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REPORT TO THE CONGRESS

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BY THE COMPTROLLER GENERAL
OF THE UNITED STATES

Costs And Problems Of Completing The Interstate Highway System

Federal Highway Administration

Department of Transportation

This report updates the Department's latest Interstate System cost estimate for 1974 price increases and estimates the total cost to be about \$100 billion, of which \$39 billion is to complete the System.

GAO suggested to the Congress that it ask the Department to analyze Interstate System needs and costs in the light of current prices and traffic forecasts and to report the results. Such an analysis would help the Congress in choosing among alternatives on the scope of the system, priorities by type of work to be finished, and levels of financing.

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SEPT. 4, 1975



COMPTROLLER GENERAL OF THE UNITED STATES

WASHINGTON, D.C. 20548

B-164497(3)

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

This is our report on the costs incurred, the estimated costs to complete, and some of the principal problems delaying construction of the National System of Interstate and Defense Highways. We made this review to provide the Congress with current information on the status of the Interstate System for its use in considering the major highway bills introduced in this session.

We made our review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of Transportation; interested congressional committees; Members of the Congress; and other interested parties.

James A. Stacks

Comptroller General
of the United States

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ABBREVIATION

OMB Office of Management and Budget

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

COSTS AND PROBLEMS OF
COMPLETING THE INTERSTATE
HIGHWAY SYSTEM
Federal Highway Administration
Department of Transportation

D I G E S T

1 The Federal Highway Administration's latest estimate of the National System of Interstate Highway's cost, as of January 1, 1974, was about \$89.2 billion, an increase of 137 percent over the original cost estimate of 1958.

GAO updated these estimates for construction price increases in 1974 and estimates total cost to be about \$100 billion; \$39 billion is to complete the system. (See p. 7.)

The basic legislation for the Interstate System was adopted during World War II. The planners could not have anticipated some of the major implications of the Interstate System nor did they foresee the energy problems we have been experiencing recently and will continue to experience for the foreseeable future.

In these circumstances, the scope and costs of work required to complete the System should be evaluated in the light of the Nation's energy conservation requirements and our national need to reduce fuel consumption, improve mass transit facilities, and encourage car pooling. In doing this, it would be helpful to evaluate unfinished work by category, such as significant gaps in the System for Interstate travel, safety-related work, and controversial urban sections. (See p. 27.)

2 GAO suggests that the Congress ask Transportation to analyze Interstate System needs and costs in the light of current prices and traffic forecasts and to report the results to legislative committees as soon as possible. (See p. 33.)

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Such an analysis would help the Congress choose among alternatives on the scope of the system, priorities by type of work to be finished, and levels of financing.

GAO also suggests that the Congress consider some alternatives to the change in the apportionment date proposed by the President, which would delay by 9 months the next availability of new Interstate funds to the States. (See p. 34.)

Barring further inflation or changes in the scope of work, the Interstate System could be completed in about 10 years at the present level of financing. GAO estimates that a moderate rate of inflation (5 percent) would add between \$11 billion and \$14 billion to the cost of completing the system and delay completion by 2 to 5 years. (See p. 8.)

Costs of unfinished segments of the Interstate System will be about four times as much per mile as costs of older segments.

Construction progress measured in miles opened to traffic slowed considerably after 1970.

Principal reasons for this are

- highway design changes to improve safety and increase traffic capacity,
- statutory sociological and environmental requirements,
- rising costs unmatched by increased funding, and
- more complex projects and public opposition as the system moved into metropolitan areas. (See p. 12.)

On July 7, 1975, the President sent to the Congress a proposed bill to reorganize the Federal highway programs, limit Highway Trust Fund financing solely to the Interstate System, change the annual date for apportioning Federal highway funds to the States, and make other changes in Federal highway assistance. (See p. 28.)

In GAO's opinion, the order of priorities proposed by the President for completing the Interstate System has merit. GAO believes, however, that required safety improvements on older segments should also be set out for consideration by the Congress. The Congress would need current information on the various types of work needed to complete the System.

CHAPTER 1

INTRODUCTION

The National System of Interstate and Defense Highways was established by the Federal-Aid Highway Act of 1944 (58 Stat. 838). The act authorized 40,000 miles to connect the Nation's principal metropolitan areas, cities, and industrial centers; to provide highways at suitable border points to connect with Canada and Mexico; and to serve the Nation's defense needs. With subsequent additions and rising construction prices, the Interstate System has become the most costly single construction program, civilian or military, undertaken by the Federal Government.

Before 1956 the Congress authorized \$400 million for the Interstate System, but little highway construction had taken place. The Federal-Aid Highway Act of 1956 (70 Stat. 374) authorized \$24.8 billion over a 13-year period for construction of the Interstate System to be financed on a Federal-State cost-sharing ratio of 90 to 10 and increased the authorized mileage by 1,000 miles to 41,000 miles. The Congress said prompt and early completion of the Interstate System was essential to the national interest.

Title II of the act, entitled "Highway Revenue Act of 1956," established the Highway Trust Fund to finance the expanded Federal-aid highway program. The revenue act increased some existing motor vehicle user taxes, established new ones, and provided that the revenues from these taxes be credited to the Trust Fund. The Federal-Aid Highway Act of 1968 (82 Stat. 815) increased the authorized mileage of the Interstate System by 1,500 to the current 42,500 miles.

The Federal-Aid Highway Act of 1973 (87 Stat. 250) established an annual Interstate program level of \$2.6 billion for fiscal year 1974, \$3 billion for each of fiscal years 1975 and 1976, and \$3.25 billion for each of fiscal years 1977, 1978, and 1979. These sums have been subject to a general obligational limit imposed annually by the Office of Management and Budget (OMB) over all highway programs financed from the Trust Fund.

As of June 30, 1975, 36,905 miles (about 87 percent) of the Interstate System had been opened to traffic, as shown below.

| | | <u>Miles</u> | <u>Percent</u> |
|---|--------------|---------------|----------------|
| Open to traffic: | | | |
| Complete or essentially complete | | 10,948 | |
| Minor improvement needed | 21,638 | | |
| Minor improvement underway | <u>2,047</u> | 23,685 | |
| Major improvement needed | 1,688 | | |
| Major improvement underway | <u>584</u> | <u>2,272</u> | |
| Total | | <u>36,905</u> | <u>86.8</u> |
| Under basic construction | | 2,528 | 6.0 |
| Location approved, construction not started | | 2,392 | 5.6 |
| Public hearings held, approval pending | | 347 | 0.8 |
| No location action taken | | 328 | 0.8 |
| Total | | <u>42,500</u> | <u>100.0</u> |

At the end of 1973 the Interstate mileage opened to traffic represented less than 1 percent of the total road and street mileage in the United States; but the system carried one-sixth of the total vehicle miles of travel in the country that year. At the same time, the rates of traffic fatalities and injuries per vehicle miles traveled on the Interstate System were about one-half or less than similar rates on all other roads and streets combined.

Some \$61 billion, including amounts for administration, planning, and research, had been invested in the Federal-Aid Interstate program as of June 30, 1975. Work completed cost \$43.7 billion, including \$36.9 billion for construction and \$6.8 billion for engineering and right-of-way acquisition. As of June 30, 1975, work estimated to cost \$15.6 billion was underway or authorized, including \$10.8 billion for construction; and \$4.8 billion for engineering and right-of-way acquisition. The status of funds authorized for the Interstate System is shown as appendix I.

The Highway Administration estimates that as of January 1, 1974, without considering the impact of future inflation or funding levels, about \$34.7 billion (38.8 percent of the total estimated cost of \$89.2 billion) remained to be obligated by State and Federal Governments. The estimated time required to finance completion of the system is dependent on the size of future authorizations and rates of inflation. Current estimates of completion dates range from 1983 to beyond the year 2000.

EXPLANATION OF TERMS

The financial operations of the Federal highway programs under the Highway Trust Fund are somewhat different from those of most other Federal programs, so that an explanation of some terms used in this report may be helpful.

The provision of Title 23, United States Code, coupled with the periodic authorization acts provide budget authority directly to the Secretary of Transportation and thus a separate appropriation act is not necessary to obligate funds. The sums authorized in these acts (the budget authority or contract authority) are available for obligation immediately after they are apportioned or allocated among the States. Two important terms are:

--Apportionments A system specified in Title 23, United States Code, for dividing among the States the sums authorized under most of the Federal-aid highway programs. The highway act directs the Secretary of Transportation to apportion such authorizations not later than 6 months before the beginning of the fiscal year to which they apply and makes the authorizations available for a period ending with the close of the second fiscal year following the year to which they apply. Thus apportioned contract authority is available for at least 3-1/2 years before lapsing. For the Interstate program only, contract authority which lapses in a State is reapportioned among the other States.

The act prescribes an apportionment formula for each of the major Federal-aid programs (Interstate, primary, secondary, urban, and urban extension) and for certain highway safety programs and other specialized highway programs.

The legislative apportionment described above is to be distinguished from the administrative apportionments made to Federal agencies by OMB involving obligational limitations.

--Allocations A system for dividing among the States the sums authorized for Federal-aid highway programs not subject to the apportionment method. The Secretary of Transportation is authorized to allocate contract authority on a project-by-project basis, according to relative needs, or on several other bases, depending on the type of program.

SCOPE OF REVIEW

We reviewed the status of the Interstate System, completed and uncompleted, to analyze costs and some of the principal problems that increased costs and delayed completion of the system. The Federal Highway Administration's 1975 estimate of the cost of the system (made as of January 1, 1974) was used for the particular elements that increased the estimated costs in prior years. Other Administration data was used to analyze work remaining at June 30, 1975, and to estimate the effect of inflation during 1974 on the estimated cost to complete the system.

Our work was performed at the headquarters offices of the Federal Highway Administration and at the highway departments of 10 selected States: California, Florida, Maryland, Missouri, Montana, Pennsylvania, Ohio, Tennessee, Texas, and Virginia.

Views of State officials were obtained regarding delays caused by obligational limitations on Interstate fund authorizations imposed by the Office of Management and Budget, difficulties of States in providing matching funds, environmental and social requirements, State priorities for other highway systems, and other factors.

CHAPTER 2

INCREASED COSTS DELAYED COMPLETION

The Federal Highway Administration's estimate of the cost of the Interstate System has increased by about \$51.6 billion, or 137 percent, between its 1958 estimate of \$37.6 billion and its 1975 estimate of \$89.2 billion. From fiscal year 1963 to fiscal year 1974, the annual level of Interstate obligations has been relatively stable. The Federal share obligated varied from a peak of about \$3.4 billion in fiscal year 1969 to a low of \$2.6 billion in 1973. The increased costs of the system, therefore, have extended the completion period considerably beyond the original congressional goal of 13 years.

Construction price increases incurred after the Highway Administration prepared its latest estimate would raise that estimate to about \$99.8 billion, of which about \$38.9 billion is for work to complete the Interstate System.

For apportioning Interstate funds among the States, 23 U.S.C. 104(b)(5) requires the Secretary of Transportation to prepare, in cooperation with State highway departments, periodic estimates of the cost of completing the Interstate System. The following table shows the highlights of the estimates submitted by the Secretary to the Congress from 1958 to 1975.

| <u>Year submitted</u> | <u>Miles included</u> | <u>Miles open to traffic</u> | <u>Estimated cost to complete</u> | <u>Estimated total cost (note a) (billions)</u> | <u>Cumulative increases over 1958</u> |
|-----------------------|-----------------------|------------------------------|-----------------------------------|---|---------------------------------------|
| 1958 | 38,548 | 2,181 | \$37.6 | \$37.6 | |
| 1961 | 41,000 | 8,642 | 31.5 | 41.0 | \$ 3.4 |
| 1965 | 41,000 | 16,555 | 26.7 | 46.8 | 9.2 |
| 1968 | 41,000 | 23,476 | 26.5 | 56.5 | 18.9 |
| 1970 | 42,500 | 28,954 | 29.2 | 69.9 | 22.3 |
| 1972 | 42,500 | 31,543 | 30.9 | 76.3 | 38.7 |
| 1975 | 42,500 | 35,460 | b/32.3 | 89.2 | 51.6 |

a/Does not include \$0.145 billion obligated before July 1, 1956.

b/Excluding estimated costs of contingencies, administration, planning, and research, amounting to about \$2.4 billion.

CAUSES OF COST INCREASES

The Federal Highway Administration attributes most of the \$51.6 billion cost increase to right-of-way and construction price increases, additional mileage, and the cost of design and safety changes that were made necessary by increased traffic and upgraded standards. The following table shows the Administration's estimates for major elements of the cost increases from 1958 to the 1975 estimate.

| | <u>Estimated increases between</u> | | <u>Total</u> |
|---|------------------------------------|--------------------------|-----------------|
| | <u>1958-72 estimates</u> | <u>1972-75 estimates</u> | <u>1958-75</u> |
| | (000,000 omitted) | | |
| Construction price increases | \$ 9,230 | \$ 5,870 | \$15,100 |
| Right-of-way and relocation increases | 2,743 | 1,060 | 3,803 |
| Mileage increase and system adjustments | 8,515 | 30 | 8,545 |
| Upgrade roadway and structure designs | 5,970 | 2,355 | 8,325 |
| Social, economic, and environmental requirements | 2,562 | 1,110 | 3,672 |
| Traffic forecast changes, four-lane minimum and added lanes | 1,834 | 515 | 2,349 |
| Additional safety requirements | 1,865 | - | 1,865 |
| Added interchanges and separations | 1,704 | 160 | 1,864 |
| Preliminary engineering increases | 1,021 | 515 | 1,536 |
| Project overruns | - | 257 | 257 |
| Mass transit fringe parking | <u>125</u> | <u>-</u> | <u>125</u> |
| Total increases | <u>\$35,569</u> | <u>\$11,872</u> | \$47,441 |
| Administrative, planning and research | | | <u>4,189</u> |
| Total | | | 51,630 |
| 1958 estimated total cost | | | <u>37,570</u> |
| 1975 estimated total cost (as of 1-1-74) | | | <u>\$89,200</u> |

EFFECT OF INFLATION ON 1975 COST ESTIMATE

The largest single cause of increased costs has been the rise in construction prices. Using 1967 as the base year, the Highway Administration's construction price index rose from 84 in 1956 to a level of 202 in 1974. Most of this rise occurred after 1965 when the index level was 90, and the rise has been particularly rapid since 1971 when the price index was 132.

Between calendar years 1973 and 1974, the Highway Administration's annual composite construction price index rose by 32.4 percent. Applying this increase to the Administration's last estimate of the cost of the system, we estimate that the cost to complete the system would rise by about \$10.5 billion. This increase, less obligations for projects approved since January 1, 1974, shows an estimate of about \$38.9 billion to complete the system as of June 30, 1975. A summary of our adjustments is presented below.

| | Federal and State costs | | |
|--|-------------------------|---|--------------------|
| | Estimate to complete | Incurred (obligations) (billions) | Estimated total |
| Administration's 1975 estimate (1-1-74): | | | |
| Engineering, construction, and right-of-way | \$32.3 | \$52.9 | \$85.2 |
| Plan, research, and administration | 1.4 | 1.6 | 3.0 |
| Contingencies | <u>1.0</u> | - | <u>1.0</u> |
| Total estimated cost at 1973 prices | 34.7 | 54.5 | 89.2 |
| Adjustment for 1974 construction prices (32.4% of engineering, construction, and right-of-way) | <u>10.5</u> | - | <u>10.5</u> |
| 1975 estimate adjusted to 1974 prices | 45.2 | 54.5 | 99.7 |
| Obligations paid prior to 7-1-56 | - | .1 | .1 |
| Costs incurred 1-1-74 to 6-30-75: | | | |
| Engineering, construction, and right-of-way | -6.1 | 6.1 | - |
| Plan, research, and administration | <u>-.2</u> | <u>.2</u> | <u>-</u> |
| Adjusted 1975 estimate (6-30-75) | <u>\$38.9</u> | <u>\$60.9</u> | <u>\$99.8</u> |

FUTURE INFLATION

The impact of future inflation on the cost of the system depends on both the rate of inflation and the annual authorization levels. In a recent study of cost estimates to complete the Washington Metropolitan Area Transit System,^{1/} we found that the average construction price increase estimates offered by Government and contractor personnel from 1975 to 1981 ranged from about 5 to about 10 percent annually. These two extremes are useful to illustrate the effects of possible price increases on the costs of the Interstate System.

Two possible levels of Federal funding over the long-range are (1) the Interstate authorizations of \$3.25 billion in the Federal-Aid Highway Act of 1973 for each of the fiscal years 1977-79 and (2) the President's proposed 1975 highway legislation providing that authorizations be increased gradually from \$3.25 billion for fiscal year 1977 to \$3.7 billion a year for fiscal year 1980. For simplicity of illustration, we assumed that the \$3.25 billion or the \$3.7 billion would be authorized from 1977 to completion of the system.

For the calculations, we made the following additional assumptions.

1. About \$3.2 billion of unobligated apportionments available as of July 1, 1975, would be obligated during fiscal year 1976, and there would be available for the transitional fiscal period of July 1 through September 30, 1976, one-quarter of the subsequent annual authorization.
2. Four percent of each fiscal year's authorization would be used for highway planning, research, and administrative costs and the balance would represent 90 percent of the cost of the work funded (10 percent being the State's share).
3. Starting with fiscal year 1977, each fiscal year's apportionment would be entirely obligated during the year for which it was apportioned.

^{1/}"Evaluation of the Capital Cost Estimate for the Metro Rapid Rail Transit System" (B-141529, May 1975).

The following table shows the effect of the two assumed inflation rates and of zero inflation on the cost to complete work remaining at June 30, 1975, with annual Federal Interstate authorizations of \$3.25 billion and \$3.7 billion.

| <u>Assumed annual Federal authorization level</u> | <u>Assumed annual inflation rate</u> | | |
|---|--------------------------------------|-----------|------------|
| | <u>0%</u> | <u>5%</u> | <u>10%</u> |
| \$3.25 billion: | | | |
| Total Federal-State cost to complete (billions) | \$38.9 | \$52.4 | \$123.4 |
| Last year of funding | 1986 | 1990 | 2009 |
| \$3.7 billion: | | | |
| Total Federal-State cost to complete (billions) | \$38.9 | \$50.2 | \$ 83.4 |
| Last year of funding | 1985 | 1987 | 1996 |

The table shows that a moderate rate of inflation (5 percent) would increase the revised January 1, 1975, estimate of about \$38.9 billion to complete the system by about \$11 billion to \$14 billion, depending on the annual funding level. A more severe rate of inflation (10 percent) would raise the revised estimated completion cost of about \$38.9 billion by about \$45 billion to \$85 billion. The total cost under these assumed conditions would increase from the revised estimate of \$99.8 billion (see p. 7) to the costs shown below.

| | <u>5% inflation</u> | | <u>10% inflation</u> | |
|----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| | <u>annual Federal funding</u> | <u>annual Federal funding</u> | <u>annual Federal funding</u> | <u>annual Federal funding</u> |
| | <u>\$3.25 billion</u> | <u>\$3.7 billion</u> | <u>\$3.25 billion</u> | <u>\$3.7 billion</u> |
| Costs incurred at 6-30-75 | \$ 60.9 | \$ 60.9 | \$ 60.9 | \$ 60.9 |
| Estimated completion costs | <u>52.4</u> | <u>50.2</u> | <u>123.4</u> | <u>83.4</u> |
| Total | <u>\$113.3</u> | <u>\$111.1</u> | <u>\$ 184.3</u> | <u>\$144.3</u> |

Continued inflation will also extend the period for completing the system, at a uniform level of annual financing. As shown in the table, a moderate rate of price increases will extend the completion from 1985 or 1986 to 1987 or 1990. A 10-percent inflation rate would extend it to the late 1990s or into the next century, depending on the funding level. Additional illustrations of the effects of various inflation rates and funding levels on the completion of the Interstate System are shown as appendix II.

ESTIMATED COSTS PER MILE
FOR HIGHWAY SEGMENTS NOT OPEN

The cost per mile for Interstate segments under construction or planned will be substantially greater than the costs for the segments completed prior to January 1, 1974. A comparison can be made with mileage and cost data compiled by the Highway Administration in connection with its preparation of the 1975 Interstate cost estimate.

At December 31, 1973, costs (Federal and State cumulative obligations) were available for 30,475 miles of completed Interstate sections open to traffic, excluding toll roads and other completed routes incorporated in the Interstate System without Federal aid for the original construction. At the same date there were about 4,003 miles of planned Interstate sections which had not reached the construction stage and for which cost estimates had been prepared by the States. We were unable to include costs for Interstate mileage under construction at that time because detailed information was unavailable by which to sort out costs of construction work in process applicable to unopened sections from that applicable to upgrading and improving older sections.

The following table presents a comparison of construction costs, exclusive of preliminary engineering and right-of-way costs, for the completed and planned sections.

Comparison of Construction Costs for Completed
and Planned Sections of Interstate Highway
as of January 1, 1974

| | <u>Completed</u> | | | <u>Planned estimated</u> | | |
|-------|------------------|--|--------------------------|------------------------------|--|--------------------------|
| | <u>miles</u> | <u>actual cost in millions</u> | <u>cost per mile</u> | <u>miles</u> | <u>cost (note a) in millions</u> | <u>cost per mile</u> |
| Urban | 5,523 | \$17,156 | \$4.3 | 841 | \$15,221 | \$18.1 |
| Rural | <u>24,952</u> | <u>23,989</u> | 1.0 | <u>3,162</u> | <u>10,263</u> | 3.2 |
| Total | <u>30,475</u> | <u>\$41,145</u> | \$1.4 | <u>4,003</u> | <u>\$25,484</u> | \$ 6.4 |

a/Adjusted for construction price increases during 1974.

Construction costs for new segments will be more than four times as costly per mile as the opened segments. As shown in the table above, the planned urban sections will cost about six times as much per mile as planned rural sections. Examples of specific planned projects are shown on page 23. These are 18 projects considered by the Highway Administration to be controversial because of public opposition. In the Administration's 1975 cost estimate, the 18 projects, covering a total of 242 miles, are estimated to cost about \$4 billion. Adjusted to 1974 construction prices, these projects would cost over \$5 billion.

CHAPTER 3

OTHER FACTORS DELAYING COMPLETION

After 1970, progress on Interstate construction (measured by miles opened) slowed appreciably. Design and execution of planned projects became considerably more difficult for many reasons, including changes in design standards to improve safety and increase traffic capacity; statutory sociological and environmental requirements, and corresponding grounds for public opposition to planned projects; rising costs unmatched by increased funding, particularly since 1971; and the greater engineering complexity, as well as public opposition, as work on the system moved into metropolitan areas.

Of the 5,600 miles of planned mileage not open for traffic at June 30, 1975, about 2,500 miles are under construction. The other 3,100 miles include controversial and very expensive projects in urban areas. All mileage, including the upgrading of existing stretches, must be at least four lanes under current design standards.

In a period of energy concern, a reevaluation of future traffic volume may show that some projects could be eliminated or scaled down and that estimates of Federal-State motor fuel tax revenues to finance highways may need revision. Over 100 billion gallons of motor fuel were used for highway travel in 1974, about 40 percent of all petroleum consumed in the United States that year. The policy of the Federal Government is to reduce fuel consumption by higher prices, lower speed limits, and more fuel-efficient engines.

REVISED INTERSTATE DESIGN AND SAFETY STANDARDS

The Federal-Aid Highway Act of 1956 required that the design and construction standards adopted for the Interstate System accommodate the types and volumes of traffic forecast for 1975. The original standards specified limited access (except for some two-lane segments in rural areas), lane widths, number of lanes, median areas, bridge widths, eliminating railroad crossings, and other design requirements. Some of these standards were found inadequate for future traffic needs. The Federal-Aid Highway Amendments Act of 1963 (77 Stat. 276) changed the design requirements from meeting forecasted traffic in 1975 to meeting forecasted traffic 20 years from the date of project approval. Other Interstate design and safety standards were also upgraded in 1963, and other highway safety requirements were added later.

Examples of Interstate requirements that have been added or changed include (1) at least four lanes of traffic on all segments, (2) additional lanes to meet existing traffic requirements, (3) additional interchanges and overpasses, (4) major system adjustments through deletion and/or relocation of segments and additional mileage authorized by Congress, (5) upgrading of roadway and shoulder design for heavier traffic requirements, added bridge widths, and increased tunnel clearances, (6) additional safety design features, including revamping completed highway segments, and (7) landscaping, beautifications, erosion control, and rest-area additions.

As a result of these requirements, the proportion of Interstate funds obligated for improving opened sections has been increasing in recent years, as shown below.

| <u>Fiscal year</u> | <u>Total Federal State obligations</u> (000,000 omitted) | <u>Obligations for improvements</u> | |
|--------------------|---|-------------------------------------|-------------------------|
| | | <u>Amount</u> | <u>Percent of total</u> |
| 1965 | \$ 3,433 | \$ 55 | 1.6 |
| 1966 | 3,549 | 44 | 1.2 |
| 1967 | 3,190 | 62 | 1.9 |
| 1968 | 3,617 | 108 | 3.0 |
| 1969 | 3,816 | 114 | 3.0 |
| 1970 | 3,856 | 174 | 4.5 |
| 1971 | 3,675 | 247 | 6.7 |
| 1972 | 3,683 | 533 | 14.5 |
| 1973 | 2,962 | 301 | 10.2 |
| 1974 | <u>3,231</u> | <u>355</u> | 11.0 |
| Total | <u>\$35,012</u> | <u>\$1,993</u> | 5.7 |

As of June 30, 1975, about 25,900 of the 36,900 miles of the Interstate highway open to traffic required improvements to meet current design and safety standards. The additional work involves minor improvements on 23,700 miles, such as rest areas, lighting, fencing, and landscaping. Major construction is required on 2,270 miles for additional lanes, overpasses, interchanges, reconstruction, and other substantial improvements.

The Highway Administration estimated that the total cost of such improvements required as of January 1, 1974, would be about \$8.1 billion at 1973 prices. This amount represented about 26 percent of the Administration's estimate of the total costs to complete the system at that time. Adjusted to 1974 construction prices, the costs would be about \$10.7 billion.

Improved safety

The Highway Administration completed a study in March 1975 of fatality rates on new and old sections of the Interstate System. The break year was 1967 when the Administration adopted the highway safety design and operating standards developed by the American Association of State Highway and Transportation Officials. As a result of these standards, additional safety features were incorporated in sections of Interstate highway opened in 1967 and later.

The Highway Administration compared the deaths from motor vehicle accidents during the 4-year period 1969-72 on Interstate sections opened before 1967 with Interstate sections opened during 1967-72. The study covered about 26,600 highway miles of Interstate sections, on which about 17,400 fatalities occurred for about 655 billion miles of total vehicle travel during the 4 years. The fatality rate per 100 million vehicle miles on the old sections of Interstate was about 2.8 during the 4 years and about 2.19 on the new sections.

Lower fatality rates were experienced on the new sections in both urban and rural sections measured separately, as well as in comparing new with old sections by ranges of travel density. Thus the highway design standards adopted in 1967 appear to have improved safety significantly on the Interstate System. Upgrading of old sections to the same safety standards will contribute even more to the overall safety of the system, inasmuch as about 77 percent of the total miles covered by the study are in the old sections.

SOCIOLOGICAL AND ENVIRONMENTAL CONSIDERATIONS

Legislation enacted in the late 1960s generally required that the social, economic, and environmental aspects of planned Federal-aid highway projects be fully considered before construction begins. Highway planning is subject to the Department of Transportation Act of 1966 (49 U.S.C. 1653(f)), the Federal-Aid Highway Act of 1968, the Clean Air Act (42 U.S.C. 1857), the National Environmental Policy Act of 1969 (42 U.S.C. 4321), and several others.

The National Environmental Policy Act of 1969 requires a detailed statement describing (1) the environmental impact of the proposed highway, (2) the adverse environmental impacts which cannot be avoided if the highway is constructed, and (3) alternatives to the proposed highway. The State highway departments, in cooperation with the Highway Administration, prepare draft statements and make them available for comment to

appropriate Federal, State, and local agencies and to the public. After considering the comments received, the State prepares a final environmental impact statement in consultation with the Highway Administration.

Other statutory sociological and environmental requirements affecting highway planning, and the year enacted, are: (1) assistance for relocating families and businesses, 1962, (2) transportation planning requirements in urban areas, 1962, (3) preservation of parkland, 1966, (4) fringe parking facilities and increased relocation assistance, 1968, (5) exclusive or preferential bus lanes and passenger loading areas to serve bus and other mass transit passengers, 1970, and (6) new environmental standards for erosion control, air quality, and noise abatement, 1970.

In 1972 we reported the results of a review of highway planning problems to the Senate Committee on Public Works ("Factors Affecting the Lengthy Process of Planning Highways," B-164497(3)). The average period of planning for 10 Federal-aid projects analyzed in that review was 8.7 years. States require most of the time for clearing highway locations with local governments, the public, in some cases other Federal Government agencies, and finally the Federal Highway Administration.

During the planning period, before right-of-way is acquired, the States must clear the proposed route with other State agencies, prepare an environmental impact plan in most cases, hold a least two public hearings, prepare a plan of relocation assistance for residents and businesses affected, prepare a special justification if routed through parkland or a recreation area, and obtain approval of the Federal Highway Administration at several stages of this process.

In addition to analyzing 10 projects through the entire planning process, we analyzed one or more planning phases of 26 other projects. We found that, for each of the various stages of planning, the Administration's review and approval took from 1 to 15 months; incorporation of new Federal requirements into projects already in the planning process required from 1 to 38 months; and delays within a State, due to giving a project low priority or resolving conflicts with local governments or other State agencies, added from 1 to 48 months to the planning period.

During March and April 1975, we interviewed officials of 10 State highway departments about significant Interstate planning problems from public opposition on sociological or environmental grounds. Of the 10 States, 6 reported a total of 36 Interstate highway segments that had been seriously delayed for such reasons. Related to the total of 486 uncompleted Interstate segments in all 10 States, those seriously delayed by sociological and environmental factors constitute about 7-1/2 percent of uncompleted Interstate work in those States. A summary of this information is shown in the following table, including the Highway Administration's estimate of the cost to construct the delayed segments.

| State | Total uncompleted Interstate segments | Segments being delayed | | |
|----------------------------|--|------------------------|--------------|---------------------------------|
| | | Number | Mileage | Estimated cost (millions) |
| Delays reported: | | | | |
| California | 57 | 7 | 73.3 | \$1,009 |
| Virginia | 42 | 8 | 109.2 | 351 |
| Maryland | 14 | 4 | 22.0 | 1,045 |
| Ohio | 66 | 6 | 109.1 | 784 |
| Pennsylvania | 85 | 5 | 31.4 | 437 |
| Tennessee | 42 | 6 | 34.2 | 87 |
| No delays reported: | | | | |
| Texas | 58 | | | |
| Florida | 69 | | | |
| Missouri | 26 | | | |
| Montana | 27 | | | |
| Total | 486 | 36 | 379.2 | \$3,713 |

Because of a December 1974 ruling by the U.S. Court of appeals, 2nd Circuit, (Conservation Society v. Secretary, the Supreme Court. Progress on the Interstate highway 7 ERC 1236 (1974)) requiring environmental impact statements to be prepared by the Federal Highway Administration and not by State highway departments, the Highway Administration imposed a moratorium on approving new Federal-aid highway construction projects in three States--New York, Vermont, and Connecticut. The moratorium was imposed to avoid the risk of wide-scale interruption of projects by additional law suits. The Highway Administration is in the process of appealing this decision to

the Supreme Court. Progress on the Interstate highway segments in these States has been delayed as summarized below.

| <u>State</u> | <u>Number of Interstate segments</u> | <u>Mileage</u> | <u>Estimated completion costs (millions)</u> |
|--------------|--|----------------|--|
| New York | 10 | 76.4 | \$ 654.6 |
| Vermont | 3 | 26.8 | 53.2 |
| Connecticut | <u>11</u> | <u>64.5</u> | <u>658.0</u> |
| | <u>24</u> | <u>167.7</u> | <u>\$1,365.8</u> |

New York and Connecticut were two of the four States which had a total of over \$300 million in Interstate apportionments lapse at June 30, 1975, because the fiscal year 1973 obligation authority was not used within the required 3-1/2 years. The obligation authority was reapportioned among the other States. A list of the lapsed funds and subsequent reapportionment is shown as appendix III.

In October 1974 the State of California requested certiorari to the Supreme Court of a decision by the U.S. Court of Appeals, 9th Circuit (Keith v. California Highway Commission, 506 F2d 696 (1974)), requiring a highway project to conform with the laws and regulations in effect at the time the State's final construction plans and specifications are submitted to the Federal Highway Administration for approval. The project involves a 17-mile Interstate segment of I-105 from Los Angeles International Airport to Norwalk, California. The State had conformed to Federal requirements during a lengthy process of obtaining approval for acquiring the right-of-way for all sections, except a 3.3-mile section through the city of Hawthorne. While the State was in dispute with Hawthorne about the highway location, additional Federal relocation assistance and environmental requirements were enacted. The Court of Appeals ruled that the State must comply with these additional requirements and hold public hearings before acquiring further rights-of-way or beginning any construction on the highway project.

PROBLEMS OF FINANCING HIGHWAY CONSTRUCTION

OMB limited for 10 successive years the amount from the Highway Trust Fund that could be obligated. The OMB obligational limits were, on the average, about 20 percent less than the sums authorized by law for highway programs. In the last 2 years some States reported that declining fuel tax revenue and rising costs made it more difficult to match all Federal funds available to them for highway programs. As a result, Federal-aid highway construction programs have not progressed at the rate authorized by the Congress.

These problems are discussed below.

Impoundments of authorizations by OMB

Since 1967 OMB and its predecessor, the Bureau of the Budget, have imposed an annual obligation limit on the sums authorized by the Congress to be appropriated out of the Trust Fund for Federal-aid highway programs. In September 1974 OMB set a limit of \$4.6 billion as the amount that could be obligated in fiscal year 1975 of the sums authorized to be spent from the Trust Fund. At that time, the fiscal year 1975 obligational limitation represented a cumulative impoundment of about \$10.7 billion of Trust Fund authorizations through fiscal year 1976. Subsequent contract authority enacted in the Federal-Aid Highway Amendments of 1974 (88 Stat. 2281) raised the cumulative impoundments of Trust Fund authorizations to about \$11.1 billion.

The OMB limitations apply to the total obligations that may be incurred each year on the Trust Fund and not to the specific highway programs separately. For that reason, the States may have the cost of projects in a particular Federal highway program approved up to the full amount of their share of funds authorized by the Congress for such program. Most States have given priority to Interstate projects in that respect and used proportionately less of the available OMB obligational authority for other programs (primary, secondary, and urban highways and safety programs). Nevertheless, Trust Fund obligations for the Interstate System have been averaging only about \$3.1 billion a year since 1967, compared to average annual congressional authorizations of about \$3.6 billion, or 14 percent less.

In our earlier review of highway planning problems (see p. 15), Highway officials of three States told us that the OMB limit on Federal-aid funds available during 1967-69 had delayed the scheduling of projects for construction. Several Michigan projects were delayed from 1 to 3 years.

In our interviews with officials of 10 State highway departments in March and April 1975, officials of three States attributed delays in Interstate work to reduced Federal funding. Officials in the other seven States encountered more administrative and planning problems but did not have to hold up Interstate work because of the unavailability of Federal funds. In some cases these States received redistributed obligational authority that was not being used in other States, used State funds to advance construction until Federal funds were available for reimbursement, had other problems delaying projects anyway, or used their obligational authority for Interstate projects while curtailing work under other Federal-aid highway programs.

In seeking court relief from the OMB obligational limitations, 14 cases involving 24 States were filed. Among the adverse effects described in their legal briefs were that the withholding of obligations

- reduced their highway construction programs,
- disrupted their highway planning and programming procedures, and
- irreparably harmed their highway programs because of continuing inflation of highway construction costs.

Louisiana identified 3 projects with an estimated cost of \$25.2 million, and Michigan identified 41 projects with an estimated cost of \$49.5 million as being delayed.

Release of impoundment authorizations

In February 1975 the President released \$2 billion of impounded obligational authority to aid in increasing employment. The Senate passed Resolution 69 about 2 months later, disapproving the President's proposed deferral of the balance, or \$9.1 billion of impounded authorizations. These actions release all unobligated sums authorized by law to be appropriated from the Trust Fund through the last fiscal year's

apportionment, or 1976. The balance of such unobligated authorizations at December 31, 1974, was about \$13.6 billion, including unapportioned fiscal years 1975-76 authorizations in the Highway Amendments of 1974 and sums withheld from authorizations for planning, research, and administration.

Inability to match funds

The inability of some States to meet matching fund requirements was a recent problem delaying completion of the Interstate System. The sudden release of all impounded funds, the 1974 reduction in State gasoline tax revenue, and the rising highway maintenance costs limit the capability of States to match available Federal-aid funds.

A Highway Administration survey showed that, after the release of \$2 billion in impounded funds in February 1975, eight States would be unable to meet the matching fund requirements for additional Federal-aid highway projects. These States told the Administration that, if their matching problems were resolved, they would be able to undertake \$157.1 million of additional projects during fiscal year 1975, as shown below.

| <u>State</u> | <u>Additional projects</u> (millions) |
|--------------|--|
| Delaware | \$ 3.0 |
| Iowa | 5.0 |
| Kansas | 17.7 |
| Maine | 15.0 |
| New Mexico | 29.0 |
| South Dakota | 12.4 |
| Virginia | 54.0 |
| Wisconsin | <u>21.0</u> |
| Total | <u>\$157.1</u> |

Of the 10 States we visited to inquire about the Interstate System, only Virginia was among the States in the above table. The other nine States (see p.16) did not anticipate financing problems. A Virginia highway official told us that, because of increased construction costs and decreased revenues from highway user taxes, the State stopped awarding contracts for major new construction in October 1974. In March 1975 the Virginia

Commissioner of Highways and Transportation testified before the Subcommittee on Surface Transportation, House Committee on Public Works, to support legislation to increase the Federal share of Federal-aid projects up to 100 percent on a temporary basis. Other State officials also testified or presented statements to support this legislation.

Temporary legislative relief

The enactment of Public Law 94-30 in June 1975 enables the States to defer paying their matching share of Federal-aid highway projects approved between February 12 and September 30, 1975. The law requires the States to repay the Trust Fund the deferred matching shares before January 1, 1977. Without considering the effect of repayments on future program periods, each State may, for the 7 1/2-month period, accelerate its Federal-aid highway programs to the full capacity of its planning, engineering, and contractor resources.

The Highway Administration's financial reports show a sharp increase in the use of available Federal funds after the President released the \$2 billion of impounded obligation authority in February 1975. The obligation of Trust Fund authorizations for the Interstate System, which averaged about \$225 million a month during the first 8 months of fiscal year 1975, rose to a monthly average of about \$555 million during the last 4 months. The monthly average for the other Federal-aid highway programs (70 to 30 cost-sharing ratio), such as primary, secondary, and urban systems, jumped from about \$126 million a month to about \$463 million for the same period. The average monthly obligations for all Federal highway programs was over \$1 billion a month during the last 4 months of fiscal year 1975.

The extent to which the provision for temporary 100 percent Federal financing accounted for this rapid rise in highway construction activity is not determinable at this time. By the end of June 1975, the Highway Administration had approved requests from seven States for deferral of their matching shares amounting to a total of about \$98 million. Highway Administration officials said other requests were being reviewed by its Division Engineer offices in the various States, and they do not know yet how much in matching funds are involved.

Inasmuch as Public Law 94-30 can be applied retroactively to projects approved February 12 or later, it is still possible for States to take advantage of further Federal financing of those projects approved before June 30, as well as for projects to be undertaken up to September 30, 1975.

Unobligated Interstate
apportionments at June 30, 1975

Federal Highway Administration reports show that the total unobligated balances of Interstate apportionments to all States were about \$3.21 billion at June 30, 1975. The balances vary from only 75 cents for Mississippi and about \$9,000 for Hawaii to over \$500 million for New York and \$300 million for Connecticut. In relation to their fiscal year 1976 apportionments, the unobligated balances of over one-half the States at the beginning of the year represent less than 6 months of Federal Interstate financing. (See app. III, p.37.)

APPORTIONING FUNDS TO STATES
VERSUS ABILITY TO CONSTRUCT SEGMENTS

Federal funds authorized each year by the Congress for the Interstate System are apportioned among the States, the ratio being the Federal share of the estimated cost to complete segments in each State to the sum of the Federal share of the estimated cost of completing the system in all of the States. The latest Highway Administration cost estimate, approved by the Congress, is used for this purpose (23 U.S.C. 104(b)(5)). The Administration's 1972 estimate was the basis for apportioning fiscal years 1974, 1975, and 1976 funds. The recently submitted 1975 estimate, if approved by the Congress, will be used to apportion fiscal years 1977 and 1978 funds.

The estimated cost to complete the system includes the costs of segments subject to public opposition, court suits, indecision on mass transit alternatives, and other delaying factors. While OMB imposed an obligational limit on the availability of Federal funds, the States generally were able to maintain an Interstate construction pace commensurate with the reduced level of Federal funding. Now that OMB limits have been removed, however, the number of controversial segments in some States raises a question about their ability to use their apportioned funds as promptly as other States.

In addition to obtaining information on sociological and environmental considerations (see p.14), we obtained information on planned Interstate segments considered by the Highway Administration to be among the most controversial and subject to indefinite delays. The following chart shows information on 18 such segments.

Controversial Interstate Segments

| <u>State</u> | <u>Route</u> | <u>Segment description</u> | <u>Miles</u> | <u>Total cost</u> <u>(note a)</u> <u>(000,000 omitted)</u> | <u>Cost per mile</u> <u>(millions)</u> |
|----------------------|--------------|------------------------------|--------------|--|---|
| California | b/I-105 | El Segundo-Norwalk Freeway | 5.5 | \$ 147 | \$26.7 |
| Colorado | I-70 | Glenwood Canyon | 20.6 | 181 | 8.8 |
| | I-470 | Southwest Freeway | 26.3 | 145 | 5.5 |
| Connecticut | I-86 | East Hartford | 3.7 | 63 | 17.0 |
| | b/I-291 | West Hartford to Windsor | 11.5 | 97 | 8.4 |
| | b/I-291 | Rocky Hill to Farmington | 8.4 | 64 | 7.6 |
| District of Columbia | I-295 | East Leg of Inner Loop | 4.2 | 219 | 52.1 |
| Illinois | I-494 | Chicago crosstown | 19.9 | 1,088 | 54.7 |
| Louisiana | b/I-410 | Boutte--I-10 (East Terminus) | 37.3 | 546 | 14.6 |
| Michigan | I-696 | Detroit to Huntington Woods | 9.0 | 163 | 18.1 |
| New Hampshire | I-93 | Franconia Notch. | 11.3 | 74 | 6.5 |
| New Jersey | b/I-78 | Pa. State Line to Alpha | 2.4 | 29 | 12.1 |
| | I-287 | Montville to N.Y. line | 19.8 | 195 | 9.8 |
| North Carolina | I-40 | I-85--Research Triangle Park | 15.5 | 43 | 2.8 |
| Pennsylvania | b/I-78 | Allentown to Bethlehem | 26.1 | 232 | 8.9 |
| Tennessee | b/I-40 | Memphis to Overton Park | 3.8 | 84 | 22.1 |
| Virginia | c/I-66 | Beltway to Potomac River | 10.0 | 172 | 17.2 |
| Washington | b/I-90 | Seattle and Mercer Island | 6.3 | 413 | 65.6 |
| | | | <u>241.6</u> | <u>\$3,955</u> | <u>\$16.4</u> |

a/1975 estimate, as of Jan. 1, 1974.

b/In litigation.

c/Disapproved by the Secretary of Transportation on Aug. 1, 1975.

The estimate of \$4 billion to construct the 18 projects would be over \$5 billion when adjusted for the increased construction prices of 1974. The latter amount represents about 14 percent of the total estimated cost to complete the Interstate System, or 18 percent of the total estimate excluding upgrading. The projects' magnitude, therefore, has an important bearing on the apportionment of Federal funds to the States involved.

Most of the controversial segments are in urban areas, justified to facilitate travel from planned or existing Interstate highways to and through central cities. Often existing beltways or alternative highways adequately serve through traffic. The consideration of constructing mass transit facilities as an alternative for suburban and city traffic is a controversial issue delaying decisions about the Interstate System.

Section 110 of the Federal-Aid Highway Act of 1973 (23 U.S.C. 103(g)) required the Secretary of Transportation to remove on July 1, 1974, each segment of the Interstate System for which a State had not provided notification of intent to construct and for which the Secretary found not to be essential to completion of a unified and connected Interstate System. Although some States reported possible substitutions and delays due to environmental considerations, all States submitted the required notification of intent to construct and no segments were removed from the system.

Section 110 further authorizes the Secretary to remove from the Interstate System segments for which a State has not submitted by July 1, 1975, a schedule for the expenditure of funds to complete construction of such segment or alternative segment within the period of availability of funds authorized to be appropriated for completion of the system. The States are also to provide satisfactory assurances that such schedules will be met. When we completed our review in July 1975, information was not yet available on the responses of the States to these requirements.

In March 1975 the Highway Administration issued guidelines to the States for the preparation and submission of the required data in specified formats. The States were instructed to assume that the Federal apportionment level would enable all construction on each applicable segment to be under project agreement by September 30, 1981. In addition to the required schedules, the States were requested to submit a second schedule to be used by the Highway Administration

for planning purposes. The second schedule is to be more realistic and reflect as reasonably as possible the physical and funding capabilities of the States to advance the segments to construction without regard to the statutory period of fund availability. For this schedule, 1985 is assumed to be the final year of Interstate authorizations, and construction on each applicable segment is to be under project agreement by September 30, 1987.

Existing legislation provides a State with the following alternatives, subject to approval by the Secretary, for segments it does not intend to construct.

- It may elect to transfer the segment to another part of the State, subject to the limitation that the estimated cost of the new segment may not exceed the cost of the transferred segment.
- The State may seek modification or revision of the segment by the Federal Highway Administrator.
- The State may simply not build the segment, in which case the mileage and Trust Fund moneys would be available to other States.
- The State may elect not to construct a segment and use an equivalent amount of money from the General Fund on a nonhighway public, mass transit project. The money for the Interstate segment not built would remain in the Trust Fund, and the mileage would be available to other States. The proposed mass transit substitute would be administered by the Urban Mass Transportation Administration.

As of July 1975, six States had requested withdrawal of urban Interstate highway sections from the designated system to substitute for them mass transit projects or a combination of other Interstate segments and mass transit projects. Presently the Highway Administration has not calculated the total amount that will become available for mass transit improvements from these substitutions.

Some of the Interstate funds apportioned to States on the basis of the estimated cost of completing controversial segments, could be used by other States to complete Interstate gaps. Of the 10 State highway departments we interviewed, 8 told us that, if additional Interstate funds were made available to them, they could accelerate the completion of gaps in the Interstate System.

CHAPTER 4

CONCLUSIONS, AGENCY COMMENTS, AND MATTERS FOR CONSIDERATION BY THE CONGRESS

CONCLUSIONS

Completing the work remaining on the Interstate System at June 30, 1975, will cost about \$38.9 billion at 1974 construction prices. Some degree of continued highway construction price inflation will undoubtedly occur, as indicated by forecasts of the general trend of the economy, by the release of impounded Federal highway funds, and by the probable rise of petroleum prices, which are important elements in construction costs. Even a moderate annual increase of construction prices (5 percent) would add a total of \$11 billion to \$14 billion to the cost of completing the Interstate System. Thus the costs of constructing uncompleted projects and of upgrading older segments will be much greater than the costs of completed projects built to current design standards.

The scope of the work underlying the estimated cost of completing most segments of the Interstate System is based on design standards the Federal and State highway engineers in 1973 considered necessary to meet traffic requirements safely and efficiently in the 1990s. Traffic forecasts for the system were made in 1972 when gasoline was plentiful and relatively inexpensive. Highways were designed for safe travel at speeds of 60 to 70 miles an hour.

The current policy of the Government is to reduce gasoline consumption. One move in that direction is the provision in the Federal-Aid Highway Amendments of 1974 (23 U.S.C. 154), which requires States to establish a 55-mile-per-hour speed limit to participate in Federal-aid highway programs.

Although miles of motor travel are increasing again in 1975, rising gasoline prices and the fear of possible gasoline shortages make it unlikely that the rate of growth will reach the level before 1974.

Many planned urban projects have been under debate for years. Sociological and environmental considerations, as well as increased interest in mass transit alternatives for moving people into and out of city centers, raised substantial public opposition to the costly intracity links of the Interstate System.

It appears, therefore that the 1973 planning assumptions for the traffic needs of the Interstate System should be reevaluated. Decisions should be made on whether highly controversial planned urban links are practical and acceptable to the metropolitan areas concerned.

The Secretary of Transportation made such a decision on August 1, 1975, in the case of the I-66 extension in Virginia from the Capital Beltway to the District of Columbia. He disapproved construction of that urban section on considerations of energy conservation, air quality, noise, and conservation of urban and community resources. The longer the actions are delayed on other controversial Interstate sections (that is, to proceed, modify, or delete), the greater the risk of higher costs if construction is undertaken and the more prolonged the distortion of Interstate fund apportionments if planned projects are eventually deleted.

At the same time, a higher priority for Interstate highway safety work might be emphasized in expediting both upgrading opened sections and completing new segments. As described on page 14, the fatality rate on Interstate segments completed after 1966 is significantly lower than the rate on older segments. The fatality rate on completed Interstate highways with full access control is less than one-half the rate on all other Federal-aid highways combined. Thus completing unfinished sections that will draw traffic from other highways, particularly in rural areas, and upgrading old segments will make a substantial contribution to highway safety and to the efficiency of the Nation's transportation network.

In our opinion, the factors discussed previously should be considered in a current analysis of the Interstate System. The reevaluation of the following two principal factors should be useful for congressional consideration of the costs and time required to complete the Interstate System.

1. The scope of the work needed to complete the system, based on planning factors compatible with the latest demographic forecasts and the Government's policy to reduce fuel consumption, improve mass transit facilities, encourage car pooling, and the like.
2. Uncompleted segments and upgrading projects considered in an order of priority, so that the more critical and the less critical projects and those facing public opposition could be viewed separately.

A division of uncompleted work for priority analyses might be: (1) important gaps in Interstate traffic routes, including by-passes in urban areas, (2) safety upgrading of old segments, (3) upgrading needed to meet current traffic requirements, (4) controversial planned urban sections held back by public opposition, and (5) all other uncompleted projects, including nonsafety improvements not required for current traffic.

It seems to us that a current analysis along the lines mentioned, using the latest cost estimates, would help the Congress to choose among alternatives regarding

--the scope of the Interstate System in relation to forecasted traffic needs;

--the question of whether an order of priorities should be set for completing the various types of Interstate work and, if so, what the order should be; and

--levels of financing required for various completion periods.

PRESIDENT'S PROPOSED CHANGES IN HIGHWAY LEGISLATION

On July 7, 1975, the President sent to the Congress a proposed bill to reorganize substantially the various highway programs in the current law, to change the method of apportioning Federal highway funds to the States, and to revise the financing of highway programs under the Trust Fund. The principal changes proposed for the Interstate highway program follow.

1. Classifying routes on the Interstate System into two categories: those of national significance connecting major population centers and routing traffic through or around them and all other routes, principally those providing commuter service in major urbanized areas.

2. Apportioning Federal Interstate funds to the States on two bases: 50 percent of the funds authorized in the ratio of each State's estimated cost to complete the work on the routes designated by the Secretary as having national significance to the total estimated cost of completing such routes nationwide; and 50 percent related to each State's share of the estimated cost of completing the unfinished work on all Interstate routes, as presently provided in the law.

3. Continuing the Trust Fund for Interstate System financing only and increasing the annual Interstate authorizations to the following amounts.

1977--\$3.25 billion

1978--\$3.40 billion

1979--\$3.55 billion

1980--\$3.70 billion

4. Revising the statutory date for making apportionments (all highway programs) from at least 6 months before the beginning of the fiscal year for which authorized to the first day of the fiscal year (October 1, beginning with fiscal year 1977).

The President proposed that the apportionments, based on the estimated cost of completing Interstate routes of national significance, be available only for work on such routes and that apportionments of the other 50 percent of each year's authorizations be available to the States for either routes of national significance or those serving primarily local needs. The President's proposal further emphasizes the completion of routes of national significance by limiting to such routes the use of lapsed funds that are reapportioned among the States. The President proposed that the 1977 and 1978 fiscal year authorizations be apportioned on the basis of revised cost estimates of completing the Interstate System to be submitted by the Secretary of Transportation to the Congress by January 15, 1976, for approval. The present law specifies that the 1975 cost estimate serve that purpose.

Basing the fiscal years 1977 and 1978 apportionments on a 1976 cost estimate, rather than the 1975 estimate, is desirable because it would enable the Congress to analyze estimated costs to complete the system in terms of the two categories of Interstate routes proposed by the President. Estimated costs could be revised accordingly to the latest construction prices, which are much higher than those used in the 1975 estimate. It would enable the Secretary and the Highway Administration to reevaluate the scope of the work required to complete the system by taking into account changes in energy policy and current demographic forecasts.

We believe that categorizing Interstate routes into those of national significance and those of more local utility, with priority on completing the former, would materially expedite

completion of the system. One other category of unfinished work needs emphasis, however, and should be set out for analysis by the Congress--safety upgrading on all Interstate segments not meeting current safety standards. Safety improvements are of equal national concern, whether on main intercity segments or on those segments serving primarily urban commuters.

The President's proposal to change the apportionment date from on or before January 1 to October 1, beginning in 1976, will leave a gap of at least 9 months before new Interstate funds (FY 1977 funds) become available to the States. The unobligated balance of Interstate apportionments at June 30, 1975, about \$3.2 billion, will not be replenished under the President's proposal until October 1, 1976. Eight States combined have nearly two-thirds of this balance, whereas over one-half the other States have less than 6 months of Federal Interstate financing available as measured by their 1976 fund apportionments. (See app. III, p.37.)

The President's proposed bill would also redefine the term "construction" in the present law to include the rehabilitation or restoration of a highway. We understand that the redefinition is intended to clarify "reconstruction," which is part of the present definition of construction. The President's proposal would authorize Federal financing of resurfacing and other major repairs of badly deteriorated sections of highways. An official of the Department told us that, although there would be no immediate change in the operation of the Interstate program, it is intended that Federal funds would be made available for rehabilitation and restoration of the Interstate System at some future date.

The Highway Administration does not at this time have an estimate of the backlog of deteriorated sections of Interstate highways that might be eligible for such assistance nor of the possible annual cost for this class of projects. The Department has not yet determined how Federal assistance for the rehabilitation and restoration of the Interstate System should be provided, whether as a separate program or as part of the basic Interstate authorization.

Further, the Department has not reached any decision as to whether funds should be distributed based on the relative cost of restoration or on some other basis.

Finally, with the cost of completing the initial construction of the System still over \$30 billion, Department officials have not reached any decision on when this new policy would be implemented.

We believe the Congress will require additional information to consider any recommendation to expand the program in this manner.

AGENCY COMMENTS AND
OUR EVALUATION

We did not request formal comments from the Department of Transportation in order that we might issue this report to the Congress as promptly as possible. Officials of the Secretary's Office and of the Federal Highway Administration reviewed the information reported, however, and their informal comments on the data in the report and our conclusions have been considered in finalizing the report.

With respect to reevaluating future traffic volume and its possible effect on estimating Interstate highway needs, Highway Administration officials doubt that changes in traffic forecasts would materially change the plans of the States and of the Highway Administration for the requirements of the Interstate System. In that connection, the officials also pointed out that the States had to state their intention to complete or withdraw planned sections of the Interstate System in June 1974 and again by July 1, 1975. Highway Administration officials believe that, unless States request withdrawal or substitution of planned Interstate sections, the Secretary of Transportation may not make major changes in the scope of the system.

We recognize that highway legislation allows the States considerable latitude in route location, the order in which projects are undertaken, and other aspects of highway planning. We recognize also that time would not permit a detailed re-examination, in conjunction with the States, of future traffic estimates and highway needs in relation to each section and project of the Interstate System. It seems to us, however, that it would be useful to the Congress for the Secretary to report his opinion on what effect a reevaluation of traffic needs under a policy of energy conservation would have generally on the planned scope of the system--in terms of both mileage in certain areas and number of lanes and other geometric requirements.

Whereas the average annual highway travel growth before 1970 had been about 4.2 percent, the Highway Administration

predicted a lower rate of about 2.6 percent a year from 1970 to 1990. We understand that the lower rate was used for the national highway needs study and the latest Interstate cost estimate. In reporting the results of the highway needs study to the Congress in January 1975, however, the Highway Administration noted that a 2-percent growth rate would be reasonable, "considering the mounting pressure for controls on the amount of private automobile travel to reduce petroleum consumption." The Highway Administration also noted in its study report that the 55-mile-per-hour speed limit and other factors would further reduce the original estimates of highway needs.

Furthermore, the estimate of highway travel growth hinges on the assumption that highway vehicles will become more fuel efficient. If continued growth, at a slower rate, is made possible by consumption of less fuel per vehicle mile, the revenue side of the highways equation might be affected, even though the highway needs would not. That is, it is possible that less revenue from fuel taxes would be available to finance highway construction and improvement. The Secretary's advice to the Congress on this point would be helpful.

Highway Administration officials believe that adequate emphasis is being given to safety improvements on older sections of the Interstate System. They pointed out that about \$193 million of the \$2.7 billion of Federal funds obligated for Interstate work in calendar year 1974 were for safety improvements, or about 7 percent of total obligations. They said that obligations for Interstate safety improvements in the 3 months March through May 1975 increased to an average of over \$54 million a month, or about 12-1/2 percent of total Federal obligations for the system in that period.

The current rate of safety work described by officials of the Administration is encouraging. The backlog of such work remaining at July 1, 1975, however, should be set out for congressional consideration of priorities to complete the system. The President's proposal to designate routes of national significance and to apportion Federal funds so as to emphasize completion of these routes would cause less money to be available for upgrading older sections as well as for completing planned sections in the urban areas.

It seems to us that the Congress needs information on the estimated costs of safety work and other improvements on all routes, together with estimates for completing unopened sections to evaluate an order of priorities for completing the entire system.

Regarding the President's proposal to defer the next apportionment of Federal highway funds from or before January 1 to October 1, 1976, we were told by a Department official that the Department's intent was to revise the current apportionment system, to make the annual authorization level coincide more closely with available authorizations and thus with the actual obligation level. This proposed change would have the effect of stretching out over a more reasonable period what was expected to be a very substantial balance of unobligated Federal highway funds on September 30, 1976. However, the rapid use of highway funds by the States after impounded funds were released for obligation in 1975 (see p. 27), plus anticipated 1976 obligations, are now expected to reduce considerably the balance of unobligated funds available on September 30, 1976.

We understand that the Department of Transportation recognizes that, if the President's proposal is adopted some provision must be made for States with low balances of available funds during the latter part of fiscal year 1976 and through the transition quarter.

MATTERS FOR CONSIDERATION BY THE CONGRESS

In considering major highway bills introduced in the Congress, including the President's proposals, the Congress would be materially assisted by current and more detailed information about work required to complete the Interstate System.

We suggest that the Congress ask the Secretary of Transportation to furnish to the legislative committees, as soon as possible, the results of a reevaluation of the needs and the estimated costs of completing the Interstate System as of July 1, 1975, taking into account

- latest actual construction prices;
- the scope of the work needed to complete the system, based on planning factors compatible with the latest demographic forecasts and the Government's policy to reduce fuel consumption, improve mass transit facilities, encourage car pooling, and the like;
- categorizing the work to show construction estimates for completing unopened segments, safety improvements on previously opened segments, and other types of upgrading of opened segments for (1) those routes of national significance described in the President's proposed bill and (2) the other routes of the system.

We suggest that, for analyzing the financial implications of the President's proposal to include rehabilitation in the Federal-aid highway programs, the Congress ask the Secretary of Transportation to furnish to the legislative committees, as soon as possible, estimates of the cost of the backlog of such work at July 1, 1975, and of the approximate annual cost thereafter.

The Congress may also wish to consider alternatives to the President's proposal that the apportionment date of the authorizations for the highway programs be deferred to October 1 each year. Some alternatives are: (1) to retain the apportionment provisions of the present law, (2) to move the date to on or before March 1 to conform with changing the beginning of the Federal Government's fiscal year from July 1 to October 1, or (3) to authorize, temporarily between January 1 and September 30, 1976, the Secretary of Transportation to transfer unobligated authorizations from States clearly not in a position to use such funds in that period to States that are about to exhaust their available apportionments. The President's proposed bill makes no provision, however, for highway program authorizations for the special 3-month fiscal period between the end of fiscal year 1976 (June 30) and the beginning of fiscal year 1977 (October 1, 1976).

FEDERAL-STATE OBLIGATIONS AND UNOBLIGATED BALANCE OF FEDERAL AUTHORIZATIONS
FOR THE INTERSTATE HIGHWAY SYSTEM
AT JUNE 30, 1975

| Fiscal year | Congressional authorizations (note a) | Deductions for administration, planning, and research | Apportioned to the States (000,000 omitted) | Obligations of apportionments (000,000 omitted) | Unobligated balance at yearend |
|---|---|--|--|--|--------------------------------------|
| Cumulative | | | | | |
| as of | | | | | |
| 6-30-66 | \$25,300 | \$ 614 | \$24,686 | \$23,418 | \$1,268 |
| 1967 | 3,400 | 88 | 3,312 | 2,830 | 1,750 |
| 1968 | 3,800 | 104 | 3,696 | 3,193 | 2,253 |
| 1969 | 4,000 | 119 | 3,881 | 3,363 | 2,771 |
| 1970 | 4,000 | 139 | 3,861 | 3,416 | 3,216 |
| 1971 | 4,044 | 139 | 3,905 | 3,235 | 3,886 |
| 1972 | 4,044 | 139 | 3,905 | 3,282 | 4,509 |
| 1973 | 2,635 | 130 | 2,505 | 2,617 | 4,397 |
| 1974 | 3,041 | 120 | 2,921 | 2,856 | 4,462 |
| 1975 | 3,041 | 150 | 2,891 | 4,015 | 3,388 |
| | | | <u>b/-127</u> | | <u>b/-127</u> |
| Cumulative | | | | | |
| as of | | | | | |
| 6-30-75 | <u>\$57,305</u> | <u>\$1,742</u> | <u>\$55,436</u> | <u>\$52,225</u> | <u>\$3,211</u> |
| Cumulative estimated State obligations as of 6-30-75 <u>c/6,936</u> | | | | | |
| Total State and Federal obligations | | | | <u>59,161</u> | |
| Administration, planning, and research | | | | <u>1,742</u> | |
| Total | | | | <u>\$60,903</u> | |

a/Authorizations are shown for the years in which they were apportioned, the fiscal years preceding the year to which they are related in the legislation.

b/Adjustment for mass transit substitutions.

c/Excludes State construction costs of toll roads designated as part of the Interstate System.

FEDERAL HIGHWAY ADMINISTRATION'S
INTERSTATE SYSTEM COMPLETION DATES
AT VARIOUS INFLATION RATES
AND FUNDING LEVELS (note a)

ASSUMPTIONS:

The \$3.25 billion of unobligated Interstate apportionments would be fully and uniformly obligated during July 1, 1975 to October 1, 1976.

No additional Interstate apportionments would be made until October 1, 1976 (Department of Transportation proposal).

Four percent of each year's authorization beginning with fiscal year 1977 would be retained for planning, research and administration.

Starting with fiscal year 1977, each apportionment would be entirely obligated by the end of the fiscal year for which apportioned.

The several alternative inflation rates are assumed to commence in calendar year 1975.

| <u>Annual funding level</u> (billions) | <u>Inflation rate</u> | | | | |
|---|-----------------------|-----------|-----------|-----------|------------|
| | <u>0%</u> | <u>3%</u> | <u>5%</u> | <u>7%</u> | <u>10%</u> |
| 3.0 | 1986 | 1989 | 1991 | 1996 | (b) |
| President's proposal (note c) | 1985 | 1986 | 1988 | 1990 | 2000 |
| 4.0 | 1984 | 1985 | 1986 | 1988 | 1994 |
| 5.0 | 1982 | 1983 | 1984 | 1985 | 1987 |
| 6.0 | 1981 | 1982 | 1982 | 1983 | 1984 |
| 7.0 | 1981 | 1981 | 1981 | 1982 | 1983 |

a/Calendar year of completion.

b/Completion impossible under these circumstances.

c/Funding levels follow.

| | |
|--------------------|----------------|
| FY 1977 | \$3.25 billion |
| FY 1978 | \$3.40 billion |
| FY 1979 | \$3.55 billion |
| FY 1980 and beyond | \$3.70 billion |

INFORMATION ON
FEDERAL-AID INTERSTATE FUNDS
BY STATE

| <u>State</u> | <u>Unobligated apportion-</u> <u>ments at June 30, 1975</u> | <u>Lapsed unobligated</u> <u>fiscal year 1973</u> <u>apportionments</u> | <u>Reapportion-</u> <u>ment of</u> <u>lapsed funds</u> <u>on 8-5-75</u> |
|------------------|--|---|--|
| Ala. | \$ 9,643,563.55 | | \$ 6,906,107.45 |
| Ariz. | 77,502,557.42 | | 6,797,870.68 |
| Ark. | 3,732,773.12 | | 2,537,551.02 |
| Calif. | 47,777,563.03 | | 22,913,123.59 |
| Colo. | 35,621,892.95 | | 6,933,166.65 |
| Conn. | 299,149,682.58 | \$ 61,988,730.30 | - |
| Del. | 24,911,350.17 | | 532,164.13 |
| Fla. | 49,129,300.50 | | 10,533,085.40 |
| Ga. | 12,884,523.77 | | 8,319,198.66 |
| Hawaii | 8,663.07 | | 3,460,570.17 |
| Idaho | 1,038,770.98 | | 1,494,268.79 |
| Ill. | 259,254,023.62 | | 16,479,048.74 |
| Ind. | 863,054.60 | | 4,040,839.54 |
| Iowa | 737,494.69 | | 3,562,793.79 |
| Kans. | 11,759,151.87 | | 4,040,839.54 |
| Ky. | 919,473.82 | | 4,933,792.92 |
| La. | 66,126,570.13 | | 10,144,190.92 |
| Maine | 7,288,752.36 | | 1,761,854.14 |
| Md. | 210,869,250.66 | | 12,795,991.87 |
| Mass. | 206,830,520.00 | | 10,396,743.39 |
| Mich. | 46,119,183.03 | | 11,948,137.14 |
| Minn. | 109,518,916.10 | | 7,775,008.22 |
| Miss. | .75 | | 2,991,544.15 |
| Mo. | 19,749,220.81 | | 6,413,028.82 |
| Mont. | 16,497,556.09 | | 3,436,517.55 |
| Neb. | 1,603,836.57 | | 505,104.94 |
| Nev. | 271,830.57 | | 1,644,597.64 |
| N.H. | 5,696,412.15 | | 1,470,216.17 |
| N.J. | 189,254,154.08 | | 9,431,632.16 |
| N. Mex. | 6,558,370.94 | | 3,102,787.50 |
| N. Y. | 532,620,331.01 | 211,672,118.68 | - |
| N.C. | 3,349,397.62 | | 6,103,351.38 |
| N. Dak. | 9,531,696.99 | | 529,157.56 |
| Ohio | 135,986,547.07 | | 10,270,467.16 |
| Okla. | 2,863,342.75 | | 2,426,307.67 |
| Oreg. | 101,751,907.44 | | 8,478,547.24 |
| Pa. | 48,350,307.24 | | 16,433,950.08 |
| R.I. | 74,874,645.54 | 852,147.64 | - |
| S.C. | 1,176,872.74 | | 2,751,017.99 |
| S. Dak. | 15,586,316.46 | | 1,205,637.39 |
| Tenn. | 2,242,126.08 | | 4,639,148.37 |
| Tex. | 21,555,422.96 | | 15,312,496.85 |
| Utah | 11,671,665.70 | | 3,905,543.57 |
| Vt. | 1,553,112.42 | | 1,274,788.66 |
| Va. | 94,675,736.38 | | 14,518,760.51 |
| Wash. | 154,450,715.71 | | 11,996,242.38 |
| W. Va. | 4,479,607.25 | | 7,696,837.21 |
| Wis. | 51,360,052.23 | | 3,902,536.99 |
| Wyo. | 150,872.82 | | 1,891,136.96 |
| Dist. of Col. | 221,472,388.95 | 26,144,707.03 | - |
| Total | <u>\$3,211,021,479.34</u> | <u>\$300,657,703.65</u> | <u>\$300,657,703.65</u> |

PRINCIPAL OFFICIALS
RESPONSIBLE FOR ADMINISTERING
ACTIVITIES DISCUSSED IN THIS REPORT

Tenure of office
From To

DEPARTMENT OF TRANSPORTATION

SECRETARY OF TRANSPORTATION:

| | | |
|-------------------------|-----------|-----------|
| William Coleman | Mar. 1975 | Present |
| John W. Barnum (acting) | Feb. 1975 | Mar. 1975 |
| Claude S. Brinegar | Feb. 1973 | Feb. 1975 |
| John A. Volpe | Jan. 1969 | Feb. 1973 |
| Alan S. Boyd | Jan. 1967 | Jan. 1969 |

ADMINISTRATOR, FEDERAL HIGHWAY
ADMINISTRATION:

| | | |
|--------------------------------|-----------|-----------|
| Norbert T. Tieman | May 1973 | Present |
| Ralph R. Bartelsmeyer (acting) | July 1972 | May 1973 |
| Francis C. Turner | Feb. 1969 | June 1972 |
| Lowell K. Bridwell | Apr. 1967 | Jan. 1969 |