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Transportation

PROGRESS REVIEW and ANALYSIS

FEDERAL HIGHWAY PROGRAM

J.S.P.
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Roads

INTERIM REPORT

Interim
Report



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PUBLIC WORKS PLANNING

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Draft of Message to Congress

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Public Works Planning
Center for
Transportation

March 12, 1960

Dear Mr. President:

The report submitted herewith is an Interim Report in response to your directive to me of July 2, 1959, to make a broad review of the Interstate Highway program with special reference to its achievement of basic national objectives and the minimizing of Federal costs.

Our studies reveal that considerable reduction in costs can be secured if a close adherence is maintained to the primary objectives of a national system. This principle, which must be applied if Congress does not act now, calls for some modification of present criteria, especially in city segments, without any diminution of interstate and intercity service. This can and should be done without reducing standards. The attainment of a balanced adequate national network of highways intercity and within cities would still be achieved.

The Interstate System would be set aside and constructed as a specific separate program of definite size within the 41,000 mile authorization.

The application of modified criteria could reduce the cost by at least \$5 billion or more.

Toll roads collect from the immediate user and are generally completely self-liquidating and self-sustaining. Their use would effect reductions in both Federal and State costs. Their use to a limited degree was suggested in your message of February 22, 1955. The most feasible roads for successful tolling are where heavy traffic exists and these are the same routes that local authorities generally wish built as soon as financing permits.

A relatively small mileage of toll roads on a basis of voluntary State selection under the incentive of a 25% Federal grant is proposed. A reduction of Federal cost of \$3 billion is estimated.



Since committals for design, construction, and rights-of-way acquisition are continuously under way, neither the reduction in cost of \$5 billion through modified criteria nor of the \$3 billion from tolling can be realized unless instituted at the earliest possible date.

Criteria modification can and should be effected administratively immediately if Congress does not act. Tolling requires legislative action. A draft of legislation for its authorization is included as an attachment to the report. (Attachment 2 to Section III.)

There are two reports to be submitted to Congress in January 1961, directed toward establishing the basis of apportionments for fiscal years 1963-1966, and toward determining the beneficiaries of the Highway System. These should not substantially change the present over-all estimate and should not form the bases to delay the actions necessary to meet the current situation.

The present confusing situation is reflected in the following:

- (a) Congress has authorized \$25.4 billion for the Interstate System and revenues that will yield \$27.9 billion, but has indicated its acquiescence in a program which realistically is estimated at a minimum of \$38.9 billion Federal cost.
- (b) Congress has authorized a mileage of 41,000 miles, 40,000 to be completed by fiscal year 1972, but for which the yield from presently authorized revenues even if extended will not accumulate in the required total until 1978.
- (c) Not only must the cumulative Federal deficit, \$11 billion now estimated, be provided in 1972, but Congress should provide increased revenues that are designed so that the annual yield throughout the program is sufficient to meet the cost for the scheduled work for each intervening year.
- (d) Annual apportionments to date have been variable in amount ranging from \$1 billion in 1957 to \$2.5 billion in 1960, and \$1.8 billion in 1961, inadequate to meet a stable and dependable uniform amount.



- (e) The presently recommended revenues would permit future annual apportionments of \$2.4 billion in 1962, with a sudden drop to only \$1.6 in 1963, thereafter increasing gradually to \$2.0 in 1970, the last apportionment year for 1972 completion, whereas a level of \$3.4 billion is necessary.

Various suggestions as to additional revenue sources for the deficits under different conditions are contained in the report. The Treasury has stated its choice of alternates for additional revenue sources to be the motor fuel tax as the most easily administered.

To meet the \$1.1 billion deficit in 1972 and avoid unmanageable deficits in the Highway Trust Fund in intervening years would require a 4-1/2¢ motor fuel tax in 1961 and 1962, 5-1/2¢ from 1963 through 1970, and the normal 3¢ in 1971 and 1972.

On the other hand, if the feasible reductions in cost proposed in this report are attained, the \$3 billion deficit can be most simply met by a 4-1/2¢ tax from 1961 through 1968, and the normal 3¢ tax from 1969 to 1972.

To remedy this situation there are the following courses open:

- (a) Stretch out the program through fiscal year 1978. We need the System much before this date. It was designed for 1975 traffic. It has been promised the public for completion by 1972.
- (b) Provide revenues of sufficient quantity to meet the foreseeable deficit of at least \$1.1 billion. This should be in such quantity as to insure regular dependable annual apportionments through fiscal year 1970 in amount to cover expenditure through fiscal year 1972.
- (c) Authority to increase apportionments without regard to the available Interstate System share in the Highway Fund by borrowing from the General Fund. This is highly objectionable from the entire fiscal, public debt, and budget aspects.



(d) Reduce the cost of the program through Congressional or administrative action by prescribing criteria sufficient to effect economies needed, estimated at \$5 billion or more. This can be done without injuring the primary purposes of the Interstate System.

(e) Effect a \$3 billion savings in Federal funds expenditure through self-liquidating financing by tolls.

Action should be taken by the Congress along one or more of these lines at once if proper progress and if savings are to be made. Failing this, administrative action to effect the reductions outlined in this report is necessary. It will be impossible to make the \$8 billion reduction in costs if no action is taken this year.

There is enclosed a draft of a message to the Congress informing it of this situation, proposing action, and recommending legislation to permit States to finance Interstate System road construction through tolls.

Respectfully yours,



J. S. Bragdon



The President
The White House
Washington 25, D. C.

March 10, 1960

Summary of Major Conclusions

The objective of building a National System of Interstate and Defense Highways has been obscured in an effort to solve other tremendous traffic demands, primarily local. There have been varied interpretations as to what functions the Interstate System is to perform as distinguished from the Primary System and the local highways system.

Congress's provision for consideration of local needs was not meant to make these local needs the primary aim above the system itself.

The 90% Federal sharing encourages the transfer of segments to the Interstate System highways formerly considered the responsibility of the State and local authorities. This pressure will continue unless clarification and action is taken to define and set aside the Interstate System as a separate system within the 41,000 authorization, with the Primary and Secondary aid systems to provide whatever additional assistance Congress may provide funds for.

The Interstate System program should be reoriented to better serve its major objective of providing a national network of transcontinental, interregional, and intercity highways for speedy and safe



motor travel and to serve interstate commerce and the national defense.

Because traffic demands are greatest in urban areas, these areas have been given first attention by State Highway Departments. Since costs average five times as much in urban as in rural areas, the estimate of the Interstate System has greatly increased and may continue to grow unless action is taken to orient the program back closer to its national goals.

Urgent transportation needs for peak rush hour traffic within urban areas are not within the province of the Interstate System to solve, but may be provided by rapid transit supplemented by other forms of mass transit, local freeways and expressways, and control systems. The primary Federal-aid System can supplement these to the extent of availability of funds, as it has in the past.

Greater control over the development of the Interstate System program should be exercised by the Federal Government by the promulgation of more specific criteria and standards for selection and construction of routes, and by programming the construction of the system through the establishment of priorities of relative urgency to the national interest.

A highway plan should be developed as a part of a region's or area's comprehensive transportation plan, and the transportation

plan should be a part of its economic growth and land use plan.

The 90-10 Interstate System program should be limited to not more than the 40,650 miles now designated (except mileage for Alaska and Hawaii) less any reduction in such mileage resulting from actions contained in this report. A "Balanced Adequate System" of approximately 39,300 miles which is within the Congressional 41,000 mile limitation, can be built under the reduced estimate of \$30.9 billion if the actions proposed herein are taken.

A presently realistic estimate is \$38.9 billion under the present criteria for construction.

Congress has authorized \$25.4 billion for the System. This is not adequate to build the mileage designated.

The revenues authorized by Congress for the Highway Fund and which are available to the Interstate System through 1972 are estimated at \$27.9 billion, which means an \$11 billion deficit.

Under the present revenue rate, available funds to meet the estimate could not accumulate until fiscal year 1978. Congress has directed completion by 1972.

Apportionments permissible under the law have been not only inadequate but have had to vary irregularly up and down. Next year the apportionment will drop from \$2.4 to \$1.6 billion. Regular dependable annual apportionments are needed.



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Apportionments must average \$3.4 billion per year from 1962 through fiscal year 1970 to meet the \$38.9 billion estimate and complete the program in 1972.

The estimate of cost can be reduced by a minimum of \$5 billion by applying more rigorous criteria for route location and design. Apportionments of \$2.7 billion per year from 1962 through 1970 would then be necessary.

A further savings of \$3 billion is estimated through permissive tolling at individual State's election. There would then be required equal annual apportionments of \$2.5 billion to complete by 1975.

The remaining deficit of \$3 billion, if an \$8 billion reduction in cost is made, could be covered by providing 4-1/2¢ motor fuel gas tax through 1964 as recommended in the Budget Message and continuing it at that rate through 1968 and reverting to 3¢ from 1969 to 1972 inclusive.

On the other hand, if no reduction in cost is made, to meet a \$11 billion deficit with revenues from motor fuel taxes would require a 4-1/2¢ tax in 1961 and 1962, 5-1/2¢ for eight years from 1963 through 1970, and the normal 3¢ tax in 1971 and 1972. These rates are approximate but are illustrative of the problem.

The recommendation for savings by applying economic criteria would result in no decrease in the design standards of the controlled access system. A magnificent adequate system would be obtained.

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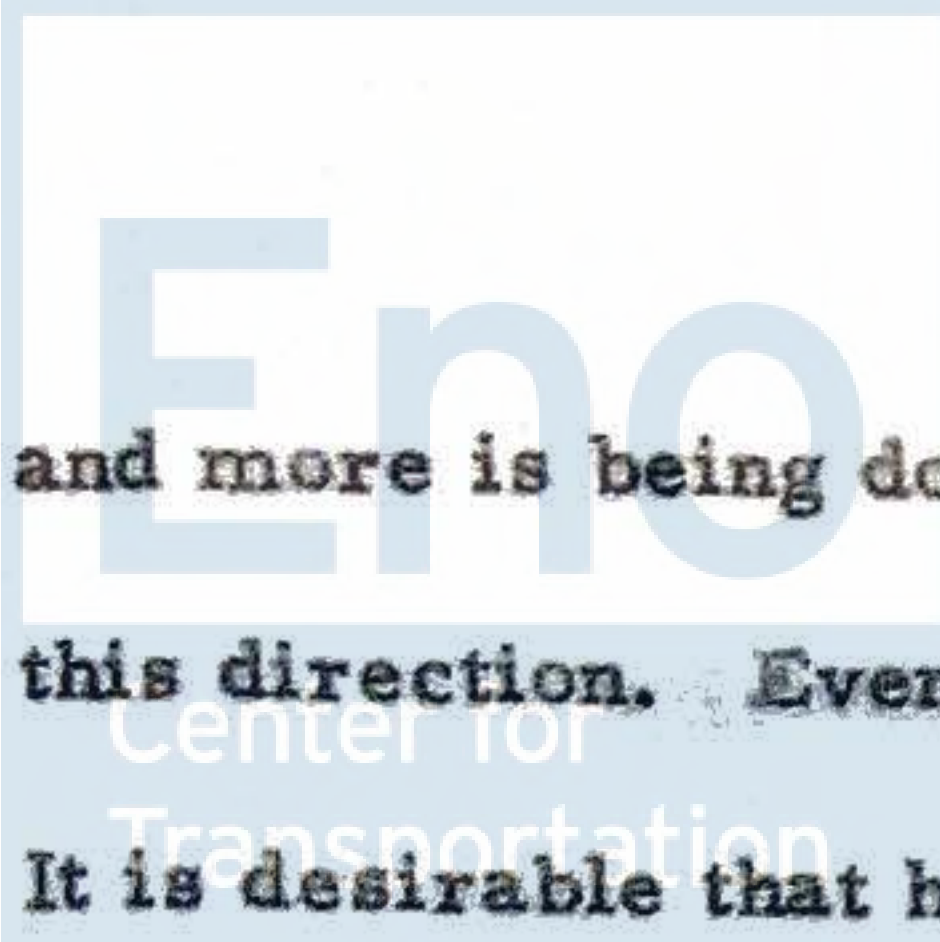
The criteria proposed would not deprive any urban area of adequate connection to the system nor of routings within the urban areas for adequate collection and distribution of intercity traffic.

The roads that are best candidates for tolling are in the highly developed area where traffic is greatest. It is difficult to conceive that where there are great traffic demands, a toll highway would fail. These same highways are those which States and cities want at the earliest possible date. Hence, if tolling is to be used, this self-liquidating and sustaining method of financing should be made available to States for them to choose now. A year from now will almost eliminate it as a means of financing.

If costs are to be appreciably minimized by the application of economic criteria through routing and design, it must be done now since contracts for construction, committals for acquisition of rights-of-way and engineering design are proceeding daily. Here again a year's delay will practically eliminate this possibility of reduction in cost.

Federal-aid highway legislation has given the State Highway Departments practically coordinate authority with the Secretary of Commerce in route selection and fixing of standards. It also gives him the right to require revision of any parts of the system. More





and more is being done by the incumbent Secretary of Commerce in this direction. Even more authority in this respect should be exercised. It is desirable that he have the greatest support from the Congress in instituting economic criteria.

In view of the conflicting interests that are to be met by the design of the system to be established, the principal objective of the Interstate Highway System is to provide a national, international, interstate highway system for swift and efficient travel between major cities and to provide for the efficient movement of goods and services. This objective should be fully reflected in the planning and construction of the system and that local needs be served to the extent consistent therewith.



That the Interstate Highway System be set aside from other Federal-aid systems with the present limit of 4,000 miles but at an average of 100 miles per section and that the system be based on a criterion based on suggestion.



That further action is taken by the Congress, committees be made in accordance with the present fund of revenue and that the funds should be directed in attainment of a system interconnecting major cities and regions as first priority.

That other pressing urban needs be met by local means or by Federal-aid funds within the availability fixed by Congress.

Summary of Major Recommendations

1. That Congress clarify its intent as to the dominant primary purpose of the system in view of the conflicting interpretations that exist so as to enable positive criteria for the design of the system to be adopted; that the principal objective of the Interstate Highway Program to provide an inter-city, interregional, interstate highway system for swift and safe motor vehicle traffic for interstate commerce and defense be affirmed; and that this objective be fully reflected in routing selection procedures and design criteria; and that local needs be served to the extent consistent therewith.
2. That the Interstate System be set aside from other Federal-aid systems within the present limit of 41,000 miles but at an approximate present mileage of 39,300 miles as determined by criteria based on suggestions herein; and that the 90-10 sharing be limited to this amount.
3. That until further action is taken by the Congress, commitments be made in accordance with the present fund or revenue authorizations and shall be directed to attainment of a system interconnecting major cities and regions as first priority.
4. That other pressing urban needs be met by local means or urban Federal-aid funds within the availability fixed by Congress.



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5. That the Interstate Highway plan for regions, urban areas, and other communities be developed as part of the over-all transportation plan for each area, and that the transportation plan be developed as a part of the area's economic growth and land use plan; that as soon as possible the formulation of substantial, adequate economic growth and transportation plans be made prerequisite to the adoption of the highway plan.

6. That recognition be given to the realistic estimate of \$38.9 billion Federal cost of the system as now contemplated; and that fiscal planning be instituted forthwith to provide for it or preferably to attain the reductions for the balanced adequate system proposed herein of \$30.9 billion.

7. That Congress take the necessary action to assure a flow of revenues into the Federal-Aid Highway Trust Fund so that the amounts available therefrom for the Interstate System will be such as to enable the program to be completed as scheduled in 1972 and work to progress at a steady, dependable, and nonexcessive annual rate.

8. That Congress pass legislation immediately to authorize States to elect to finance toll roads, with Federal assistance of 25% grants so that States may thus be able to put under way important routes in heavy





traffic areas at an early date, thus opening the path to a further financial savings to both Federal and State Governments estimated at \$3 billion or more.

9. That failing action by the Congress as outlined above, especially as suggested in items 1 and 7, in view of the necessity for the Executive to stay within the presently announced authorizations of the Congress, executive action be taken to effect minimization of Federal costs to the extent compatible with the primary purpose of the system.



March 5, 1960

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INTERIM REPORT

PROGRESS REVIEW OF NATIONAL SYSTEM OF INTERSTATE
AND DEFENSE HIGHWAYS

INTRODUCTION

The 1956 Act started a new era in Federal-aid for highways. In July 1954 the President proposed a public works program of unprecedented magnitude and vision which not only captured the popular imagination, but addressed itself to a great need and a great desire of all Americans - a nationwide expansion of highways to join both seacoasts, to link both international borders, to connect all cities, for swift, safe, and uninterrupted motor travel. Nonpartisan in its appeal and purpose, its completion was and remains in its basic concept a universally favored national goal.

Prior to 1956, the Federal-aid funds, while substantial, constituted only a relatively small portion of the total expenditures for highways. This situation was radically changed by the 1956 Act by its authorization of a National System of Interstate and Defense Highways involving the construction of a 41,000 mile system of controlled access highways adequate to serve the needs of 1975 traffic, at an estimated cost of about \$27 billion, with Federal-aid constituting 90% of the cost.

Twelve billion dollars total have been committed on all Federal-aid highway systems in the space of three years, \$7-1/2 billion of this on the



Interstate System. The State Highway Departments and the Bureau of Public Roads have made enviable and commendable progress in attacking their gigantic construction operations.

The type of construction involving the controlled access type of highway as a nationwide network is a relatively new concept. The extent of the control of access, especially its application when passing through areas of high congestion, is of far-reaching importance. It has been adopted to better serve the primary objective of the System for interstate commerce and National defense.

In providing management and control, what features of authority should be retained centrally and what delegated, and particularly, the extent to which agencies of various echelons of government participate and exercise control are of paramount importance. In financing, the degree to which the self-liquidating methods are used and what other types of revenue sources and, in turn, the way of distributing them, are fundamental considerations. These heavily affect the cost, the time, the efficiency, and value of the end product, and its acceptance by the public.

A serious new problem has now emerged; namely, the question of how to complete this program on schedule. Recent cost estimates have indicated that the 1955 estimates are far too low and that the total cost of completing the System will be at least \$11 billion higher



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than originally contemplated. Whether to increase taxes, physically reduce the extent of the System, change construction standards, or extend the period of its construction, are questions now raised, and to which the Congress must supply the answers.

This report points out a possible answer. It shows that the concept of the Interstate System has gradually departed from that of one distinct system of transcontinental highways predominantly to serve interstate commerce and the National defense and has evolved, not as a System, but as a number of miles of controlled access highways, designed to serve all traffic in the particular areas where the highways are located. The report indicates the necessity for a return to the concept in which the Interstate aspect is given the greatest emphasis. This report also points out the advisability of limiting the System to the dimensions and to the number of miles needed to fulfill its National objective as a system now designated and not redesignating any mileage "saved" thru adherence to its fundamental purposes.

This report points up the advisability and suggests incentives to induce States to build toll roads. Tolling as a method of financing practically ceased with the advent of 90-10 Federal sharing.

The report also shows various alternates of extension of time and completion and types of taxes to meet the deficits of the latest estimate



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or of such estimate reduced by proposed actions.

As activities in selection and location of routes, procurement of rights-of-way and approving plans for the Interstate System are constantly proceeding, decisions on implementing actions should be taken promptly in order to protect the function of the System and the investment in it, and to reduce costs.

Actions to meet the present situation are presented herein on three major topics. These were selected for an Interim Report because (1) they cover the area in which optimum reductions in cost can be made; (2) they deal with basic concepts and policies; and (3) legislation or major administrative action is required now.

The three topics in this report are:

1. Basic Concepts and Criteria with emphasis on routing and controlled access to include such features as interchanges, number of lanes, and others.
2. Management Control, Needs, Programming, and Planning.
3. Long-Range Financing.



March 5, 1960

SECTION I

BASIC CONCEPT AND CRITERIA

The 1944 Federal-Aid Highway Act was the first to provide for the specific designation of a system of highways. It was to be "... so located as to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers, to serve the national defense, and to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico." The rapid expansion of the economy and especially highway transportation as well as the experiences of the war dictated the need for such a national system of highways.

Primary Purpose of the Interstate System

The primary purpose of the Interstate System is to provide the Nation with an intercontinental, interregional, intercity, north-south, east-west, efficient, free-flowing, safe highway network embracing the country as a backbone system that will foster the national economy and serve the national defense. That the Interstate System cannot serve all traffic needs and solve all highway problems is apparent in the fact that it is limited to 41,000 miles, whereas the entire Federal-aid System of the Nation is about 781,000 miles and the State and local mileage is approximately 2,600,000 miles.



The first fund authorization specifically for Interstate Highways as such was made in the 1952 Act. Such authorizations in the Federal-Aid Highway Acts of 1952 and 1954 for the four fiscal years 1954 to 1957, inclusive, totaled \$400 million. ^{J.S.} The urban section of the Federal-aid Primary System for these same four years was \$625 million. Prior to 1956 the entire amount expended on Federal-aid routes in urban areas was \$1.125 billion. In addition to urban extensions on the Interstate System there has continued to be provision of funds for urban extensions of Federal-aid Primary and Secondary routes.

The Federal-Aid Highway Act of 1956 was revolutionary in a number of respects including, (1) the great leap in authorization for the Interstate System from the \$400 million authorized for it specifically in previous years to \$24.825 billion authorized for expenditure through fiscal year 1969; (2) the 13 years for completion of the Interstate System involving an average expenditure of about \$2 billion per year; (3) the 90% sharing of the Federal Government instead of the 60% of the 1954 Act and 50% for Federal-aid roads in prior Acts; (4) the requirement for geometric and construction standards to accommodate 1975 traffic; and (5) apportionment on basis of estimated cost. These facts taken together justified the program's treatment as a new concept. It would be difficult to contend that the justification of the United States share of 90% could be other than the national nature of the System including its defense potentialities.



Characteristics of the Design of the Interstate System

The 1956 Act required adoption of the controlled access principle to afford efficient, speedy and safe motor travel. Controlled access highways are much more expensive than the normal highways since they admit of no entrances and exits except at interchanges, and provide expensive grade separation structures. An interregional system of this type highway is essential for national commerce and its integrity must not be compromised. If, however, the Interstate program is treated as only a great expansion of the existing Federal-aid system with the latter's characteristics of annual apportionments to all States and divided authority in the planning, selection of routes and other operational features, the newness of the concept other than the vastness of expenditure becomes submerged.

The objectives of the Interstate System have been interpreted to include taking care of local needs to the maximum extent feasible. This is not required by law nor is it a proper objective of a national system.

With the revival of toll roads in 1940 with their controlled access principle, route location generally became one of passing close to, but not through cities. The controlled or limited access principle has been adopted in the pattern utilized by toll turnpikes but with the added feature of carrying these expensive highways through the most congested areas of urban communities. In passing through these congested areas the highway often becomes an elevated viaduct or a depressed expressway with multiplied costs.



The completely controlled access highway in the pattern of turnpikes permitted interchanges or access at widely separated points with spacing up to 36 miles. When this spacing is reduced to take care of all local traffic along the route, the interchanges multiply in number and the costs increase.

Entrances and exits are hazards. They also slow traffic. The greater the number, the greater the downgrading effects on safety and speed, two primary benefits of the Interstate highway design. Recently, a number of ramps have been closed in congested centers of cities for this reason. The use of the controlled access highway has been found not to solve the rush hour problem in Los Angeles. City officials by press appeal have asked the public not to use these routes during peak periods.

The application of the criteria of giving local needs major consideration has, in practice, resulted in an attempt to take care of all traffic needs wherever encountered in a route corridor, and of whatever type. Any attempt to add to the basic objective and function of the Interstate routes by making them a major part of the area's local transportation system, would be a great factor in the leaping of costs to unmanageable proportions. To accommodate such traffic along some routes would require 22 or more lanes. In such case several routes would be necessary.

Illustrative of the costs is the fact that the Interstate System is costing approximately \$700,000 per mile in rural areas and an average of \$4 million per mile in urban areas. In some large cities it reaches up to \$16 million



per mile. In 1956 the cost of Interstate routes averaged \$134,000 per mile in rural areas and \$632,000 per mile in urban areas.

The preceding analysis of the building-up of cost is only partial in that the adoption of the concept of controlled access within congested portions of the cities superimposes high cost in rights-of-way acquisition and construction. One published criteria of the American Association of State Highway Officials is that Interstate System routes, in order to accomplish their task, should pass through or close to the congested part of urban areas. This as a requirement for the Interstate System is questioned as not required to accomplish its primary purpose.

Examples of Expanding Federal Costs for Urban Areas

A study of 16 large metropolitan Interstate System road complexes indicates an estimated cost of approximately \$5.5 billion. If the Interstate System had been planned only to connect by spurs with the arterial road or major street connections for distribution or receipt of intercity traffic but without passage through its congested sections, this total cost estimate would have been reduced to only \$2.3 billion, a reduction of \$3.2 billion. It is too late to accomplish this particular reduction but prompt and temperate actions as suggested in this report at this date would accomplish substantial reductions.

An examination of the situation in a western city illustrates the effect of such tendencies. It was found that the resolution of the primary traffic problems of the city included three routes of a city expressway system



proposed in plans prepared in 1951 prior to the provision of 90% Federal sharing in the 1956 Highway Act. The State, city and county planned to share expense of 83.2% of the total cost and 16.8% was to come from anticipated Federal funds. The plans were formed for the specific purpose of solving local congestion. The objective of the engineers who developed these plans had been to serve all traffic as it exists or will exist in the corridors of these routes.

The Federal-aid share for this System in 1951 was estimated at \$28 million spread over 20 years. After the 1956 Act established the Interstate System and 90-10 sharing, two of the three expressways were absorbed into the Interstate System, and one into the Federal-aid Primary System so that the Federal share became 62.5% instead of 16.8%. However, a new radial route was added within the city and a new circumferential route, bringing the total cost of \$342 million and the United States cost, based on recent estimates, up to an estimated \$285 million, or ten times the participation anticipated prior to the 1956 Act.

In another large city, a 1948 highway program of four expressways was built at a cost of \$212 million, of which \$35 million or 16% was the Federal share. A new arterial plan, a modification of the old one, has been and still is under construction after the 1956 Act. It consists of three Interstate and two Primary routes, making up an inner belt and radials. Its estimated cost is \$397 million, of which the Federal cost will be \$332 million or 83%.



For the alleviation of traffic conditions in the heart of cities, present criteria permit: that inner belts in the congested areas should be built as part of the Interstate System; that in some cases more than one inner belt might be in order; and that there also may be outer circumferential belts for bypassing. The Department of Defense has emphasized that outer bypass routes are more favored for purposes of defense.

A Modified Concept

A modified concept would provide for through traffic plus intercity traffic which originates in or is destined for the urban areas, plus only such local nonpeak hour traffic whose trip lengths are not such as to require numerous ingress and egress points. These defeat the primary purposes of the Interstate System, both by slowing it down by crowding and by decreasing its safety by causing cross weaving.

The further criteria of such a concept that (a) rush hour traffic should be handled either by mass transit, traffic control methods, or by local expressways, and that (b) spot traffic jam centers should not be taken care of by the Interstate System would, together, call for the routing of the Interstate System through the less, not the most densely congested regions, while at the same time adequately fulfilling a function of collection for and distribution from the Interstate System.

The concepts in the preceding paragraphs would tend to avoid the neglect of other transportation means and erosion of existing transportation assets.



Local Needs

Section 101 of Title 23, United States Code, provides in part as follows:

"It is hereby declared that the prompt and early completion of the National System of Interstate and Defense Highways, so named because of its primary importance to the national defense and hereafter referred to as the 'Interstate System', is essential to the national interest and is one of the most important objectives of this Act. It is the intent of Congress that the Interstate System be completed as nearly as practicable over the period of availability of the thirteen years' appropriations authorized for the purpose of expediting its construction, reconstruction, or improvement, inclusive of necessary tunnels and bridges, through the fiscal year ending June 30, 1969, under Section 108(b) of the Federal-Aid Highway Act of 1956 (70 Stat. 374), and that the entire System in all States be brought to simultaneous completion. In so far as possible in consonance with this objective, existing highways located on an interstate route shall be used to the extent that such use is practicable, suitable, and feasible, it being the intent that local needs, to the extent practicable, suitable, and feasible, shall be given equal consideration with the needs of interstate commerce."

(Underlining supplied)

The above-quoted section of the law has been variously interpreted.

Some persons have taken the position that the clause "... it being the intent that local needs, to the extent practicable, suitable, and feasible, shall be given equal consideration with the needs of interstate commerce" should be interpreted as though it were not a clause modifying one provision of the Act but rather an independent declaration of purpose modifying the entire Act. They have concluded, therefore, that the Federal Government is bound to pay 90% of the costs of all traffic needs, including all local traffic needs encountered along an interstate route.



Another interpretation is that the above-quoted clause applied to existing highways on an interstate route and that the phrase "... extent practicable, suitable, and feasible" was included to qualify this consideration to assure that the clause would be applied without impairing the Interstate objectives of the System.

Still another interpretation is that this clause is used only in connection with the determination as to whether to use existing routes.

Irrespective as to which interpretation is used, there can be little question but that the requirement concerning local needs is, in any case, subject to the predominant objective of the Interstate System, namely, to connect by routes as direct as practicable, the principal metropolitan areas, cities, and industrial centers so as to serve first and foremost the needs of interstate traffic and the national defense. These confusing interpretations of the law are reflected in costs to the extent of many billions of dollars. Early clarification by Congress is desirable to avoid excessive expenditure.

Abnormal Expansion of Urban Needs

Metropolitan areas, central city plus suburbs, have grown at faster rates than rural areas, the urban growth having been 13% from 1950 to 1956, and the rural 8% in the same period. For the 1950-1955 period, 97% of the United States population growth took place within metropolitan areas. The suburbs of metropolitan areas increased six times as rapidly as the central cities. Motor vehicle registrations have grown at still greater



pace than population. United States population increased 18%;

United States motor vehicle registration increased 43% since 1950.

Reconstruction of highways and streets for vehicular traffic has become imperative in many urban areas.

It has been stated that since most motor vehicle taxpayers are in urban areas, those areas should receive a greater share of the proceeds from motor vehicle use sources. The wealth of urban areas is due to the concentration of people therein. The tributary areas contribute to this wealth. The people of the area individually do not pay more for their motor fuel.

The pressure of motor vehicle congestion in cities and urban areas is real. The problem can be alleviated by the use of rapid transit, other forms of mass transit, and by new methods of control of traffic which are evolving. These are less expensive than structures that destroy existing physical assets including other transportation means.

Local city freeways and expressways properly planned are often imperatively needed. Since these contribute directly to the wealth of the area and are a part of its local growth assets, they should normally be the responsibility of the local community.

Because of the growing intensity of the transportation problems in urban areas, there may be some justification for special assistance to these areas. Any such assistance should not be sought by alteration of



the primary objectives of the Federal Interstate System. Rather, it should be included as part of a State or a special authority program. If necessary for further assistance, an expansion of the urban category of the ABC System of limited scope and duration could be authorized.

Traffic statistics within the limits of urban areas, taken from origin and destination surveys made in 55 cities, show that as an average, 75.5% of all trips are completely within the cordon lines defining the areas and hence purely local; 22% of the trips are internal-external and only 2.5% are for "through" trips. For 15 of the 55 cities whose population was over 250,000, these same percentages were 86.6% local, 12.7% internal-external and only 0.7% for "through" trips. This was, of course, to be anticipated. Although these percentages may not hold fully for a specific Interstate corridor, they are highly indicative. They emphasize the urban traffic problem and at the same time indicate that the problem is not one that can be solved by those highways which are primarily intercity and national.

The fact that roadways into cities cannot solve the rush hour problems is evidenced by the fact that the average number of riders per vehicle in the United States is 1.8 passengers per car. In most cases where metropolitan areas reach a population of approximately 1 million, the downtown section peak hour traffic demands mass transit supplemented by the use of strict control methods, local expressways, and freeways.

In a large eastern city where these problems have been studied with great intensity, the realization that rapid and mass transit must be a major

part of the solution has led to a subsidization of commuter rail lines by the city itself. It was found that by such subsidies in two instances the fares could be lowered 30%. There immediately followed an increase of 35% in the daily number of passengers. Such subsidization and retention of existing assets often will be the solution in preference to building expressways, one lane of which can carry only about 2,000 persons per hour in automobiles versus 8,000 per hour for buses and an average of up to 40,000 per hour for rapid transit.

Controlled access highways, whether intercity or local, in the form of "freeways," "expressways," "thruways" are rigid, static, costly structures. They are hard to remove, more so than the ci-devant elevateds of New York City. They must be lived with for a long time.

It is the conclusion of most students of the city traffic problem that super highways to carry more and more vehicles into and out of central cities are not the answer to peak hour or rush hour problems. They are often self-defeating. Rapid transit aided by surface mass transit and improved traffic control for the larger metropolitan areas is generally the answer.

Lack of Uniformity

Review of design practice, notably the spacing of interchange and grade separations, and lane requirements, indicates a lack of uniformity throughout the various States. This, of course, is reflected in variation in costs.



It is reasonable to expect that in States of relatively equal population density, average spacing for combined interchange and grade separation structures would be found to be approximately equal. Likewise the percentage of interchanges to the total intersected routes should be comparable.

Examples of variation follow.

The spacing of interchanges in Nebraska, 38th in population density, is 6.13 miles; in Colorado, 40th in population density, it is 3.29 miles, or about one-half as much.

In Louisiana, 23rd in population density, the percentage of interchanges to route intersections is 67%; in Kentucky, 18th in population density, it is 27%.

Delaware and Illinois are 10th and 11th in population density, but the ratio of interchanges to route intersections is twice as great in Delaware as in Illinois, and the interchange spacing is 1.78 miles in Delaware as contrasted with 4.17 miles in Illinois.

In number of lanes, New York, Washington, and Utah, which rank 6th, 33rd, and 43rd in population density, propose significant amounts of six lane routes in rural areas; New York plans 9.6% of its Interstate mileage, or 43 miles; Washington, 12.5%, or 60.7 miles; and Utah, 8.9%, or 53.6 miles.

Oregon, with 664.8 rural miles, plans to build 14.3% of two lane highways; 84.9% of four lane highways; and 0.8% miles of six lane highways in this State's rural areas.

Washington, with a total of 490 rural miles, plans no two lane construction; 75.8% of four lane construction; 12.5% of six lane construction; and 11.7% of eight lane construction.

Entrance ramps for interchanges vary from 14 to 20 feet in width in one region. The use of shoulders varies also. Connecticut paves both shoulders; Massachusetts paves only the right shoulder. Use and widths of left and right shoulders on bridges vary considerably with these States. Similar variations of these items are certain to exist in all regions of the United States. Within the group of States, New York, New Jersey, and all New England States, Massachusetts specifies a 13 foot width for the two innermost lanes in each direction on six and eight lane highways; all other States use a 12 foot width.

Deviations in lengths of acceleration and deceleration lanes in New Hampshire and Rhode Island are 20% below the design standards of the Bureau of Public Roads. Deviation of acceleration lanes in Vermont is 20% above standards and the deviation in New Jersey for deceleration lanes is 40% above design standards.

Estimates of costs average \$651,400 per mile for four lane rural segments, running from \$350,600 in Nevada to \$2,989,100 in Delaware.

Urban four lane sections average \$2,195,500 per mile and range from \$696,000 in North Carolina to \$8,992,600 in Washington, D.C.



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Interchange spacing in rural areas ranges from 1.0 in Delaware to 6.9 miles in Vermont. Cost of interchanges averages \$329,400 in rural areas, ranging from \$123,500 in South Dakota to \$2,160,000 in Delaware. In urban areas, cost estimates of interchanges range from \$90,500 (North Carolina) to \$2,018,200 (Washington, D.C.), averaging \$682,600.



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Actions Proposed Under Section I, Basic Concepts and Criteria

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1. That as a matter of basic policy, the Federal Government orient the Interstate System to conform to the primary objective of providing the Nation with a network of transcontinental, interregional, and intercity highways for efficient, safe and rapid motor transportation in interstate commerce and to serve the national defense; and require that criteria and standards should be in furtherance of this primary objective.
2. That the Department of Commerce, in furtherance of the objective for the National System of Interstate and Defense Highways, fully and precisely define the functions of the several Federal-aid Systems and their inter-relationships in terms of service and system integration.
3. That the Department of Commerce, through the Bureau of Public Roads, establish such clear-cut policies, regulations, rules, and instructions, including specific criteria and standards so as to secure optimum uniformity and to provide for such location and geometric design as to insure that the Interstate System fulfills its primary objective as economically as possible.
4. That in cases where Interstate System routes pass through urban areas, they be designed primarily for through intercity traffic, and intercity traffic originating in or destined for the area.
5. That where in special cases, without interfering with the primary



objective, it is feasible to assist local traffic by additional lanes, these be paid for by the State; or, if the routes qualify for Federal-aid, by a combination of State, local, and Federal-aid 50-50 sharing funds.

6. That where the primary objective requires the passage of a route on the Interstate System through a city, the maximum centers of congestion shall be avoided but the Interstate System shall be designed to connect with the more important arterial systems which are the natural collecting and distributing arteries for the Interstate System.
7. That inner belts to solve intracity traffic problems be avoided.
8. That outer circumferential routes be consistently favorred over penetrating routes or spurs into congested areas.
9. That in general the number of radials within the large urban areas be only such as are reasonably required to collect and distribute intracity traffic and interstate traffic except that where existing highways are used, local needs be considered to extent practical and consistent with the primary purpose.
10. That wherever practical, spurs from the main trunk routes be preferred to routes running through cities, especially in the case of smaller cities; that generally, spurs will not be built in addition to a major trunk route when the latter passes through the town; and that spurs be of the minimum feasible length.
11. That Interstate routes in or through cities be not designed to provide for peak rush hour traffic nor to solve the numerous spot centers of traffic



congestion caused by particular local street patterns.

12. That in 1975, the number of lanes in cities exceeding one million population shall not exceed eight, for cities in the population range of 400,000 to 1,000,000 shall not exceed six, and for cities under 400,000 inhabitants shall not exceed four. Exceptions to this can be made only when they meet approved engineering standards for efficient operation and are specifically approved by the Bureau of Public Roads in Washington, upon recommendation of the Regional Engineer, in keeping with the basic objectives of the National System. As a guide in making their review, the Division and Regional Engineers, in addition to the normal tests of traffic assignment methods, volumes, and lane capacities, shall determine that the exception is based upon all or such of the following considerations as are pertinent to the case:



- (a) Whether alternative forms of transportation, as outlined in local transportation studies, would provide a more effective or more efficient solution.
- (b) Whether other present or proposed highway facilities adequately serve the needs for which the Interstate lanes are proposed.
- (c) Whether it is feasible to provide other traffic engineering and traffic control measures as a solution to the problem within the physical limitations of the existing and generally parallel highways.

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(d) Whether all other highways, present and contemplated, will be operated at their design capacity in 1975.

(e) Whether the cost of improving other highways within the corridor would be more economical than adding extra lanes to the Interstate System.

13. Spacing of Interchanges. It is important that they be located so as to properly discharge and receive traffic from either Interstate and Federal-aid system routes, or major arterial highways or streets. It is equally important that they be not spaced so closely as either to unnecessarily increase the cost of the System or interfere with the free flow and safety of traffic on the Interstate System. Interchanges within urban areas should not be spaced closer than an average of two miles, in the suburban sections of urban areas average not closer than four miles, and in rural sections average not closer than eight miles. Obviously, however, in consideration of the varying nature of the highway, street, or road systems with which the Interstate System must connect, the spacings between individual adjacent interchanges must vary considerably. In urban areas the minimum distance between interchanges should be not less than one mile, and in rural areas, not less than three miles. Under normal circumstances the increased cost of construction resulting from the development of an interchange should have a net benefit cost ratio of not less than 1.0.



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When a State recommends that the interchange spacing be closer than the above-stated averages or minimum, or the net benefit cost ratio is less than 1.0, the recommendations must be submitted to the Regional Engineer for concurrence, with a showing of justification based on demonstrable public benefits or necessity.

The concurrence of the Department of Commerce and the Federal Highway Administrator of Recommendations 12 and 13 above was developed in staff conferences in connection with this report. The criteria contained in these Recommendations is now being issued to the field. The use of this criteria is estimated to produce a saving of about three-fourths billion dollars in the System recommended.



March 5, 1960

SECTION II

MANAGEMENT CONTROL, NEEDS, PROGRAMMING AND PLANNING

Transportation

Management Control

Title 23 - Highways - 1958 - provides that:

Section 103(d) - "... The routes of this system shall be selected by joint action of the State highway departments of each State and the adjoining States, subject to approval by the Secretary as provided in subsection (e) of this section..."

Section 109(b) - "The geometric and construction standards to be adopted for the Interstate System shall be those approved by the Secretary in cooperation with the State highway departments. Such standards shall be adequate to accommodate the types and volumes of traffic forecast for the year 1975..."

Section 103(e) - "The Secretary shall have authority to approve in whole or in part the Federal-aid primary system, the Federal-aid secondary system, and the Interstate System, as and when such systems or portions thereof are designated, or to require modifications or revisions thereof..." Underlining supplied.

The State highway departments in cooperation with the Department of Commerce are jointly involved in the selection of routes and establishment of the Interstate System. The States are responsible for selection of routes subject to the approval of the Secretary of Commerce. Although the Secretary has authority to withhold approval of recommendations of State highway departments or to require modifications or revisions thereof, and thus has a veto control, it is relatively rarely that it is exercised.



The Secretary of Commerce, in order to exercise his responsibility for approving the routes of the Interstate System, must give further guidance to the States in the form of objectives, criteria and standards as to type and character of routes which will meet with his concurrence. Similarly, under Section 109(b), supra, he must provide guidance as to the geometric and construction standards which will meet with his approval. This he has done but, as it has developed, in terms which have been too broad to make certain that the most economic solutions, consistent with the achievement of the System objectives, have been adopted.

The Department of Commerce has prescribed that the standards published by the American Association of State Highway Officials would be followed, but they do not set maxima and are so broad as to permit wide variation. There may not have been sufficient high level staff to provide the necessary review and surveillance to assure that the Secretary's policies and principles were being carried out. This has resulted as a practical matter, in a greater assumption of authority by the State highway departments than is consistent with the attainment of the most economical national system. As a consequence there has been a wider variation than is desirable among States as to such important things as the spacing and type of interchanges, the spacing and type of grade separations, the number of lanes, and the extent of frontage roads.



In the desire to take care of local traffic, State highway departments, under the pressures of counties and communities, have departed greatly from the pattern of turnpikes with their widely spaced interchanges. They have in some instances, proposed to provide not only the immediately needed interchanges which are a proper part of this program, but also those desired for future development beyond it.

The practice has grown up to leave not only the initiative of route selection but the more refined development of standards, to the State highway departments. In consequence, the Federal Government does not, in effect, have the control which now seems to be necessary. There are efforts being made by the Secretary of Commerce to correct this.

The ability to hold the program within economical bounds and within its basic operations is contingent upon the exercise of greater authority by the Federal Government in the selection and approval of routes and the criteria and standards for the Interstate System.

Experience has shown that promulgation of broad criteria does not insure the type of performance which adequately protects the national interest. Fifty sovereign States swayed by 50 sets of varying conditions and by the desires of 3,000 counties and countless small jurisdictions, do not work efficiently to the benefit of the total economy without stronger central control. In a program of such broad overriding importance as the Interstate Highway System, such control is most reasonable and appropriate.

Maximum economy is seldom secured when one authority expends funds that another supplies.



In fact, it might be better if the entire cost were borne by the United States, if this were necessary to insure the national and defense character of the System and to keep its cost to the minimum for that objective.

Authority of the Secretary of Commerce to Change or Modify Parts of the Federal-Aid System

The question has been raised as to the authority of the Secretary of Commerce to modify or change routes, inasmuch as initially, the selection of routes under the law is a joint action of the Secretary of Commerce and the State Highway Departments.

Section 103(e) of Title 23, U.S. Code "Highways" quoted above would appear to leave little doubt as to his authority to make such changes as he believes necessary.



An opinion of the Assistant Attorney General dated February 19, 1960, states in part as follows:

"The more reasonable construction of the statute is that it vests authority in the Secretary, after the Interstate System has been approved, to require modifications or revisions thereof, including deletions of routes if necessary to the purposes of completing the Interstate System.

"Applications of comparable precedents supports this construction as a matter of sound and flexible administrative practice." Underlining supplied.

90-10 Sharing

As fundamental as the principle that cheap money drives out good, is that a higher aid sharing will gradually replace a lower, since to those receiving aid it is the best bargain, the cheapest to them. In consequence, there is incentive to transfer routes from the traditional category of 50-50 sharing to the Interstate System's 90-10. Both are available for intercity and intracity purposes.

In the 11 years from the close of World War II in 1945 to July 1, 1956, roadways constructed as urban sections of the Interstate System and of the Primary System were 82 miles and 6,036 miles, respectively, costing \$10.6 million and \$1.2 billion, respectively. In the 3-1/2 years from July 1, 1956 to November 30, 1959, roadways constructed as urban sections of the Interstate System were 535 miles, a 650% increase over the earlier 11-year period and the total cost, \$360 million, was 34 times that of the earlier 11-year period; whereas the mileage of urban sections of the Primary System dropped from 6,036 miles for the 11 earlier years to 2,704 miles, a decrease of 55% for the latter 3-1/2 years; and the cost of these Primary urban sections dropped from \$1,208 million in the earlier 11 years to \$831 million in the later 3-1/2 years, a decline of 30%.

The transfer of mileage and costs from the Primary urban to the Interstate urban is sharply reflected in these figures.

The pressure for greater mileage under 90-10 sharing was also



evident in the recommendations by the States of 13, 775 additional miles for designation when the limit was raised from 40, 000 to 41, 000 in 1956.

The 90-10 Interstate program should be limited to not more than the 40, 650 miles now designated (except mileage for Alaska and Hawaii) less any reduction in such mileage resulting from the proposals of this report.

Cost Control

Cost control systems are needed by management in order that it can make constructive financial and program decisions. Such a system should provide information sufficiently frequent and with such timing that management will be warned of undesirable trends in time to take corrective action.

Cost control in the production of new highways is similar to other devices used in overcoming production problems in that it involves best use of resources without sacrifice in the usability, quality and safety of the finished product.

Greater cost control, as a tool to assist management, is needed in the Interstate Highway Program. It is also essential that the fiscal accounting systems used by the Bureau of Public Roads provide continuing information as to whether "as built" costs exceed or fall below earlier estimates for the same items as well as actual costs for comparable items under comparable conditions. It is understood the latest instruction



being prepared by the Bureau of Public Roads provides for such cost control. A cost control system with common elements should also be placed in effect by each State highway department at the earliest possible date so that comparative and evaluation costs analysis can be readily made.

Programming by Criteria

A more effective control by the Bureau of Public Roads over the order of selection of routes to be placed under construction should lead to the earlier completion of greater integrated stretches. These should connect first the more important control points. The ones which have less need should be deferred to a later date. Doing a little bit of something everywhere has resulted in a fragmentary picture which, although the sum of all the small sections keeps expenditures up, nevertheless does not result in an orderly development of completed connections between important control points.

The desire to get funds committed under 90-10 sharing and the 1958 acceleration action have contributed to these piecemeal activities. This has been especially true in congested urban areas under the stimulation of 90-10 cost sharing where rights-of-way, utility relocations and complex structures are very expensive.

The orderly programming of the entire system with the aim of securing first, a completed, connected network and deferring to a later stage less important routes and their ancillary features, would result in an increased efficiency of the System at any time as the program proceeds.



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Later increments would add deferred routes and segments thereof considered necessary to integrate the System further and to keep pace with growth demands in the latter portion of the program.

Programming should be kept attuned to availability of funds for the program. The first increments should be within the present provision of revenues authorized for the Highway Fund and estimated to become available by 1972. A definite outline of the later increments which would proceed - if, as and when Congress provides funds beyond the present \$27.4 billion authorization - would provide an orderly and prudent procedure. A uniform level of funding would encourage ordered programming.

Planning

The foundation of proper regional, metropolitan area, city or community planning begins with an economic growth and land use plan, of such comprehensiveness as to include balanced development in all the aspects of an area's life. Social and aesthetic values, manifested in community centers, parks, and recreation, zoning, subdivision development, location of other public works and improvements, all should be weighed.

Comprehensive planning measures needs, forecasts their growth, and compares their relative urgencies by established techniques, as well as providing for the coordination of the plans of communities with higher and lower echelons of government, and with adjacent areas.



Of such a comprehensive plan, the transportation plan is one part and, in turn, the highway plan is one part of a transportation plan.

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It is true that business developments will spring from and follow along a great highway, but this "stringing along" is sometimes not the development which a community wants nor is entitled to have in these times when modern planning techniques can easily be applied to attain healthy, balanced sequential growth.

It should not be difficult to require as a prerequisite to allocation of road funds, a satisfactory highway plan conforming to the regional transportation plan and the community growth and land use plan.

The Bureau of Public Roads reports that of the 288 cities over 25,000 in population, 149 have comprehensive city plans, 230 cities have urban arterial highway plans, and 66 have transportation plans. However, these plans are often limited to city corporate boundaries and do not cover the entire designated urban area. Much of the arterial highway planning is for parts of the State highway system and is done by State highway departments. These plans are not always based on the concepts of comprehensive planning in the full significance of the term.

Practically all planners and experts in the transportation field agree that highways alone cannot answer the traffic congestion problems of the larger cities. The American Municipal Association at its meeting in December 1959, after calling attention to the fact that by 1980



more than 80% of the nation's people will live in some 160 great urban areas, states that, "Neither highways nor aviation can meet the transportation needs of these people. Not only would the cost be prohibitive, the amount of land required for highways and parking facilities would take so much of the usable space in any urban area as to defeat its own purpose. "... "It is apparent that high-speed mass transportation, particularly in the form of rail, both surface and subway, must play a vital, important part in furnishing transportation to the great urban areas." The Association advocated that a national policy be established by the Congress for a balanced and coordinated transportation system for urban areas and that a study be made of the need for grants-in-aid by the Federal Government to communities or duly constituted public bodies to develop sound plans for the permanent improvement of intracity transportation facilities. These points deserve early consideration by Congress.

The expansion of the authority of Section 701 of the HHFA Act of 1959 gives sufficient scope to cover the comprehensive planning contemplated at the State, regional, and local level. The one and one-half per cent highway planning funds can be applied to transportation elements.

Needs

A real estimate of needs has not been prepared by which the relative urgency of highways can be evaluated in comparison with other



types of public works or services. There are techniques for determination of relative urgencies in most public works fields but such techniques are all predicated on a determination of NEEDS.

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It is difficult to estimate highway needs. Good roads constitute an invitation to the individual to become a car owner and to enterprisers in the transportation field to launch new businesses for profit over the media provided by such roads. Roads in themselves increase the demand for cars. And conversely, the more automotive vehicles produced, the more the demand for roads. However, while some measure of traffic growth in vehicle miles can be obtained on the basis of estimates of population and economic growth, it does not necessarily indicate need.

This continuous cycle of road and vehicle growth makes difficult, if not impossible, the fixing of a reasonable target. Economic law may decree a saturation point but it may not be recognized. For example, two-thirds of the land area of downtown Los Angeles is now used for streets and parking lots.

But it is easy to confuse true need with apparent desires which are not synonomous with needs. When needs estimates are invited from those who are not directly responsible for their fulfillment, it is desires and not needs that are forthcoming. And for desires, there is no limit.

An engineering estimate based on "needs" predicated on estimated future vehicle miles, although useful as a tool for application to



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a highway route, becomes fallacious as an over-all measuring rod. The vehicle miles of the future can be as fantastic as quantity of roads and available funds can make them. The point here is that not only should population and vehicle miles be predicted, but also the needs in other public works and services should be measured and fitted into the total revenues reasonably expected to be available for public works investment generally. There exist techniques of comprehensive planning which enable relative urgencies of all types of public works and services to be determined, and to serve as a guide for distribution of such appropriations as a legislative body may make available.

It is, of course, standard business practice to create desires for a product. But the limitation to production is based not only on the quality of the product, but its cost. The limitation of cost is not so persuasively present when the product is publicly provided, although it should be.

The automotive industries' prosperity has so often spearheaded the general prosperity that no one desires to check it, nor should.

For the public good, however, we should be interested in all values resulting from public expenditures. When we build roads we should prevent the erosion and destruction of other public assets, whether in the transportation field or the sphere of community values. For example, we have a tremendous investment in existing railroads which may be able to serve certain transportation needs more efficiently.





Los Angeles at one time had a suburban rail rapid transit system which operated 2,300 trains daily on 50 different branches. It now has none. It has tried unsuccessfully to solve its whole traffic problem by free-ways and expressways. Now it is studying plans for a new rail rapid transit system.

If we cannot wisely plan, weigh and utilize all our assets, then only the overriding costs and threatened deficits will provide the restraint which must be exercised. It is beyond the scope of this report to analyze these values. But time should be taken to survey what they are and to weigh them against the values of more highway and automotive development.



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Actions Proposed Under Section II
Management Control, Needs, Programming and Planning

1. That the Secretary of Commerce in approving projects on the Interstate System give priority to those projects which will develop a connected system to Interstate Standards at the earliest practical date and which is consistent with their contribution to interstate commerce and national defense; and that he require such modifications or revisions of the system or any portion thereof to conform to the criteria recommended in Section I, unless Congress has expressed itself differently.
2. That in the development and submission of plans for important alternate routes wherever there are major variations in cost and service to intercity traffic, there be included a complete analysis of the advantages and disadvantages of each so as to determine net benefits.
3. That the Secretary of Commerce as soon as practical, but no later than January 1961, institute as a prerequisite requirement to Federal approval of Interstate routes that plans therefor conform to over-all growth and land use plans of regions, metropolitan areas and communities, and to the transportation plans of the community area, including all types of transportation. Where they do not conform, full justification of differences should be submitted to the regional office for consideration.
4. That in the event Congress does not clarify the program, the Interstate System be programmed as follows:



A. Initial Increments

To attain a connected system to the extent practical to (1) link all major control points with priorities being given to those routes most needed in accordance with Recommendation 1; (2) conform to the amended criteria as recommended in Section I; and (3) stay within the present estimated cumulative 1972 total of revenues authorized for the Highway Fund plus matching funds as shown more specifically in Section III, Long-Range Financing; and that early action be taken to have apportionments modified accordingly. These increments would not exceed in total cost the estimated yield of revenues now authorized, namely \$27.9 billion.

B. Later Increments

Add to the initial program segments or elements deferred therefrom but considered desirable which will (1) further integrate the system to meet its primary objective; (2) furnish additional sections and ancillary features; (3) keep within the revenues authorized for later increments by the Congress; (4) and conform to the criteria recommended in Section I of this report. These increments would not exceed the \$33.9 billion estimate after reduction in cost by criteria application.

C. That any elements now designated but deferred beyond increments in A and B be carried out either under local programs or as part of the urban categories of the ABC System.



5. That when the mileage of the Interstate System now designated, less any reduction in such mileage resulting from the adoption of these recommendations, or approximately 39,300 miles within the 41,000 miles authorized and designated as more specifically described in Case III of Section III, Long-Range Financing, of this report, has been constructed, no further mileage on the Interstate System be designated under 90-10 sharing, and that thereafter Federal participation in future construction on the Interstate System be limited to 50% of the cost.



March 5, 1960

SECTION III
LONG-RANGE FINANCING

In the development of a long-range finance plan for the Interstate Highway System, it is considered that the highway construction program should be completed on the schedule approved by Congress because the American people have been promised an adequate Interstate System in 1972, and the System is being designed for that period. States, the constructors of the program, are entitled to a stable program for which they can plan, rather than one of a stop-and-go type. Further, the program should be one based on the pay-as-you-go policy.

1. Limitations

The Highway Act of 1944 established 40,000 miles as the limits of the Interstate System mileage. The Highway Act of 1956 increased this to 41,000 miles. The Act of 1956 also established the Highway Trust Fund and prescribed the fund authorizations for the Interstate System, exclusive of the 1,000 miles added by the Act. The 1956 authorization for the System has been modified and is now \$25.44 billion.

At the time of the Clay Report in early 1955, only 37,500 miles of the Interstate System had been designated. Prior to enactment of the 1956 Law, the Secretary of Commerce, on September 15, 1955,



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designated the remaining 2,500 miles, primarily in urban areas. It thus appears that the 41,000 mileage limitation was posed by Congress as a goal to be quickly reached, rather than a ceiling within which to work and to reach ultimately, notwithstanding the fact that there had been a dollar limitation of \$25.44 billion established for a 40,000 mile program.

Although the States recommended 13,750 miles to fill the added goal of 1,000 miles authorized in 1956, these were expressions of the individual State highway departments of their "needs." Criteria formulated to define what constituted a "need" as distinguished from a "desire" and thus create uniformity in reporting "needs" as promulgated, were inadequate. While the Bureau of Public Roads adopted eligibility tests to select the 1,000 miles most fitted for the System out of the 13,750 recommended, the selecting process apparently was aimed at meeting the new goal of a 41,000 mile System.




In the studies made in connection with the selection of the 1,000 miles, a saving of 1,452 miles in the then designated 40,000 mile System was realized, due to straightening of routes and more precise locations. Of this 1,452 miles, 1,102 were redesignated into the System in 1957, leaving about 350 miles in reserve for future designations.

The 41,000 miles established by Congress for the Interstate

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System does not at the same time define a financial target. Uncertainties as to what the target may be makes difficult the devising of ways to meet it. Thus, a flexible program for raising revenues is needed. As an example, the application of the criteria contained in this report to the routes included in the 41,000 mile designation would establish the mileage needed for a balanced adequate system at about 39,300.

Uncertainties exist as to whether the mileage of the System should be reduced if the primary objectives of the Interstate System can be attained with a reduced mileage. Uncertainties also exist as to whether Congress wishes the costs to be held down to the costs of a System which will meet the primary objectives of the Interstate System or whether Congress will provide all funds necessary to complete a 41,000 mile program. The resolution of these matters, plus the rate of providing funds, must determine progress. Pending certainties in this regard the appropriate administrative action would include, (1) proceeding within the limits of existing law in planning and construction; (2) developing the System toward the primary objective without committing it to an ultimate much larger figure. To do this requires the establishment of priorities and the use of such specific criteria as to hold the program to the minimum to accomplish the primary objective.



2. Estimates and Deficits

In providing funds for whatever size system, it is desirable to have a uniform and definite rate of allocation and expenditure for both planning and progress. Table 1 illustrates the necessity of providing funds continuously in early years, as well as throughout the program. Table 1 shows that, under a \$38.9 billion estimate (later explained as to amount), even under the 4-1/2¢ temporary motor fuel tax recommended in the Budget Message for fiscal years 1961 through 1964, deficits will occur in fiscal year 1962, and a cumulative deficit will appear in fiscal year 1964 of almost \$1 billion, and in 1972 of \$11 billion. This is because the revenues now provided by law are not sufficient to permit the required apportionments on a pay-as-you-go basis. Provision for annual income to meet annual expenditures must be made in addition to providing the over-all amount that will be needed to complete construction by the end of 1972.

Other assumptions will also affect both the incremental annual income and expenditures, such as the extent to which the allocations will be made out of the Highway Fund to the ABC System, which has priority established by Congress over the Interstate in this regard. There exist certain contingencies which were not included in the \$36 billion estimate presented to Congress in 1959, but, nevertheless, are



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contemplated by the law, such as (a) cost of State highway planning survey funds; (b) reimbursement to States for relocating utilities; (c) increasing vertical clearances on future bridges; (d) a small allowance for Alaska and Hawaii; (e) provision for the 1,000 miles additional authorization in the 1956 Act; and (f) contingencies. These are reasonably certain costs, to the extent modified criteria will not require deferrals. Since the 41,000 mile limitation is just as authoritative as the earlier 40,000 mile one, it should be included for consideration and the criteria of Section I applied to the routes proposed therein.

In addition, there are other contingencies such as the cost of reimbursing the States for highways taken into the System, and cost of increasing vertical clearances of all structures, already built, which are considered remote at this time. Hence, although an estimate will be shown for this, no analysis of revenues or actions to meet it will be presented.

The application of the criteria recommended in Sections I and II would result in reductions in costs which will vary with the rigor with which applied.

Thus it may be seen that the total estimate and, therefore, resulting deficits, after utilizing estimated available funds, will depend on assumptions with respect to many variables, namely, (1) the mileage of the System; (2) the funds authorized, available or anticipated to be authorized or available; (3) temporary revenues to



balance incremental annual expenditures; (4) availability to the Interstate System of Highway Fund moneys; (5) extent of application of criteria and resultant reduction in costs; and (6) savings to the Federal Government that might be made by other methods of financing.

Under these conditions innumerable alternate cases might be developed. To simplify this, there are discussed herein four cases, namely, Case I - what can be done within the present \$25.44 billion of authorization; Case II - what system could be expected under the \$27.9 billion accumulated total funds anticipated to become available by 1972 under the recommendations of the Budget Message for fiscal year 1961, captioned below "A Minimum Interconnected System"; Case III - "A Balanced Adequate System" within the 41,000 mile limitation totaling 39,300 miles, resulting from a reduction of designated routes by the application of criteria contained in Section I - there being included certain contingencies based upon provisions of law or otherwise considered certain. These cases are summarized in Table 3.

Case IV includes two presently remote contingencies of reimbursing for highways taken into the System and for increasing vertical clearance for bridges already built. This case is included merely to show the large resulting deficit. No further analysis is made concerning its financing.



Case I - What Could be Done within Present Authorization

A study of what could be done to stay within the \$25.4 billion Federal, \$28 billion total, present authorization indicates that the prime objective of an interconnected system between all control points could not be attained.

In this study the prime purpose of securing an interconnected intercity system was the first essential - this to be considered within the light of present commitments. The dispersed character of these commitments, especially within urban areas where traffic needs are pressing, makes impossible attaining a countrywide network within the authorization of the Congress.

Case II - "A Minimum Interconnected System"

On the assumptions that the funds for the Interstate System that would be available by 1972 in the Highway Fund, namely \$27.9 billion Federal funds, or \$30.5 billion total, including States' share, it would be possible to develop a nationwide interconnected system including carrying the most important connections through cities, with a very rigorous application otherwise of the criteria given in Sections I and II. It might, however, require some modification of apportionments.

The routes which could not be included in such a minimum interconnected system would be deferred to later programs, in accordance with monetary authorizations by Congress.

The fixing of project priorities would be controlled by the



Secretary of Commerce in accordance with such authorizations.

The use of tolling as a method of financing is discussed in later paragraphs of this Section and in Attachment 1. If States should take advantage of the authority to build toll roads contained in the Federal-Aid Highway Act of 1956, there could be added many of the routes, especially in cities where traffic pressure is greatest, to supplement the System. Toll financing would be effected by States as in any self-liquidating public works project.

To encourage the construction of toll facilities in the Interstate System, certain incentives, including assistance in the form of Federal grants to help in initial financing, may be utilized. Such incentives would require additional authorization to the present toll provisions.

These grants can be financed in early stages from available funds which make up the current inflow into the Highway Fund as it builds up to an ultimate \$27.9 billion. Grants of 25% in substitution of 90% Federal sharing would result in a substantial reduction of Federal financing.

It is not anticipated that a large number of toll roads would be built under Case II, their greater application being contemplated for Case III. Applications under Case II would require substantial control to produce an "interconnected system".

"A Minimum Interconnected System" would consist of approximately



35,200 miles of intercity highway, interconnected within and through many cities. The supplementation by 2,000 - 4,000 miles of toll roads would add to this.

Case III - "A Balanced Adequate System" Within the 41,000 Mile Limit

While existing law gives no present legal leeway other than to consider Case I or II, Congress has indicated that it contemplates greater magnitudes than those limits, inasmuch as it approved in 1959 utilizing a \$36 billion estimate as a basis for apportionments, and because it has indicated acceptance of the Secretary of Commerce's designations of routes, and because the 1956 Act provides in broad terms for taking care of traffic needs of uncertain extent other than that necessary for national and defense purposes.

Case III, therefore, takes this \$36 billion estimate as the starting point and applies thereto the criteria of Sections I and II to reduce its costs.

A system within the 41,000 mile instead of the 40,000 mile limit is considered for the reason that 41,000 miles has the same degree of authorization, and the total cost between the two being of the order of somewhat over a billion dollars would amount to less than 3% of the total, so that the same general comments as to ways and means of meeting the funding requirements would apply. In addition, the application of criteria could reduce the difference between the two to a very small amount. There seems to be little question as to the intent



of Congress to finance the additional 1,000 miles at a later date because it has required a new estimate for only 40,000 miles for January 1961.

It is also noted that the Bureau of Public Roads is proceeding with planning and with right-of-way acquisition on the additional routes which make up the additional 1,000 miles.

In accordance with the terms of the Highway Act, the Secretary of Commerce submitted to the Congress in January of 1958, a new estimate for the cost of the authorized system of 40,000 miles. This brought the total estimate of Federal funds, including previous appropriations, to about \$36 billion. The increased costs were stated to be due to underestimating of earlier submissions because of lack of time in preparation, price increases, increased traffic, and greater provision for local needs. The last was stated to be responsible for 50% of the increase.

The estimate of \$36 billion was stated by the Federal Administrator of Highways to be a reliable estimate. It is, therefore, taken that any revisions to be made in the January 1961 submission will be due to additional or more expensive alternates or unforeseen conditions. It omitted certain items which are contemplated by law, or are so probable that they should be considered.

In view of the foregoing facts, Case III is taken to be the realistic situation and the one for which consideration must be given to develop the various means and methods of meeting the total required for it. A summary estimate follows.

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| | | <u>(billions)</u> |
|----|--|-------------------|
| 1. | Estimate of January 1, 1959 (Federal funds) | \$36.000 |
| 2. | Cost of earmarked State Highway planning survey funds (1-1/2%) - Section 307, P.L. 85-767 | .540 |
| 3. | Reimbursement to States which enact laws to defray expenses of relocating utilities (18 States at present, more to follow), Section 111, P.L. 84-627 | .500 |
| 4. | Cost of increasing vertical clearance on <u>future</u> bridges on new Interstate System from 14 ft. to 16 ft. | .200 |
| 5. | Tentative estimate of Interstate System for Alaska and Hawaii | .200 |
| 6. | Cost of providing for the 1,000 miles added by the 1956 Act (41,000 - 40,000) | 1.000 |
| 7. | Unforeseen costs and contingencies on above items | <u>.460</u> |
| | Total | 2.900 2.900 |
| | Revised cost of the 41,000 mile System, Federal funds | 38.900 |
| | Estimate of revenues available to the Interstate System through 1972 ^{1/} | <u>27.900</u> |
| | Deficit ^{2/} | \$11.000 |



1/ The present Law and the 1961 Budget Message proposals provide about the same total in 1972 since the increment to the Federal motor fuel tax is about offset in the Budget Message by the repeal of the present diversion of automobile manufacturers' excise tax from the General Fund to the Highway Fund.

2/ Methods of reducing cost to meet this deficit are discussed in the following paragraphs.

Case IV - 41,000 Mile System, including Further Additional Contingent Items

This Case is outlined only to show the magnitude to which the deficit could grow. Before providing for it, it would be of higher value to the System to include higher priority items deferred under the application of criteria for Cases I, II and III. It will not be considered further in this report.

Case IV (billions)

| | | |
|--|--------------|---------------|
| (1) Cost of Case III as outlined | | \$38.900 |
| (2) Cost of increasing vertical clearance from 14 ft. to 17 ft. (or 16 ft.) on Interstate System structures <u>already</u> built (estimated by Army) | .600 | |
| (3) Cost of reimbursing the States for certain toll and "free" highways financed by them and incorporated into the Interstate System (from H. Doc. 301, January 7, 1958) | <u>4.300</u> | |
| Total | 4.900 | <u>4.900</u> |
| Revised cost, including additional contingencies, Federal funds | | 43.800 |
| Estimate of revenues available to the Interstate System through 1972 | | <u>27.900</u> |
| Deficit | | \$15.900 |



The following parts of the Discussion apply primarily to Case III.

3. Methods of Reducing Costs or Securing Revenue to Meet Long-range Deficits.

The following methods are considered:

(a) Reduction of estimated costs through criteria application.

(b) Revenues from user charges, or tolls.

(c) Increase or extension of present taxes and new revenue sources.

(d) Reducing the percentage of Federal sharing.

(a) Reductions in Cost through Criteria Application

The effects of application of the routing and geometric design criteria reviewed in Section I, as previously discussed, can according to the rigor used, amount to an \$11 billion reduction to stay within the \$27.9 billion income anticipated by 1972. Several studies were made with major consideration given to the status of engineering, rights-of-way acquired, and status of construction where started. A \$5 billion reduction was determined as practical. Studies of specific route deferrals were made with the idea that final action in this direction must be made by the Congress, or failing that, by the Secretary of Commerce.



(b) Tolling or User Charges (See also Attachment 1)

It is fundamental that if any financing means other than taxes, can be found which will reduce public costs, they should be utilized. Such means are available through the use of the toll or immediate user charge method as now employed by States through toll road authorities.

Toll road construction was greatly expanded after the war as a quick method of meeting greatly expanded traffic problems. This program also retarded the rate of increase of already burdensome

taxes and allowed a fairer distribution of State funds to other equally demanding purposes such as stream pollution. In 1950 the United States had only 424 miles of toll roads. By 1959 toll road mileage had jumped to a total of 3,207 miles, representing an investment of about \$5 billion. The advent of the sharply increased Federal Aid -- the 90-10 sharing for the Interstate System -- brought about an abrupt cessation of toll road financing. As of now, there is only about 21 miles under construction.

The present Law provides for taking into the Interstate System toll roads already built or hereafter to be built to standards within the traffic corridor. This has not been invoked as an incentive to use tolling since 90% Federal funds were considered readily available, or would become so.

Attachment 1 discusses the advantages of the use of tolling for the Interstate System on a permissive basis and includes the incentives which it is believed would induce States to select this method. It is estimated therein that as much as 4,000 miles would thus be built at a savings of approximately \$3 billion in the Federal cost of the Interstate System.

Non-toll bonding being proposed in some States where tolling is most feasible, will tend to reduce the acceleration incentive of tolling, and the savings to the Federal Treasury. This increases the importance of prompt action.



(c) Increase or Extension of Present Taxes and New Revenue Sources

Attachment 3 is a brief discussion of the present revenue sources of the Highway Fund and of how these may be augmented by increasing them or by utilizing new tax.

Table 2 shows the revenue needed with and without cost reductions attainable through application of criteria and permissible toll road financing. The reduction of \$8 billion leaves only \$3 billion to be found from new revenue sources. This amount could be accumulated by establishing the Federal motor fuel tax at 4-1/2¢ from 1961 through 1968 and permitting it to revert to 3¢ from fiscal year 1969 through 1972. If no action is taken to secure reductions, the \$11 billion deficit must be faced. If the motor fuel tax is chosen, it would have to be at a 4-1/2¢ rate, starting in July, 1960, for fiscal years 1961 and 1962, then stepped up to 5-1/2¢ for 8 years, fiscal years 1963 through 1970, reverting back to the normal 3¢ for the last 2 years, 1971 and 1972.

The reductions in cost are considered feasible and reliable. If, however, the means of their attainment are utilized only partially, the deficits will vary as well as the required rates and yields of revenues to meet them. The rates and yields of alternate sources of revenue under different reductions in costs or savings can be calculated from Table 2 by interpolation.

The necessity of reducing costs of the realistic Case III is apparent in Tables 1 and 2 and Chart 1.

Chart 1 illustrates the apportionments required for the various program levels of Case III. It will be noted that if apportionments would be limited to the revenue levels expected under the 1961 Budget Message, they would have to be extended through 1976 to meet the \$38.9 billion program level. Since apportionments must be made at least two years in advance, the resultant construction programs would be extended through 1978 -- a 22-year highway program instead of the authorized 16-year program.

The chart also reveals the fluctuation in apportionment to date and that without any action, their level must fall to \$1.6 billion, a reduction of 33-1/3% in fiscal year 1963, ascending gradually thereafter to fiscal year 1976.

For orderly and efficient planning and execution there is badly needed a steady, dependable rate of flow of funds.

If the program is to be completed on schedule in 1972, there are only nine apportionment years left.

If the full reduction of \$8.0 billion discussed herein is achieved, the apportionment level to complete on schedule would be about \$2.4 billion per year, somewhat higher than that contemplated under the 1956 Act.

If only \$5 billion reduction is realized, the apportionment level to complete on schedule would rise to about \$2.750 billion per year.



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If no reductions are achieved, the apportionment level rises to more than \$3.4 billion per year. This level would greatly extend, if not make impossible, the matching abilities of many States. It might undesirably affect the general economy.

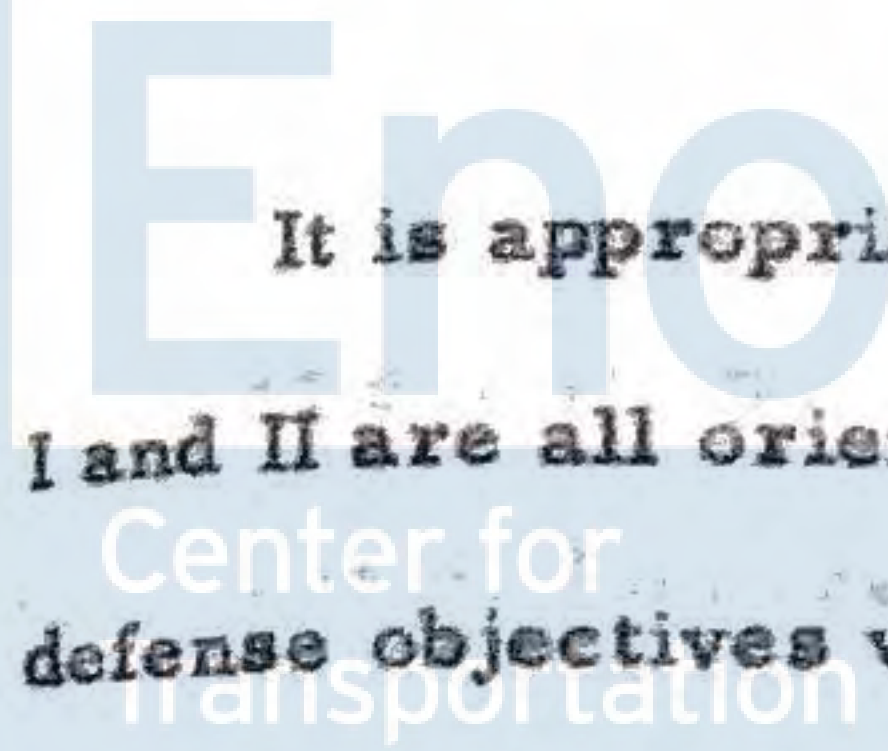
It can be readily seen from the Chart that immediate action is necessary if the program schedule is to be maintained and if apportionment levels are to be kept from becoming excessive.

The need for immediate action, if reductions in cost are to be effected, lies also in the fact that commitments on road selection, right-of-way acquisition, are being made daily. It will be impossible to make any substantial reductions by deferrals and utilizing toll roads if another year is allowed to pass without positive action.

(d) Reducing the Percentage of Federal Sharing.

A change in the sharing formula from 90-10 to 66-2/3 - 33-1/3 effective July 1, 1960, would reduce the Federal share of costs to complete the program from the target estimate of \$38.9 billion to about \$31.7 billion, a decrease of \$7.2 billion. The States' share would be increased accordingly. Adoption of this change in sharing would reduce the deficit of Federal funds under Case III of the target estimate from \$11.0 billion to \$3.8 billion. This could be covered by application of criteria to effect deferrals of this amount, institution of tolling, or a year's extension of the motor fuel tax through fiscal year 1965.





It is appropriate to point out that the criteria contained in Sections I and II are all oriented toward maintaining the primary national and defense objectives which justify the 90% sharing. If the Federal proportion of sharing were now reduced, States wherein little commitment has been made to date would feel unfairly dealt with.



March 5, 1960

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Actions Proposed Under Section III, Long-Range Financing

1. That in the absence of clarifying action by Congress, the Interstate System program be reoriented to secure a "balanced, adequate system" in 1972 by the following:

- (a) Effecting a reduction to \$30.9 billion in the estimated Federal cost of \$38.9 billion, as now programmed made up of:
- (1) \$5 billion reduction in cost through modified criteria;
 - (2) \$3 billion from tolls in States electing to build them.
- (b) (Reference Table 2) Meeting the remaining deficit of \$3 billion by any one of the alternate revenue sources shown in the last column of Table 2, whichever of these alternates the Congress would elect. An additional alternate not shown would be a stretch-out of 18 months into fiscal year 1974 of present revenue sources.
- (c) That for any less reduction in cost the greater deficit be made up by any one of the alternates shown in Table 2, at proportional rates, whichever the Congress may choose. Since stretch-out for larger deficits could run as much as five years, it is not proposed.
- (d) That no stretch-out be considered unless included in an alternate.



(a) That temporary motor fuel taxes be terminated in 1972 or 1973,
upon completion of the System indicated herein.

2. That in order to effect the cost reductions to Federal and State Governments attainable through user charges on toll roads, Federal grants, within the apportioned amounts, be authorized as an incentive to States which may request them for the construction of any approved section of the Interstate System as a toll road, to the extent of 25% of its cost; and that there be further authorized advances by the Federal Government to the State operating the toll road sufficient funds to make up any deficit in debt service requirements during the period such debt is outstanding; such loans to be repaid to the Federal Government out of and to have first claim to toll revenues derived from such roads after outstanding debt is retired.

3. That legislation be introduced at once for proposed Action 2. Attachment 2 consists of a draft therefor.



March 5, 1960

Apportionments Required to Meet Expenditures of a \$38.9 Billion Program
To Be Completed in 1972

and

Deficits Accumulating Under Revenues Now Authorized or Proposed in 1961
Budget Message

(Millions of Dollars)

| F. Y. | Apportionments | | Expenditures | | Revenues | | Trust Fund Bal. | |
|-------|----------------|--------|--------------|--------|----------|--------|-----------------|---------|
| | Annual | Cumul. | Annual | Cumul. | Annual | Cumul. | Annual | Cumul. |
| Bal. | 315 | | | | | | | |
| 1957 | 1,000 | 1,315 | 208 | | 724 | 724 | 516 | 516 |
| 1958 | 1,700 | 3,015 | 675 | 883 | 1,208 | 1,932 | 533 | 1,049 |
| 1959 | 2,200 | 5,215 | 1,501 | 2,384 | 976 | 2,908 | - | 524 |
| 1960 | 2,500 | 7,715 | 1,964 | 4,348 | 1,449 | 4,357 | - | 515 |
| 1961 | 1,800 | 9,515 | 1,780 | 6,128 | 2,088 | 6,445 | 308 | 317 |
| 1962 | 2,600 | 12,115 | 2,340 | 8,468 | 2,265 | 8,710 | - | 75 |
| 1963 | 3,400 | 15,515 | 2,600 | 11,068 | 2,359 | 11,069 | - | 241 |
| 1964 | 3,400 | 18,915 | 3,400 | 14,468 | 2,464 | 13,533 | - | 936 |
| 1965 | 3,400 | 22,315 | 3,400 | 17,868 | 1,559 | 15,092 | -1,841 | - 2,776 |
| 1966 | 3,400 | 25,715 | 3,400 | 21,268 | 1,626 | 16,718 | -1,774 | - 4,550 |
| 1967 | 3,400 | 29,115 | 3,400 | 24,668 | 1,696 | 18,414 | -1,704 | - 6,254 |
| 1968 | 3,400 | 32,515 | 3,400 | 28,068 | 1,765 | 20,179 | -1,635 | - 7,889 |
| 1969 | 3,400 | 35,915 | 3,400 | 31,468 | 1,832 | 22,011 | -1,568 | - 9,457 |
| 1970 | 2,985 | 38,900 | 3,400 | 34,868 | 1,901 | 23,912 | -1,499 | -10,056 |
| 1971 | | | 2,700 | 37,568 | 1,968 | 25,880 | - | 732 |
| 1972 | | | 1,332 | 38,900 | 2,035 | 27,915 | 703 | -10,985 |

Assumptions - Based on December 1959 projections of revenues modified by terms of 1961 Budget Message: (1) Repeal excise diversion of 1959 Highway Act; (2) maintain temporary 1¢ gas tax through 1964; (3) add 1/2¢ temporary gas tax from 1961 through 1964; (4) annual rate for ABC to be \$900 million starting 1962; (5) refund of 2¢ of aviation gas tax; and (6) paying for Public Lands and Forest Highways from Trust Fund starting in 1961.

Note: The above assumptions of Revenue total about \$500 million more through 1972 than the revenue estimates based on existing law (1959 Highway Act).



CASE III - "A BALANCED ADEQUATE SYSTEM"

| 1 | 2 | 3 | 4 | 5 |
|--|---------------------------------------|------------------------------------|-------------------------------|---|
| Federal Funds Only (Billions of Dollars) | Est. Total Program - No Modifications | 1/ Deferrals Due to Criteria \$5.0 | Reductions Thru Tolling \$3.0 | Reductions - Criteria and Tolling - \$8.0 |
| Cost of Program | 38.9 | | 35.9 | 30.9 |
| Revenues Available | 27.9 | 27.9 | 27.9 | 27.9 |
| Deficit | 11.0 | 6.0 | 8.0 | 3.0 |
| ALTERNATE REVENUE SOURCES | | | | |
| | <u>Rate</u> | <u>Yield</u> | | |
| Auto Retail Sales Tax <u>2/</u> | 2-1/4% | 11.2 | 1-1/4% | 6.2 |
| Mfrs. Excise Tax <u>2/</u> | 4-1/2% | 11.2 | 2-1/2% | 6.2 |
| Motor Fuel Tax <u>3/</u> | | | | |
| 2 yrs | | | 4 yrs. | |
| 1961-62 | 4-1/2¢) | | 1961-64 | 4-1/2¢) |
| 8 yrs. |)) | | 4 yrs. |)) |
| 1963-70 | 5-1/2¢) | 11.8 | 1965-68 | 5¢) 7.0 |
| 2 yrs. |)) | | 2 yrs. |)) |
| 1971-72 | 3¢) | | 1969-70 | 4¢) |
| | | | 2 yrs. |)) |
| | | | 1971-72 | 3¢) |
| | | | 4 yrs. | |
| | | | 1961-64 | 4-1/2¢) |
| | | | 5 yrs. |)) |
| | | | 1965-69 | 5¢) 8.5 |
| | | | 2 yrs. |)) |
| | | | 1970-71 | 4¢) |
| | | | 1 yr. |)) |
| | | | 1972 | 3¢) |
| | | | 8 yrs. | |
| | | | 1961-68 | 4-1/2¢) |
| | | | 4 yrs. |)) 3.9 |
| | | | 1969-72 | 3¢) |



1/ Deferrals from application of criteria would reduce the 41,000 designated miles to 39,300 miles.
 2/ These rates are average only and should be fixed so as to be higher in early years and lower in later.
 3/ There are other alternates to the rates and periods to which they apply. These can be worked out based on the deficit and the latest data on the yield of this tax. Those shown were aimed particularly toward avoiding deficits in any single year of the program in accord with the Byrd Amendment Sec. 209(g) of Federal Highway Act of 1956.

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SUMMARY OF CASES

| | <u>Estimated Federal Cost (billion)</u> | <u>Estimated Total (billion)</u> | <u>Result</u> |
|--|---|--|--|
| SYSTEM NOW PLANNED 41,000 Miles | \$38.9 | \$42.8 | |
| CASE I Present Authorization | 25.4 | 27.9 | No Interconnected System. |
| CASE II "A Minimum Intercon- nected System" - within anticipated revenues under present law - 35,500 miles | 27.9 | 30.7 | Interconnection of major control points only. Minimum criteria. Local city needs incidental only. |
| CASE III "A Balanced Adequate System" | | | |
| (a) Criteria Application 39,300 miles \$5 billion reduction | 33.9 | 37.3 | National and Defense Network; interconnected cities - routing thru cities for traffic diffusions. |
| (b) Additional to (a). Limited use of toll roads by States (4,000 miles) esti- mated \$3 billion reduction. | 30.9 | 34.0 | Same as (a) but States can extend toll use as desired. |
| CASE IV - 41,000 Mile System | 43.8 | 48.2 | No attempt at cost re- ductions. If case is seriously considered they would be applied as in Case III (b). |
| Plus Reimburse- ment. | | | |



February 5, 1960

TABLE 3

INTERSTATE APPORTIONMENTS

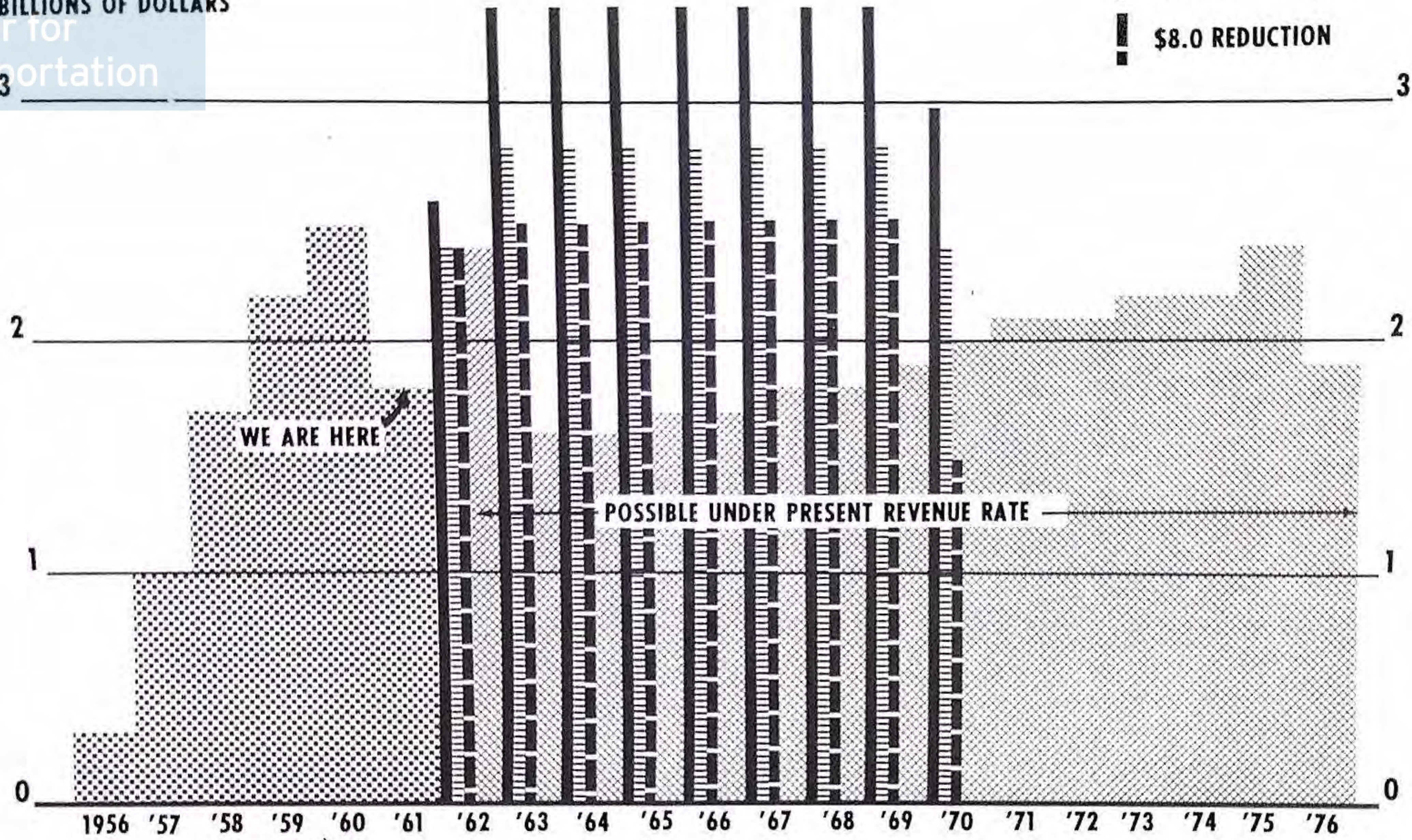
1

PROGRAM LEVELS

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FEDERAL FUNDS ONLY
BILLIONS OF DOLLARS
Center for
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TO COMPLETE ON SCHEDULE

- NO REDUCTIONS
- ▤ \$5.0 REDUCTION
- ▥ \$8.0 REDUCTION



FISCAL YEARS



March 11, 1960

Attachment 1

Reduction in Federal and State Costs Through Financing
by Tolls or Collections from Immediate Users

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The predicted traffic on proposed toll routes in congested regions has often been underestimated. The traffic on the Pennsylvania Turnpike in 1952 was 16 times that predicted for that year thirteen years earlier. The 1975 traffic estimates for the New Jersey Turnpike were attained in 1953.

House Document No. 139, April 14, 1955, contains a statement by the Commissioner of Public Roads to the effect that based on the assumption that each section of the road showing a feasibility ratio of 1.5 or greater is acceptable for toll financing the total length that could be so financed would be about 6,700 miles.

In May 1955, informal estimates by the Bureau of Public Roads indicated that if the feasibility ratio was 1.0, about 14,000 miles would be feasible. Because the feasibility ratio is only a measure of when and to what extent earnings overtake charges, a feasibility ratio of 1.0 becomes justified with Federal Government participation. Even a lesser ratio would be acceptable since the feasibility ratio would merely be a measure or an indication chiefly of how much the user charge would cover and what balance must be made up by the Treasury. For example, a feasibility ratio of .8 would indicate that at the mid-term of any bond period, 80% of the charges would be covered by collections.



In the same informal calculations by the Bureau of Public Roads a feasibility ratio of 1.0 indicated that if all the Interstate System's routes in each State were considered as a unit whereby collections from stronger and weaker sections were all a part of a State fund, 21,000 miles would be feasible. The calculations also revealed that if the Interstate System roads were considered as a national system, calculations in excess of charges from any section of the route in the System being available for deficits anywhere else, 30,500 miles would be feasible.

These calculations have been brought up-to-date. Because a great many of the sections first studied have been committed under the 90-10 basis, the Bureau of Public Roads now reports the feasibility on a 1.0 ratio as follows:

For remaining sections individually meeting the criteria of the 1955 study:

25 year bond term, 4% interest, 3,397 miles

25 year bond term, 4.5% interest, 2,955 miles

For State units where surplus collections from some sections could be used for deficits in other sections:

25 year bond term, 4% interest, 7,360 miles

25 year bond term, 4.5% interest, 6,614 miles

The calculations in the preceding paragraphs are based on 1955 traffic counts.



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Advice from bond experts is that if some definite support is given by the Federal Government in the form of advances or backing of States toward bonds for the Interstate System, a bond rate of 4.5% or less may be considered feasible.

(1) Advantages of Toll or User-Charge System

- (a) Most obviously it reduces the financing burden of the Government, Federal, and State. The States save not only their 10% sharing, but the cost of maintenance during the life of the route as a toll road.
- (b) The toll method provides a means for quickly building roads where needed and justified.
- (c) Completion of the Interstate System as a whole can be greatly accelerated because in those States where permissive tolling prevails, the State may start work at once in such volume as it deems best.
- (d) Immediate user charges are deflationary. The immediate user chooses to pay for the service the highway affords just as he pays for any other service. His expenditure for such services does not impel prices upward.
- (e) Immediate user charges are not difficult to administer because of the directness of the collections. The cost



of collection is not excessive. Many scientific advances for electronic and automatic computers have possibilities

Center for substitution for manual toll collection.

Transportation

(f) A toll system helps do away with the necessity of dedicating large amounts of excise taxes to a specific function, viz. highways. This practice is most undesirable for the Federal Government upon which the purposes of expenditures are so numerous and varied. Congress must each year weigh anew the relative urgency of demands for all purposes. In lower echelons of government where certain functions overshadow others the Government may, fittingly, dedicate resources to special purposes.

The situation is changed from 1955 when it would have been feasible as one solution of the financial problem to place, on a self-liquidating basis, the entire mileage of the Interstate System requiring development. Since then many commitments have been made, the Highway Fund established, and many plans have been formulated on other tax dedicated bases.

However, if the toll method were placed on a permissive basis for selected routes or selected sections, States could advantageously adopt this method with a reduction in cost to both the Federal and State Governments. There would be required legislation to permit any State to request



Federal-aid for the construction of a toll road where feasible and desirable. Under this plan an incentive grant would be authorized the State towards the construction cost or debt service of any toll road project, in an amount equivalent to 25% of the cost of construction of such project. A major incentive would be the desire of a State for early construction of roads where traffic demands are greatest, without waiting until later stages of the program. In addition, the Secretary of Commerce in conjunction with the Secretary of Treasury would assure the State that there will be advanced to it, out of general treasury funds, after the 25% has been received, such amounts as may prove necessary from time to time to cover any deficit in the debt service requirements of the toll road. Since the roads which would be chosen for tolling are those where presence of traffic was greatest, there would be slight risk that collections would not exceed charges at an early date after completion. Advances would be repaid out of the total revenues derived from the toll road after the outstanding debt has been paid. The Federal Government would also agree not to provide any Federal-aid for the construction of a free, competing road for at least one year after the amortization of revenue bonds.

Estimates indicate that between 3,000 and 5,000 miles of toll roads could reasonably be expected to be built under this permissive provision. A reduction in cost of at least \$3 billion to the Federal Government is estimated if 4,000 miles of the Interstate System were built as toll roads.



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One populous eastern State is proposing to issue "grant anticipation" bonds in order to accelerate construction of its roads. The grants to be anticipated are the 90% Federal funds expected in future apportionments. This contemplates both Interstate and Primary routes. The Federal share would be \$763 million out of a billion dollar expenditure. It is understood that other States are considering the same method. These bonds are not toll bonds. The major objective is acceleration by the State of its most needed routes, which routes are also the ones which would have the greater feasibility of payoff as toll roads. Non-toll bonding would tend to eliminate one of the major incentives of use of toll roads, namely, acceleration. The United States thus would lose the opportunity of saving 65% of its 90% sharing. The States would also lose their opportunity to save 10%, plus the financing costs, and maintenance costs during the amortization period. Such non-toll bonding which has the same aim of acceleration of heavy traffic route construction as would toll roads, makes it most desirable that the incentives for using toll roads be made available by proposed legislation just as soon as possible if the Federal Treasury is to have an opportunity to reduce its costs.

In view of the fact that committals are being constantly made in selection of routes, engineering, rights-of-way acquisition, construction, and this especially in the sections where traffic is greatest and toll roads would more likely be utilized, and if States are to be reasonably expected



to utilize this method, the proposed addition of the incentives to the present authorization for such roads should be authorized without delay.

It is doubted whether any savings at all through this means can be effected a year from now.

The draft of needed legislation to cover the foregoing proposals is included as Attachment 2.



March 11, 1960

Attachment 2

PROPOSED TOLL ROAD AMENDMENT

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That Chapter 1 of Title 23, United States Code, be amended by adding
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thereto a new section to be numbered Section 132 and to read as follows:

Section 132. Federal-aid to Toll Roads on the Interstate System



- (a) It is hereby declared necessary and advisable in order to further the prompt and early completion of an integrated Interstate System, that (1) the restrictions against Federal participation in toll roads on the Interstate System be eliminated and (2) States be encouraged to construct toll roads through limited Federal-aid participation; but only subject to the conditions, limitations and requirements contained in this Section 132.
- (b) Any State may apply to the Secretary for authorization to construct a toll road located on an Interstate System route. Any such application shall contain an agreement by the State to comply with the applicable provisions of this Section 132. Prior to the commencement of construction of any toll road project for which an application has been granted, the Secretary and the State shall enter into an agreement conforming to the provisions of this Section 132.

(c) (1) Any toll road constructed pursuant to this Section 132 shall be publicly owned and operated.

(2) All tolls received from the operation of such toll road, after deduction of actual costs incurred in connection with its operation and maintenance, shall be pledged and applied to the servicing of the debt incurred in connection with its construction. Any surplus funds remaining after payment of the actual costs of operation, maintenance and debt service shall be applied to the retirement of outstanding debt. Reasonable operating reserves may be provided.



(3) After the entire outstanding debt of a particular toll road has been retired, and, in the case of an application under subsection (d) (1) of this Section 132, after all Federal advances have been repaid, the State may continue to collect tolls, and, after payment of operation and maintenance costs, pay any surplus into its own treasury to be used solely for construction on the Federal-Aid Primary System; provided that the toll rate shall be adjusted downward to take into account the fact that debt service is no longer required.

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(4) Construction of any toll road pursuant to this Section 132 shall be subject to the provisions of this Title to the same extent as though it were a free road, except to the extent that the provisions of this Section 132 conflict with the other provisions of this Title in which case the provisions of this Section 132 shall govern.

The Secretary shall have the power to approve toll rates for toll roads constructed under paragraph (1) of subsection (d); and also for any toll road constructed pursuant to this Section 132 after its entire outstanding debt has been retired.

(d) Any State applying under this Section 132 may request aid for the construction of a toll road under the following plan:

(1) The Secretary in conjunction with the Secretary of Treasury will assure the State that there will be advanced to the State out of general treasury funds, after the total amount of Federal-aid authorized by subparagraph (d) (2) has been paid, such amounts as may prove necessary from time to time, to cover any deficit in the debt service requirements of such toll road during a period not exceeding twenty-five years from the date upon which the debt is incurred, such advances to be repaid out of toll revenues derived from such toll road after the outstanding debt has been paid; and



- (2) During the ten-year period ensuing after the signing of the agreement required by subsection (b), the Secretary shall permit the State to apply, from its apportionments of Interstate System funds, towards the construction cost or debt service of any toll road project, an amount equivalent to 25% of the cost of construction of such project.
- (e) No road, constructed or reconstructed after the commencement of construction of the toll road, and serving the same terminal points, which would have the effect of competing with such toll road for traffic to such an extent that the toll collections would be materially impaired by such competing free road, shall be eligible for Federal-aid grants until one year after the entire outstanding debt of the toll road has been retired.
- (f) The fact that one or more sections of the Interstate System, which have already been constructed with Interstate funds authorized by the Federal-aid Highway Act of 1956 or subsequent Federal-aid Highway Acts, or are under construction, lie between the terminal points of the proposed toll road, shall not preclude the approval of such proposed toll road if the cost of construction of such of the sections as are utilized within the toll road is repaid to the United States and the State in accordance with their respective contributions to such cost.



March 11, 1949

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(g) For the purposes of this Section 132

(1) The term "State" shall be deemed to include any agency or authority of the State which has been duly authorized to construct a toll road.

(2) The term "debt" shall mean bonds or other fixed obligations incurred because of the construction of the toll road repayable either by one or more obligors, by pledge of toll revenues, or both.

(3) The phrase "debt service" or similar phrase shall mean payments of interest or principal of the debt as such interest and principal matures.

That Chapter 3 of Title 23, United States Code, be amended by amending

Section 301, so said Section as amended reads as follows:

Section 301. Freedom from Tolls



Except as provided in Section 129 and 132 of this Title with respect to certain toll roads on the Interstate System, toll bridges and toll tunnels, all highways constructed under the provisions of this Title, shall be free from tolls of all kinds.

March 11, 1960

Attachment 3

Sources of Tax Revenue for the \$38.9 Billion Program

C. Increasing Current Revenues(1) Present Revenue Sources

The revenues into the Highway Trust Fund for fiscal year 1958 amounted to \$2.044 billion, 79% came from motor fuel taxes, 19% from automotive manufacturers' excise taxes, and 2% from motor vehicle use taxes.

- (a) The yield from motor fuel taxes was \$1.6 billion in 1958 from the 3¢ motor fuel tax. An additional temporary 1¢ tax was added to the motor fuel tax effective October, 1959. This temporary tax expires June 30, 1961. The yield from this temporary tax is estimated to be about \$600 million for fiscal year 1961.
- (b) An automotive manufacturers' excise tax on tires, tubes, rubber, buses, trucks, and trailers yielded about \$400 million in fiscal year 1958. As a temporary expedient, Congress, in the 1959 Highway Act, directed that an amount equal to 5 percentage points of certain other excise taxes (automobiles and motor vehicle parts and accessories) was to be transferred



from the General Fund to the Highway Trust Fund during the fiscal years 1962, 1963, and 1964. The total of this transfer is estimated to be \$2.487 billion. This is a direct levy on the General Fund - not a new revenue source.

(c) The motor vehicle use tax is imposed on very heavy vehicles only, and yielded only \$33 million for fiscal year 1958.

(2) The Motor Fuel Tax

Motor fuel taxes provide the major source of revenues for highway purposes at the Federal and State level. It is a most suitable source of revenue at the State level.

The States have long looked on the motor fuel tax as being in their area of taxation. It was initiated by them in 1919 and most States consider it dedicated to highway development. In 1957 the average State gas tax was 5.9¢ per gallon, the maximum 7¢.

When higher government competes with a lower for a source of revenue, the higher government prevails. If the Federal motor fuel tax gradually preempts this field of revenue, the States can be expected to turn to the Federal Government for expansion of and greater assistance for all the Federal-aid highway systems, Interstate, Primary, Urban, and Secondary.



This need for funds is indeed great when it is realized that local problems in this field embrace not only the entire 3-1/2 million miles of roads and streets but also all forms of transportation. This is especially true in urban areas.

Building boulevards, expressways, and freeways as the chief means of solution of the mass transportation problem results in so reducing the patronage of the natural mass transportation of rail and other public systems to the extent that they are financially - not physically - unable to handle the problem. Subsidization of former rail commuter lines is being tried. However, few cities are financially able to do this and the tendency to turn to the Federal Government for assistance to meet this situation, caused in part and in some places by the overbuilding of superhighways, will grow.

Thirty-four governors opposed increases in the Federal motor fuel taxes last year.

It would be prudent for the Federal Government to return as soon as practicable to the States the motor fuel tax as pertaining to the natural field of State sources of revenue so that they can care for their own highway needs. This is in accord



with the purpose of the Joint Federal-State Action Committee and the President's intent in announcing its formation in 1957.

It would also be in keeping with the recommendations made elsewhere in this report that the 90-10 sharing formula be terminated upon completion of the present Interstate System program, at which time the normal 50-50 sharing would be resumed.

The foregoing does not equally apply to the use of the motor fuel tax as a temporary special measure to assist in meeting the requirements of the Highway Fund for the Interstate System as a definite limited system as proposed in the report.

Self-Help by States

Just five years ago, aid by the Federal Government for highways was a little over \$.5 billion. At this time the States were spending annually \$6.3 billion on roads - approximately \$3.5 billion for new construction, \$1.8 billion for maintenance, and the remainder for debt service, etc. The Federal Government was then contributing about 9% to the cost of the Nation's highways.

With the expansion of the Interstate System and other systems, the total annual road bill is now about \$11 billion per year. While



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the Federal Government is now contributing about 27% of the cost, the States' total bill has sharply increased to about \$7 billion.

Tax powers and resources of State governments, which should be the first called upon as a source of aid to cities and urban communities, with respect to the highway problem, have, in many cases, not been exhausted and often not thoroughly studied. The fallacious idea that "Federal funds are free" acts as a deterrent to seeking ways and means by lower government echelons of taking care of their own problems. This narcotic to self-action should be cleared away.

Motivation of any action in this field which can influence policy should be to restore to States their ability to build and maintain their highway systems.

(3) The Automotive Manufacturers' Excise Taxes

This tax is easily collected. It is said to be painless. It is also an excellent source of revenue for the General Fund so should be directed to the Highway Trust Fund only for the minimum possible time which, in this instance, is only for the relatively short period until 1972. Thereafter the excess percentage should be repealed.

At the present time a portion of the excise taxes on trucks, trailers, buses, tires, tread rubber and tubes are directed to the Highway Trust Fund. The taxes on passenger automobiles and automotive parts and accessories are diverted to that fund from the General Fund.

In order to preserve intact the General Treasury Fund, but at the same time increase revenues in a practical manner, there is the possibility of a temporary increase in the excise tax on automobiles, trucks, trailers, buses and automotive parts and accessories to be placed directly in the Highway Trust Fund.

A one percentage increase would yield about \$2.5 billion through fiscal year 1972.

(4) The Motor Vehicle Use Tax

This is now applied only to heavy vehicles, those over 26,000 pounds gross weight. If this tax is applied to all automobiles, it would be objectionable since it would result in duplicate taxing. It would draw a fire of protest from the States. It would be difficult to enforce and it is better reserved for special application such as now utilized.



New Revenues

A retail sales tax on new and used cars of 1% imposed now would yield about \$5 billion through fiscal year 1972. A tax of this nature is somewhat more difficult to enforce than a manufacturers' excise tax, but a transfer title stamp to be procurable at post offices is simple and practical. Its use could avoid extension of the manufacturers' excise tax and dedication of excise taxes to highway use. It is flexible and a small fee on a percentage basis will produce a large sum of revenue. It is appropriate as a temporary tax and, if used, should be repealed promptly upon completion of the Interstate program.



March 12, 1960

President's Message to the Congress of the United States

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The construction of the great system of controlled access highways of our Interstate System is well under way. Twenty-eight hundred miles have been completed; 5,000 miles are under construction; preliminary engineering and rights-of-way are in progress for 18,400 miles. Seventy-six hundred miles are open to traffic, including routes improved with Interstate System funds and 2,300 miles of toll roads, bridges and tunnels.

The completion of this system will provide safe and swift motor vehicle travel for commerce, defense, and personal transport to every city and region of our country.

In my 1961 Budget Message I stated that at the appropriate time I would make recommendations to the Congress for the ensuing conduct and financing of the Highway Program.

The program has now been under way nearly four years. I directed my staff to make a progress review to include an examination of policies and their effectiveness in achieving basic national objectives of the program, and to determine economies that could be instituted to minimize Federal costs.

An interim staff report dealing with the most important of these matters is herewith transmitted. The report points out that substantial reductions in cost can be made if certain actions are taken.



The Congress will receive two reports in January 1961, one of which is to serve as a basis for apportionments for fiscal years 1963-1966, and the second of which is to be a study of the beneficiaries of the Highway System to provide for an equitable distribution of taxes. It is not contemplated that these reports are to provide for a material revision of the over-all estimate. I do not believe they should be the basis for delaying actions which can effect large reductions in the cost of the System and provide for its efficient prosecution.

Inasmuch as committals are being made daily placing projects under construction, for the procurement of rights-of-way and for engineering design, it is evident that to be certain savings can be realized, early action is necessary.

The Congress has authorized an appropriation of \$25.4 billion for the Interstate Highway System. It has also approved revenues whose flow into the Highway Fund will make available for the Interstate System \$27.9 billion by 1970.

The report indicates that the realistic present estimate is \$38.9 billion. There would, therefore, be a cumulative deficit of \$11 billion in 1972.

Congress stated its wish that this be an accelerated program to be completed in 1972 under apportionments made through fiscal year 1969.

Because of the needs of the Nation for the system, I am in accord with this early completion date.



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However, the Congress has not provided the revenues to insure this completion nor given any indication of how it will provide for the \$11 billion deficit. The report indicates various revenue sources which could be used.

The present revenue rate would not accumulate enough funds available to the Interstate System to complete the 41,000 miles authorized until 1978.

Funds provided to date have been variable in amount and such as to permit apportionments varying from \$1.7 billion in 1958 to \$2.5 billion in 1960, and \$1.8 billion in 1961. The revenues recommended in my Budget Message would permit \$2.4 billion in 1962, \$1.6 billion in 1963 and 1964, with a gradually ascending scale reaching \$2.3 billion in 1970. On the other hand, to keep on schedule under the estimate of \$38.9 billion, there would be required apportionments of \$3.4 billion per year from fiscal year 1963 through 1969 inclusive, and \$2.95 for 1970.

The up and down availability of funds for apportionment up to now and its continuance in a fluctuating fashion as presently indicated does not permit the steady, dependable planning and execution of work which is most essential in a program of this great magnitude. The States should know as far ahead as possible what they can depend upon.

I believe it unwise to proceed on a basis of a \$38.9 billion program, including the design and acquisition of rights-of-way, without any assurance either of authorization or of a flow of revenues to enable the work to be accomplished in the limited time set.



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The report also indicates that a strict adherence to criteria which assures the basic national objectives of the system as an interstate, intercity network for safe and swift motor travel could result in great savings, totaling a minimum of \$5 billion.

The report also indicates that a limited use of tolling would provide a method for States, which so chose, to put under way as toll roads immediately, or at an early date, those highways where the traffic demands are greatest; and that such action would at the same time effect a savings of approximately \$3 billion in Federal costs as well as a large saving to States, both in their initial share and in maintenance during construction. An incentive of a 25% Federal grant for such sections as the States may elect for this method is included.

The foregoing two types of savings could be expected to effect a reduction in cost from \$38.9 billion to \$30.9 billion, thus reducing the deficit to \$3 billion. This small deficit could be taken care of as shown in the report by a continuation of the gas tax at 4-1/2¢ through 1968, and 3¢ from 1969 through 1972.

The modified criteria which could result in the \$5 billion savings would result in no decrease in standards nor would it leave any city without adequate interstate and intercity service and connections to and within them.

The reductions in Federal costs which could be effected by the application of modified criteria must be initiated now or continuing commitments



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will prevent their adoption. Since the roads which are most fitting for use as toll roads are those which States wish to put under way at the earliest date, the legislative authority for tolling should be provided now. A year hence it is not anticipated such savings can be made.

In the lack of any tangible evidence by Congress of providing funds for the realistic estimate of \$38.9 billion and for providing a flow of apportionments as to permit an even, dependable rate of progress, it is my responsibility to effect economies through a method of priority selection and deferrals of less needed routes.

I am attaching a draft of legislation to authorize toll road financing in the Interstate System and recommend its approval at this Session.



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This is an Interim Report. The Final Report will deal with the following subjects, plus some amplification of details of the Interim Report:

Real Estate Acquisition

Rights-of-Way

Contract Methods

Organizational Structure at all Levels

Planning, Procedures, Hearings, etc.

Benefits to Cost Ratios

Auditing and Cost Control

Technical Provisions

Utility Relocations

