the following table.

1/Consumption has stopped growing and declined since the study was published in July 1978.

Comparison of Gasoline Prices and Taxes

	1960	1976	1978	1980
Retail price of gasoline (note a)	$0.310	$0.595	$0.618	$1.189
Average State gasoline tax (note b)	0.059	0.077	0.078	c/0.083
Federal gasoline tax	0.04	0.04	0.04	0.04
State tax in percent	19	13	13	7
Federal tax in percent	13	7	6	3

a/Including taxes. The 1980 retail price figure is through August.

b/Weighted average rate based on net gallons taxed.

c/Our estimate.

Tax increases are seldom popular, but FHWA concluded that, in theory at least, there appears to be room to increase both State and Federal gasoline taxes. Applying the 1960 State tax rate of 19 percent to 1980 gasoline prices would result in a theoretical average State motor fuel tax of 23 cents per gallon, an increase of 14.7 cents over the estimated 1980 average tax of 8.3 cents per gallon. Each penny of tax currently yields an estimated $1 billion annually. On this basis, a theoretical increase of 14.7 cents in the average State tax rate would produce $14.7 billion more annually. Similar application of the 1960 Federal tax rate of 13 percent to 1980 gasoline prices would result in a theoretical Federal tax of 15.5 cents, or 11.5 cents more than the current tax. This theoretical increase in the Federal tax should produce $11.5 billion more annually. However, fuel consumption would decrease as a result of price increases caused by such Federal and State tax increases, thereby adversely affecting the tax revenue actually generated.

The report further stated that relying too much on fuel taxes, on the other hand, could severely alter the distribution of costs borne by each vehicle class. For example, other special taxes have been imposed on trucks because taxing them solely on their motor fuel use would not generate

sufficient funds to offset the highway wear they cause. As a result, each increase in fuel taxes without adjustments of the special taxes on heavier vehicles tends to shift proportionately more highway costs to other vehicles. To assure equity among user classes, major changes in the gasoline tax may require changes in other user taxes.

Transportation Research Board Study

This study attributes States' highway financing difficulties to the common State practice of designating or dedicating specific tax revenues for highways outside the normal appropriation process. It concludes that States can generate more revenues and that a combination of user and general revenues would be preferable to reliance on either method by itself. According to the study:

> "One of the strengths of current transportation financing--the dedication of highway funds--has contributed to the difficulties many states are facing. Dedication has tended to isolate highway financing from the mainstream of policy making, shielding it from the attention of legislative bodies and preventing revenue problems from receiving early deliberation and action."
>
> * * * * *
>
> "An in-depth review of both user financing and general taxation has turned up no hidden revenue fountain to rescue states from difficulties in providing for transportation needs. On the positive side, no flaws were revealed in current methods of financing of such nature and magnitude that appropriate revenue levels cannot be achieved. Revenue issues pertain mainly to the distribution of the burden. What appears to be needed is an institutional framework that will facilitate timely adjustments in the revenue structure."
>
> * * * * *
>
> "A combination of financing may be preferable to reliance completely on either general tax subsidy or total benefit financing. A judicious combination of the two methods might promote equity and minimize excess burden."

The study concludes that revenues could be increased substantially without exceeding previous taxing levels. It also concludes that if a basic highway financing problem exists it is convincing the public and legislators that increased highway expenditures are warranted.

CONCLUSIONS

Although motor fuel tax rates have been relatively stable for many years, the level of State activity to increase them and other sources of highway revenues has grown recently. Most of the activity is directed toward the motor fuel tax, but States also seem to recognize that a combination of various actions will likely be required to bolster lagging revenues.

Variable methods of taxing motor fuel have helped overcome some of the disadvantages of the flat cents-per-gallon tax, but States reviewed that adopted such changes are also seeking additional alternatives. Variable taxes in the manner enacted in Washington and New Mexico, for example, did not provide the revenues the States considered they needed. In fact, because of its structure, the Washington tax is no longer a variable but a straight, fixed cents-per-gallon tax. A number of other States have recently enacted variable fuel taxes, but it is too early to tell if these taxes will generate sufficient revenues to meet highway needs. Of the nine States reviewed, only Texas appears, for the present, to have succeeded in establishing a highway revenue source that is protected from inflation and declining growth in fuel consumption.

We believe the key to Texas' success is its method of linking revenues directly to inflation. This linkage seems to be more important than specific sources of revenues used. The amount transferred from Texas' general funds each year, however, will likely grow unless motor fuel and other taxes and fees are increased--or until other competing State needs prevent further increases in the amount of general funds used for the State's highway program.

We believe the trend of increasing State activity to generate additional highway revenues is likely to continue. Two recent studies by FHWA and the Transportation Research Board suggest that the States can do more to alleviate their financial difficulties. While both studies cite evidence that States can provide additional revenues through increased taxes, such an increase is a State decision.

Highways are only one of many competing demands on States. Whether States can resolve their highway financing difficulties depends largely on what the public will accept in the way of highways or increased taxes. Highway officials in most of the States we visited perceived a need for continued State actions to increase revenues.

Federal-aid funds are the second most important source of State highway financing. The primary source of Federal funds is the straight cents-per-gallon motor fuel tax, which has not been increased in more than 20 years. Similarly, other taxes that make up most of the remaining 30 percent of the total highway tax revenue have not been increased in 20 years. The congressionally mandated study of highway cost allocation among different types of vehicles should provide sufficient data to help the Congress decide who should pay what share of the cost. A proposal was made late in the last Congress to convert the fixed 4-cents-per-gallon tax to a 4-percent variable tax. This proposal might take care of future highway cost increases but might not be sufficient to handle the cost of rehabilitating the Nation's deteriorating highways, particularly the Interstates. The proposed 4-percent variable tax could be enacted, at least as a stop-gap measure, until a complete reassessment of the Federal-aid highway program and its financing can be made.

CHAPTER 5

PRESERVING EXISTING ROADS AND COMPLETING THE INTERSTATE SYSTEM--A FORMIDABLE CHALLENGE

At a time of rapidly rising highway costs and lagging revenue, the States and Federal Government are faced with the formidable task of preserving existing roads and completing the Interstate System. Cost estimates to preserve existing roads total in the billions of dollars, and delaying these investments will only exacerbate the roads' declining condition and increase future costs. Additional billions will be required to complete the Interstate System, but at current funding levels and the current rate of inflation, completion of the Interstate System to current standards might not be feasible.

PRESERVING EXISTING HIGHWAYS IS A LARGE TASK REQUIRING ADDITIONAL OUTLAYS

As discussed in chapter 2, the percentage of roads in fair condition has been increasing while the percentage in good condition has been decreasing. Because roads in fair condition deteriorate faster than those in good condition, the increasing proportion of pavement now only in fair condition foretells a need to increase funds for rehabilitation in the near future. The most serious deterioration has occurred on the Interstate System where the percentage of miles rated in poor condition has more than doubled between 1975 and 1978. There is no indication that this situation will improve under current financial conditions.

Federal aid is available to the States for highway preservation work. The 1978 Highway Act requires that at least 20 percent of the apportionments to each State for the Primary and Secondary Systems be used for resurfacing, restoring, and rehabilitating roads on these systems. Primary System money may also be used for preservation work on Interstate highways. The 1976 Federal-Aid Highway Act established a special program for Interstate rehabilitation; the funding for this program increased from $175 million in 1981 to $275 million in 1982.

The Federal-Aid Highway Act of 1970 authorized funds for the replacement of deficient bridges on the Federal-aid systems beginning in fiscal year 1972. The Surface Transportation Assistance Act of 1978 expanded the bridge replacement program to include major rehabilitation work and off-system bridges. At least 15 percent, but no more than 35 percent, of program funds must be spent on off-system bridges.

DOT's latest annual report states that the estimated cost to rehabilitate or replace well over 100,000 eligible deficient bridges is $33.2 billion--the program was authorized $1.1 billion in fiscal year 1980 and $1.3 billion for 1981. States also spend other Federal-aid highway funds on bridge work and fund some work entirely with non-Federal funds.

A 1977 DOT report estimated a minimum capital investment of $14 billion (in constant 1975 dollars) would be needed annually over the next 15 years to maintain the 1975 highway condition and performance level.

Annual capital outlays for highways by all levels of Government ranged from $13 billion to $17.5 billion between 1975 and 1979, adequate to meet only minimum projected needs for 1975 and 1976 and below minimum needs for 1977 through 1979 when converted to constant 1975 dollars. The following table shows that capital outlays fell as much as 39 percent short of meeting estimated minimum investment by 1979. It also indicates a trend of meeting fewer and fewer of the minimum needs.

Actual Investment

Year	Current dollars investment	1975 constant dollars	Percent of $14 billion minimum investment met in constant dollars
	(billions)		
1975	$14.4	$14.4	103
1976	13.9	14.2	101
1977	13.0	12.2	87
1978	14.8	10.4	74
1979	17.5	8.5	61

Preliminary information from a 1980 FHWA study of highway conditions emphasizes that sufficient investment is not being made. A preliminary FHWA analysis of this study data concludes that a 15-year capital investment resulting from a constant 1980 capital investment level would not be sufficient to maintain the overall 1978 system condition. It concluded further that unless the total national capital investment increases annually to compensate for inflation, severe deterioration in physical and operating conditions will occur by 1995.

In 1977 FHWA estimated the funding needs for the Interstate Systems. It reported backlogged Interstate rehabilitation needs totaling $2.6 billion and projected that States

would have required about $18.5 billion for the 20-year period through 1995, or about $950 million annually (in 1975 dollars) to keep up with necessary rehabilitation work after completing the backlogged work. In a 1980 follow-on study, FHWA updated Interstate rehabilitation needs. In a report on this study, FHWA estimated that backlogged rehabilitation needs now totaled $7 billion and that $20 billion would be needed over the 10-year period 1980-89 (in 1979 dollars). Not including the backlog, this would represent annual needs of about $1.4 billion. For comparison purposes, FHWA inflated the 1977 estimate to reflect 1979 dollars, resulting in a total of $31 billion. The report concluded that the estimates show that inflation has occurred since the 1976 estimate, but that a contributing factor to the increase has been the accelerated deterioration of the system. It also concluded that further funding delays or lack of sufficient funds could be expected to cause need for much more massive expenditures in the future to return the roadway to a reasonable and functional operating condition.

The consequences of deferring necessary investment in rehabilitation was emphasized by Mr. John Hassell, former FHWA Administrator, who in a December 1979 speech before the members of the National Asphalt Institute said:

> "We have too much invested in the present system and it is an extremely vital part of the transportation system of this country for us to not do something to preserve, maintain, and extend its serviceability. Under the present conditions the only way that can be done is by 3R [1/] types of work. Total reconstruction would require unrealistic amounts of resources because the rate of pavement condition deterioration is faster than the reconstruction program could even possibly keep up with in the foreseeable future."

Although they had no specific data, officials in several of the States we reviewed acknowledged that their deferral of needed routine maintenance and rehabilitation work would result in substantially increased future costs. Some indication of these costs was presented in a 1979 report by The Road Information Program entitled "Savings from Timely Resurfacing of Public Roads in Arizona." The report estimated that it would cost $214 million to resurface 4,767 miles of Arizona roads that were in fair condition. But if the resurfacing is not done before the

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1/Resurfacing, restoring, and rehabilitating.

mileage declines to poor condition, the roads will have to be rebuilt at a cost of $834.5 million.

Interstate preservation is mostly federally funded

While preserving existing roads is becoming an increasingly pressing need, FHWA indicates that Interstate preservation funding has been primarily limited to the funds available under the Federal Interstate 3R program. This program for resurfacing, restoring, and rehabilitation provides funds specifically for preservation work on the Interstate System. The program authorized $175 million annually for fiscal years 1978-81 and $275 million annually for fiscal years 1982 and 1983. The Federal Government pays 75 percent of eligible project costs.

FHWA has stated that Federal Interstate completion and Interstate 3R funds, including State matching funds, account for about 98 percent of all capital improvements on the Interstate System. According to FHWA, this means that States have chosen to use virtually none of their other Federal (such as Primary System) or State-only funds for Interstate 3R work.

FHWA noted further that while Federal-aid Primary funds and State-only funds could be used for Interstate preservation, these funds do not offer a feasible source of funding because (1) Federal-aid Primary funds must be distributed over some 271,000 miles of non-Interstate arterial roads and (2) State-funded programs must be distributed to Interstate segments and all other Federal-aid roads, as well as all State-funded roads.

Thus, there is no guarantee or indication that States will invest a larger share of their funds for Interstate rehabilitation in the future, at least without additional Federal assistance.

COSTS TO COMPLETE THE INTERSTATE SYSTEM CONTINUE TO INCREASE

Since its beginning more than 60 years ago, the Federal highway program has emphasized new construction, and since 1956 Interstate construction has received the highest priority, accounting for about 60 percent of the total program. Although 94 percent of this system is open to traffic, the cost to open the remaining sections and to upgrade older sections to current standards is estimated at about $54 billion, or about 40 percent of the estimated total cost of the system.

Completion involves more than simply building a major highway between two points. Only about 53 percent of the estimated completion cost is for building the 2,500 miles needed to close gaps in the system. The remainder is for eligible improvements defined as initial construction on segments already serving traffic. These improvements include several categories of upgrading and additional features to minimize social, economic, and environmental impacts such as noise-abatement measures, fringe parking areas and preferential lanes for buses and vanpools. The categories of upgrading are for States that (1) elected not to build to full standards initially so that they could spread their available dollars over more miles, (2) designated previously constructed freeways as Interstate routes even though they were built without Federal Interstate funds, and (3) need to upgrade safety features to current standards.

Cost estimates to complete the system, including the eligible improvements defined as initial construction, have been growing and will continue to do so. In 1955 the original estimate for building the entire 40,000-mile system was about $27 billion. The current designated system is 42,500 miles. By January 1978 the estimate to complete the system as explained above was $42.4 billion with the Federal share at $38.3 billion. By January 1980 the estimated Federal share to complete the Interstate System was $48.6 billion, a 27-percent increase in just 2 years.

If the $48.6 billion estimated Federal share is reasonable and if highway construction costs continue to increase at the average rate since 1970 (about 17 percent annually), an average annual investment of $10.4 billion would be needed to complete the system in 10 years. The current Interstate funding of about $3.5 billion annually will clearly not be enough to meet the Federal share of remaining costs. As the following table shows, even at a 5 percent inflation rate the annual needs would be $6.3 billion.

Assumed average annual inflation rate	Average annual investment needed to complete estimated $48.6 billion system by 1990
(percent)	(billions)
5	$ 6.3
10	7.9
15	9.7
20	11.6

Recent legislative action to speed completion

The Surface Transportation Assistance Act of 1978 included several provisions designed to speed completion of the Interstate System. A significant change was made in the availability of Interstate apportionments; they are now available only until the end of the fiscal year for which they are authorized. Since Interstate authorizations are apportioned 1 year in advance, this provision means that Interstate apportionments are now available to a State for 2 years before they are subject to lapse, as compared with the previous 4-year availability. If a State does allow funds to lapse, those funds will be made available to other States which have used up their own apportionments and are ready to begin additional Interstate projects.

Also, the 1978 act no longer allows a State to replace one Interstate route with a substitute Interstate route of increased mileage but no increase in cost. However, the lid on the costs of the substitute routes already approved was lifted and full funding of those routes will be permitted.

Withdrawal of certain urban Interstate routes and the transfer of Federal financial commitment to substitute public transportation or other highway projects in the same area under 23 U.S.C. 103(e)(4) is still allowed until September 30, 1983. After that date, no further transfer of Interstate credits can be made except for routes under litigation on the date of the act.

The act requires that environmental impact statements for all routes or route sections to be constructed on the Interstate System must be submitted to the Secretary of Transportation by September 30, 1983. Further, all Interstate routes or substitute projects must be either under contract for construction or under construction by September 30, 1986, if sufficient Federal funds are available. If these requirements are not met, those routes will be removed from the Interstate System, or approval for substitute projects will be withdrawn. Also under the law, States will be allowed to use abandoned Interstate rights-of-way on withdrawn routes for a wide variety of public purposes without the repayment of Federal funds already received.

Redefining Interstate completion would enhance the possibility of completion

The cost of completing the Interstate could be reduced by redefining completion to exclude some of the items

currently included in completion costs. As discussed previously, only about 53 percent of the latest cost estimate to complete the system is for opening new sections to traffic. The remaining costs are for improving existing facilities to meet current design and safety standards and to meet eligible social and environmental needs. Whether all these items should have the same national priority is debatable. Few would argue that essential gaps in the system should not be completed, but there is room to debate which gaps and which improvements are essential.

However, eliminating all or some of the improvements from eligibility for Interstate completion funding would create a problem of how these improvements would be funded. Because existing legislation and FHWA procedures make these improvements eligible and States have proceeded with the understanding that they would be funded, there is at least an implied commitment to fund them.

One option being considered by FHWA would make some work under the current program ineligible under a redefined Interstate completion program. This option would provide funding for all activities that become ineligible under the revised completion program, including upgrading to standards, improvements, and the former 3R program (resurfacing, restoring, and rehabilitation) which would be expanded to include reconstruction and become a 4R program. This option would allow States flexibility in establishing priorities among these areas. The extent of flexibility would of course depend on the amount of funding made available and on the prerogatives allowed the States.

Under the current Interstate 3R program, FHWA's philosophy has been that when resurfacing or other pavement restoration is to be accomplished with Federal aid, any safety or other design upgrading should be done concurrently. While this is a worthy objective, States have questioned why some segments have to be brought to full standards while other mileage continues to deteriorate because of fund shortages.

CONCLUSIONS

National studies have shown and State officials have confirmed that highway conditions are declining and capital outlays for rehabilitation have not been sufficient to correct the deterioration as it occurs. Unless capital outlays for rehabilitation are increased, highway conditions will decline more rapidly and repair costs will increase. There is also a continuing need to finance the

rehabilitation and replacement of many of the Nation's bridges.

The cost to complete the Interstate Highway System continues to increase, and at current investment and inflation rates the goal of completing the System may not be achieved. Much of the cost of completing the system is for upgrading existing sections to current standards. Redefining completion to eliminate these costs and fund only the Interstate gaps would facilitate completion but would raise problems as to how those improvements could be funded. Additional problems regarding the funding of preservation work will complicate any decisions on funding Interstate completion.

CHAPTER 6

FEDERAL HIGHWAY MAINTENANCE POLICY NEEDS STRENGTHENING

Federal legislation and FHWA maintenance policies need to be strengthened to help ensure that the Nation's highways are preserved. Current legislation requires States to perform routine maintenance on highways built with Federal aid and authorizes the Secretary of Transportation to sanction States that do not maintain them adequately. However, FHWA has misinterpreted its responsibilities for requiring timely preventive maintenance. It has interpreted the law as authorizing sanctions only when highways become unsafe or unserviceable rather than for failure to perform routine preventive maintenance on a continuous basis. Further, the authorized sanctions may be counterproductive in that they could cause restoration funds to be withheld from the State. In addition to maintenance, the States are also responsible for making capital improvements such as resurfacing, restoring, and rehabilitating work necessary to preserve existing highways. However, there is no specific sanction for failing to perform this work.

FEDERAL LEGISLATIVE REQUIREMENTS FOR HIGHWAY MAINTENANCE

States are responsible for maintaining highways built with Federal aid. This requirement set forth in 23 U.S.C. 116 provides that States must maintain or have maintained any highway project for which they had accepted Federal financial aid. The code defines a project as an undertaking to construct a particular portion of a highway or, if the context so implies, the particular portion of a highway so constructed. For clarification, FHWA has defined a project as any individual section of highway pavement or a bridge.

Section 116 also establishes penalties for noncompliance. It requires the Secretary of Transportation to notify the State if a project built with Federal aid is not being properly maintained. The State then has 90 days to complete any repairs needed to properly maintain the project. If not repaired within this time frame, the Secretary of Transportation must withhold approval of any further federally assisted highway projects in the entire State. Project approval may be resumed when the deficient highway project is properly maintained.

FHWA is responsible for ensuring that States comply with the maintenance requirements. FHWA division offices--

there is one in each State--are to perform annual maintenance inspections in each State to evaluate the adequacy of State maintenance efforts. They then report their findings to FHWA headquarters.

FHWA WOULD AUTHORIZE SANCTIONS ONLY WHEN ROADS ARE UNSAFE

FHWA has interpreted the maintenance requirement as authorizing sanctions only when the highway becomes unsafe or unserviceable rather than for failure to perform maintenance on a continuous basis.

In chapters 2 and 3 we discussed declining highway conditions, the increasing problem of deferred maintenance, and the increased highway costs this deferral may cause. We further noted in chapter 5 that FHWA estimates that about $20 billion will be needed solely for Interstate highways from 1980-89 to resurface, restore, and rehabilitate badly deteriorated sections. In view of these indications of increased deferred maintenance and rising capital needs, we asked DOT to explain its policy for implementing the legislative requirement that the States properly maintain their federally aided highway projects. We were specifically interested in what the States were required to do to maintain the projects and under what conditions the sanctions could be applied.

On April 9, 1980, the Assistant Secretary for Administration responded to several specific questions we had asked. From his response and subsequent discussions with FHWA officials, we ascertained DOT's policy regarding required State maintenance. Its policy is that States are responsible for routine highway maintenance but Federal financial sanctions cannot be applied until the road becomes unsafe or unserviceable. Thus, under this policy the States could not be required to do any preventive maintenance such as sealing cracks in pavement, cleaning ditches, or leveling shoulders until the road was in such poor condition that it was unsafe or unserviceable. DOT based its policy on the definition of maintenance as found in 23 U.S.C. 101(a), which states:

> "The term 'maintenance' means the preservation of the entire highway, including surface, shoulders, roadsides, structures, and such traffic-control devices as are necessary for its safe and efficient utilization."

Based on this definition, FHWA officials contended that they could not require any State action unless a federally funded project was found to be unsafe or unserviceable.

Even then FHWA's position was that it could not mandate what specific maintenance activity the State must perform. It believed the State retains the prerogative to do whatever it wishes as long as that action satisfies the performance requirement that the highway be safe and serviceable.

FHWA officials acknowledged that by the time a highway becomes unsafe or unserviceable and thus subject to Federal intervention via the sanction process, deterioration may be well advanced. They agreed that by then it probably would be too late to accomplish the more economical highway preservation strategies, making more intensive and costly improvements necessary. In some cases, extensive reconstruction of joints between pavement sections or total reconstruction may be the most appropriate improvement.

Thus far, FHWA has never asked the Secretary to withhold funds because a State's maintenance efforts were inadequate. Its division offices have, however, listed significant maintenance deficiencies that either already had or potentially could have led to earlier than normal rehabilitation or reconstruction needs.

FHWA division offices in Pennsylvania and New York have cited specific maintenance deficiencies in their annual maintenance reports. For example, FHWA's division office in Pennsylvania reported a lack of preventive maintenance on several sections of Interstate 80 during its fiscal year 1978 inspection and on Interstate 81 in the fiscal year 1979 inspection. Accompanied by Pennsylvania highway officials, we observed the condition of some of the State's highways. This observation confirmed the State's failure to perform elementary maintenance functions such as filling cracks between concrete pavement sections on Interstate 80. Similarly, the New York division office reported in its 1979 annual maintenance report that while the level of maintenance on Federal-aid highways and bridges in New York was satisfactory, it was decreasing at an alarming rate. The report noted that preventive maintenance was not being routinely conducted. It noted that cracks and joints often were not being sealed in pavements and that uncleaned deck drains, rust, and leaking joints were frequently found on bridges. The report concluded that preventive maintenance was not being done to the extent desirable to properly protect the investment in the highways and that continuation of this trend could very well lead to unsatisfactory conditions in the future.

In commenting on the use of the authorized sanctions, the Assistant Secretary said that while FHWA has taken initial steps in many cases to withhold funding of future

construction projects, all deficient or unsatisfactory cases were corrected before FHWA asked the Secretary of Transportation to withhold funds.

GAO interpretation of existing legislation

Ample legislative history exists to establish that the Congress intended that the executive branch provide for well-maintained highways. Section 2 of the 1921 Good Roads Act, 42 Stat. 212, required "the constant making of needed repairs to preserve a smooth surfaced highway." The underlying congressional intent was for States to keep roads built with Federal aid in good repair at all times during the year.

Section 101(a) of Title 23, relied on by DOT for determining its maintenance responsibilities, is a restatement of Section 2 of the 1921 Good Roads Act; and while the Federal highway legislation was totally revised in 1958, the House Committee on Public Works explicitly described the revision as an effort to make the law more useful and understandable, not to make substantive changes. FHWA was also well aware of the intent. The Administrator at that time recognized the changes as designed to organize existing laws more logically rather than to change the meaning of existing laws.

The 1921 act was initiated in response to President Harding's message to Congress in which he said:

> "I know of nothing more shocking than the millions of public funds wasted in improved highways, wasted because there is no policy of maintenance * * *. There is nothing the Congress can do more effectively to end this shocking waste than condition all Federal aid on provisions for maintenance. Highways, no matter how generous the outlay for construction, cannot be maintained without patrol and constant repair."

As the President urged, the Congress imposed a maintenance requirement on the States in section 14 of the 1921 act. The high standard of maintenance expected by the Congress is expressed not only by the section 2 definition but also by statements made during House debate. Representative John M. Robsion of Kentucky stated:

> "This bill provides that the State must keep these roads in good repair at all times throughout the year when once built with Federal aid.

It means that when we once get a good road we will always have a good road."

During debate, Representative John L. Cable of Ohio pointed out that:

"To use the taxpayers' money to construct a good road and then stand by while it is torn down is waste."

Representative Thomas W. Harrison of Virginia stated that maintenance requires the constant care of the roads so that they continually would be in good condition. He stated that:

"The cost of maintenance applied on the doctrine of 'a stitch in time saves nine' is a principle that ought to be firmly embodied in all new road construction. A little money expended on keeping the road in first-class condition will save thousands of dollars."

FHWA BELIEVES SANCTIONS ARE UNDULY RESTRICTIVE

Regarding imposing sanctions, the Assistant Secretary also stated that DOT did not believe withholding funds is the solution to the maintenance problem. He stated that the present language in section 116 does not provide the Secretary of Transportation with the latitude to penalize a deficient area within a State, especially in cases where the State is responsible for maintaining all Federal-aid projects. In his opinion, withholding approval of future projects of all types in the entire State is not practical and a statewide fund cutoff does not represent a viable sanction, since such cutoffs could involve massive disruption of planning and considerable economic waste. He added that DOT had sent to the Office of Management and Budget a draft of a bill providing for localized, rather than statewide, sanctions.

We agree that the current sanctions could be disruptive to the State's program and DOT's suggested revision would lessen the impact on the State. However, it does not address the fact that localizing the sanctions could still prevent approval of projects to preserve the roads. An alternative would be to exclude restoration projects from the sanction.

STATE RESPONSIBILITY FOR CAPITAL OUTLAY FOR RESTORATION

When major segments of a highway become severely deteriorated, as some sections of the Interstate System already

have, routine maintenance may no longer be an effective and economical way to preserve the highway. At this stage, highways need capital improvements such as resurfacing, restoration, or rehabilitation. While the States have the responsibility to perform this type of work, they cannot be required to make these improvements based on the legislative requirement that they properly maintain their Federal-aid roads.

This capital work was specifically excluded from coverage under 23 U.S.C. 116(c)--maintenance--by the Federal Highway Act of 1976, Public Law 94-280. Section 108 of that act defined "construction" to mean:

> "* * * the supervising, inspecting, actual building, and all expenses incidental to the construction or reconstruction of a highway, including * * * resurfacing, restoration, and rehabilitation * * *."

By this action the Congress specifically allowed States to use Federal-aid highway funds for rehabilitation; and importantly, this legislation established a distinction between (1) routine maintenance which is ineligible for Federal participation and (2) rehabilitation which specifically is eligible.

FHWA officials told us that States were responsible for performing and financing maintenance in whatever form necessary to preserve safe and serviceable highways. They advised us that although Federal funds are available for rehabilitation, the Federal aid is not sufficient to do all the necessary work. However, they said that this does not dismiss the States from their maintenance responsibilities because the States would have to generate their own funds from other sources to meet any additional capital improvement needs for preservation. They noted, however, that FHWA could not require the State to make such capital expenditures. If the State could return the road to a safe and serviceable condition through maintenance-type activities, this would meet its preservation responsibilities. However, this may not be the most economical long-term solution as this maintenance-type activity may be only a temporary solution and may have to be repeated.

CONCLUSIONS

FHWA has well-documented evidence that States' routine maintenance and rehabilitation backlogs are growing. These deferrals are costly from two perspectives: inflation increases the cost of the originally required work and as time

passes more intensive repairs are needed as the facility continues to deteriorate. But, FHWA does not believe it can require the States to perform preventive maintenance or penalize them for failing to do so until the roads become unsafe or unserviceable. FHWA, however, has misinterpreted its responsibilities for requiring timely preventive maintenance. The Congress intended that the roads be kept in good condition and that the States repair them before they become unsafe or unserviceable.

In addition, legislation allowing the imposition of sanctions for failure to adequately maintain highways should be strengthened. FHWA's reluctance to impose the current sanctions that would effectively stop a State from starting any new federally assisted highway project, including restoration projects, has some merit. Because States are now relying more on Federal funds for major restoration projects, prohibiting States from starting new restoration projects because they fail to provide adequate maintenance may be counterproductive. We believe restoration work should be eliminated from the current sanction.

Finally, viewed in the broadest context, highway maintenance means preserving existing highways for future use. Currently, FHWA can only assure that States perform routine maintenance work. The States are also responsible for capital outlays such as resurfacing, restoration, and rehabilitation. However, there is no specific sanction for failing to perform the necessary work as there is for failing to perform maintenance work.

RECOMMENDATIONS TO THE SECRETARY OF TRANSPORTATION

To help ensure that the Nation's highways are preserved, we recommend that the Secretary of Transportation (1) modify the basis for imposing maintenance sanctions to include the failure to perform routine preventive maintenance on a continual and timely basis and not solely when roads become unsafe or unserviceable and (2) submit a legislative proposal to exempt preservation-type projects from the sanctions.

AGENCY COMMENTS

DOT did not comment specifically on the above recommendations. However, it stated that FHWA recognized the importance of timely maintenance procedures and practices and had been working closely and continuously with State highway personnel to resolve problems as they occur and avoid

the use of sanctions except as a last resort. DOT noted further that FHWA recently promulgated and is now implementing Interstate maintenance guidelines to aid the States in their maintenance efforts. Furthermore, DOT said that a legislative proposal has been submitted to make the sanctions of 23 U.S.C. 116 more workable by limiting them to specific subunits of States where the problems occur. DOT also stated that it was aware of the widespread concern about the condition of the Nation's highways and is reassessing the Federal-aid highway program and considering legislative options for the future, including proposals related to preservation.

We agree with DOT that available sanctions should not be used unless other methods fail to elicit proper maintenance. However, we believe that it should be made clear that sanctions will be applied, if necessary, to ensure that preventive maintenance is accomplished. Further, as noted on page 53 of the report, we recognize that application of existing sanctions on a localized or "subunit basis," as proposed by DOT, would make them less disruptive to a State's highway program. However, such application could still be counterproductive if restoration funds were withheld.

CHAPTER 7

PROBLEMS AND ISSUES HIGHLIGHTED AND ELEMENTS TO BE ADDRESSED IN REASSESSING THE PROGRAM

The problems affecting the Federal-aid highway program are complex and interrelated. To maintain and protect the Nation's critical highway system, the Congress needs to make major decisions on how the Federal Government will respond to these problems. This chapter highlights material presented previously on the major problems and issues surrounding the future of the highway system and presents the elements we believe the Congress should address in reassessing the Federal-aid highway program.

DETERIORATION AND PRESERVATION

Generally the condition of our Nation's highways is declining. For all systems (Interstate, Primary, Urban, and Secondary), the percentage of pavement in good condition has declined. The corresponding change is that the highways in fair condition have been increasing to the extent that 50 percent or more of the mileage for each type of highway, except Interstate, was in fair condition in 1978. The mileage in poor condition has remained relatively stable for these same systems.

The Interstate System shows the most recent wear and tear in both rural and urban areas. In 1975, 74 percent of rural and 68 percent of urban Interstate mileage was in good condition. By 1978 these figures had dropped to 63 and 58 percent, respectively. Even more disturbing is that the percentage of mileage in the poor category and in need of capital improvements, such as resurfacing or reconstruction, has more than doubled. By 1978, 9 percent of rural Interstate and 8 percent of urban Interstate miles were in poor condition. In fact, FHWA has reported that States have chosen to use virtually none of their other Federal-aid monies (such as Primary System funds that can be used on the Interstate System) or State-only funds for Interstate resurfacing, restoration, and rehabilitation work.

In 1977 FHWA reported backlogged rehabilitation needs on the Interstate System totaling $2.6 billion and projected that States would have required about $1 billion annually (in constant 1975 dollars) through 1995 (after completing the backlog) to keep up with necessary preservation work. A more recent FHWA estimate in 1980 showed that the Interstate backlog had increased to about $7 billion and that annual needs had increased to $2 billion through 1989 in

constant 1979 dollars. Although part of this increase is due to inflation, it warns of the increasing rehabilitation needs of a deteriorating Interstate System.

The consequences of deferring the needed investment to rehabilitate the Nation's highways was emphasized by the former FHWA Administrator who stated that too much has been invested in the present highway system for us not to preserve, maintain, and extend its serviceability.

As highway deterioration increases, not only do rehabilitation costs increase but so do energy costs. DOT reported that fuel consumption increases by 34 percent for vehicles traveling at 40 miles per hour on badly broken, patched asphalt road as compared with traveling on high quality pavement.

Roads in fair condition deteriorate faster than those in good condition. Therefore, the increasing proportion of pavement now in fair condition and the increase in poor condition of the Interstate foretells a need for increased rehabilitation commitments in the near future. It means more money now and in the near future or tremendous amounts later to keep this vital transportation link in good condition. Such capital outlays are not being made.

RESPONSIBILITY FOR PRESERVATION

Under existing Federal legislation, the States are responsible for maintaining highways built with Federal financial assistance and may be penalized for their failure to do so by the withholding of Federal funds. Federal law requires States to perform routine maintenance on Federal-aid highways and authorizes the Secretary of Transportation to sanction States that do not maintain them adequately. However, FHWA has misinterpreted its responsibilities for requiring timely preventive maintenance. It has interpreted the law as authorizing sanctions only when highways become unsafe or unserviceable rather than for failure to perform routine preventive maintenance on a continuous basis. In chapter 6 we recommended that the Secretary modify the basis for imposing the sanctions to include failure to perform routine preventive maintenance.

In addition to maintenance, the States are also responsible for making the capital improvements necessary to resurface, restore, and rehabilitate the highways. But no legislative penalties exist for failing to do so. In the 1976 Highway Act, the Congress defined resurfacing, restoration, and rehabilitation as construction, thus making these activities eligible for Federal-aid program funds and drawing

a distinction between these preservation activities, which can be federally funded, and routine maintenance, which cannot. This definition meant that Primary and Secondary System construction funds could be used for these types of major preservation work. This act also authorized a new small program specifically providing funds for resurfacing, restoring, and rehabilitating highways on the Interstate System. Because the broad category of Primary highways includes the Interstate System, Primary funds could also be used for major preservation work on the Interstates. But as pointed out by FHWA, States have chosen to use virtually none of these funds on the Interstates. FHWA noted however that it may not be feasible to use these funds for Interstate preservation because they must be distributed over some 271,000 miles of non-Interstate arterial highways.

In addition to the above programs, a highway bridge replacement and rehabilitation program was established to fund work on the well over 100,000 deficient bridges both on and off the Federal-aid highway system. States do use other Federal-aid highway funds and their own funds for work on deficient bridges. The special program currently provides more than $1 billion annually, but the estimated need to fund the replacement or rehabilitation of the Nation's bridges is $33.2 billion. Obviously, bridges are a critical element in any highway system and there will be a continuing need to provide funds to correct this problem.

COMPLETING THE INTERSTATE SYSTEM

Since 1956 Interstate construction has received the highest priority in the Federal-aid highway program, accounting for about $70 billion, or about 60 percent, of the funding. Although 94 percent of this system is open to traffic, the cost to open the remaining sections and to upgrade older sections to current standards is estimated to cost the Federal Government about $49 billion. This cost is significant when compared with the $132 billion estimated total system cost.

Only 53 percent of the estimated completion cost is for building the 2,500 miles needed to close gaps in the system. The remainder of this cost is for improvements defined as initial construction on segments already serving traffic. These improvements include several categories of upgrading and additional features such as noise abatement measures and public transportation facilities, including fringe parking areas and preferential lanes for buses and vanpools.

If a $49 billion estimated Federal share is reasonable, and if highway construction costs continue to increase at the average rate of about 17 percent annually since 1970,

the current Interstate funding of about $3.5 billion annually will clearly not be sufficient to meet the remaining costs. An estimated average of $10.4 billion annually would be needed to complete the system in 10 years, assuming no additions and an annual inflation rate of 17 percent.

Considering the magnitude of the completion needs and the additional need of $2 billion annually for the restoration work, the goal of completion, as completion is now defined, may not be practical. Meeting the goal of Interstate completion might be attained by excluding some of the improvements and upgrading work from the definition. There is, however, an implied commitment on the part of the Federal Government to fund the upgrading and improvements.

INFLATION EATS UP HIGHWAY FUNDS

Highway financing is not keeping up with the rapidly rising costs of highway construction and maintenance. Using 1970 as a base year, highway financing increased about 60 percent by 1979, somewhat less than the Nation's general inflation rate of about 87 percent as represented by the Consumer Price Index. Not only did highway financing fail to keep pace with the Nation's inflation rate, but it lagged even further behind highway costs. Highway construction and maintenance costs increased 145 and 105 percent, respectively, an amount significantly in excess of the related highway financing increase of 60 percent. This situation is becoming progressively worse.

In constant dollars, total expenditures have declined, with capital outlays for construction at the State level falling dramatically and maintenance spending increasing slightly. Even so, some States are deferring maintenance, reducing highway personnel, and reducing construction projects that are totally State-financed. Some States also anticipate difficulty in matching available Federal funds, which compounds their highway financing problems.

States derive the revenues used for their highway programs from a variety of sources but rely primarily on State motor fuel taxes and Federal aid. In turn, Federal aid is also derived primarily from Federal motor fuel taxes. Most motor fuel taxes, including the Federal tax, are fixed at so many cents per gallon. Twenty years ago the average State gasoline tax was about 6 cents per gallon and about 19 percent of the retail price of gasoline. While the average tax has now risen to about 8 cents per gallon, the gasoline price has increased more rapidly so that the average State tax is down to about 7 percent of the retail gasoline price. In the past, revenue from the motor fuel

taxes increased as consumption increased and thereby kept pace with increasing highway costs. However, this is no longer true as inflation has outpaced motor fuel tax revenue. The change began with the 1973 fuel embargo and has become more pronounced in the last few years as fuel prices, highway costs, and the overall inflation rate have increased while fuel conumption has not kept pace. In fact, fuel consumption is currently declining, which means the highway revenue situation is getting even worse.

INCREASING REVENUES

In response to these rapidly rising costs and lagging revenues, States are trying to increase highway revenues by increasing motor fuel taxes and other taxes and fees. A number of States are looking at variable motor fuel taxes that automatically increase as prices increase rather than the fixed cents-per-gallon tax now used in most States and by the Federal Government. Some States are also using general tax revenues for highway purposes or raising registration, license, or other related fees. Moreover, some States are also seeking innovative ways to link highway revenues to rapidly rising costs. While these actions have helped, most of the highway agencies we talked with foresee the need for further steps to increase revenues.

Two recent studies by FHWA and the Transportation Research Board suggest that the States can do more to alleviate their financial difficulties. While both studies cite evidence that States can provide additional revenues through increased taxes, this is a State decision. Highways are only one of many competing demands on States. Whether States can resolve their highway financing difficulties depends largely on what the public will accept in the condition of highways and the extent of increased taxes.

At the Federal level, little action has occurred to increase highway trust fund revenues. In fact, the latest report on the status of the highway trust fund indicates that the rate of revenue increases has been slowing and that estimated revenues for 1980 and 1981 will be below those for 1979. The primary source of Federal-aid monies is the fixed 4-cents-per-gallon gasoline tax, which has not been increased in over 20 years. At that time it was 13 percent of the wholesale price of gasoline, but now it is about 3 percent and will drop again with the next surge in gasoline prices. Similarly, other taxes that make up the remaining 30 percent of the total highway taxes have not been increased in 20 years. However, a proposal was introduced in the last Congress to convert the fixed 4-cents-per-gallon tax to a 4-percent variable tax. This specific proposal will probably be taken up again in the 97th Congress.

The highway trust fund balance at the end of fiscal year 1979 was reported to be $12.6 billion, but there are differing opinions on whether there is actually a balance in the trust fund. It can be analyzed from two perspectives: the "pay as you go" concept or whether sufficient funds are available to meet outstanding commitments. The trust fund does not have a sufficient balance to meet outstanding commitments, including obligations not yet paid and apportionments not yet obligated or paid. Under the pay as you go concept imposed when the fund was established, the amount of the deficit is immaterial as long as sufficient funds are available to meet current State requests for reimbursement. At the present time, sufficient funds are available to meet these requests and will remain so for some time to come, particularly with the current trend of congressionally imposed ceilings on obligations.

CONCLUSIONS

Due to the cumulative effects of increasing needs for highway preservation, responsibility for maintaining and preserving highways, increased costs of Interstate completion, the inflationary trends in highway construction and maintenance, and lagging revenues, the Congress with assistance from DOT needs to reassess the Federal-aid highway program. It will be a matter for the Congress to decide the Federal-aid highway categorical programs that should be retained, modified, deleted, or added; the respective funding levels; the method used to acquire the necessary funds; the States' responsibilities; and matching ratios.

The United States simply cannot afford not to preserve its highway system, particularly the Interstate System. The greatest Federal investment--$70 billion--went into this national system of "super" highways that handle almost 20 percent of the Nation's traffic. This investment must be adequately protected but doesn't seem to have been as evidenced by the mileage in fair and poor condition. Accordingly, in reassessing the future Federal-aid highway program, priority should be given to preserving existing highways--especially the Interstate System. This preservation could be accomplished in several ways, including a significant increase in the Interstate resurfacing, restoration, and rehabilitation funding; an increase in funding for the Primary and Secondary Systems; and an increase in the percentage of Primary and Secondary funds that must be used for resurfacing, restoration, and rehabilitation. In addition, a continuing need exists to rehabilitate and replace many of the Nation's bridges.

The Congress should consider redefining Interstate completion to make it a more readily attainable goal. A range of possibilities exists, and one obvious possibility would be to give priority to opening existing essential gaps to traffic. Other gaps and upgrading and improvements could then be funded through a separate program. In addition, some of the standards and additional features could be evaluated to determine their need and whether revisions would be appropriate in view of current economic conditions.

In assessing the future highway program, the Congress should decide whether the current preservation policy should be modified. Under the current policy, States are responsible for resurfacing, restoration, and rehabilitation work on Federal-aid highways, but there is no specific sanction for failing to perform the necessary work as there is in 23 U.S.C. 116 for failing to perform maintenance work. Some such mechanism should be established to ensure that these responsibilities are carried out. Sanctions for failure to carry out these responsibilities should not apply to restoration funds but to other highway funds because such sanctions applied to restoration funds would be counterproductive. However, the sanctions should be strong enough incentives for the States to carry out their responsibilities.

The primary source of highway financing--the fixed cents-per-gallon motor fuel tax--is obsolete and should be changed to be more responsive to highway needs and the inflationary trends in highway costs. Some States have changed their motor fuel taxes to meet this objective. It would seem appropriate that the Federal Government should provide the leadership in establishing flexible financing methods and that highway revenues should continue to be used to fund the Federal highway program. In other words, users should pay for what they use. Also, in determining Federal financial levels, the efforts and capabilities of States to increase highway revenues and to preserve highways should be considered.

The Federal highway program, for at least the 1980's, should be a Federal/State sharing program aimed at keeping the highway system in good condition to fulfill the Nation's highway transportation needs.

RECOMMENDATION TO THE CONGRESS

We recommend that the Congress reassess the Federal-aid highway program, giving consideration to priority needs and funding levels. Specifically, the Congress should address:

--Giving priority to preserving existing highways with emphasis on the Interstate System.

--Determining whether the current preservation policy needs to be modified to ensure that the necessary resurfacing, restoration, and rehabilitation work on Federal-aid highways is carried out.

--Eliminating preservation funds from sanctions.

--Assessing the goal of Interstate completion as currently defined, possibly giving priority to funding essential gaps.

--Analyzing State efforts and capabilities to increase highway revenues and to preserve highways.

--Using highway revenues to fund the Federal-aid highway program.

--Revising the Federal motor fuel tax and other highway revenue sources to be more responsive to highway needs and the inflationary trends in highway costs.

AGENCY COMMENTS

DOT stated that our report was a reasonable and balanced presentation of a number of major Federal highway program issues and that our recommendations to the Congress raised significant questions that the administration and the Congress will consider as part of the 1981 legislative cycle. Also, DOT noted that our report underscored the following conclusions that FHWA had already reached:

--Highway needs are outstripping available resources.

--System preservation is a major problem.

--There is a need to revise the existing financing mechanism.

--There is a need to redefine Interstate completion.

--There may be a need to redefine the areas of Federal interest.

FEDERAL-AID HIGHWAY PROGRAMS

AUTHORIZED FOR FY 1980

Program	Source of funding: Trust fund (T) or General fund (G)
Interstate: construction	T
Interstate: 1/2 percent minimum	T
Interstate: 3R	T
Consolidated Primary	T
Rural Secondary	T
Urban System	T
Forest highway	T
Public lands	T
Forest development - roads and trails	G
Public lands development - roads and trails	G
Park roads and trails	G
Parkways	G
Indian reservations - roads and bridges	G
Economic growth center	T
Beautification Administration	G
Territorial programs - Virgin Islands, Guam, and American Samoa	G
Northern Mariana Islands	G
Northeast corridor demonstration	G
Great River Road - off system	G
Great River Road - on system	T
Control of outdoor advertising	G
Safer off-system roads	G
Access highways	G
Carpool/vanpool projects	T
Energy conservation grants	T
Railroad highway crossing demonstration	T, G
Bicycle program	T, G
Access control demonstration	T
Bypass highway	T
Integrated motorist information	T
Section 402 - FHWA	T
Section 403 - FHWA	T
Bridge reconstruction and replacement	T
Pavement marking	T
Elimination of hazards	T
Rail-highway crossings	T

FEDERAL HIGHWAY FINANCING AND THE HIGHWAY TRUST FUND

Federal involvement in building roads began in the early 1800's with construction of the Cumberland Road connecting Baltimore and Cumberland, Maryland, to Wheeling, West Virginia, and locations further west. Until 1916 Federal assistance for highway construction was rather sporadic. But since then the Federal highway program has been evolving steadily into a multifaceted program for highway development.

Federal-aid highway financing has been provided through a series of Federal-aid highway acts since 1916. The first act, the Federal-Aid Road Act of 1916, authorized $6 million for 1917: $5 million for Primary highways and $1 million for forest highways. Authorizations increased to about $1 billion for 1956. The next year saw a doubling of highway funding to more than $2 billion. The most recent major legislation, the Federal-Aid Highway Act of 1978, provided about $9 billion for fiscal year 1980.

Probably the best known feature of highway financing today is the Federal Highway Trust Fund. It was passed as the Highway Revenue Act of 1956--Title 2 of the Federal-Aid Highway Act of 1956--and marked the beginning of a dedicated funding source for highways. Previously, highway-user tax revenues had flowed directly into the general fund of the Treasury and were available for Government expenditures the same as other Federal revenue such as income tax revenue. Thus, no formal relationship existed between total revenues from highway-user taxes and the total funding for the highway program as authorized by the Congress. Instead, highway needs competed with other programs for available Federal funds. With the establishment of the trust fund, highway-user revenues continued to be credited to the general fund but for the most part were in turn credited to the trust fund, which serves as a holding device or depository for dedicated highway revenues.

The Federal highway program has several underlying principles relating directly to financing through the trust fund. They include the concepts that highway users should pay for highway costs and that the program should be entirely financed from current revenues.

The user concept includes more than the policy statement that highway users should provide sufficient tax revenues for necessary improvements. It also was intended that the various vehicle classes share the tax burden in amounts approximately proportional to attributable costs. Several

cost allocation studies have been done to determine the appropriate share for various vehicle classes. In its February 1978 report, "Highway Assistance Programs: A Historical Perspective," the Congressional Budget Office observed that both early and more recent reports reveal an imbalance among the user charges. The report pointed out that diesel-powered trucks and heavier trucks in general were underpaying their proportional share of highway costs. As an added factor, it referred to recent congressionally authorized increases in truck weight that could further add to cost burdens that might properly be allocated to trucks. The Surface Transportation Assistance Act of 1978 required a new cost allocation study to be done by DOT with a final report due no later than January 15, 1982.

The second concept requires a "pay as you build" approach. The requirement was incorporated into a provision popularly known as the Byrd amendment. It in effect expressly prohibited deficit financing by requiring the Secretary to decrease future program apportionments or allocations if financial projections showed that estimated State demands for cash reimbursement would exceed the balance available in the trust fund. This provision, adopted in 1956, was suspended temporarily in 1958 for 1959 and 1960 as an antirecession stimulant. The provision was reimposed in 1961.

The trust fund obtains its revenue from several sources, but the basic concept is that money is generated from the use of highway facilities. Since 1956, revenue from highway-user taxes has generally been exclusively used for highway purposes. One exception was revenue from the Federal excise tax on new cars and motor vehicle parts and accessories, which continued to flow into the general fund and hence was not available for highway improvements. These taxes were subsequently repealed. Another exception was the tax on lubricating oils which continued to flow into the general fund until January 1, 1966, when these revenues were then channeled into the trust fund. The following table, taken from FHWA's "Federal Highway Financing, FE-Summary--1977," September 1978, shows the sources of Federal highway revenue, tax rates, and changes since 1956.

FEDERAL HIGHWAY-RELATED EXCISE TAXES AND THE HIGHWAY TRUST FUND

TABLE FE-101(A)

Tax	Rate basis	Tax rate 1/								
		Before 7/1 1956	From 7/1 1956	From 10/1 1959	From 7/1 1961	From 1/1 1966	From 3/16 1966	From 8/16 1971	From 1/1 1978	From 10/1 1979 a/
DEDICATED TO HIGHWAY TRUST FUND:										
Motor fuel 2/ 3/	cents per gallon	2¢	3¢	4¢	4¢	4¢	4¢	4¢	4¢	1 1/2¢
Rubber:										
Tires 3/ 4/	cents per pound	5¢	8¢	8¢	10¢	10¢	10¢	10¢	10¢	5¢
Tubes 3/ 4/	cents per pound	9¢	9¢	9¢	10¢	10¢	10¢	10¢	10¢	9¢
Retread	cents per pound	none	3¢	3¢	5¢	5¢	5¢	5¢	5¢	none
New trucks, buses, and trailers 5/	percent of mfgr's sales price	8%	10%	10%	10%	10%	10%	10%	b/10%	5%
Federal use tax (Vehicles over 26,000 lbs. GVW) 6/	per 1,000 pounds per year	none	$1.50	$1.50	$3.00	$3.00	$3.00	$3.00	$3.00	none
Lubricating oil 7/	cents per gallon	(7/)	(7/)	(7/)	(7/)	6¢	6¢	6¢	6¢	6¢
Truck and bus parts and accessories 8/	percent of mfgr's sales price	(8/)	(8/)	(8/)	(8/)	8%	8%	8%	b/ 8%	5%
OTHER HIGHWAY-RELATED EXCISE TAXES:										
Lubricating oil 7/	cents per gallon	6¢	6¢	6¢	6¢	(7/)	(7/)	(7/)	(7/)	(7/)
New automobiles	percent of mfgr's sales price	10%	10%	10%	10%	6%	7%	(9/)	none	none
Motor-vehicle parts and accessories 8/	percent of mfgr's sales price	8%	8%	8%	8%	(8/)	(8/)	(8/)	(8/)	(8/)

1/ "Before 7/1/56" rates are those in effect just prior to passage of the 1956 legislation. "From 10/1/79" rates are those to which the taxes revert under existing law.

2/ Refunds of the tax for general nonhighway uses, farming and transit use of gasoline are made from the Trust Fund. Compressed natural gas (CNG) is not taxed when used as fuel in motor vehicles and motorboats.

3/ Effective 7/1/70 the revenue derived from motor fuel, tires and tubes used by aircraft is no longer included in the Trust Fund under the provisions of the Airport and Airway Revenue Act of 1970.

4/ The tax rate on tires other than for highway use has remained at 5¢ per pound. Original equipment tires and tubes are taxed for imported automobiles, effective 8/16/71, and for imported trucks and trailers of 10,000 pounds or less gross vehicle weight, effective 9/23/71.

5/ From 7/1/56 to 7/1/62 only half the tax on new trucks, buses, and trailers was dedicated to the Trust Fund. Beginning 11/1/51 house trailers are tax exempt. Beginning 6/22/65 the following are tax exempt: bodies for camper coaches and self-propelled mobile homes; bodies designed for seed, feed, and fertilizer; small 3-wheeled trucks; and school buses. Effective 9/23/71 new trucks and trailers having a gross vehicle weight of 10,000 pounds or less are tax exempt (PL 92-178 Section 401). Effective 12/11/71 local transit buses in urban use and trash container bodies for use on trucks are tax exempt. Refunds of the tax paid on light-duty trucks purchased after 9/23/71 are made from the Trust Fund.

6/ Annual use tax on vehicles over 26,000 pounds gross weight (vehicle plus load); levied on total weight, not just on excess over 26,000 pounds.

7/ Prior to 1/1/66, the lubricating oil tax went to the General Fund. Beginning 1/1/66, this tax (excluding cutting oil) was dedicated to the Trust Fund, and refunds can be claimed for nonhighway use.

8/ The 8% tax on motor-vehicle parts and accessories, in effect prior to 7/1/56, continued thereafter with revenue going to the General Fund. Effective 1/1/66, the tax on automobile parts and accessories was repealed; the tax on truck and bus parts and accessories remains in effect, with revenue dedicated to the Trust Fund.

9/ The tax rate on new automobiles was repealed, effective 8/16/71 (PL 92-178 Section 401).

GAO Note: Notes to this table are on page 69.

APPENDIX II

GAO NOTES TO SCHEDULE ON PAGE 68:

a/The date tax rates revert to the amounts shown in the last column has been extended to 10/1/84.

b/Public Law 95-618, November 9, 1978, repealed the 10-percent tax on buses and exempted bus parts and accessories from the 8-percent tax.

From 1957 through fiscal year 1979, trust fund revenues have totaled $108.6 billion: $103.9 billion from user taxes and $4.7 billion from interest income and reimbursements from the general fund. A summary of the revenues as of September 30, 1979, reported by the Department of the Treasury, follows.

Receipts

	Millions
Excise taxes:	
Gasoline	$ 73,066.9
Diesel and special motor fuels	5,451.7
Tires, tubes, and tread rubber	12,761.3
Trucks, buses, and trailers	10,088.4
Use of certain vehicles	3,083.9
Parts and accessories	1,618.8
Lubricating oils	1,322.0
Total taxes	a/107,393.1
Transfers to land and water conservation fund	434.4*
Refunds of tax receipts	3,041.0*
Net taxes	a/103,917.7
Interest on investments	4,658.8
Miscellaneous interest	4.8
Reimbursements from general fund	15.1
Total receipts	a/$108,596.4

* Deduction

a/Does not total because of rounding.

User revenue reported by the Department of the Treasury for fiscal years 1978 and 1979 is summarized below.

Type of tax	Fiscal year 1979 Net taxes (millions)	Fiscal year 1979 Percent of total	Fiscal year 1978 Net taxes (millions)	Fiscal year 1978 Percent of total	Increase or decrease (-) (millions)
Gasoline, diesel fuel, and special motor fuels	$4,834.3	67.2	$4,722.4	68.4	$112.0
Trucks, buses, and trailers (note a)	943.6	13.1	850.5	12.3	93.1
Tires	808.8	11.3	761.5	11.0	47.3
Use of certain vehicles	235.3	3.3	245.5	3.6	- 10.2
Lubricating oils	83.9	1.2	80.2	1.2	3.7
Parts and accessories	224.7	3.1	187.5	2.7	37.3
Inner tubes and tread rubber	58.2	.8	56.9	.8	1.3
Total	$7,188.8	100.0	b/$6,904.4	100.0	b/$284.4

a/The Energy Tax Act of 1978 (Public Law 95-618, approved Nov. 9, 1978) removed excise taxes on buses and bus parts purchased after April 20, 1977, and allowed credits or refunds for such taxes paid.

b/Does not total because of rounding.

How does user tax revenue get into the trust fund?

Most highway excise taxes are not paid directly by the users. Rather, producers pay the tax to the Internal Revenue Service and obtain reimbursement from purchasers. For example, gasoline taxes are paid by refiners when the gasoline is produced. Similarly, truck and tire manufacturers pay those excise taxes. The producer is reimbursed when the eventual user pays for these products. The highway excise taxes and any other taxes are merely added to the retail price and any other taxes to arrive at the actual sales price. Exceptions include diesel and special fuels on which taxes are paid initially by the retailer or the consumer and the Federal use tax, which is paid directly by owners of heavy vehicles.

These tax revenues are deposited in the general fund of the U.S. Treasury. Subsequently, accounting entries transfer the appropriate credit to a special account--the

Federal Highway Trust Fund. No actual transfer of cash occurs. It is like an individual who has two checking accounts in one bank transferring money from one to the other.

Authorizing funds for the States

State use of trust fund revenues is several legislative and administrative steps removed from receipt of funds by the U.S. Treasury. Federal highway legislation passed every 2 to 4 years prescribes amounts and conditions for fund use. Then the Secretary of Transportation, through FHWA, distributes spending authority to the States in accordance with the prescribed legislation. It is important to note that no distribution of cash occurs, only the authority to commit Federal funds for projects.

The legislative process for most highway programs financed from trust fund revenues differs from that of programs funded from general funds. The basic difference is the sequence of events. Under general fund financing for a cost-reimbursable program, activities occur in the following order:

--The Congress passes an authorization act prescribing funding limits and categories of use.

--The Congress passes an appropriation act allowing Federal obligations 1/ or expenditure of funds.

--Appropriated sums are distributed to States.

--Funds are obligated usually through specific approval by the Federal agency involved.

--States spend their own funds for the full cost of the approved project.

--The Federal Government reimburses the States for the Federal share.

In contrast, obligation of trust fund revenues does not require appropriations, but appropriations are needed before the States can be reimbursed for the Federal share of project costs. These projects must be approved by the Secretary of Transportation. The term applied to this process is "contract authority," which occurs in the following order:

1/An obligation is a Federal commitment to reimburse States for the Federal share of the eligible cost for a specific highway project.

--The Congress passes an authorization act prescribing funding limits and categories of use.

--Authorized funds are apportioned or allocated to States in accordance with legislation.

--Projects requested by the States are approved by the Secretary, who has delegated the authority to FHWA division (field) offices. Thus the funds are obligated without being appropriated.

--States spend their own funds for the full cost of the approved project.

--Each year the Secretary determines the amount needed to liquidate obligations--the amount the States will request for reimbursement. The Congress then passes an appropriation providing the necessary funds to be withdrawn from the trust fund.

--The Federal Government reimburses the States for the Federal share.

Contract authority is one of the basic elements of the Federal-aid highway program. This concept evolved from the Federal Highway Act of 1921 and the Post Office Appropriation Act of 1922 (42 Stat. 660). These acts gave the Secretary of Agriculture 1/ authority to approve projects and translated that approval, rather than waiting for a congressional appropriation, into a contractual obligation on the part of the Federal Government to reimburse the States for the Federal share of project costs. Specifically, the 1922 act provided:

> "That the Secretary of Agriculture shall act upon projects submitted to him . . . and his approval of any such project shall be deemed a contractual obligation of the Federal Government."

One of the advantages of contract authority over normal budget authority, which requires an appropriation before any commitment for Federal funding, is that contract authority, combined with multiyear congressional authorizations, assures program continuity.

1/At the time of this legislation in 1922, Federal activity regarding highways was administered by the Department of Agriculture.

After authorizing legislation has been passed, FHWA distributes (apportions or allocates) this spending authority to the States in accordance with either legislatively or administratively determined formulas. Prior to distributing this authority, FHWA deducts--within legislative limits--amounts required for Federal administration of the program and for urban transportation planning. A variety of factors governs how the authority is distributed and not all factors are used for all funding categories. Some of the factors used to determine how funds are distributed among the States include geographic area, population, mileage, and comparative needs.

How long do States have to use this authority?

Most program authority must be used within specific periods and the availability of spending authority differs according to the designated use. While all funds are to be apportioned to the States on October 1 of specific years, the appropriate year and duration of availability differ. For example, Interstate spending authority is to be apportioned on the first of October, 1 year in advance of the fiscal year for which the funds were authorized. The authority remains available for obligation until the end of the fiscal year for which funds were authorized, a total of 2 years. In contrast, non-Interstate spending authority is apportioned on October 1 of the Federal fiscal year for which it was authorized. Most non-Interstate authority remains available for that fiscal year plus 3 subsequent fiscal years, a total of 4 years.

Failure to use the authority within prescribed time limits causes individual States to lose the right to the funds. If States do not use their authority for non-Interstate projects within the designated time period, the funding authority lapses. For Interstate authority, the State that originally received the apportionment still loses the funding authority for that year, but this spending authority is accumulated in a discretionary fund. States that have used all their available Interstate funding authority and have eligible projects can apply for this authority. Thus, a major difference is that while non-Interstate authority lapses if not used by the original recipient (State), Interstate authority can be reassigned. If a State has lost some of its Interstate authority for a particular year, it does not mean that it will not receive those funds at a later date, principally because Interstate money is apportioned on the basis of the estimated cost to complete the system.

It should be fully recognized that the Federal payment for work envisioned by these obligations may take place long after the year for which the funds were actually authorized.

Project approval

States have wide latitude within the highway program. Because the Congress has declared it a federally assisted State program, States have almost total authority to select and build projects along with the responsibility to maintain them. Within program constraints established by the Congress, State highway agencies can determine what projects they wish to build and where they want to build them. They must, however, conform their projects to meet the currently acceptable standards established or adopted by FHWA. Once the Secretary of Transportation approves the project, the State may construct the project either under contract or with State personnel.

Federal share payable

The Federal share of project costs has been modified since the start of the program. Some programs are entirely federally funded but generally States have had to provide some matching funds to receive Federal highway program assistance. The Federal share, however, has been increasing. Through fiscal year 1973, States had to match non-Interstate program funds dollar for dollar; however, highway legislation increased the Federal share to 70 percent in 1974 and to 75 percent in 1979. A major exception is the bridge program, which provided 75-percent Federal funding initially for fiscal year 1972 and increased Federal funding to 80 percent in 1979. For Interstate completion projects, Federal participation is 90 percent of the project costs. The major exception to these matching ratios is that Federal participation can range as high as 95 percent depending on how much of a State's land is owned by the Federal Government.

The following table shows the fiscal characteristics of several categories of highway program financing authorized by the Surface Transportation Assistance Act of 1978. It indicates whether funding comes from general funds or highway trust fund revenues, the Federal share of project costs, whether Federal funds may be obligated in advance of appropriations (contract authority) or must be appropriated first (appropriated budget authority), and the number of years States have to use the funding authority.

APPENDIX II

Major program category	Trust fund or general fund	Federal share	Contract authority or appropriated budget authority	Availability of authorizations (years)
Interstate completion	T	90*	C	2
Interstate resurfacing	T	75*	C	4
Primary	T	75*	C	4
Secondary	T	75*	C	4
Urban	T	75*	C	4
Forest highways	T	100	C	4
Public lands highways	T	100	C	4
Economic growth center development highways	T	75*	C	4
Northeast corridor demonstration project	G	80-100	AB	b/
Great River Road:				
On-system	T	75*	C	4
Off-system	G	75	AB	a/
Control of outdoor advertising	G	75	AB	a/
Safer off-system roads	G	75*	AB	a/
Highway safety programs (23 U.S.C. 402)	T	75*	C	4
Bridge replacement and rehabilitation	T	80	C	4
Pavement marking	T	100	C	c/4
Hazard elimination	T	90	C	4
Rail-highway crossings	T	90	C	4

a/Authorizations are available for appropriations for multiple fiscal years. Once appropriated, the funds are available as specified in the Appropriation Act.

b/Authorizations are available for appropriation for 1 fiscal year only. Once appropriated, funds are available as specified in the Appropriation Act.

c/Pavement marking authorizations are available for 4 years; however, if not used by States in 2 years, they are withdrawn and reallocated to other States.

* Federal share may be increased in States containing large amounts of federally owned land.

Appropriations and cash disbursement

The Federal-aid highway program can be described as a reimbursable program. After States pay contractors, they request reimbursement from the U.S. Treasury through FHWA. As discussed previously under contract authority, congressional appropriations are not needed until these requests for cash are made. However, before the Department of the Treasury

reimburses States, the Congress must appropriate annually sufficient cash, principally from the trust fund, for estimated State reimbursement costs for that year.

The Congress has taken steps to obtain some control over highway programs' contract authority and, in turn, appropriations. Under the concept of contract authority described earlier, the Congress has little choice but to appropriate sufficient funds to meet reimbursement demands. Failure to provide sufficient funds could be construed as a broken commitment since States would be denied prompt reimbursement. However, since the mid-1970's, DOT appropriation acts have included restrictions on the amount that FHWA can obligate annually. For example, the 1979 appropriation act limited obligations to $7.95 billion, although the Surface Transportation Assistance Act of 1978 increased this to $8.5 billion. The 1980 obligational ceiling was set at $8.75 billion and later reduced to $7.8 billion. The Congress therefore indirectly placed some control over future appropriations although it is not possible to predict exactly at what rate States will request reimbursements.

These limitations, budget deferrals, and earlier impoundments by the executive branch (which were imposed from 1966-75) have resulted in an increasing balance in the trust fund. This balance occurred because user tax revenues have continued exceeding expenditures for several years. The expenditures have been reduced as a result of the lower obligation levels.

Opinions differ on whether there is actually a balance in the trust fund. Whether or not there is a balance depends on your viewpoint: from the perspective of the "pay as you go" concept or from the viewpoint of whether sufficient funds are available to meet outstanding commitments.

The trust fund does not have a sufficient balance to meet outstanding commitments. As of September 30, 1979, commitments (i.e., unpaid authorizations) totaled $19.8 billion. The balance in the trust fund was $12.6 billion, indicating a shortfall of $7.3 billion. The deficit at the end of fiscal year 1980 should be about $8 billion. If only unpaid obligations are considered, the shortfall is less than $1 billion. The status of the highway trust fund as reported by the Department of the Treasury in its annual report on the fund is as follows:

APPENDIX II

Status of Highway Trust Fund

Fiscal year	Receipts	Outlays	Balance in the fund	Liability for: Unpaid obligations	Liability for: Unpaid authorizations
	(millions)				
1957	$1,482	$ 966	$ 516	$ 2,421	$ 4,702
1958	2,044	1,511	1,049	3,855	6,769
1959	2,087	2,613	523	4,751	7,562
1960	2,536	2,940	119	4,421	7,300
1961	2,799	2,619	299	4,989	7,764
1962	2,956	2,784	471	5,239	8,309
1963	3,293	3,017	747	6,149	8,866
1964	3,539	3,645	641	6,669	8,978
1965	3,670	4,026	285	6,665	8,775
1966	3,924	3,965	244	6,748	8,856
1967	4,455	3,974	725	6,556	9,332
1968	4,428	4,171	982	6,617	10,011
1969	4,690	4,151	1,521	7,124	11,435
1970	5,469	4,378	2,612	7,535	12,710
1971	5,725	4,685	3,652	7,512	13,977
1972	5,528	4,690	4,490	7,918	15,357
1973	5,912	4,811	5,591	7,380	10,546
1974	6,675	4,599	7,667	8,106	18,057
1975	6,774	4,844	9,597	11,173	20,163
1976	6,000	6,520	9,077	9,361	18,481
Transition quarter	1,690	1,758	9,009	9,299	20,334
1977	7,302	6,147	10,164	10,362	17,489
1978	7,567	6,058	11,673	11,749	18,582
1979	8,046	7,155	12,564	13,556	19,823
Estimated:					
1980	8,134	9,034	11,664	12,488	19,818

Does this deficit pose a problem? Under the "pay as you go" concept imposed at the time the fund was established, the amount of the deficit is immaterial. The most important element is whether sufficient funds are available to meet current State requests for reimbursement, and if there will be sufficient funds in the trust fund at its expiration date to meet all of the commitments made against it by that time. To repeat, the work envisioned by these obligations may take place long after the year for which the funds were actually authorized. Comparing the fiscal year 1979 closing balance, $12.6 billion, with estimated fiscal year 1980 receipts and outlays--$8.0 billion and $9.0 billion, respectively--there does not appear to be a problem in the near future.

Expiration of the trust fund

The Highway Revenue Act of 1956 provided for expiration of the trust fund at the beginning of fiscal year 1973, supposedly to coincide with Interstate completion. Delays in that goal have now pushed the current expiration date to 1985 with little expectation that the Interstate will be completed in the near term.

Under current law, no highway user tax receipts would go to the trust fund unless received by the Treasury prior to October 1, 1984. The only exception would be receipts related to tax liabilities arising before that date. The balance would also be available for expenditures through September 30, 1984. Also, most of the Federal excise taxes available for highway improvements would automatically be reduced.

Expiration of the trust fund would mean major changes for highway programs. Under the trust fund, States have relatively high assurance of funding levels and program continuation through multiyear authorizations and contract authority. With lapse of the fund, States would not be able to plan their improvement strategies very far in advance since both annual funding levels and, in fact, program continuance would rely solely on annual appropriations. Also, Federal highway revenues would decline significantly, thereby necessitating greater deficit spending for the Federal Government to maintain current program levels.

APPENDIX III

MISSOURI
HIGHWAY AND TRANSPORTATION COMMISSION

December 24, 1980

GENERAL: Draft of Proposed Report
Deteriorating Highways and Lagging Revenues

Mr. Henry Eschwege, Director
Community & Economic Development Division
U.S. General Accounting Office
Room 6146
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Eschwege:

We appreciate the opportunity to review and comment on the draft of a proposed report which you have prepared entitled "Deteriorating Highways and Lagging Revenues: A Need For Reassessment Of The Federal Highway Program."

The proposed draft report is generally well prepared and we are substantially in agreement with the comments as they pertain to the state of Missouri. There is a correction that needs to be made, however, on Page 33. The last sentence in the second paragraph should be eliminated because no proposals were submitted to the legislature in July 1980 to increase registration and driver's license fees and to convert the current 7¢ per gallon motor fuel tax to a variable tax based on the sale price of motor fuel. Actually, the legislature was not in session at that time and there would have been no way to submit a proposal to the legislature. Actually, the Department did work with an Interim Committee of the legislature and furnished for consideration suggested additional revenue sources which might be utilized to provide additional funding. These were suggestions only and the final decision on a course of action would come from the legislature.

APPENDIX III

Mr. Eschwege
December 24, 1980
Page 2

At various locations in the report you have referred to the fact that the states have increased highway user fees through the years, however, the Federal tax on fuel particularly has remained the same for more than twenty years. In fact, certain excise taxes may have been reduced or eliminated during this period of time. Although the Federal highway user taxes have not been increased, you are probably aware of the fact that many impositions have occurred at the Federal level to increase the cost of highway improvements, such as right-of-way relocation assistance, noise attentuation and other environmental considerations, historical and archaeological reviews and delays, and others. Some of these are worthy endeavors and certainly have merit, but the funding for such features that are not exactly highway user related should come from a source other than highway user funds. Your draft report is generally silent regarding these added costs that have occurred over the years which in reality have reduced the available highway user funds for the operation, maintenance, and improvement of the highway system. Perhaps such information has a place in your report.

Hopefully, these few brief comments will be useful to you in perfecting your report before distribution.

Very truly yours,

Robert N. Hunter

Robert N. Hunter
Chief Engineer

APPENDIX IV

STATE OF WASHINGTON
Dixy Lee Ray
Governor

DEPARTMENT OF TRANSPORTATION
Highway Administration Building, Olympia, Washington 98504 206/753-6005

January 2, 1981

Mr. Henry Eschwege, Director
Community and Economic Development Division
U. S. General Accounting Office
Room 6146
441 G Street N.W.
Washington, D. C. 20548

Dear Mr. Eschwege:

Thank you for the opportunity to review your draft report "Deteriorating Highways and Lagging Revenues: A Need for Reassessment of the Federal Highway Program".

In general we found the draft to be well written and a comprehensive analysis of the highway revenue situation. We would, however, suggest two corrections in the material dealing with Washington.

1. On page 24, the statement that Washington has cut back on snow removal activities should be deleted. While we have cut back on mowing activities, our snow and ice control has remained intact.

2. On page 29, the fifth and sixth sentence of the Washington paragraph should be replaced with the following:

   After the State legislature determined how much it wished to spend on highways in a given biennium, the maximum permissible fuel tax revenue would be determined by subtracting nonfuel tax highway revenues from highway appropriations. If the existing tax rate would yield too much revenue, the tax would be adjusted downward at six month intervals to stay within the maximum permissible revenue. No provision was included, however, to cause a rise in the tax rate if revenues based on the percentage rate were insufficient to fully fund the highway programs.

We hope these comments will be of assistance to you and look forward to receiving the final version of your report.

Sincerely,

W. A. BULLEY
Secretary of Transportation

WAB:W239

APPENDIX V

STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION
AUSTIN, TEXAS 78701

January 12, 1981

IN REPLY REFER TO
FILE NO D-8D

Mr. Henry Eschwege, Director
Community & Economic Development Division
U.S. General Accounting Office
Room 6146
441 G Street, NW
Washington, D. C. 20548

Dear Mr. Eschwege:

We have reviewed the draft report on "Deteriorating Highways and Lagging Revenues: A Need for Reassessment of the Federal Highway Program" and commend you for the thorough job that has been done.

The following comments are made relative to the portions of the report that deal with conditions in Texas:

1. Page 10 states that highways in Texas are in a stable or improving condition. It is likely that this statement was developed after the implementation of a special $200,000,000 rehabilitation program which was provided by the Texas Legislature in 1977. This statement is no longer true, especially with regard to the Interstate System. The phenomenal growth of traffic, particularly heavy trucks, has far exceeded original design projections. Also, extremely cold and wet winters for the last three years have contributed to severe pavement damage in the northern part of the State. The extreme heat during the summer of 1980 may have contributed to rutting problems and other additional, unexpected distress.

2. The last Interstate Rehabilitation Estimate (3-R) showed that Texas needs approximately $100,000,000 each year to keep the Interstate System up to acceptable standards. We have been using Primary and State funds combined with the limited IR Funds on Interstate Rehabilitation projects but this has provided less than half the amount needed each year.

APPENDIX V

January 12, 1981

Mr. Henry Eschwege
Washington, D. C.

3. On page 25 a listing is given of the reductions in personnel by some of the States. Since 1974, Texas has reduced its personnel by over 20 percent in both maintenance and engineering.

We appreciate the opportunity to review and comment on this draft report. Please advise if any additional information is needed.

Sincerely yours,

M. G. Goode
Engineer-Director

APPENDIX VI

Maryland Department of Transportation
The Secretary's Office

Harry Hughes
Governor

James J. O'Donnell
Secretary

January 23, 1981

Mr. Henry Eschwege, Director
Community & Economic Development Division
U.S. General Accounting Office
Room 6146
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Eschwege:

Thank you for the opportunity to review and comment on your draft report entitled "Deteriorating Highways and Lagging Revenues: A Need for Reassessment of the Federal Highway Program".

We find that the portions of the report that we received represent a thorough review of the situation we all are faced with today.

The highway expenditures for the State of Maryland on page 23 do not agree with our budgeted expenditures for construction and maintenance for fiscal years 1975 and 1978. Budgeted expenditures for fiscal 1975 for construction were $156.3 million and for maintenance $31.0 million. In fiscal 1978, expenditures for construction were $101.8 million and for maintenance $39.7 million. The construction expenditures cited above represent the total construction program less reimbursable amounts while the maintenance amounts represent total maintenance program expenditures less capital items. If these were included in the above figures, the total would be much greater than those reported in your draft report.

Reference to the State of Maryland in the last paragraph on page 44 is requested to be deleted, While we would welcome additional Federal-aid for Interstate rehabilitation, the example cited does not reflect the position of this Department.

Sincerely,

James J. O'Donnell
Secretary

JJO'D:mb

cc: M.S. Caltrider, SHA
Walter R. Richardson, OFPB
Clyde E. Pyers, OTP

APPENDIX VII

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
HARRISBURG, PENNSYLVANIA 17120

OFFICE OF
SECRETARY OF TRANSPORTATION

January 28, 1981

Mr. Henry Eschwege, Director
Community and Economic Development Division
U.S. General Accounting Office
Room 6146
441 G. Street, N.W.
Washington, D.C. 20548

Dear Mr. Eschwege:

This is in response to your request of December 17, 1980, to review and comment on your draft report entitled "Deteriorating Highways and Lagging Revenues: A Need for Reassessment of the Federal Highway Program."

I thought the draft report presented an excellent assessment of the conditions now being faced by the states as they attempt to meet their respective highway system requirements. You will find attached my comments on those portions of the report that address Pennsylvania matters.

I hope our previous input has been useful and that these comments will aid you in preparing your final report. I look forward to receiving a copy.

Sincerely,

Thomas D. Larson, P. E.
Secretary of Transportation

Attachment

APPENDIX VII

United States General Accounting Office

Draft Report Entitled

"Deteriorating Highways and Lagging Revenues: A Need For Reassessment of the Federal Highway Program"

COMMENTS ON PENNSYLVANIA INFORMATION

Report Page Number	Comment
Page 12	The discussion on Pennsylvania's Interstate Highway System is accurate.
Page 24	The statement on Pennsylvania's maintenance backlog should be revised as follows. "Pennsylvania officials estimated their maintenance backlog in April 1976 was $858 million. As of January 1981, this backlog had increased to $4 billion due to insufficient revenues, inflation, and modifications to design and construction standards to ensure permanent improvement."
Page 25	The statement on the reduction in Pennsylvania's maintenance staff should be revised as follows: "Pennsylvania reduced its maintenance staff by 7 percent from 1976 to 1978."
Page 25	The statement regarding State-financed projects should be revised as follows: "...while Pennsylvania has discontinued 100 percent state financing of major highway construction."
Page 25	The statement on Pennsylvania's inability to match Federal-aid should be revised as follows: "Of the States reviewed, only Pennsylvania had failed to match Federal funds allowing $415 million in Federal-aid Interstate and Appalachian Development Highway funds to go unused in 1978 and 1979. These funds were reallocated to other states."
Page 29	The table shown on page 29 accurately reflects action taken on Pennsylvania legislation to increase state motor fuel taxes.
Page 32	The table on page 32 should be revised to show that Pennsylvania legislation was adopted in 1980 that increased registration, licensing, and other fees. This will cause a corresponding revision to the paragraph on page 34 under "Increasing vehicle registration, licenses, and other related fees."

APPENDIX VIII

U.S. Department of Transportation
Office of the Secretary of Transportation

Assistant Secretary for Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

JAN 29 1981

Mr. Henry Eschwege
Director, Community and Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Eschwege:

We have enclosed two copies of the Department of Transportation's (DOT) reply to the General Accounting Office (GAO) draft report, "Deteriorating Highways and Lagging Revenues: A Need for Reassessment of the Federal Highway Program," dated December 17, 1980.

This report is a reasonable and balanced presentation of a number of major Federal Highway Program issues. The recommendations to Congress on page 64 of the report raise significant questions which the Administration and the Congress will be considering as part of the 1981 legislative cycle.

If we can further assist you, please let us know.

Sincerely,

Robert L. Pairman
Acting

Enclosures

Department of Transportation Reply

To

GAO Draft Report of December 17, 1980

On

Deteriorating Highways and Lagging Revenues

A Need for Reassessment of the Federal Highway Program

Summary of GAO Findings and Recommendations

This report addresses the increasing difficulties of preserving and restoring Federal-aid highways in the face of accelerating deterioration and the mounting cost of construction and maintenance. The report recommends a Congressional reassessment of Federal Highway programs, including consideration of priority funding for existing roads, redefinition of Interstate completion, and revision of the Federal motor fuel tax basis so that it would be more responsive to inflation. The report focuses especially on the problems of maintaining the Interstate Highway System.

Summary of the Department of Transportation Position

This report is a reasonable and balanced presentation of a number of major Federal Highway program issues. The recommendations to Congress on page 64 of the report raise significant questions which the Administration and the Congress will be considering as part of the 1981 legislative cycle. Particularly, we note that the report underscores the following conclusions that FHWA has already reached:

--Highway needs are outstripping available resources

--System preservation is a major problem

--There is a need to revise the existing financing mechanism

--There is a need to redefine Interstate completion

--There may be a need to redefine the areas of Federal interest

APPENDIX VIII

page two

The Department agrees that if timely action is not taken to resolve some of these issues, that deterioration of the Interstate and other Federal aid systems may continue or accelerate.

We noted with particular interest the GAO finding in Chapter Six (page 49) of the report that FHWA maintenance policies need to be strengthened to help insure that our Nation's highways are preserved.

FHWA recognizes the importance of timely maintenance procedures and practices. Highway users should be provided with uninterrupted, safe and well-kept roads. To this end the agency works closely and continuously through its field offices with counterpart State highway personnel to resolve problems as they occur and avoid the use of sanctions except as a last resort. The agency recently promulgated and is now implementing Interstate Maintenance Guidelines to aid the States in their maintenance efforts. Furthermore, a legislative proposal has been submitted to make the sanctions of 23 USC 116 more workable by limiting them to specific subunits of States where the problems occur.

The Department is aware of the widespread concern about the condition of the Nation's highways, and is currently conducting a reassessment of the Federal Highway Program and consideration of legislative options for the future. This review includes proposals related to preservation, including significant expansion of Federal funding for resurfacing, rehabilitation, restoration and reconstruction projects.

We share the GAO's concern for taking swift action to protect our substantial capital investment in Federal-aid highways and appreciate the opportunity to comment on its findings and recommendations.

(342732)

* U.S. GOVERNMENT PRINTING OFFICE : 1981 - 341-843/571

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