

I  
Iowa Highway Needs  
and  
Estimated Revenues for Highway Purposes  
1961 through 1980

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Ames, Iowa  
March 7, 1962

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I. Introduction

The state and county road systems of Iowa compose a densely spaced network of rural highways uniformly distributed over the area of the state. Superimposed upon this network at fairly regular intervals are patches of various sizes and shapes of even more closely spaced networks which compose the street systems of the cities and towns of the state. Collectively, these rural and urban highway systems include a total of approximately 112,000 miles of roads and streets.

Annual travel by motor vehicle on these systems is approximately 12 billion vehicle miles. Annual expenditures for the construction, reconstruction, maintenance, engineering and administration of all systems amount to only a little less than a quarter of billion dollars. Virtually every economic activity in the state has become, with the elimination of mud roads and the proliferation of dependable motor vehicles, dependent upon uninterrupted daily usage of the highways by the people of the state in the attendance at work, in the conduct of business, in transportation of raw and processed farm products, in the transportation of raw or semi-finished materials to shops, fabricating plants or other industrial installation, and in the distribution of finished products from these various places to markets in Iowa as well as elsewhere in the Nation. Freedom of movement by motor vehicle over the highways of the state is essential to the health and growth of the economy of the state. Highway

transportation has become an indispensable element of the economy of the state.

The highways, therefore, must be available constantly for service whether it be for the passage of few vehicles per day, may be only the mail service, the milk collection truck, the fuel truck, the school bus, the livestock truck, a farm truck, or vehicles of any of several service personnel such as the telephone lineman, power lineman, or farm implement repair man or the veterinarian, to the passage of several thousand vehicles each involved in some way in the various economic activities of the state.

The administering and financing of this great mileage (sixth largest among the states of the Nation) in such manner that each and all segments of it are furnished with the improvements appropriate to the quality and quantity of service required of them and are maintained in that condition constantly available for the service required of them are enormous and complex tasks. The provision of this service is, in Iowa, as elsewhere in the United States considered as basically a function of government. Its importance to the economic, health, and growth of the state, its complexity of management, and its magnitude of operation give it status as a major function of government.

Consequently, it is fitting that the Legislature be concerned with the problems involved in the provision and maintenance of the improvements needed upon the various highway systems of the state to supply the service required of them in connection with the economic activities of the citizenry of the state. In accord with its interest in the highways of the state and its responsibility to the

residents of the state in the discharge of this major function of the government of Iowa on their behalf, the Legislature in the 58th General Assembly created in 1959 a Highway Study Committee and directed this committee to make an analysis of the present and future physical needs of the existing highway systems and of the fiscal structure and capacity of the state, the counties and municipalities to meet these needs and to maintain the improvement required to satisfy them.

The Highway Study Committee, under the authorization given it by the Legislature, employed two non-profit research agencies to conduct the technical operation of the study, (1) the Automotive Safety Foundation, Washington, D.C. to make an analysis of the physical needs of the highways of the state, to prepare estimates of costs of the improvements required now and over some period in the future, and to make recommendations for the administration of the various highway systems and (2) the Public Administration Service, Chicago, Illinois, to make an analysis of the fiscal problems involved in meeting the physical needs of the various highway systems as determined by the Automotive Safety Foundation and to make recommendations with respect to the responsibility of each of the various groups of beneficiaries and users of the highways for financial support of the highways and with respect to the distribution of revenues from highway users among the various highway systems.

## II. Determination of Physical Needs

Salient features of the work performed by the Automotive Safety Foundation in connection with the analysis of the physical needs of the highways of the state were:

- A. An inventory of the existing highway facilities on each of the highway systems;
- B. Determination of the extent and nature of the usage of each segment of each of the highway systems;
- C. Classification of the highways of the state into systems on the basis of thier predominant service functions;
- D. Selection of standards of facilities for each classification of highways;
- E. Comparison of the characteristics of the existing facilities of each section of the proposed systems with the standards appropriate to the service required of the section;
- F. Computation of the costs required to bring each section of each system to the standards of improvement appropriate to the service required of the section;
- G. Computation of the costs for the replacement of facilities at the end of their service lives on each section where such event is estimated to occur with a proposed program period;
- H. Tabulation of program costs for alternate programs each with a defferent length of period for elimination or catch-up of the backlog of improvements needed at the time the study was made; and
- I. Preparation of an extensive series of recommendations pertaining principally to items of legislation and to features of administration for the implementation of the proposed programs.

Data and comments pertaining to each of the facets of the work of the Automotive Safety Foundation for the Highway Sutdy Committee were presented in the report of that agency to the committee entitled, "Iowa Highway Needs, 1960-1980".

### III. Determination of Financial Needs

Salient features of the work performed by the Public Administration Service in connection with the fiscal problems involved in meeting the physical needs of the various highway systems were:

- A. Preparation of a historical record of income from various sources for highway purposes;
- B. Preparation of forecasts of revenue from historical and new sources for each of the proposed alternate improvement programs;
- C. Comparison of the estimated annual revenues for each of the highway systems with the annual expenditures required for the execution of the alternate programs on the basis of
  - 1. Continuation in effect of laws pertaining to highway finance that were in effect in 1960, and
  - 2. Enactment of new laws proposed by the Public Administration Service;
- D. Computation of responsibility of highway users and non-users for financial support of each of the highway systems;
- E. Suggestion of sources of additional revenue for highways.

Data, comment and discussion of each of these and other features of the work performed by the Public Administration Service for the Highway Study Committee are set forth in the rather extensive report of that agency to the Committee entitled, "Financing Iowa's Highways".

#### IV. Highway Study Committee

The reports of the Automotive Safety Foundation and of the Public Administration Service were submitted to the Highway Study Committee late in the fall of 1960. The committee reviewed these reports and, in accord with the provisions of the Act creating the committee, submitted a report to the 59th General Assembly, nearly three months after the date specified in the Act. This allowed little time for the members of the Legislature to become thoroughly acquainted with the report and the basis for the numerous recommendations of the committee pertaining to legislation. Consequently, only one piece of major legislation pertaining to highways was enacted, that providing for a change in the formula for the allocation of the road

use tax fund among the highway systems. The 59th General Assembly, recognizing the necessity for further study of the highway problems of the state, did adopt a Resolution creating a new Highway Study Committee to continue the work of the previous committee, particularly to review and study the reports submitted to and by that committee and to recommend legislation for the consideration of the 60th General Assembly in 1963.

#### V. Program Costs of Highway Needs 1961-1980

The foregoing is intentionally a somewhat lengthy introduction to a discussion of the topic assigned for this report. It is believed to be essential background information for this discussion. It is presented here as a substitute for the three reports referred to in the foregoing, all of which are now out of print and unavailable for distribution in conjunction with the presentation of the data that follows.

#### VI. Classification of Highways

Iowa highway law provides for three rural highway systems and designates the agency responsible either singly or jointly with another agency for the administration of each system. These systems are the Primary Road System and the Secondary Road System, which is further classified into the Farm-to-Market Road System and the Local Secondary Road System. The Primary Road System is under the control of the state highway commission which also has general supervision of the Secondary Road System as a whole and joint supervision with County Boards of Supervisors of the Farm-to-Market Road System. The Secondary Road System is under the control of the County Boards of

Supervisors who act jointly with the state highway commission in the administration of the Farm-to-Market Road System portion of the Secondary Road System. Iowa law, for the first time in history, now provides for the classification of municipal streets. The 59th General Assembly adopted a recommendation of the Automotive Safety Foundation and subsequently by the Highway Study Committee for the classification of municipal streets into Arterial and Access Street Systems by January 1, 1963.

The Automotive Safety Foundation proposed a reclassification of the highways of the state into systems defined by the predominant service provided by the roads. Under this proposal, roads or streets serving similar purposes would be grouped together, systematically inter-connected and assigned to government agencies having the primary interest in the type of service each system provides. Such grouping of like purpose roads or streets together would greatly assist in providing equal service where conditions are similar and make possible better and more efficient management. It would give legislators and administrators opportunity to recognize and meet the most essential needs in the order of their importance and it would tend to reduce pressure for system changes thereby giving each system stability and freedom from change or serious threats of changes. Collectively, these things would aid materially in sound long range planning and provide a logical basis for proper financing of each system.

For the purposes of its analysis of highway needs, the Automotive Safety Foundation noted that existing legal provisions in Iowa for system classification were in need of modernization, and that revisions



of present systems and establishment of new systems were long overdue. For its analysis of highway needs, that agency reclassified the highways of the state on the basis of the predominant function and use of each road and street in the state. Each was grouped with others having a similar function to form interconnected systems. In this operation the primary road system was reduced to 8,400 miles including the urban extensions, 1,900 miles of the existing system being designated as Local Service Primary Roads and suggested for transfer to the secondary road system; the Farm-to-Market Road System was subclassified into a County Trunk and a County Feeder Road System; the Local Secondary Road System was left intact; and the municipal streets were classified into Arterial Street Systems and Access Street Systems. The proposed classification of the highways is a basic feature of the analysis of physical needs of the highways of the state. All data for the proposed programs are tabulated under the control of these classifications. All computations were based on the standards appropriate to each highway classification.

#### VII. Program Costs of Highway Needs, 1961-1980

The Automotive Safety Foundation report, "Iowa Highway Needs, 1960-1980," shows program costs over a 20-year period for each of three alternate programs. The difference between these programs is in the length of the period for the elimination or "catch-up", of the backlog of improvements needed at the time the study was made. The lengths of the catch-up periods are 10, 15, and 20 years, each identifying the particular program in which it is employed.

These programs, particularly the 20-year catch-up period programs,

are used in this discussion of Iowa highway needs and estimated revenues which may be made available under current laws for highway purposes in the event that these are continued in effect throughout the program period, 1961 through 1980. These programs are used because they are the only ones available. They were developed by competent authority. They were accepted by the Highway Study Committee. They are in reports presented to the Legislature. They are in the public domain and, to date, without any indication of objection by the public. General and widespread knowledge by the people, highway officials in state, county and municipal government and members of the Legislature of the needs for highway improvement set forth in these programs appears to have led to the common conclusion that these needs are substantial and, except for a few particulars, either the ASF programs or a quite similar program will be required to effect these improvements. The program costs are quite probably as accurate in statement and content as any forecast which may be made of revenues that may be expected over the program periods. If it be assumed that the accuracy be similar and the departures from accuracy be in the same direction, the relationships between expenditures required for these programs and the revenues estimated to become available for them over the program period may be expected to be about the same as they would if both the estimates of program costs and forecasts of revenue were absolutely accurate. They are, at the least, suitable for the purposes of this and similar discussions for the reasons here set forth.

#### VIII. All Road and Street Systems

Placement of the needs of any particular system in proper

perspective requires a knowledge of the needs of all systems as a whole. This may be obtained through an examination of the tabulation on page 7 of the ASF report. For convenience in reference this tabulation has been reproduced as Table No. 1A in this presentation.

From Table No. 1A it may be noted that the average annual expenditure required for the 20-year catch-up period programs for all highway systems is \$278,006,000. The forecasts presented in this discussion indicate an average annual revenue for highway purposes of approximately \$253,579,000 during that period. There would be therefore a deficit of slightly less than \$25,000,000 per year for the execution of these programs in that period. Elimination of this deficit through provision of additional funds for highways, corresponds to an increase of two tenths of a cent in the cost per vehicle mile of travel by motor vehicle in Iowa if all of the additional amount were to be derived from road use taxes and corresponds to about \$9.10 per capita per year if it were derived from any combination of additional road use taxes and property or other taxes. In either event, the total per capita cost would be about \$100 per year. Without the additional funds required for the elimination of the difference between the average annual cost and the estimated revenues over the 20 year program period will be about \$90 per capita per year.

The classification of highways used in Table No. 1A is that proposed by the Automotive Safety Foundation and used by that agency throughout its report to the Highway Study Committee.

#### IX. Primary Road System

The Automotive Safety Foundation omitted any tabulation showing

the average annual costs for alternate programs for the existing primary road system for the reason that it computed only the 20 year catch-up period program for those primary roads which that agency classified as Local Service Primary Roads. Therefore, Table No. 3 of the Road Study Report showing average annual expenditures for the existing primary road system, which was compiled from basic data of the study, has been reproduced in this presentation in Table No. 2A. Details of the other programs for the existing primary road system are shown in Tables No. 2 and No. 5.

Let it suffice, for the moment, to note that average annual expenditure for the existing primary road system is approximately 42 per cent of that required for all highway systems. At this point, it is of interest to note that the existing primary road system and its extensions into and through cities and towns carries 63 per cent of the travel on all roads and streets in the state.

#### X. Secondary Road System

Average annual program costs as developed by the Automotive Safety Foundation for the Secondary Road System are found on page 58 of the report of that agency to the Highway Study Committee and are shown in Table No. 3A in this presentation. These expenditures are approximately 39 per cent of the total required for all highway systems. The Secondary Road System carries approximately 18 per cent of the total travel on the roads and streets in the state, but requires an extensive mileage to serve all areas of the state. Consequently, much of the essential mileage has little traffic but does require substantial expenditure for improvement to the extent necessary

to provide even the small volume of service demanded of it.

### XI. Municipal Street Systems

Average annual program costs as developed by the Automotive Safety Foundation for the municipal street systems are found on page 50 of the report of that agency to the Highway Study Committee, but that tabulation includes a duplication of the expenditures for those streets which are extensions of the Primary Road System for which the expenditures are included in Table No. 1A. The report of the Highway Study Committee contains these data without this duplication in Table No. 1 on page 43. This tabulation is included in this presentation as Table No. 4A.

These data indicate that the program costs for municipal streets other than primary road extensions is approximately 19 per cent of the program costs for all roads and streets over the 20-year program period. It is of interest to note that these streets carry approximately 19 per cent of the total travel on all roads and streets in the state. The municipal extensions of the primary roads carry about 13 per cent. Therefore, municipal streets as a group carry approximately 32 per cent of the total travel on all roads and streets in the state.

### XII. Funds for Execution of Programs

The Public Administration Service shows in Tables B-6, B-7, and B-8 in Appendix B of the report of that agency to the Highway Study Committee, the estimated annual revenues from the various sources of income for the Primary, Secondary, and Municipal Street Systems respectively. The forecasts of revenues as presented in these tabulations

are based on the assumption that laws pertaining to highway finance in effect in 1960 would be continued in effect throughout the highway improvement programs developed by the Automotive Safety Foundation. The data given in Tables B-6, B-7, and B-8 were consolidated and presented in Table B-5 to show the estimated annual revenues for all roads and streets over the program period, 1961 through 1980. For the purposes of this discussion, these tabulations have been revised to take advantage of information unavailable at the time the originals were prepared, particularly with respect to federal aid allocations and with respect to the recent trend of income for the road use tax fund, and to reflect the effect of the laws pertaining to highway finance that were enacted by the 59th General Assembly in 1961. These tabulations so revised are presented in this discussion as Tables No. 1, No. 2, No. 3, and No. 4.

#### XIII. Relationships Between Revenues and Expenditures

The Public Administration Service shows in Tables 14, 15 and 16 on pages 60, 61, and 62 of the report of that agency to the Highway Study Committee, the annual expenditures required over the period 1961 through 1980 for the execution of each of the alternate programs developed by the Automotive Safety Foundation for the Primary, Secondary, and Municipal Street Systems respectively and compares the annual expenditures with the respective estimated annual revenues for each system that would be available in the event that the changes in laws pertaining to highway finance recommended by the fiscal study agency were adopted. These tabulations have been revised for the purposes of this discussion in the manner described for the revisions

of Tables B-5, B-6, B-7, and B-8. Tables 14, 15 and 16 so revised are presented here as Tables No. 5, No. 6 and No. 7 respectively.

The responsibility for the rate of execution of the various programs is, at this time, obscure. Recent examination of certain work sheets assembled in the final stages of the physical needs studies indicate that the Automotive Safety Foundation rather than the Public Administration Service as first thought, is responsible. Study of these work sheets indicates that such conclusion is logical and that the Public Administration Service would have obtained these data from the Automotive Safety Foundation as a matter of course.

In any event, the rate of execution shown for the 20-year catch-up period program for the primary road system is wholly unrealistic in that it is inconsistent with the revenues for this system through the portion of the program period covered by the known conditions for the execution of the Interstate construction program. It seems unlikely that the Public Administration Service would make so gross an error in its special field and it seems far more likely that the Automotive Safety Foundation would do so inadvertently in preparing the instructions for the machine calculation of the program costs, such calculations being most readily accomplished at a uniform rate of increase per year than at a variable rate of execution per year as would be required if proper consideration were given to the execution of the Interstate Highway portion of the program for the Primary Road System.

The effect of the adoption of a uniform rate of execution for the 20-year catch-up period program for the primary road system is

the production of a surplus of revenue over expenditures during the portion of the period including the construction of the Interstate Highways, that is, 1961 through 1971, when actually there is a deficit for the program as a whole. Consequently, Table 14 was further revised to employ a more realistic but variable rate of execution, one that bears a consistent relationship to revenues. After such revision, the annual deficits are relatively uniform as shown in Table No. 5.

Lacking such special feature as the variable program required for the Interstate on the Primary Road System, the rates of execution of the 20-year catch-up period programs for the Secondary Road and Municipal Street Systems show a fairly constant relationship between the estimated revenues and expenditures required throughout the entire program period as is indicated in Tables No. 6 and No. 7 respectively.

#### XIV. Validity of Deficits of Revenues

From the data in Tables No. 5, No. 6 and No. 7 it is obvious that there may be less revenue for each of the systems under laws now in effect than will be required to execute the 20-year catch-up period program developed for it by the Automotive Safety Foundation. Two questions arise immediately, the first, "Are the programs conservative or excessive?" and the second, "Are the revenues to be expected through continuation of laws now in effect, adequate or inadequate for the provision of highway facilities on each and all of the systems appropriate for the services required of them?"

Some data are now available as a basis for an answer to the first of these questions. For example, comparison of the average annual allowance for administration for the primary road system as shown in



Table No. 2A and the current expenditures for that purpose for a lesser program are approximately equal. It would appear, therefore, that expenditures for the greater program will require a greater allowance for administration than was made by the Automotive Safety Foundation for that purpose. Similarly, the current expenditure for maintenance on the primary road system is approximately \$1,000,000 greater than the annual average allowance for maintenance over the 20-year program period. Review of the standards for construction for the program reveals that those used for the major portion of the primary road system indicate a lower level of quality of construction than has been found by experience to be necessary for that system. A similar situation is found for the standards for secondary road construction. It seems fair to assume that similar conservatism was used in the selection of the standards for municipal streets. In these circumstances, it may be expected that all program costs as shown by the Automotive Safety Foundation are less than will be required for the execution of the programs. The program costs for each system are, therefore, believed to be conservative, perhaps even ultra-conservative.

If so, the answer to the second question is that the revenues for each of the highway systems through continuation of the laws pertaining to highway finance now in effect over the program period, 1961 through 1980, will be less than those required for the execution of the 20-year catch-up period programs for the system in each instance. The average annual deficiency for the Primary Road System will be approximately \$14,000,000; that for the Secondary Road System, approximately \$6,000,000; and that for the Municipal Street System, approxi-

mately \$5,000,000. The average annual deficiency for the Primary Road System is approximately 12.04 percent; that for the Secondary Road System is approximately 5.65 percent; and that for the Municipal Street System is approximately 9.11 percent of the average annual expenditure required for the execution of the 20-year catch-up period program developed for the system by the Automotive Safety Foundation.

The data on estimated revenues and expenditures required for this program for each system are presented graphically on Charts No. 2, No. 3, and No. 4 which are appended to this paper.

Table No. 1  
Estimated Annual Revenue for All Roads and Streets  
For the Period 1961 thru 1980  
(PAS Table B-5 Revised)  
(\$1,000's)

| Year<br>(1) | Federal<br>Aid<br>(2) | Road Use<br>Tax Fund<br>(3) | Property<br>Taxes<br>(4) | Special<br>Assessments<br>(5) | Miscellaneous<br>(6) | Total<br>(7) |
|-------------|-----------------------|-----------------------------|--------------------------|-------------------------------|----------------------|--------------|
| 1961        | \$ 35,915             | \$ 118,948                  | \$ 49,300                | \$ 5,800                      | \$ 5,900             | \$ 215,863   |
| 1962        | 39,510                | 121,988                     | 50,100                   | 5,900                         | 4,100                | 221,598      |
| 1963        | 49,646                | 125,028                     | 50,800                   | 6,000                         | 5,000                | 236,474      |
| 1964        | 52,367                | 128,068                     | 51,400                   | 6,100                         | 5,100                | 243,035      |
| 1965        | 53,954                | 131,108                     | 52,100                   | 6,200                         | 5,600                | 248,962      |
| 1966        | 55,410                | 134,148                     | 52,800                   | 6,300                         | 5,200                | 253,858      |
| 1967        | 56,997                | 137,188                     | 53,400                   | 6,400                         | 4,800                | 258,785      |
| 1968        | 58,453                | 140,228                     | 54,200                   | 6,500                         | 5,200                | 264,581      |
| 1969        | 58,453                | 143,268                     | 54,800                   | 6,600                         | 5,800                | 268,921      |
| 1970        | 58,453                | 146,308                     | 55,600                   | 6,700                         | 4,200                | 271,261      |
| 1971        | 56,998                | 149,348                     | 56,200                   | 6,800                         | 4,900                | 274,246      |
| 1972        | 20,496                | 152,388                     | 56,900                   | 6,900                         | 5,400                | 242,084      |
| 1973        | 20,496                | 155,428                     | 57,600                   | 7,000                         | 4,900                | 245,424      |
| 1974        | 20,496                | 158,468                     | 58,300                   | 7,100                         | 5,500                | 249,864      |
| 1975        | 20,496                | 161,508                     | 58,900                   | 7,200                         | 5,100                | 253,204      |
| 1976        | 20,496                | 164,548                     | 59,700                   | 7,300                         | 4,500                | 256,544      |
| 1977        | 20,496                | 167,588                     | 60,300                   | 7,400                         | 6,100                | 261,884      |
| 1978        | 20,496                | 170,628                     | 61,000                   | 7,500                         | 4,700                | 264,324      |
| 1979        | 20,496                | 173,668                     | 61,700                   | 7,600                         | 4,200                | 267,664      |
| 1980        | 20,496                | 176,708                     | 62,400                   | 7,700                         | 5,700                | 273,004      |

Total \$760,620 \$2,956,560 \$1,117,500 \$135,000 \$101,900 \$5,071,580

Note: Columns 1, 4, 5, and 6 are same as in PAS Table B-5 for the years 1961 thru 1980. Columns 2, 3, and 7 were revised to reflect effect of changes in Federal Aid allocations and in forecasts of revenues in the Road Use Tax Fund.

*Fed Aid  
Part of revenue  
in approx 3 1/2 %  
per year to 1971*

*Based on  
Traffic  
Study  
1971*

*County &  
City*

*City*

*Washington refund for  
Pulaski State Highway*

*Reflects completion of Interstate*

TABLE NO. 1A  
ALL IOWA ROAD AND STREET SYSTEMS  
AVERAGE ANNUAL COSTS OF ALTERNATIVE PROGRAMS  
At 1959 Prices

| Proposed System   | 10-Year<br>Catch-Up Period |                  | 15-Year<br>Catch-Up Period |                 | 20-Year<br>Catch-Up Period |
|-------------------|----------------------------|------------------|----------------------------|-----------------|----------------------------|
|                   | First<br>10 Years          | Next<br>10 Years | First<br>15 Years          | Next<br>5 Years |                            |
| State             |                            |                  |                            |                 |                            |
| Rural Primary     | \$109,262,000              | \$50,728,000     | \$ 95,263,000              | \$35,031,000    | \$ 80,116,000              |
| Municipal Primary | 39,745,000                 | 21,676,000       | 32,089,000                 | 26,993,000      | 30,950,000                 |
| Total             | \$149,007,000              | \$72,404,000     | \$127,352,000              | \$62,024,000    | \$111,066,000              |
| Local Service     |                            |                  |                            |                 |                            |
| Primaries         |                            |                  |                            |                 |                            |
| Rural             | \$ 5,478,000               | \$ 1,422,000     | \$ 4,108,000               | \$ 1,322,000    | \$ 3,384,000               |
| Municipal         | 2,658,000                  | 595,000          | 2,018,000                  | 501,000         | 1,654,000                  |
| Total             | \$ 8,136,000               | \$ 2,017,000     | \$ 6,126,000               | \$ 1,823,000    | \$ 5,038,000               |
| Municipal         |                            |                  |                            |                 |                            |
| Arterial          | \$ 31,169,000              | \$12,622,000     | \$ 24,521,000              | \$13,081,000    | \$ 21,512,000              |
| Local Access*     | 32,543,000                 | 32,543,000       | 32,543,000                 | 32,543,000      | 32,543,000                 |
| Total             | \$ 63,712,000              | \$45,165,000     | \$ 57,064,000              | \$45,624,000    | \$ 54,055,000              |
| County            |                            |                  |                            |                 |                            |
| Trunk             | \$ 54,373,000              | \$12,025,000     | \$ 39,753,000              | \$11,279,000    | \$ 32,192,000              |
| Feeder            | 44,425,000                 | 26,233,000       | 38,803,000                 | 23,144,000      | 34,705,000                 |
| Local*            | 40,950,000                 | 40,950,000       | 40,950,000                 | 40,950,000      | 40,950,000                 |
| Total             | \$139,748,000              | \$79,208,000     | \$119,506,000              | \$75,373,000    | \$107,847,000              |
| All Systems-Total | \$360,603,000              | \$198,794,000    | \$310,048,000              | \$184,844,000   | \$278,006,000              |

\* Based on a 20-year catch-up program only

Table No. 2  
 Estimate Annual Revenue for Primary Roads  
 For the Period 1961 thru 1980  
 (PAS Table B-6 Revised)  
 (\$1,000's)

*(Incl. Interest)*  
*Taken from PAS tables*

*Proj. + Int. + Devel.*

*On Present Formula*

| Year<br>(1) | Federal<br>Aid<br>(2) | Road Use<br>Tax Fund<br>(3) | Miscellaneous<br>(4) | Total<br>(5) |
|-------------|-----------------------|-----------------------------|----------------------|--------------|
| 1961        | \$ 28,882             | \$ 57,504                   | \$ 700               | \$ 87,086    |
| 1962        | 32,477                | 58,929                      | 100                  | 91,506       |
| 1963        | 42,613                | 60,354                      | 300                  | 103,267      |
| 1964        | 45,144                | 61,779                      | 700                  | 107,623      |
| 1965        | 46,731                | 63,204                      | 300                  | 110,235      |
| 1966        | 47,996                | 64,628                      | 1,000                | 113,624      |
| 1967        | 49,583                | 66,053                      | 600                  | 116,236      |
| 1968        | 50,849                | 67,478                      | 200                  | 118,527      |
| 1969        | 50,849                | 68,903                      | 800                  | 120,552      |
| 1970        | 50,849                | 70,327                      | 500                  | 121,676      |
| 1971        | 49,394                | 71,752                      | 100                  | 121,246      |
| 1972        | 12,892                | 73,178                      | 700                  | 86,770       |
| 1973        | 12,892                | 74,602                      | 300                  | 87,794       |
| 1974        | 12,892                | 76,027                      | 1,000                | 89,919       |
| 1975        | 12,892                | 77,452                      | 600                  | 90,944       |
| 1976        | 12,892                | 78,877                      | 200                  | 91,969       |
| 1977        | 12,892                | 80,301                      | 800                  | 93,993       |
| 1978        | 12,892                | 81,726                      | 500                  | 95,118       |
| 1979        | 12,892                | 83,150                      | 100                  | 96,142       |
| 1980        | 12,892                | 84,575                      | 700                  | 98,167       |
| Total       | \$611,395             | \$1,420,799                 | \$10,200             | \$2,042,394  |

Note: Columns 1 and 4 are same as in PAS Table B-6 for the years 1961 thru 1980. Columns 2, 3, and 5 were revised to reflect effect of changes in allocations of Federal Aid and in allocations of Road Use Tax Funds.



TABLE No. 2A  
PRIMARY ROAD SYSTEM  
AVERAGE ANNUAL COSTS  
OF 20-YEAR PROGRAM

| Item           | ASF Proposed<br>Primary Road<br>System | Local Service<br>Primary Roads | Total Existing<br>Primary Road<br>System |
|----------------|--|--------------------------------|--|
| Rural          |  |                                |  |
| Construction   | \$ 66,283,000                          | \$ 2,389,450                   | \$ 68,672,450                            |
| Maintenance    | 9,385,000                              | 833,750                        | 10,218,750                               |
| Administration | 4,448,000                              | 161,100                        | 4,609,100                                |
| Total          | \$ 80,116,000                          | \$ 3,384,300                   | \$ 83,500,300                            |
| Municipal      |  |                                |  |
| Construction   | \$ 26,627,000                          | \$ 1,216,750                   | \$ 27,843,750                            |
| Maintenance    | 2,716,000                              | 358,050                        | 3,074,050                                |
| Administration | 1,607,000                              | 79,050                         | 1,686,050                                |
| Total          | \$ 30,950,000                          | \$ 1,653,850                   | \$ 32,603,850                            |
| Total          |  |                                |  |
| Construction   | \$ 92,910,000                          | \$ 3,606,200                   | \$ 96,516,200                            |
| Maintenance    | 12,101,000                             | 1,191,800                      | 13,292,800                               |
| Administration | 6,055,000                              | 240,150                        | 6,295,150                                |
| Total          | \$111,066,000                          | \$ 5,038,150                   | \$116,104,150                            |

Note E. & A. incl admin. but changed  
directly to const. or maint.

Estimates conservative due partly to  
low standards set up for estimating.  
Actual costs now higher than estimated  
for heavier proposed program. This  
is due to changing standards caused  
by progress.

Table No. 3  
Estimated Annual Revenues for Secondary Roads  
For the Period 1961 thru 1980  
(PAS Table B-7 Revised)  
(\$1,000's)

| Year<br>(1) | Federal<br>Aid<br>(2) | Farm-to-Market<br>(3) | Road Use Tax Fund<br>Secondary Road<br>(4) | Total<br>(5) | Property<br>Taxes<br>(6) | Miscellaneous<br>(7) | Total<br>(8) |
|-------------|-----------------------|-----------------------|--|--------------|--------------------------|----------------------|--------------|
| 1961        | \$ 7,033              | \$ 11,490             | \$ 34,471                                  | \$ 45,961    | \$ 33,300                | \$ 1,200             | \$ 87,494    |
| 1962        | 7,033                 | 11,794                | 35,380                                     | 47,174       | 33,600                   | 900                  | 88,707       |
| 1963        | 7,033                 | 12,097                | 36,289                                     | 48,386       | 33,800                   | 1,400                | 90,619       |
| 1964        | 7,223                 | 12,399                | 37,200                                     | 49,599       | 34,100                   | 700                  | 91,622       |
| 1965        | 7,223                 | 12,703                | 38,109                                     | 50,812       | 34,300                   | 1,400                | 93,735       |
| 1966        | 7,414                 | 13,006                | 39,018                                     | 52,024       | 34,600                   | 1,000                | 95,038       |
| 1967        | 7,414                 | 13,309                | 39,928                                     | 53,237       | 34,800                   | 700                  | 96,151       |
| 1968        | 7,604                 | 13,612                | 40,838                                     | 54,450       | 35,100                   | 1,300                | 98,454       |
| 1969        | 7,604                 | 13,916                | 41,750                                     | 55,666       | 35,300                   | 1,100                | 99,670       |
| 1970        | 7,604                 | 14,218                | 42,656                                     | 56,874       | 35,600                   | 600                  | 100,678      |
| 1971        | 7,604                 | 14,522                | 43,565                                     | 58,087       | 35,800                   | 1,400                | 102,891      |
| 1972        | 7,604                 | 14,825                | 44,475                                     | 59,300       | 36,100                   | 1,000                | 104,004      |
| 1973        | 7,604                 | 15,128                | 45,384                                     | 60,512       | 36,300                   | 700                  | 105,116      |
| 1974        | 7,604                 | 15,431                | 46,294                                     | 61,725       | 36,600                   | 1,400                | 107,329      |
| 1975        | 7,604                 | 15,735                | 47,203                                     | 62,938       | 36,800                   | 1,100                | 108,442      |
| 1976        | 7,604                 | 16,038                | 48,112                                     | 64,150       | 37,100                   | 700                  | 109,554      |
| 1977        | 7,604                 | 16,341                | 49,022                                     | 65,363       | 37,300                   | 1,400                | 111,667      |
| 1978        | 7,604                 | 16,643                | 49,931                                     | 66,575       | 37,600                   | 1,000                | 112,779      |
| 1979        | 7,604                 | 16,947                | 50,841                                     | 67,788       | 38,800                   | 800                  | 114,992      |
| 1980        | 7,604                 | 17,250                | 51,750                                     | 69,000       | 38,100                   | 1,400                | 116,104      |
| Total       | \$149,225             | \$287,405             | \$862,216                                  | \$1,149,621  | \$715,000                | \$21,200             | \$2,035,046  |

Note: All columns except 3 and 8 are same as in Table B-7 for the years 1961 thru 1980.  
Columns 3 and 8 were revised to reflect effect of changes in allocation of Road  
Use Tax Funds.

TABLE No. 3A  
ALL COUNTY ROADS AND STRUCTURES  
AVERAGE ANNUAL COSTS OF ALTERNATIVE PROGRAMS

|                  | 10-Year<br>Catch-Up Period |                  | 15-Year<br>Catch-Up Period |                 | 20-Year<br>Catch-Up Period |
|------------------|----------------------------|------------------|----------------------------|-----------------|----------------------------|
|                  | First<br>10 Years          | Next<br>10 Years | First<br>15 Years          | Next<br>5 Years |                            |
| County Trunks    |                            |                  |                            |                 |                            |
| Construction     | \$ 45,535,000              | \$ 4,955,000     | \$ 31,594,000              | \$ 4,229,000    | \$ 24,406,000              |
| Maintenance      | 6,137,000                  | 6,463,000        | 6,171,000                  | 6,500,000       | 6,178,000                  |
| Administration   | 2,701,000                  | 607,000          | 1,988,000                  | 550,000         | 1,608,000                  |
| Total            | \$ 54,373,000              | \$12,025,000     | \$ 39,753,000              | \$11,279,000    | \$ 32,192,000              |
| County Feeders   |                            |                  |                            |                 |                            |
| Construction     | \$ 32,543,000              | \$14,595,000     | \$ 27,100,000              | \$11,461,000    | \$ 23,157,000              |
| Maintenance      | 10,169,000                 | 10,630,000       | 10,201,000                 | 10,773,000      | 10,213,000                 |
| Administration   | 1,713,000                  | 1,008,000        | 1,502,000                  | 910,000         | 1,335,000                  |
| Total            | \$ 44,425,000              | \$26,233,000     | \$ 38,803,000              | \$23,144,000    | \$ 34,705,000              |
| Local Roads      |                            |                  |                            |                 |                            |
| Construction     | \$ 21,412,000              | \$21,412,000     | \$ 21,412,000              | \$21,412,000    | \$ 21,412,000              |
| Maintenance      | 18,344,000                 | 18,344,000       | 18,344,000                 | 18,344,000      | 18,344,000                 |
| Administration   | 1,194,000                  | 1,194,000        | 1,194,000                  | 1,194,000       | 1,194,000                  |
| Total            | \$ 40,950,000              | \$40,950,000     | \$ 40,950,000              | \$40,950,000    | \$ 40,950,000              |
| All County Roads |                            |                  |                            |                 |                            |
| Construction     | \$ 99,490,000              | \$40,962,000     | \$ 80,106,000              | \$37,102,000    | \$ 68,975,000              |
| Maintenance      | 34,650,000                 | 35,437,000       | 34,716,000                 | 35,617,000      | 34,735,000                 |
| Administration   | 5,608,000                  | 2,809,000        | 4,684,000                  | 2,654,000       | 4,137,000                  |
| Total            | \$139,748,000              | \$79,208,000     | \$119,506,000              | \$75,373,000    | \$107,847,000              |



Table No. 4  
Estimated Annual Revenues for Municipal Streets  
for Period 1961 thru 1980  
(PAS Table B-8 Revised)  
(\$1,000's)

| Year  | Road Use<br>Tax Fund | Property<br>Taxes | Special<br>Assessments | Miscellaneous | Total     |
|-------|----------------------|-------------------|------------------------|---------------|-----------|
| (1)   | (2)                  | (3)               | (4)                    | (5)           | (6)       |
| 1961  | \$ 14,987            | \$ 16,000         | \$ 5,800               | \$ 4,000      | \$ 40,737 |
| 1962  | 15,331               | 16,500            | 5,900                  | 3,100         | 40,831    |
| 1963  | 15,726               | 17,000            | 6,000                  | 3,300         | 42,026    |
| 1964  | 16,120               | 17,300            | 6,100                  | 3,700         | 43,220    |
| 1965  | 16,514               | 17,800            | 6,200                  | 3,900         | 44,414    |
| 1966  | 16,909               | 18,200            | 6,300                  | 3,200         | 44,609    |
| 1967  | 17,302               | 18,600            | 6,400                  | 3,500         | 45,802    |
| 1968  | 17,696               | 19,100            | 6,500                  | 3,700         | 46,996    |
| 1969  | 18,090               | 19,500            | 6,600                  | 3,900         | 48,090    |
| 1970  | 18,484               | 20,000            | 6,700                  | 3,100         | 48,284    |
| 1971  | 18,878               | 20,400            | 6,800                  | 3,400         | 49,478    |
| 1972  | 19,273               | 20,800            | 6,900                  | 3,700         | 50,673    |
| 1973  | 19,667               | 21,300            | 7,000                  | 3,900         | 51,867    |
| 1974  | 20,061               | 21,700            | 7,100                  | 3,100         | 51,961    |
| 1975  | 20,455               | 22,100            | 7,200                  | 3,400         | 53,155    |
| 1976  | 20,849               | 22,600            | 7,300                  | 3,600         | 54,349    |
| 1977  | 21,243               | 23,000            | 7,400                  | 3,900         | 55,543    |
| 1978  | 21,637               | 23,400            | 7,500                  | 3,200         | 55,737    |
| 1979  | 22,031               | 23,900            | 7,600                  | 3,300         | 56,831    |
| 1980  | 22,425               | 24,300            | 7,700                  | 3,600         | 58,025    |
| Total | \$373,628            | \$403,500         | \$135,000              | \$70,500      | \$982,628 |

Note: Columns 1, 3, 4, and 5 are same as in PAS B-8 for the years 1961 thru 1980. Columns 2 and 6 were revised to reflect effect of changes in allocation of Road Use Tax Funds.

TABLE NO. 4A  
AVERAGE ANNUAL COSTS OF ALTERNATIVE PROGRAMS  
FOR IMPROVEMENT OF MUNICIPAL STREETS  
OTHER THAN PRIMARY ROAD EXTENSIONS

| System               | 10-Year<br>Catch-Up Period |                  | 15-Year<br>Catch-Up Period |                  | 20-Year<br>Catch-Up Period |
|----------------------|----------------------------|------------------|----------------------------|------------------|----------------------------|
|                      | First<br>10 Years          | Next<br>10 Years | First<br>15 Years          | Next<br>5 Years  | First<br>20 Years          |
| Arterial             |                            |                  |                            |                  |                            |
| Construction         | \$25,188,000               | \$ 6,960,000     | \$18,883,000               | \$ 7,346,000     | \$16,008,000               |
| Maintenance          | 4,380,000                  | 5,033,000        | 4,386,000                  | 5,076,000        | 4,407,000                  |
| Administration       | <u>1,601,000</u>           | <u>629,000</u>   | <u>1,252,000</u>           | <u>659,000</u>   | <u>1,097,000</u>           |
| Total                | \$31,169,000               | \$12,622,000     | \$24,521,000               | \$13,081,000     | \$21,512,000               |
| Local Access Streets |                            |                  |                            |                  |                            |
| Construction         | \$23,239,000               | \$23,239,000     | \$23,239,000               | \$23,239,000     | \$23,239,000               |
| Maintenance          | 8,356,000                  | 8,356,000        | 8,356,000                  | 8,356,000        | 8,356,000                  |
| Administration       | <u>948,000</u>             | <u>948,000</u>   | <u>948,000</u>             | <u>948,000</u>   | <u>948,000</u>             |
| Total                | \$32,543,000               | \$32,543,000     | \$32,543,000               | \$32,543,000     | \$32,543,000               |
| Both Systems         |                            |                  |                            |                  |                            |
| Construction         | \$48,427,000               | \$30,199,000     | \$42,122,000               | \$30,585,000     | \$39,247,000               |
| Maintenance          | 12,736,000                 | 13,389,000       | 12,742,000                 | 13,432,000       | 12,763,000                 |
| Administration       | <u>2,549,000</u>           | <u>1,577,000</u> | <u>2,200,000</u>           | <u>1,607,000</u> | <u>2,045,000</u>           |
| Total                | \$63,712,000               | \$45,165,000     | \$57,064,000               | \$45,624,000     | \$54,055,000               |

Table No. 5  
 Relation Between Estimated Revenues and Expenditures for Alternate  
 Programs for Primary Roads over the Period 1961 thru 1980  
 (PAS Table 14 Revised)  
 (\$1,000's)

| Year  | Estimated<br>Revenues | 20-Yr. Catch-up<br>Period |           | 15-Yr. Catch-up Period |         |           | 10-Yr. Catch-up Period |         |           |
|-------|-----------------------|---------------------------|-----------|------------------------|---------|-----------|------------------------|---------|-----------|
|       |                       | Expenditures              | Deficit   | Expenditures           | Surplus | Deficit   | Expenditures           | Surplus | Deficit   |
| (1)   | (2)                   | (3)                       | (4)       | (5)                    | (6)     | (7)       | (8)                    | (9)     | (10)      |
| 1961  | \$ 87,086             | \$ 95,000                 | \$ 7,914  | \$ 110,000             | -       | \$ 22,914 | \$ 139,700             | -       | \$ 52,614 |
| 1962  | 91,506                | 100,000                   | 8,494     | 113,200                | -       | 21,694    | 143,500                | -       | 51,994    |
| 1963  | 103,267               | 118,754                   | 15,487    | 116,500                | -       | 13,233    | 147,300                | -       | 44,033    |
| 1964  | 107,623               | 122,754                   | 15,131    | 119,700                | -       | 12,077    | 151,200                | -       | 43,577    |
| 1965  | 110,235               | 125,504                   | 15,269    | 123,000                | -       | 12,765    | 155,000                | -       | 44,765    |
| 1966  | 113,624               | 128,009                   | 14,385    | 126,300                | -       | 12,676    | 158,900                | -       | 45,276    |
| 1967  | 116,236               | 130,254                   | 14,018    | 129,600                | -       | 13,364    | 162,900                | -       | 46,664    |
| 1968  | 118,527               | 132,504                   | 13,977    | 133,000                | -       | 14,473    | 166,900                | -       | 48,373    |
| 1969  | 120,552               | 135,004                   | 14,452    | 136,400                | -       | 15,848    | 171,000                | -       | 50,448    |
| 1970  | 121,676               | 135,965                   | 14,289    | 139,900                | -       | 18,224    | 175,000                | -       | 53,324    |
| 1971  | 121,246               | 133,393                   | 12,147    | 143,500                | -       | 22,254    | 177,800                | 43,446  | -         |
| 1972  | 86,770                | 101,978                   | 15,208    | 147,100                | -       | 60,330    | 80,500                 | 6,270   | -         |
| 1973  | 87,794                | 103,468                   | 15,674    | 150,800                | -       | 63,006    | 83,300                 | 4,494   | -         |
| 1974  | 89,919                | 104,768                   | 14,849    | 154,600                | -       | 64,681    | 86,200                 | 3,719   | -         |
| 1975  | 90,944                | 105,968                   | 15,024    | 158,600                | -       | 67,656    | 89,200                 | 1,744   | -         |
| 1976  | 91,969                | 107,268                   | 15,299    | 59,300                 | 32,669  | -         | 60,500                 | 31,469  | -         |
| 1977  | 93,993                | 108,268                   | 14,275    | 61,500                 | 32,493  | -         | 62,800                 | 31,193  | -         |
| 1978  | 95,118                | 109,768                   | 14,650    | 63,700                 | 31,418  | -         | 65,300                 | 29,818  | -         |
| 1979  | 96,142                | 111,168                   | 15,026    | 66,100                 | 30,042  | -         | 67,800                 | 28,342  | -         |
| 1980  | 98,167                | 112,305                   | 14,138    | 68,600                 | 29,567  | -         | 70,500                 | 27,667  | -         |
| Total | \$2,042,394           | \$2,322,100               | \$279,706 | \$2,321,400            | -       | \$279,006 | \$2,315,300            | -       | \$272,906 |

Note: Column 2 revised to reflect change in estimated revenues and change in allocations of Road Use Tax Funds. Column 3 revised to provide a consistent relationship between estimated revenues and expenditures. Columns 5 and 8 are same as in PAS Table 14.

Table No. 6  
Relation Between Estimated Revenues and Expenditures for Alternate  
Programs for Secondary Roads over the Period 1961 thru 1980  
(PAS Table 15 Revised)

| Year  | 20-Yr. Catch-up    |              |           | 15 Yr. Catch-up Period |         |           | 10-Yr. Catch-up Period |         |           |
|-------|--------------------|--------------|-----------|------------------------|---------|-----------|------------------------|---------|-----------|
|       | Estimated Revenues | Expenditures | Deficit   | Expenditures           | Surplus | Deficit   | Expenditures           | Surplus | Deficit   |
| (1)   | (2)                | (3)          | (4)       | (5)                    | (6)     | (7)       | (8)                    | (9)     | (10)      |
| 1961  | \$ 87,494          | \$ 93,675    | \$ 6,181  | \$ 97,700              | -       | \$ 10,206 | \$ 120,100             | -       | \$ 32,606 |
| 1962  | 88,707             | 95,167       | 6,460     | 100,300                | -       | 11,593    | 123,400                | -       | 34,693    |
| 1963  | 90,619             | 96,657       | 6,038     | 102,900                | -       | 12,281    | 126,700                | -       | 36,081    |
| 1964  | 91,622             | 98,149       | 6,527     | 105,600                | -       | 13,978    | 130,100                | -       | 38,478    |
| 1965  | 93,735             | 99,639       | 5,904     | 108,400                | -       | 14,665    | 133,500                | -       | 39,765    |
| 1966  | 95,038             | 101,131      | 6,093     | 111,200                | -       | 16,162    | 137,000                | -       | 41,962    |
| 1967  | 96,151             | 102,621      | 6,470     | 114,000                | -       | 17,849    | 140,700                | -       | 44,549    |
| 1968  | 98,454             | 104,113      | 5,659     | 117,000                | -       | 18,546    | 144,300                | -       | 45,846    |
| 1969  | 99,670             | 105,603      | 5,933     | 120,000                | -       | 20,330    | 148,100                | -       | 48,430    |
| 1970  | 100,678            | 107,095      | 6,417     | 123,100                | -       | 22,422    | 152,100                | -       | 51,422    |
| 1971  | 102,891            | 108,585      | 5,694     | 126,200                | -       | 23,309    | 79,300                 | 23,591  | -         |
| 1972  | 104,004            | 110,077      | 6,073     | 129,400                | -       | 25,396    | 81,400                 | 22,604  | -         |
| 1973  | 105,116            | 111,567      | 6,451     | 132,700                | -       | 27,584    | 83,600                 | 21,516  | -         |
| 1974  | 107,329            | 113,059      | 5,730     | 136,000                | -       | 28,671    | 85,700                 | 21,629  | -         |
| 1975  | 108,442            | 114,549      | 6,107     | 139,400                | -       | 30,958    | 87,900                 | 20,542  | -         |
| 1976  | 109,554            | 116,041      | 6,487     | 77,900                 | 31,654  | -         | 79,400                 | 30,154  | -         |
| 1977  | 111,667            | 117,531      | 5,864     | 79,800                 | 31,867  | -         | 81,300                 | 30,367  | -         |
| 1978  | 112,779            | 119,023      | 6,244     | 81,700                 | 31,079  | -         | 83,200                 | 29,579  | -         |
| 1979  | 114,992            | 120,513      | 5,521     | 83,600                 | 31,392  | -         | 85,100                 | 29,892  | -         |
| 1980  | 116,104            | 122,005      | 5,901     | 85,500                 | 30,604  | -         | 86,900                 | 29,204  | -         |
| Total | \$2,035,046        | \$2,156,800  | \$121,754 | \$2,172,400            | -       | \$137,354 | \$2,189,800            | -       | \$154,754 |

Note: Column 2 revised to reflect change in estimated revenues and change in allocations of Road Use Tax Funds. Column 3 revised to provide a consistent relationship between estimated revenues and expenditures. Columns 5 and 8 are same as in PAS Table 15.

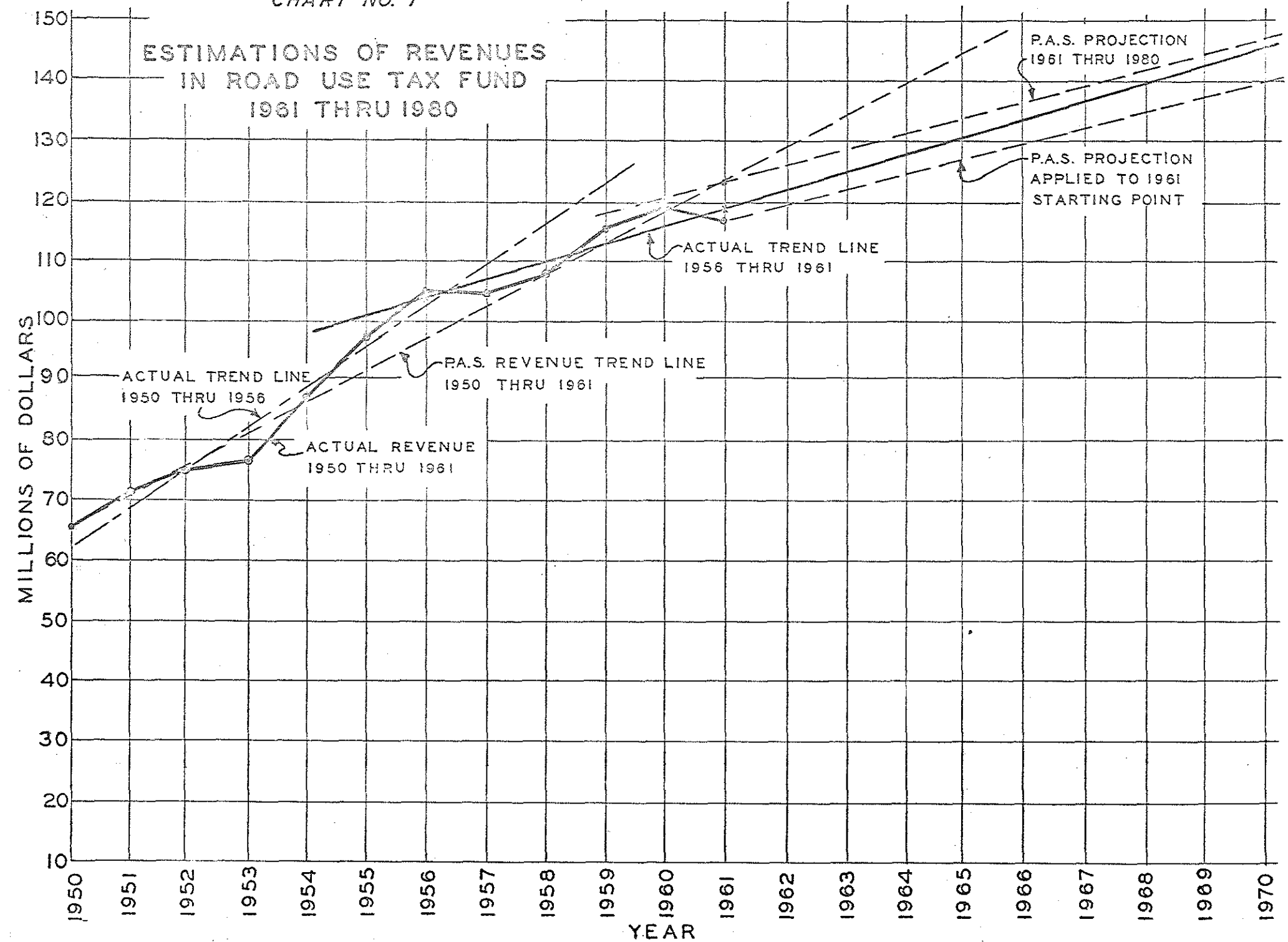
Table No. 7  
Relations Between Estimated Revenues and Expenditures for Alternate  
Programs for Municipal Streets over the Period 1961 thru 1980  
(PAS Table 16 Revised)

| Year  | 20-Yr. Catch-up<br>(\$1,000's) |              |          | 15-Yr. Catch-up Period |         |           | 10-Yr. Catch-up Period |         |           |
|-------|--------------------------------|--------------|----------|------------------------|---------|-----------|------------------------|---------|-----------|
|       | Estimated Revenues             | Expenditures | Deficit  | Expenditures           | Surplus | Deficit   | Expenditures           | Surplus | Deficit   |
| (1)   | (2)                            | (3)          | (4)      | (5)                    | (6)     | (7)       | (8)                    | (9)     | (10)      |
| 1961  | \$ 40,737                      | \$ 45,657    | \$ 4,920 | \$ 44,600              | -       | \$ 3,863  | \$ 51,900              | -       | \$ 11,163 |
| 1962  | 40,831                         | 46,541       | 5,710    | 45,900                 | -       | 5,069     | 53,300                 | -       | 12,469    |
| 1963  | 42,026                         | 47,425       | 5,399    | 47,100                 | -       | 5,074     | 54,800                 | -       | 12,774    |
| 1964  | 43,220                         | 48,309       | 5,089    | 48,500                 | -       | 5,280     | 56,400                 | -       | 13,180    |
| 1965  | 44,414                         | 49,193       | 4,779    | 49,800                 | -       | 5,386     | 57,900                 | -       | 13,486    |
| 1966  | 44,609                         | 50,077       | 5,468    | 51,200                 | -       | 6,591     | 59,600                 | -       | 14,991    |
| 1967  | 45,802                         | 50,961       | 5,159    | 52,600                 | -       | 6,798     | 61,200                 | -       | 15,398    |
| 1968  | 46,996                         | 51,845       | 4,849    | 54,100                 | -       | 7,104     | 63,000                 | -       | 16,004    |
| 1969  | 48,090                         | 52,729       | 4,639    | 55,700                 | -       | 7,610     | 64,700                 | -       | 16,610    |
| 1970  | 48,284                         | 53,613       | 5,329    | 57,200                 | -       | 8,916     | 66,600                 | -       | 18,316    |
| 1971  | 49,478                         | 54,497       | 5,019    | 58,900                 | -       | 9,422     | 43,200                 | 6,278   | -         |
| 1972  | 50,673                         | 55,381       | 4,708    | 60,500                 | -       | 9,827     | 44,600                 | 6,073   | -         |
| 1973  | 51,867                         | 56,265       | 4,398    | 62,300                 | -       | 10,433    | 46,000                 | 5,867   | -         |
| 1974  | 51,961                         | 57,149       | 5,188    | 64,000                 | -       | 12,039    | 47,500                 | 4,461   | -         |
| 1975  | 53,155                         | 58,033       | 4,878    | 65,900                 | -       | 12,745    | 49,000                 | 4,155   | -         |
| 1976  | 54,349                         | 58,917       | 4,568    | 49,900                 | 4,449   | -         | 50,500                 | 3,849   | -         |
| 1977  | 55,543                         | 59,801       | 4,258    | 51,500                 | 4,043   | -         | 52,100                 | 3,443   | -         |
| 1978  | 55,737                         | 60,685       | 4,948    | 53,100                 | 2,637   | -         | 53,800                 | 1,937   | -         |
| 1979  | 56,831                         | 61,569       | 4,738    | 54,800                 | 2,031   | -         | 55,500                 | 1,331   | -         |
| 1980  | 58,025                         | 62,453       | 4,428    | 56,500                 | 1,525   | -         | 57,200                 | 825     | -         |
| Total | \$982,628                      | \$1,081,100  | \$98,472 | \$1,084,100            | -       | \$101,472 | \$1,088,800            | -       | \$106,172 |

Note: Column 2 revised to reflect change in estimated revenues and change in allocations of Road Use Tax Funds. Column 3 revised to provide a consistent relationship between estimated revenues and expenditures. Columns 5 and 8 are same as in PAS Table 16.

CHART NO. 1

ESTIMATIONS OF REVENUES  
IN ROAD USE TAX FUND  
1961 THRU 1980



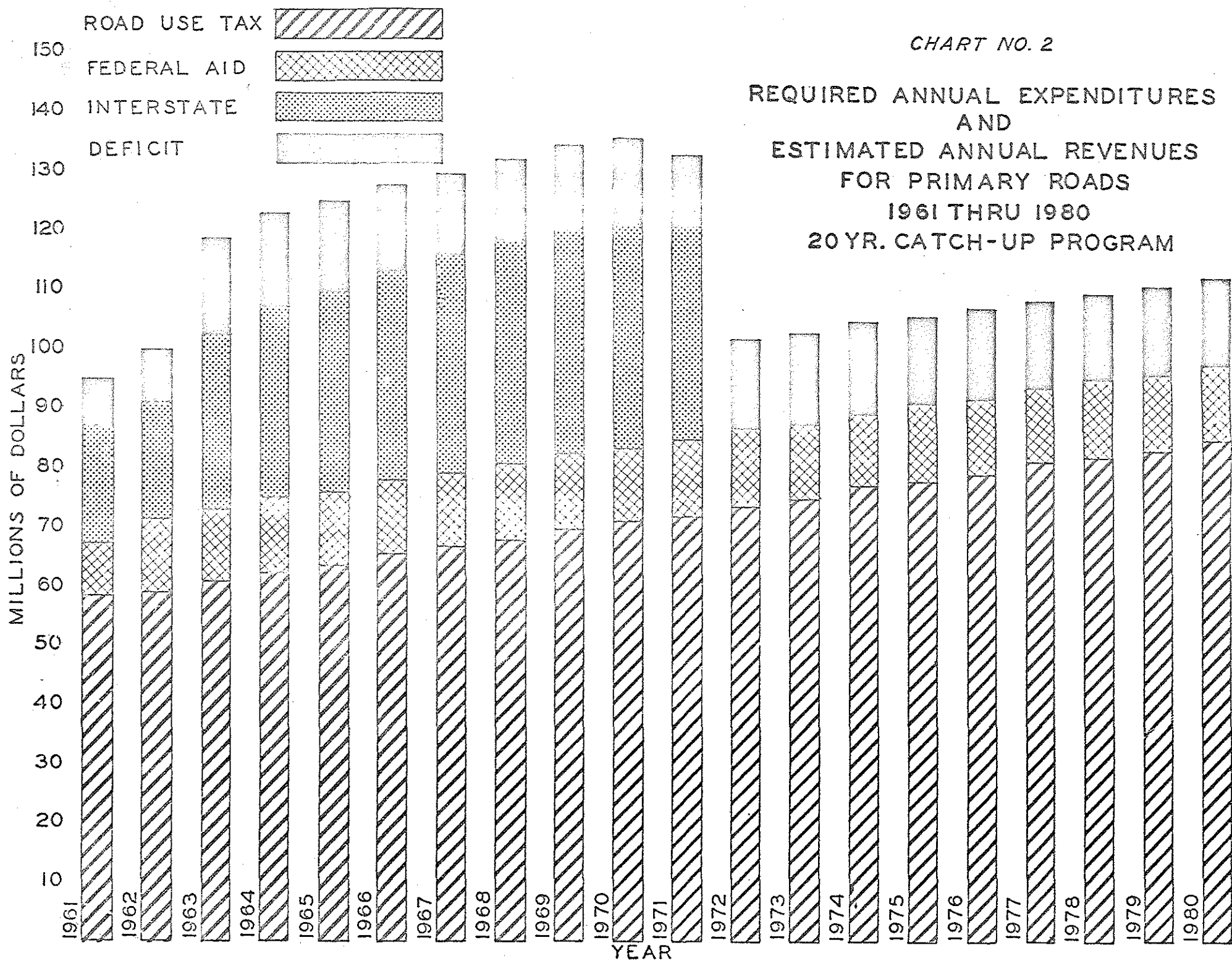


CHART NO. 3

REQUIRED ANNUAL EXPENDITURES  
AND  
ESTIMATED ANNUAL REVENUES  
FOR SECONDARY ROADS  
1961 THRU 1980  
20YR. CATCH-UP PROGRAM

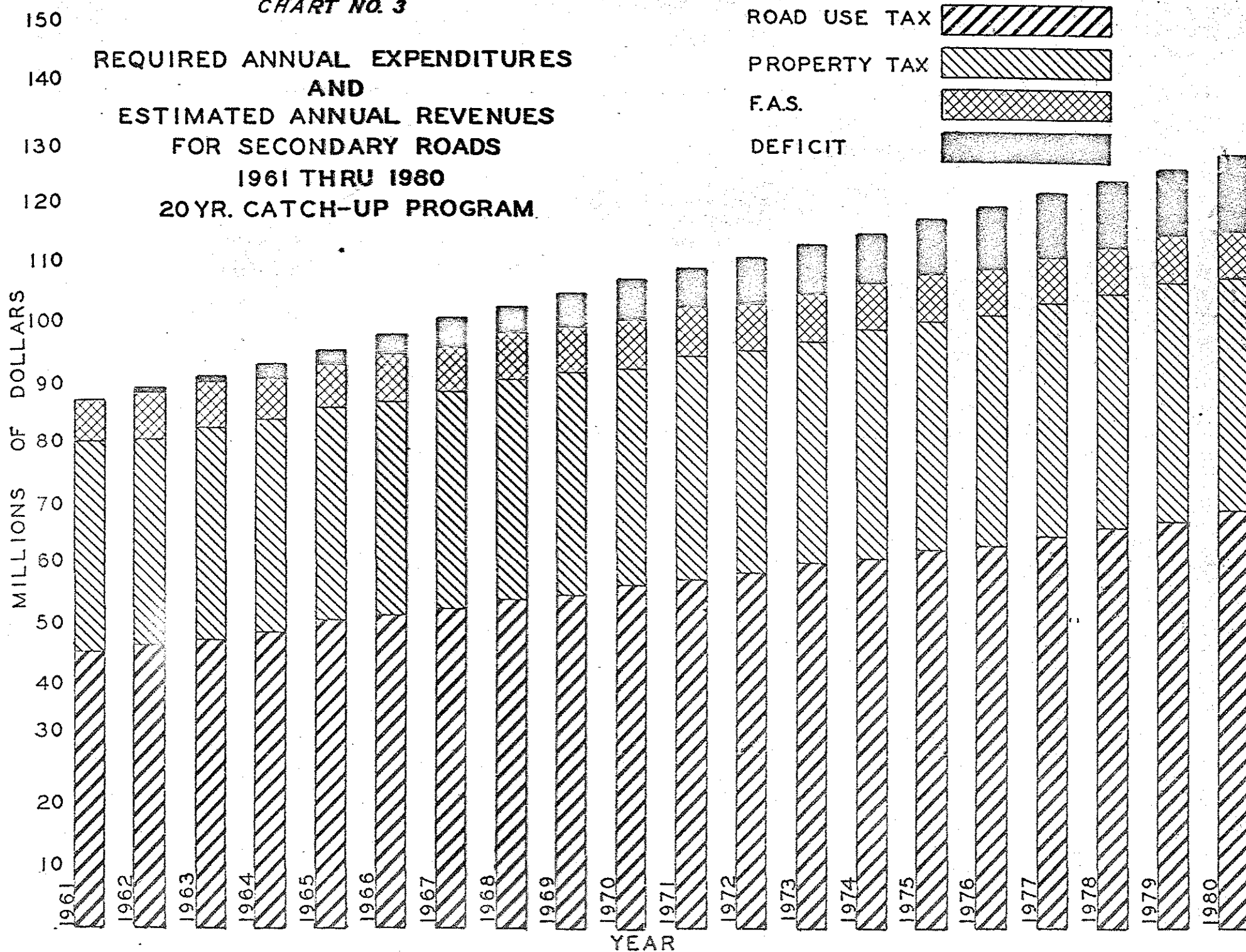




CHART NO. 4

REQUIRED ANNUAL EXPENDITURES  
AND  
ESTIMATED ANNUAL REVENUES  
FOR MUNICIPAL STREETS  
1961 THRU 1980  
20 YR. CATCH-UP PROGRAM

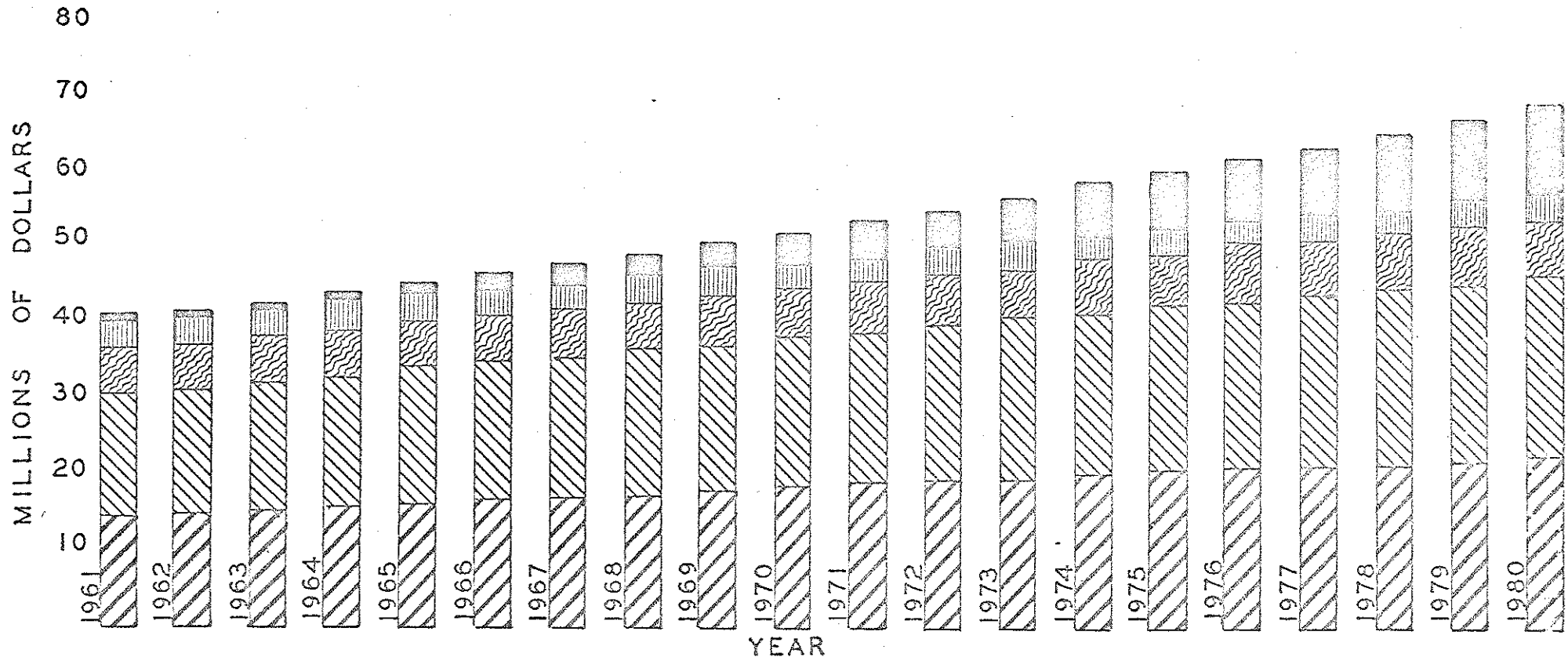
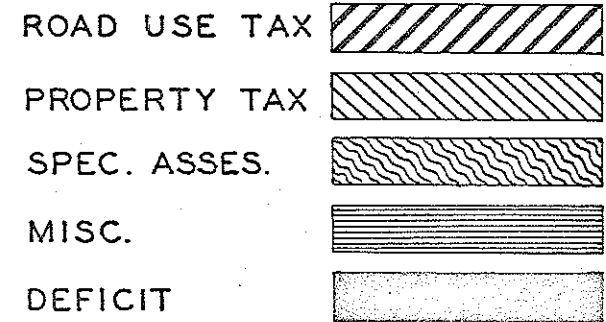


CHART NO. 5

REQUIRED ANNUAL EXPENDITURES  
AND  
ESTIMATED ANNUAL REVENUES  
FOR PRIMARY ROADS  
1961 THRU 1980  
20 YR CATCH-UP PROGRAM

