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**DIGEST AND REVIEW**  
of the  
**PRELIMINARY REPORT**  
of the  
**COLORADO HIGHWAY  
PLANNING  
COMMITTEE**



**COLORADO HIGHWAY PLANNING COMMITTEE**  
**DECEMBER, 1950**



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**COLORADO HIGHWAY PLANNING COMMITTEE**  
**DECEMBER, 1950**

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- MARK U. WATROUS, State Highway Engineer
- R. E. LIVINGSTON, Planning and Research Engineer, State  
Highway Department and Executive Secretary to the  
Committee

## FOREWORD

The most thorough study of Colorado's highway and street needs ever attempted has been completed by the Colorado Highway Planning Committee after sixteen months of intensive effort. Results of the study, together with the Committee's recommendations to meet the state's highway problem, are contained in a Preliminary Report.

The Report lists the deficiencies in City streets and State and County roads, and gives specific figures on the expenditures necessary to bring them to required standards. It proposes changes in the control of construction and maintenance of highways to attain a more realistic division of authority. It recommends a new system for the allocation of highway revenues, and it sets forth a complete plan for financing a state-wide, integrated street and highway improvement program on a 20-year, pay-as-you-go basis.

This pamphlet is a digest and review of the Committee's report. It is designed to provide the facts on one of the State's most critical problems—our highways. It explains how the problem developed, its size and scope, and what is being done about it. It also gives the answers for a real and lasting solution.

In addition to pointing out the broad major proposals, it gives definite information which will enable each highway user to determine his part in the program, and its cost to him as an individual.

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## COLORADO'S HIGHWAY PROBLEM

### Importance of Highways

Nothing affects our daily life as much as facilities for motor vehicle transportation. Everything we eat, wear or use is, at some time, carried over a street or highway. As a community, a county, a state or a nation, we grow and prosper only as our streets and highways keep pace with progress.

### What Has Happened to Our Highways

The phenomenal growth of highway transportation in the last thirty years has presented the entire nation with a problem that staggers the imagination.

In 1919, at the beginning of the "Motor Age," Colorado had 40,067 miles of roads and streets, left-overs from the days of the horse and buggy. That year, 104,875 motor vehicle licenses were issued in this state.

In 1949 there were 79,700 miles of streets and highways in use in Colorado, and 532,440 motor vehicle licenses of all classes were issued. In but thirty years the length of our roads and streets has nearly doubled, and the number of motor vehicles using them has increased more than five times.

In 1920 the average annual travel per vehicle was 4,000 miles; today it is in excess of 9,000 miles. This added traffic burden has jammed an annual average of 17,000 vehicles a day on to some rural highways and 25,000 a day on to some City streets. Then, too, has come the demand for roads which will permit speeds of at least sixty miles an hour and which can sustain loads up to forty tons.

Back in 1914, Colorado had an estimated population of 836,266 and 5,814 miles of railroads to handle the bulk of passenger and freight traffic. Today, with a population of 1,325,089, the state's railroads have dwindled to 4,347 miles, throwing a tremendous additional burden on to our highway transportation facilities.

These factors alone give striking evidence of the critical nature of the highway problem, but there is another factor which has made a bad situation even worse. During World War II, highway construction was virtually halted and even maintenance was held to a minimum while our streets and roads suffered the heaviest pounding in their history. Even after the war, delay in highway improvement was necessitated because of manpower, equipment and material shortages and the reconversion of industry to peacetime operations.

## What Has Been Done About It

Vigorous efforts to relieve the distressing and alarming situation have been put forth for many years by every agency responsible for our streets and highways. Such efforts, however, have failed because of the insufficiency of funds—funds derived from highway user taxes and fees, such as the tax on gasoline, motor vehicle license fees, motor carrier fees, and revenues contributed from every level of government, community, county, state and federal. In the last ten years, construction and maintenance costs virtually have doubled, thus cutting in half the amount of work which could be accomplished with a 1950 highway dollar.

More roads wear out in this state each year, or are made obsolete by the increase in traffic, than can be replaced with present available revenues.

On July 30, 1949, acting on a resolution adopted by the State Highway Advisory Board, Governor Lee Knous named a Highway Planning Committee to make a thorough study of economic and practical problems involved in Colorado's highways, and to prepare a long-range program for their development.

## What The Highway Planning Committee Did

The Committee, working with representatives of Towns, Cities and Counties, and with the Federal Bureau of Public Roads, established standards of construction necessary for roads and streets to carry present and future traffic burdens in an efficient manner.

The technical staff, working with local representatives, surveyed every mile of road and street in the State and determined existing deficiencies.

Cost estimates were applied to these deficiencies to determine the amount of money required to improve streets, roads or bridges to standards previously agreed upon.

Through a painstaking study made by the Bureau of Business and Social Research of the University of Denver, various plans, based upon fair and equitable contributions by everyone, were devised to defray costs of the highway improvement program.

## HOW HIGHWAYS ARE ADMINISTERED NOW

The present highway, road, and street systems of Colorado, consisting of 79,696 miles, are classified as follows:

State Highways .....	12,204 miles
County Roads .....	63,290 miles
City Streets .....	4,202 miles



These systems of highways are further administered and classified as follows:

### State Highways

Federal Aid Interstate System.....	607 miles
Federal Aid Primary System.....	3,143 miles
Federal Aid Secondary System.....	3,481 miles
Other State Highways.....	4,763 miles
City Connections for all State Highways	210 miles
	<hr/>
Total.....	12,204 miles

The Federal Aid Interstate and the Federal Aid Primary Systems are constructed by the State Highway Department with Federal and State funds and are maintained by the State Highway Department solely with State funds. Most roads on these systems are U. S. numbered highways.

The Federal Aid Secondary System is constructed by the State Highway Department with Federal, State, and in some instances, County funds and are maintained by the Counties with their own funds. This class of road came into being in 1938 and only a small portion of this system has been improved to adequate standards.

Other State highways are constructed mainly by the Counties with some assistance from the State Highway Department and are maintained solely by the Counties. This class of roads, like the Federal Aid Secondary System, has not as yet been improved to adequate standards.

### County Roads

County Roads are constructed and maintained by the Counties with funds allocated to them by the State from highway-user taxes and general property taxes raised within the County.

In all the foregoing systems of highways and roads, the portions of each system lying within the boundaries of the National Forest are eligible for development with funds available to the Forest Service.

### City Streets

City streets are constructed and maintained by the Cities with funds raised by general property tax and highway-user funds contributed by the State.

## PRESENT SOURCES OF REVENUE FOR THE FINANCING OF ROADS AND STREETS

Source	Amount (1949)
Highway User Taxes.....	\$23,078,000
Property Taxes* .....	4,538,000
Federal Aid and Grants.....	10,205,000
Special & Miscellaneous Funds....	2,461,000
Total.....	\$40,282,000

The apportionment of the above funds to the State, Counties, and Cities is as follows:

Type of fund	State	Counties	Cities	Total
	(In thousands of dollars)			
Highway User Taxes.....	13,936	8,412	730	23,078
Property Taxes .....		4,538	*	4,538
Federal Aid and Grants.....	9,387	818†	*	10,205
Spec. & Misc. Funds‡.....	2,133	328	*	2,461
Totals.....	25,456	14,096	730	40,282

\*County taxes only—City data not available.

†The Federal Aid and Grants to Counties includes Forest Service Funds, Mineral Leasing Act Funds, etc.

‡This includes Operators' and Chauffeurs' License Certificates of Title, Justice of the Peace and Penalty Assessments, Issuance of Brake and Light Certificates, etc.

Highway-user taxes are the 4-cent gasoline tax, the 2-cent gasoline tax, motor vehicle license fees and motor carrier fees. Their distribution to the State Highway Department, the Counties and the Cities is as follows:

### 4-cent Gasoline Tax

Seventy per cent to the State Highway Department; 27 per cent to the Counties on the basis of miles of State highway mileage existing in each County as compared to the total State highway mileage in the State; 3 per cent to the Cities. The funds for the Cities are apportioned first to each County on the basis of the number of motor vehicles registered in each County. The County Treasurer then apportions to the Cities on a ratio of the number of motor vehicles registered in each incorporated community as compared to the number of motor vehicles registered in all incorporated communities in the County.

### 2-cent Gasoline Tax

Fifty per cent to the State Highway Department; 44 per cent to the Counties and 6 per cent to the Cities on the same

basis as indicated for the 4-cent tax. The Counties' share is apportioned 50 per cent on the basis of the number of miles of State highways existing in each County as compared to the number of miles of State highways in the State and 50 per cent on the basis of rural population in each County as compared to the rural population in the State.

### **Motor Vehicle License Fees**

Fifty per cent to the State Highway Department; 50 per cent to the Counties. Each County receives 50 per cent of the moneys collected by them from motor vehicle registration.

### **Motor Carrier Taxes**

(Ton-mile and Passenger-mile taxes)

These taxes are paid by common, commercial and private carriers in accordance with three laws governing such operations. Different percentages are used to apportion the funds derived under each law. As an average, these funds are apportioned as follows:

52½ per cent to the State Highway Department

47½ per cent to the Counties on the basis of the number of miles of State highways existing in each County.

## **CREATION OF COLORADO HIGHWAY PLANNING COMMITTEE**

The State Highway Advisory Board passed a resolution on May 16, 1949, recommending that the Governor appoint a temporary highway planning committee of four members of the State House of Representatives and four members of the State Senate with fifteen members from agencies or organizations having a primary interest in streets and highways. The Chairman of the Highway Advisory Board, the State Highway Engineer, and one assistant were designated as ex-officio members of the Committee.

### **Appointment and Organization of the Committee**

On July 30, 1949, the Governor announced the appointment of the nineteen-man Committee to undertake the statewide highway needs study. Elsewhere in this pamphlet is the list of members.

The instructions to the Committee in the Highway Advisory Board resolution define the scope of the work and establish its responsibility. The instructions were:

1. To develop a long-range program of construction and reconstruction, improvement and maintenance of the highways, roads and streets of the State.
2. The long-range plan shall be based on actual and reasonable anticipated traffic needs and requirements.
3. To make a thorough study of the economic and practical problems involved in the highways and their uses including:
  - (a) Designation of an integrated series of roads and streets within Counties and Municipalities.
  - (b) Financing of the systems and assignment of administrative responsibility with a method of distributing highway user revenues.
  - (c) The present status of road and street systems.
  - (d) The existing deficiencies of the present systems.
  - (e) A schedule of progressive improvements.
  - (f) A schedule of maintenance to protect the capital investment.
  - (g) Special problems relating to highways.
4. The Committee should summarize and report its findings and its recommendations on required legislation, and summarize the costs of the long-range problem. It should recommend allocation of the costs of the program to the State, Counties, and Cities and determine the number of years required to carry out the program; should there be a deficiency of revenue the Committee should recommend sources of revenue to carry out the program.
5. The Committee should hold public hearings within the State.
6. In making studies the Committee shall, with the consent of the State Highway Department, utilize such facilities of that Department as may be necessary.
7. The Committee shall elect a chairman and vice-chairman from its membership and shall secure the cooperation of County and Municipal officials, State Highway Department, and other state officials.

Four sub-committees were appointed: Engineering, Finance, Publicity and Public Relations, and Policy, Recommendations and Reports. State Senator Stephen L. R. McNichols was elected Chairman of the General Committee.

## THE ENGINEERING STUDY

Sub-committee Chairman: Roderick L. Downing, Engineering School, University of Colorado.

The Engineering Sub-committee obtained the services of the State Highway Planning and Research Division and field engineers to assist in (a) system selections; (b) preparation of construction standards; (c) determination of present status and deficiencies; and (d) cost of the program.

### Classification of Road Systems

Under the present road system classification in Colorado there is overlapping authority and financing.

The Sub-committee believed that insofar as possible each governmental unit should be responsible for a definite system of roads and with specific funds allocated for the construction and maintenance of that system.

The road system agreed upon included the following:

#### State System

- Federal Aid Interstate
- Federal Aid Primary
- Federal Aid Secondary
- Urban connections of these systems
- 3% of above system for designation by State without Federal approval.

#### County System

- County Primary
- County Land Service

#### City or Municipal System

- City Arterial Streets (other than State system urban connections)
- City Local Service Streets

## STATE SYSTEMS

The State system of roads as proposed has actually developed over a long period of time. The interstate system was established by the 1944 Federal Highway Act to provide an integrated National system to connect principal metropolitan and industrial areas, serve National defense and to connect with continental routes in Canada and Mexico.

The Federal Aid Primary system had its inception in the Federal Aid Act of 1921 and was created to connect State Capitals, County Seats and provide a main system of interstate and intrastate routes.

The Federal Aid Secondary systems were created by the Federal Aid Act of 1944 to provide a system of principal feeder roads, farm-to-market, mail, and school bus routes. Their selection was approved by the county commissioners in each County.

## COUNTY SYSTEMS

At present there is no provision in the law permitting Counties to classify their systems of roads. However, in spite of this, for the last several years Counties have been encouraged to organize citizen committees with County-wide representation to work with County Commissioners in selecting a primary road system and planning for improvements of the road systems on a systematic basis which would be agreeable to all sections of the County.

This work has been carried on in 58 of the 62 Counties. Expression of policy is made on a statewide basis by the State-wide Agricultural Planning Committee Roads Subcommittee which has functioned for three years. This voluntary work of interested citizens throughout the State was made available to the Planning Committee. Hence the system selection of County Primary roads represents a seriously studied approach which has been underway actually several years prior to the appointment of the Planning Committee. No other State making a Needs Study has had the advantage of virtual County-wide agreement on their County road system selections. In many cases a copy of the County system map already prepared was all that was needed to comply with the Committee's request for a system selection.

For those not familiar with the basis for a system selection the County Primary roads are those roads of County-wide interest providing arterial service to inter-community traffic; roads leading to or connecting producing areas or places of minor populations and which are not a part of the Federal-State system. The County Land service roads are those roads which provide service to abutting property and are worthy of public tax support.

It is of interest that the Colorado study, of all those so far undertaken, developed a total 29,494.4 miles of roads that County Planning Committees agreed were not worthy of public tax support.

## CITY OR MUNICIPAL SYSTEMS

Cities and Incorporated Municipalities were asked to select a system of arterial streets, other than the State system urban connections, which served and connected residential, commer-

cial, and industrial areas within the City or connected with County Primary roads.

City Councils submitted their selections on the basis of their knowledge of the City, traffic volume counts, and present or anticipated use of streets.

Local service streets predominately serving abutting property were the remainder of the streets open to public travel.

The Colorado Municipal League took active leadership in assisting Cities and Municipalities throughout the State in preparing their reports. In addition the League prepared a report "Financing City Streets and Highways in Colorado" for the use of the Committee.

### Determination of Standards

In order to determine the deficiencies of any section of road or a road system it is necessary to have some yardstick or measure by which the road may be judged. The establishment of geometric and structural standards applicable to a system of roads provides the necessary yardstick.

There are a number of elements which must be given consideration in establishing standards which include the traffic volume, sizes and weights of vehicles, speed, sight distance, curvature, width, supporting strength of the bridges and pavements, and other factors. There has been a considerable amount of research done over a long period of years, the results of which have shed increasing light on standards for road construction and maintenance.

Using this information, the State already had developed a set of construction standards. Standards for the County and City systems were prepared and reviewed by a committee appointed by the County Commissioners' Association for County standards and by a committee of City engineers for City standards. After changes were made as a result of the review, these standards were adopted by the Committee.

In the preparation of standards, actually two sets of standards were prepared. The first were the construction standards which actually were a set of specifications for the construction of highways, roads, or streets, according to a given set of conditions. The conditions included the type of terrain, the traffic volume, and the estimated proportion of trucks using the road. These standards were those which would be used where a road was to be constructed today.

The second set of standards were as termed in the report, "Tolerable Standards." They were less restrictive and were designed to measure a road giving passable traffic service, although in the light of what is now known as to what is re-

quired, the road would not be built to the standard which was in place. For instance, the difference between the tolerable and the construction standards on a particular road might be in the width of the surface or the allowance for the maximum grade.

Roads not meeting the tolerable standards were considered to be in immediate need for reconstruction or correction of the particular items in which they fell below the tolerable standards.

### Determination of Deficiencies

With the systems selected and a measure or yardstick to determine deficiencies, the Committee was now in position to review the needs of each of the road systems selected. This work was done by Planning and Research engineers by actual travel over all the State systems and the County Primary and City Arterial systems. Work sheets indicated the particular deficiency found in the road and its location. These compared with the tolerable standards determined the amount and extent of the deficiency. Work sheets were reviewed on the State system by the State Highway Department engineers and on the County Primary system by County Commissioners and State highway engineers travelling over the roads. Agreement was reached as to what was needed to bring the road up to standard. City engineers and street superintendents reviewed the City Arterial systems and determined in cooperation with the State the necessary work to bring those systems to an acceptable standard.

Contracts let by the State for construction for the past several years were tabulated by type of work in order to determine unit costs which could be used as a basis for estimating the cost of eliminating the deficiencies. For each type of road, tables were prepared showing the cost per mile for foot of width and the cost per linear foot per foot of width for bridges. Cost estimates were based on 1949 unit prices.

It was not the intention of the Committee to determine the cost of a complete new system of roads and streets in the State. Rather, they were instructed to determine what was necessary to bring the present road systems up to a condition which was consistent with the traffic volume using them and with the minimum amount of work that would be required. Consequently, when deficiencies were reviewed, a section of road below tolerable standards in regard to width was only listed as an immediate need for widening. Similarly for other elements against which deficiencies were measured, only the minimum work necessary to correct these individual deficiencies was considered.



The Committee in reporting the cost of improvement needed included costs of (a) construction in the immediate needs category; (b) replacement requirements on roads partly or wholly improved during the program period and which would need replacement before the end of the program period; (c) replacement costs of present tolerable roads which would wear out and need to be constructed during the program period; (d) stop-gap improvements which included work on roads in the immediate needs program but which could not be constructed for several years but must be bettered in some manner until they could be reconstructed; and (e) the maintenance requirements for each system of roads. Item (b) is essential as the program periods considered are longer than the average life of some roads, particularly those improved with only low type surfaces.

### Roads Wear Out

A highway begins wearing out the day it is completed. It deteriorates from use and as a result of the action of the elements, or it may become obsolete due to increased demands of traffic. Studies made by the Colorado State Highway Department and the Federal Bureau of Public Roads determined approximately the life span to be expected from roads of various types. The following road-life expectancies were used by the Committee in determining the roads which would require improvement before the end of the program period:

Federal-Aid Highways	Average Life
Surface Type	(Years)
Natural gravel, sand-clay, gravel or crushed rock.....	10
Surface treatments and light road mix mats.....	12
Plant mix or road mix mats.....	15
Portland cement concrete.....	25

### Cost of Program

Costs for each of the systems were developed for a 5, 10, 15, and 20 year program period. After consideration of the cost and the methods of financing the Committee recommended the 20-year program period. At 1949 prices the total cost for the State system was \$701,772,000, or an annual cost of \$35,089,000. The County system totaled \$636,997,000, or an annual cost of \$31,850,000; and the Municipal systems totaled \$203,398,000, or an annual cost of \$10,170,000. For the first time the State is able to determine the total cost of all systems

of roads in the State and this was reported by the Committee as \$1,542,167,000, or an annual cost of \$77,109,000. This constitutes the size of the road problem in Colorado, and on the basis on which the study was conducted it is the minimum requirement for an adequate transportation system for the State. Special projects providing more than minimum transportation service were not included, although at meetings throughout the State many of these were suggested for the consideration of the Committee. These included such projects as the Loveland Pass tunnel and the "Navajo Trail" southwest of Cortez.

### **Programming Priorities**

One of the instructions to the Committee was that it should recommend a schedule of progressive improvements for all systems of roads. In consideration of this instruction, the Committee believed that ultimately the decision for construction priorities should be the responsibility of the governmental unit administering the particular road system.

The system of roads, streets and highways proposed and recommended by the Committee is drastically different from that which now exists under the prevailing statutes. Before any priority for construction could be prepared, the Committee would need to know that the administrative principles which it followed in setting the responsibility for each of the systems was acceptable and the financing of these systems would be provided. The Committee did favor the proposal that priorities for construction be established and that the people affected should know what the plans were. Accordingly, they recommended that each governmental unit establish priorities after public hearing, and that reports be made on the work accomplished. This plan further carries into effect the Committee's belief that there should be complete responsibility within each governmental unit for the roads under its administration, and permits the use of State, County, and City planning information and the maturing of long-range plans in their proper perspective rather than on a "hurry-up" basis.

## THE FINANCE STUDY

### Highways Have to be Paid for

The major funds at present available for financing highways, roads, and streets in Colorado are derived from highway-user taxes in the form of motor fuel tax, motor vehicle registration fees, and additional mileage taxes on trucks and busses. The Counties and Cities expend some funds on roads and streets derived from property taxes or special assessment districts. In addition the State receives Federal aid in the amount of about seven million dollars per year and the Counties receive some road funds derived from Forest Reserve and Mineral Leasing Act revenues.

The decrease in the value of the dollar now as compared with the prewar period has resulted in doubling the costs of road construction. With this increase in costs there has not been a commensurate increase in the rates of tax. During this period there has also been a great increase in the amount of travel particularly of trucks on Colorado highways. But, while these have resulted in an increase in revenue they have also placed an additional strain on the highway system in the form of congestion and extra weight. With the low rate of tax not commensurate with the increase in costs the highways have been wearing out at a faster rate than they could be replaced with the funds available.

Citizens of this State and of each of the other States must look to themselves to raise the money necessary to finance any road program.

### Finance Committee

The finance study was made under the chairmanship of Professor F. L. Carmichael, by contract with the Bureau of Business and Social Research, University of Denver. Professor Carmichael is also Director of the Bureau and is a nationally recognized authority in this type of research. The Committee was fortunate in being able to draw on the talents of men of the caliber of Professor Carmichael for this important phase of its work.

In the course of the work Professor Carmichael's staff reviewed the work done in other States and on a National level by individuals in the field of highway finance. The sources and methods of taxation in other States were compared with those of Colorado for the purpose of developing a fair and equitable method of raising necessary revenues.

## Sources of Funds

In general there are two ways in which highway funds can be raised — borrowing or the pay-as-you-go method with current tax collections. Colorado has followed a policy of spending from current revenues although bond financing has been used on occasion in the past.

During the area meetings held by the Committee, the policy of borrowing was discussed and the preponderance of opinion was against the use of borrowed funds for financing an accelerated highway program. In accordance with this expression the Committee made no recommendation on borrowing but favored a pay-as-you-go policy in their recommendation of increased highway user tax rates.

## Highway User Taxes

The principal sources of current funds are from what is known as highway user taxes which include motor fuel taxes, vehicle licenses and motor carrier taxes. For the period 1936 through 1949, highway user taxes were 51% of the total available for roads and streets; property taxes 11.3%; Federal funds 15.3%; special funds 19.7%; and miscellaneous funds 2.7%.

With the shift of the responsibility for development of main roads to the State Highway Department, user taxes have been of increasing importance in the financing of this system.

The present 4-cent and the 2-cent motor fuel tax (enacted in 1947 and expiring in 1953) raised a total of \$24,208,760 in 1949 of which 19.2% was refunded for non-highway use. The principal non-highway use was by agriculture (66.1%) and aviation (19.8%) with all other non-highway use amounting to 14.1%.

Motor fuel taxes are imposed as compensation for highway use. They are capable of producing substantial revenues, are generally popular among taxpayers and are capable of inexpensive and effective administration and collection. The finance study concluded that sufficient evidence was presented to support a differential between gasoline and diesel fuel up to 50% of the gasoline tax in view of the increased efficiency of diesel fuel. Diesel fuel is now taxed at the same rate as gasoline. The Policy Committee, however, recommended that this rate of tax for diesel fuel be 25% in excess of that for gasoline.

The subject of refunds was discussed in the regional Committee meetings. Upon extensive study the Bureau of Business and Social Research recommended that no change be made in the present tax rate refund (i.e., with regard to no

refunding or refunding part of the tax), but that \$1.50 per year be charged for refund permits and the time allowed for filing refund claims be reduced to sixty days instead of six months. In addition, the Finance Study recommended that consideration be given to improve sections of the Motor Fuel Tax Law to aid enforcement and administrative policies.

Motor vehicle licenses, the second most important means of producing user revenue, provided, in 1949, approximately 15.6% of the highway-user revenue.

While the character of motor vehicle travel has changed and the resulting demand for highway facilities has been sensitive to social and economic changes, license fees for passenger cars are virtually the same as they were in 1930 and truck fees have remained unchanged since 1920. Re-examination of the comparative equity of these was made in the light of present conditions.

Motor carrier taxes (mileage taxes) are extra taxes levied on owners of motor vehicles used to transport freight or passengers for hire. There are three types of such carriers classified as common, private, and commercial carriers. The Motor Carrier Tax Collection in 1949 amounted to about 7% of the total revenues obtained from highway users. The basis for the tax levied is the carried load ton mile for freight or the number of passenger miles for busses.

Under present laws these carrier taxes are not paid on all travel on City streets. It is difficult to find reason why these highway user taxes are not applicable to City street travel, particularly if part of these revenues are returned to Cities for expenditure on streets.

**Federal Aid**

Since 1921 the Federal Government has had a regular program of allocating to States Federal funds to be matched on a dollar-for-dollar basis for road construction. Funds were at first available only on the Federal Aid Primary system. However, since 1944 Federal Aid funds have been available on a secondary system and for the urban extensions of the Federal Aid Primary system.

For 1950 funds available from this source for State matching were:

Federal Aid Primary .....	\$3,583,930
Federal Aid Secondary .....	2,411,757
Federal Aid Urban .....	829,510
	<hr/>
Total .....	\$6,825,197

Funds allocated to a State may be spent only for construction on the particular system for which authorized on a matching basis, and must be expended by or under the control of the State Highway Department.

The Federal Aid program stems from a National interest in the promotion of interstate commerce through the development of an integrated system of highways. The amount of Federal Aid allotments is governed by the National interest to accomplish this objective.

Other Federal revenues available for roads include Forest Reserve and Mineral Leasing Act funds. Forest Reserve funds accrue from earnings of National Forests and a part is allocated to Counties in lieu of taxes. The average annual receipts, for the Colorado Counties that received these funds, are \$49,838.00. In accordance with the Federal Oil Leasing Act of 1920, two-thirds of all royalties received by a State are for the benefit of the Counties from which they originate, for County road purposes. This source has increased from \$80,000 in 1945 to \$818,000 in 1949. The Colorado School of Mines is allocated the remaining one-third of these funds.

### Property Taxes

Property taxes for State highways have largely been confined to the repayment of highway bonds. Bonds sold in 1921 and 1922 were paid from property levies through 1946. No property levies have been made since that time.

For County road purposes property levies have contributed a substantial proportion of County road revenues. For the period 1936-49, revenues from this source contributed about one-third of the total funds available for County roads.

Since 1941, Counties upon the approval of the State Tax Commission may levy more than 10 mills for County road purposes. However, Jefferson County with an 11-mill levy is the only County which has taken advantage of this provision. In addition, there is a provision in the 1948 law providing for the 2-cent gasoline tax increase, that Counties must levy at least a 1-mill levy to participate in the County portion of the funds raised by that increase.

Colorado has a Specific Ownership Tax on motor vehicles levied "in lieu" of property taxes. Class A vehicles are those used for hire and revenues derived are distributed to County road funds in proportion to the distance traveled by the carrier across each County as compared to the total distance traveled in the State. Class B vehicles are privately owned and revenues derived or distributed to County funds in the same proportion as the ad valorem tax levy. In 1949 County road fund revenues derived from this source amountd to \$414,000.

City streets have been largely financed from general property taxes and from special assessments on the abutting or adjacent property to the street being improved.

### Miscellaneous Fees and Taxes

Since 1935 the operators license fee has been \$1.00 renewable every three years, and since 1931 the chauffeur's license has been \$2.00 annually. Since these fees are paid by **all drivers** they should be applied to the costs of collection and to safety work. Accordingly the Committee recommended that operators' licenses be increased to \$4.00 for the 3-year period to be used to cover collection costs and the balance to the Highway Patrol.

Certificate of title fees have remained at \$1.00 since 1925. A certificate of title is issued for each motor vehicle and shows legal ownership. Increasing costs of administration reflect a deficit in 1949 and the Committee recommended an increase in the fee to \$1.50.

### Future Estimates of Revenue at Present Rates

Estimates of revenue available over the next 20 years for State and local highway and street purposes were made on the basis of existing tax rates and existing methods of distribution of the revenues. Some increases of revenue may be expected over the next 20-year period due to increased population, industrial development and increase in the number and use of vehicles. The Bureau of Business Research has used identifiable past trends, their basic reasoning has been sound, and their projection has been reasonable.

In any estimate of probable future revenue the purchasing power of the dollar can make material differences in the result. For purposes of this study and to be on a comparable basis with the Engineering Study the present price level was used.

Any consideration of increased rates of taxation should take into account what is now being raised at present rates and what the deficiency would be, as compared with the amounts needed. The following table summarizes the estimated income from present tax rates with the present distribution of revenues as compared with estimated cost of the highway, road and street program determined from the Engineering Study for a 20-year period and shows the deficiencies. (Table on following page)

Table 1

COMPARISON OF HIGHWAY REVENUE ESTIMATES FROM PRESENT SOURCES  
AT EXISTING RATES WITH ESTIMATED COSTS OF THE IMPROVEMENT  
PROGRAM FOR A 20-YEAR PERIOD

	Estimated Income at present rates and distribu- tion for a 20-year period (000)	Estimated Cost of a needed 20-year highway program (000)	D E F I C I E N C Y		
			For a 20-year period (000)	Annually (000)	Per cent
Federal Aid and State System					
Highway User Taxes .....	\$407,571	\$ 561,626	\$154,055	\$ 7,703	27.4
Federal Aid .....	140,146	140,146	.....	.....	0.0
Total .....	\$547,717	\$ 701,772	\$154,055	\$ 7,703	22.0
County Roads					
Highway User Taxes .....	\$244,649	\$ 369,693	\$125,044	\$ 6,252	33.8
Property Taxes .....	131,465	267,304	135,839	6,792	50.8
Total .....	\$376,114	\$ 636,997	\$260,883	\$13,044	41.0
City Streets					
Highway User Taxes .....	\$ 20,648	\$ 96,737	\$ 76,089	\$ 3,804	78.7
Property Taxes .....	5,575	106,661	101,086	5,054	94.8
Total .....	\$ 26,223	\$ 203,398	\$177,175	\$ 8,858	87.1
Total All Systems					
Highway User Taxes .....	\$672,868	\$1,028,056	\$355,188	\$17,759	34.5
Property Taxes .....	137,040	373,965	236,925	11,846	63.4
Federal Aid .....	140,146	140,146	.....	.....	0.0
Total .....	\$950,054	\$1,542,167	\$592,113	\$29,605	38.4



## Allocation of Highway User Tax Responsibility Among Vehicles

In 1947, when the increase of two cents per gallon was passed by the Legislature, the thought was that more funds were needed for roads so an increase in the gasoline tax appeared to be the logical answer.

In the Finance Study consideration was given to increases in either the motor fuel tax or motor vehicle taxes, or both. It was found that increases in any one of the user taxes could not be made without further unbalancing the equitable payments on individual or classes of motor vehicles. In fact the present schedule of user taxes is not equitable as between classes of highway users.

There has been a good deal written about the problem of allocating motor vehicle taxes equitably among the various classes of vehicles. In area meetings held by the Committee there was general agreement that highway users should pay their fair share of the present or improved highway program.

Highway user tax fees are payments for special benefits, benefits which should be the same for all classes of highway users. Thus, if one class of vehicles use the highway more than another class, the first class should pay more of the cost of operating the highway plant.

There are several methods of allocating user responsibility. One is the "Incremental Cost Theory," another is the "Operating Cost Theory," and a third is the "Gross Ton Mile Theory." In both the first two methods there has not been enough research done to work them out to a definite schedule of fees for each class of user and factually support the schedule.

The gross ton mile method is based on the premise that the movement of one ton one mile over a public highway constitutes a basic unit of transportation service and highway use. Thus, equal payments for highway use should be the same for each class of highway user. If the tax structure were altered to accomplish equal payment for equal use, all highway users would pay at the same rate.

This method combines two important elements of measuring highway use—weight and distance—and bears a close relation to highway benefits received.

Setting a price per ton mile does not mean that all vehicles would have to record their ton miles of travel and pay accordingly. Rather it is more expedient to divide vehicles into weight classes and adjust payments per gross ton mile on the basis of the average vehicle within each weight class. In addition there is the factor which has been developed that heavier vehicles pay less motor fuel tax per ton mile than lighter ve-

hicles. One-third as much gasoline will move over five times as much weight. Thus, while the motor fuel tax has generally been considered a measure of highway use it is not a constant measure since the fuel requirements and the tax per ton mile decreases as the size of the vehicle increases.

The average passenger car license fee in 1949 was \$5.75 and with a 6-cent tax on gasoline and an average annual mileage of 9,200 miles, the average passenger car paid 2.103 mills in motor fuel tax and 0.357 mills in motor vehicle tax or a total of 2.46 mills per ton mile. Since we are considering an equitable method of taxation it follows that all vehicles should pay the same rate of 2.46 mills per ton mile.

In order to compute an equitable tax schedule for other classes of vehicles in relation to the base vehicle, the passenger car, it is necessary to know the average miles per gallon, average gross weight, and the average annual miles. From current and previous studies this information was available.

The following table illustrates the tax deficiency for single unit trucks in the various unladen weight classes: (Table on following page)

It will be seen from this table (Column 4) that truck combinations pay about one-third as much fuel tax per ton mile as passenger cars. If all vehicles were required to pay an equal gross ton mile tax, then the motor fuel tax alone leaves serious tax deficiencies per ton mile for heavier vehicles which must be remedied through supplementary motor vehicle taxes.

The report recommends a gross ton mile tax for trucks over 9,500 pounds empty weight and trailers and semi-trailers over 4,500 pounds empty weight. The reasons for this are:

- (a) The disparity in annual mileage travelled and in annual ton miles is so great as to make it impossible to arrive at an average that would be equitable for all vehicles in the class. These divergencies from the average are sufficiently important for the heavier vehicles to make it more equitable to collect the ton mile tax.
- (b) Collection costs would not be large. Of the total registration of 111,866 trucks in 1949 only, 2,628 vehicles, or 2.4% would fall in this group.
- (c) Most of the vehicles which would be taxed on a gross ton mile rate are owned by operators who would normally keep records of their operations as a matter of business and are comparatively few in number.

The present method of licensing trucks on manufacturers rated capacity bears no relationship to the load-carrying ability of the vehicle and is meaningless as an indicator of average gross vehicle weight.

**Table 2**      **EQUITABLE TAX SCHEDULE FOR CLASSES OF VEHICLES**  
**USING THE PASSENGER CAR AS THE BASE VEHICLE WITH A \$5.75**  
**REGISTRATION FEE AND A 6c GAS TAX**

	1	2	3	4	5	6	7
	Average Gross Vehicle Wt. Tons	Average Miles per Gallon	Average Ton Miles per Gallon Col. 1 X Col. 2	Average Fuel Tax per Ton Mile 6c ÷ Col. 3 Mills	Passenger Car User Tax per Ton Mile Mills	Tax Deficiency per Ton Mile from Gas Tax only Col. 5 - Col. 4 Mills	Motor Vehicle Fees needed to Equalize Tax Payments per Ton Mile
Average Passenger Vehicle .....	1.75	16.3	28.525	2.103	2.460	0.357*	\$ 5.75
Single Unit Trucks (Empty weight in pounds)							
3500 and under .....	1.94	14.5	28.130	2.133		0.327	5.40
3501 - 4500 .....	2.75	12.8	35.200	1.705		0.755	17.00
4501 - 5500 .....	4.50	10.2	45.900	1.307		1.153	48.00
5501 - 6500 .....	5.40	9.4	50.760	1.182		1.278	76.00
6501 - 7500 .....	6.30	8.5	53.550	1.120		1.340	108.00
7501 - 8500 .....	7.30	7.4	54.020	1.111		1.349	137.00
8501 - 9500 .....	8.10	6.8	55.080	1.089		1.371	161.00
Trucks over 9500 pounds .....	10.65	5.1	54.315	1.105		1.355	1.44 mills per gross ton mile
Combinations with trailers or semi- trailers over 4500 pounds .....	15.80	5.1	80.580	0.745		1.715	1.7 mills per gross ton mile
Passenger Buses .....	9.57	5.1	48.807	1.229		1.231†	0.7 millst per passenger mile

\* Registration fee of \$5.75 ÷ 16,100 ton miles is 0.357 mills per ton mile.  
† 9.57 tons X 1.231 ÷ 18 (average passengers per bus) is 0.66 mills.

## Tax Rates

It was the objective of the Committee throughout its work to determine the cost of an overall program and then to find a means of distributing the cost equitably. Using the method described in the previous section the problem then was to develop a taxation schedule that would raise the funds to meet the needs in the engineering study. There were seven schedules developed that would raise the necessary highway user revenues for each of the five, ten, fifteen, and twenty-year program periods.

The Committee considered all the alternates and selected Alternate 3 as being the schedule which would most nearly meet with general acceptance and still raise the required funds. Briefly this schedule provides for a \$2.00 flat fee for registering vehicles, a seven cent motor fuel tax, and a \$14.00 motor vehicle fee for passenger cars. Truck fees were developed from the total user taxes paid by the base vehicle by the method described in the previous section. The fees developed are shown in the last section of this summary.

It should be pointed out that under the present method of truck taxation Colorado has a three structure tax, registration fees, motor fuel tax, and motor carrier fees. Under this method of taxation there is a large group of vehicles engaged in private operations using the roads and streets that are exempt from motor carrier taxation because of the nature of their operation. Under the proposals of the Committee all trucks using the roads and street system would pay their share of the user tax regardless of the kind of business in which they were engaged.

The tax plan developed is a two structure tax consisting of a motor fuel tax and a motor vehicle tax designed to tax all highway users in proportion to the benefits derived and would probably result in lower administrative costs.

It should be borne in mind that proportional increases in present highway user taxes or increases in only one or two taxes would only aggravate already existing inequities in the present highway user tax structure.

## Distribution of Revenues

For simplicity of administration the Committee recommended that all state collected revenues for highway purposes be placed in a single road fund. This procedure would replace the present cumbersome method of making a separate distribution from each separate tax collected.

Having provided a method of raising the revenues the next problem was to distribute them to the several governmental units having jurisdiction of their respective road systems. Since

the purpose of the Engineering Study was to determine the cost of an overall road program and the interest of the people of the State is to secure better roads than they now have, decision must be reached on the method of financing each system.

Because the predominate use of the Federal Aid Primary and Secondary systems and their urban connections is for intra and interstate travel, and since they form the major statewide transportation network, highway user taxes were assigned to the construction and maintenance of this system to be administered by the State Highway Department.

The County Primary and City Arterial street systems form integrated systems of rural and urban traffic arteries of countrywide and citywide use. Highway user taxes were assigned to these systems to construct and maintain them.

Both County Land and City Local Service systems used principally by residents of abutting property should be financed from locally levied property taxes. Their rate and degree of improvement being left to the local units of government in response to the desires of the people who will pay for them. No attempt was made by the Committee to establish rates of property taxation that would raise funds to meet deficiencies in these systems. At present rates in a 20-year period County property taxes would raise approximately half the funds necessary to improve the County Land Service system and the Cities would be deficient by 94.8%.

The distribution of highway user taxes between the State, Counties, and Cities was based on the relationship of needs of the systems for which these taxes were to be expended. The needs showed the State as 54.6%, Counties 36.0%, and the Cities 9.4%. The Committee recommended rounding these off to State 55%, Counties 36%, and Cities 9%.

Comparison of the proportion of highway user revenue to individual counties and cities under the proposed plan and actual receipts in 1949 is made in Tables 3 and 4.

Table 3

COMPARISON OF PROPOSED AND PRESENT APPORTIONMENT FORMULAE  
OF HIGHWAY USER REVENUES AND PRIMARY COUNTY ROAD NEEDS  
FOR COUNTIES IN COLORADO

Counties	Proposed Apportionment			1949 Highway User Revenues		
	$\frac{3a + b}{4}$			Highway User Revenues		
	Co. Road Primary Needs	% Total	100.00	Co. Road Primary Needs	% Total	100.00
Total	3.47	3.13	100.00	2.36	2.36	100.00
Adams	0.57	0.43		1.20	1.20	0.71
Alamosa	2.24	1.32		2.40	2.40	1.51
Archahoe	1.24	1.54		0.85	0.85	3.35
Baca	1.54	1.14		1.99	1.99	2.96
Bent	0.71	0.67		0.94	0.94	2.49
Boulder	1.91	1.64		2.35	2.35	2.01
Chaffee	0.52	0.38		0.86	0.86	3.03
Cheyenne	1.28	1.25		1.07	1.07	0.46
Clear Creek	0.44	0.47		0.85	0.85	1.53
Concejos	0.96	0.97		1.35	1.35	1.50
Costilla	0.69	0.33		1.24	1.24	2.29
Crowley	0.58	0.41		0.71	0.71	1.75
Custer	1.08	0.83		1.63	1.63	1.79
Delta	1.77	1.77		1.63	1.63	0.42
Dolores	1.21	1.35		0.58	0.58	1.49
Douglas	1.43	1.95		1.32	1.32	0.94
Eagle	1.13	1.11		1.32	1.32	1.66
Elbert	1.44	1.75		1.19	1.19	1.89
El Paso	2.54	2.66		3.65	3.65	3.46
Fremont	1.90	2.16		1.88	1.88	1.16
Garfield	1.91	1.96		1.45	1.45	1.81
Gilpin	0.35	0.27		0.37	0.37	1.40
Grand	1.12	0.99		1.50	1.50	1.06
Gunnison	1.71	1.70		2.13	2.13	0.80
Hinsdale	0.72	0.99		0.32	0.32	0.72
Huerfano	1.43	1.51		1.70	1.70	0.91
Jackson	0.91	1.07		1.04	1.04	0.88
Jefferson	4.15	2.48		3.71	3.71	2.23
Kiowa	0.71	0.71		1.18	1.18	5.75
Kit Carson	3.59	4.51		1.69	1.69	2.27
Lake	0.27	0.26				0.71
La Plata	1.71	1.71				1.51
Larimer	3.45	3.04				3.35
Las Animas	1.71	2.23				2.96
Lincoln	2.31	4.04				2.49
Logan	2.00	2.47				2.01
Mesa	2.96	1.78				3.03
Mineral	0.21	0.19				0.46
Moffat	2.49	2.69				1.53
Montezuma	1.82	2.15				1.50
Montrose	4.29	4.00				2.29
Morgan	1.95	1.96				1.75
Otero	1.32	1.56				1.79
Ouray	0.83	0.91				0.42
Park	2.50	2.58				1.49
Phillips	0.59	0.47				0.94
Pitkin	1.44	1.66				1.67
Prowers	3.12	3.65				1.89
Pueblo	1.82	2.43				3.46
Rio Blanco	1.92	1.90				1.71
Rio Grande	0.84	0.88				1.16
Routt	1.55	1.80				1.81
Saguache	0.91	0.61				1.40
San Juan	0.13	0.15				1.35
San Miguel	0.80	0.91				1.06
Sedgwick	0.83	1.20				0.80
Summit	0.22	0.03				0.72
Teller	1.03	0.91				0.91
Washington	1.54	2.03				2.23
Weld	5.66	2.97				5.75
Yuma	2.19	2.38				2.27

**Table 4** COMPARISON OF PROPOSED AND PRESENT APPORTIONMENT FORMULAE OF HIGHWAY USER REVENUES AND ARTERIAL STREET MILEAGE NEEDS FOR CITIES IN COLORADO

Number in Group	City Population Group	Proposed Apportionment Formula			City Arterial Street Needs % Total	1949 Distribution of Highway User Revenues to Cities City Share <sup>(2)</sup>	
		1950 <sup>(1)</sup> Population	% Total	$\frac{a+3b}{4}$ 9% 1949 Rev.		% Total	City Share
	Total 230.....	902,864 (est.)	100.00	\$2,187,773	100.00	100.00	\$1,199,282
153	1,000 or less .....	79,001	14.65	\$	16.07	7.09	\$ 84,982
41	1,001 to 2,500 .....	66,356	9.09		6.23	5.96	71,422
15	2,501 to 5,000 .....	53,202	6.26		3.13	4.77	57,162
	Golden .....	5,176	0.71		0.55	0.46	5,495
	Fort Morgan .....	5,292	0.59		0.38	0.48	5,730
	Alamosa .....	5,342	0.65		0.82	0.48	5,729
	Walsenburg .....	5,567	0.70		0.79	0.51	6,079
	Canon City .....	6,313	0.85		1.73	0.56	6,780
	Loveland .....	6,759	0.80		1.03	0.60	7,248
	Durango .....	7,437	0.83		1.27	0.66	7,949
	Sterling .....	7,470	0.86		1.03	0.67	8,066
	La Junta .....	7,679	1.01		1.72	0.69	8,300
	Lamar .....	7,715	0.82		0.25	0.69	8,300
	Longmont .....	8,061	0.84		0.79	0.72	8,651
	Aurora .....	11,396	1.27		0.48	1.02	12,275
	Trinidad .....	12,206	1.20		1.59	1.09	13,093
	Grand Junction .....	14,454	1.78		2.57	1.30	15,548
	Fort Collins .....	14,932	1.63		1.87	1.34	16,016
	Englewood .....	16,619	1.99		2.76	1.49	17,886
	Boulder .....	19,916	2.37		3.15	1.79	21,509
	Greeley .....	20,286	2.22		2.09	1.82	21,860
	Colorado Springs .....	45,268	5.40		13.56	4.06	48,629
	Pueblo .....	63,561	6.51		3.43	5.70	68,383
	Denver .....	412,856	36.97		32.71	56.05	672,190

<sup>(1)</sup> Preliminary 1950 Census of Population, Series PC-2, No. 19, August 22, 1950.

<sup>(2)</sup> Denver's share as a county of motor vehicle license fees and motor carrier taxes included.

**Table 5** BASIS OF DETERMINING COUNTY DISTRIBUTION FORMULA OF HIGHWAY USER REVENUES (36% Recommended to be Distributed to Counties)

1 County	2 Primary County Road Mileage	3 Factor of Difficulty <sup>(a)</sup>	4 Corrected Primary Mileage		5 (a) % Total	6 Estimated Rural Registration from Finance Study		7 (b) % Total	8 Proposed Apportionment Formula 3a + b <sup>(b)</sup> % Total
			Miles <sup>(2)</sup>	% Total		Estimated Number	% Total		
Total	15,622.7	1.737	27,140.5	100.00	209,891	100.00	100.00	100.00	
Adams	427.9	1.748	748.0	2.76	11,765	5.60	3.47	3.47	
Alamosa	60.1	1.875	112.7	0.42	2,093	1.00	0.57	0.57	
Arapahoe	190.5	1.750	333.4	1.23	11,055	5.27	2.24	2.24	
Archuleta	142.0	2.981	423.3	1.56	564	0.27	1.24	1.24	
Baca	396.0	1.056	418.2	1.54	3,259	1.55	1.54	1.54	
Bent	152.5	1.115	170.0	0.63	1,997	0.95	0.71	0.71	
Boulder	158.3	2.540	402.1	1.48	6,666	3.18	1.91	1.91	
Chaffee	46.4	3.000	139.2	0.51	1,169	0.56	0.52	0.52	
Cheyenne	384.2	1.000	384.2	1.42	1,803	0.86	1.28	1.28	
Clear Creek	42.3	3.000	126.9	0.47	730	0.35	0.44	0.44	
Conejos	98.3	2.375	233.5	0.86	2,623	1.25	0.96	0.96	
Costilla	79.3	2.363	187.4	0.69	1,407	0.67	0.69	0.69	
Crowley	136.4	1.000	136.4	0.50	1,742	0.83	0.58	0.58	
Custer	132.9	2.653	352.6	1.30	861	0.41	1.08	1.08	
Delta	163.4	2.581	421.7	1.55	5,112	2.44	1.77	1.77	
Dolores	141.2	2.750	388.3	1.43	1,134	0.54	1.21	1.21	
Douglas	209.8	2.088	438.1	1.61	1,933	0.92	1.44	1.44	
Eagle	108.5	3.000	325.5	1.20	1,949	0.93	1.13	1.13	
Elbert	310.5	1.333	413.9	1.53	2,436	1.16	1.44	1.44	
El Paso	451.0	1.483	668.8	2.46	5,849	2.79	2.54	2.54	
Fremont	196.0	2.744	537.8	1.98	3,494	1.66	1.90	1.90	
Garfield	181.2	3.000	543.6	2.00	3,447	1.64	1.91	1.91	
Gilpin	33.3	3.000	99.9	0.37	598	0.28	0.35	0.35	
Grand	106.1	2.893	306.9	1.13	2,276	1.08	1.12	1.12	
Gunnison	187.1	3.000	561.3	2.07	1,309	0.62	1.71	1.71	
Hinsdale	84.9	3.000	254.7	0.94	120	0.06	0.72	0.72	
Huerfano	195.8	2.279	446.2	1.64	1,713	0.82	1.43	1.43	



Jackson .....	122.5	2,340	286.7	1.06	956	0.46	0.91
Jefferson .....	243.8	2,618	638.3	2.35	20,062	9.55	4.15
Kiowa .....	325.2	1,000	325.2	1.20	1,212	0.58	1.04
Kit Carson .....	1096.3	1,000	1096.3	4.04	4,736	2.26	3.59
Lake .....	20.7	3,000	62.1	0.23	845	0.40	0.27
La Plata .....	191.3	2,584	494.3	1.82	2,852	1.36	1.71
Larimer .....	326.4	2,596	847.3	3.12	9,288	4.44	3.45
Las Animas .....	260.2	1,684	438.2	1.61	4,223	2.01	1.71
Lincoln .....	726.6	1,000	726.6	2.68	2,478	1.18	2.31
Logan .....	455.3	1,131	514.9	1.90	4,832	2.30	2.00
Mesa .....	227.5	2,791	635.0	2.34	10,145	4.83	2.96
Mineral .....	20.6	3,000	61.8	0.23	324	0.15	0.21
Moffat .....	351.2	2,365	830.6	3.06	1,623	0.77	2.49
Montezuma .....	227.0	2,298	521.6	1.92	3,219	1.53	1.82
Montrose .....	501.8	2,744	1,376.9	5.07	4,145	1.97	4.29
Morgan .....	476.9	1,032	492.2	1.81	4,939	2.35	1.95
Otero .....	247.7	1,064	263.6	0.97	5,002	2.38	1.32
Ouray .....	106.3	2,665	283.3	1.04	442	0.21	0.83
Park .....	334.1	2,561	855.6	3.15	1,147	0.55	2.50
Phillips .....	128.6	1,000	128.6	0.47	1,979	0.94	0.59
Pitkin .....	162.7	3,000	488.1	1.80	775	0.37	1.44
Prowers .....	997.9	1,000	997.9	3.68	3,072	1.46	3.12
Pueblo .....	330.0	1,448	477.8	1.76	4,203	2.00	1.82
Rio Blanco .....	206.0	3,000	618.0	2.28	1,716	0.82	1.92
Rio Grande .....	75.5	2,515	189.9	0.70	2,639	1.26	0.84
Routt .....	157.3	2,841	446.9	1.65	2,586	1.23	1.55
Saguache .....	107.9	2,639	284.7	1.05	1,047	0.50	0.91
San Juan .....	15.0	3,000	45.0	0.17	34	0.02	0.13
San Miguel .....	97.5	2,741	267.2	0.98	568	0.27	0.80
Sedgwick .....	231.1	1,000	231.1	0.85	1,611	0.77	0.83
Summit .....	18.0	3,000	54.0	0.20	631	0.30	0.22
Teller .....	102.9	3,000	308.7	1.14	1,468	0.70	1.03
Washington .....	399.9	1,041	416.3	1.53	3,268	1.56	1.54
Weld .....	871.7	1,397	1,217.8	4.49	19,265	9.18	5.66
Yuma .....	643.4	1,000	643.4	2.37	3,455	1.65	2.19

(1) Factor of difficulty based on comparative construction and maintenance costs, plains area 1.00, rolling 1.75, mountainous 3.00.

(2) Column 2 times column 3.

(3) 3 times column 5 plus column 7 divided by 4.

**Table 6** BASIS OF DETERMINING CITY DISTRIBUTION FORMULA OF HIGHWAY USER REVENUES (9% Recommended to be Distributed to Cities)

1 Number in Group	2 City Population Group		3 Arterial Street Mileage Miles	4 Estimated Urban Motor Vehicle Registrations		5 Proposed Apportionment Formula $\frac{a + 3b^{(c)}}{4}$ % Total
	Class			(a) % of Total	(b) % of Total	
	Total 230.....		502.8	100.00	100.00	100.00
153	1,000 or less.....		163.0	32.42	8.75	14.65
41	1,001 to 2,500.....		72.0	14.32	7.35	9.09
15	2,501 to 5,000.....		37.0	7.36	5.89	6.26
	Golden.....		5.7	1.13	0.57	0.71
	Fort Morgan.....		2.9	0.58	0.59	0.59
	Alamosa.....		4.1	0.82	0.59	0.65
	Walsenburg.....		4.8	0.95	0.62	0.70
	Canon City.....		6.5	1.29	0.70	0.85
	Loveland.....		4.7	0.93	0.75	0.80
	Durango.....		4.2	0.84	0.82	0.83
	Sterling.....		4.7	0.93	0.83	0.86
	La Junta.....		7.5	1.49	0.85	1.01
	Lamar.....		3.4	0.68	0.86	0.82
	Longmont.....		3.5	0.70	0.89	0.84
	Aurora.....		6.6	1.31	1.26	1.27
	Trinidad.....		3.8	0.76	1.35	1.20
	Grand Junction.....		11.7	2.33	1.60	1.78
	Fort Collins.....		7.9	1.57	1.65	1.63
	Englewood.....		12.3	2.45	1.84	1.99
	Boulder.....		14.3	2.84	2.21	2.37
	Greeley.....		10.6	2.11	2.25	2.22
	Colorado Springs.....		33.0	6.56	5.01	5.40
	Pueblo.....		24.8	4.93	7.04	6.51
	Denver.....		53.8	10.70	45.73	36.97

(c) Factor of difficulty 1.0 for all cities. Column 4 plus 3 times column 5 divided by 4.

The highway users share of this program came out to 66.7%; property taxes 24.2% and Federal Aid 9.1% for a 20-year program period.

Thus, with the funds divided between governmental units the next step was to allocate the funds for Counties to individual Counties and the City funds to individual Cities.

The present system of distributing funds among Counties on the basis of State Highway mileage bears no relationship to transportation service necessary for a County. Some Counties get as much as \$700 per mile of road maintained to as low as \$30 per mile. Little equity is had under such a plan.

The Committee recommended that the County portion of statewide highway users taxes for the construction and maintenance of the County Primary system be distributed among Counties on this formula: "3 times the per cent adjusted primary mileage plus the per cent of rural registration, the total divided by four."

The adjusted primary mileage is arrived at by multiplying the approved primary mileage by a factor of difficulty. Recognition was made in the factor of difficulty for the additional cost of building and maintaining a road in the mountainous areas as compared to the plains. For this purpose a topographic map of the U. S. Geological Survey was used to determine the proportion of plains, rolling, and mountainous area within each county. The plains area was assigned a factor of one and based on known costs; the rolling area was assigned a factor of 1.75 and the mountainous area a factor of 3.00. Depending on the terrain, the composite factor for each county was determined. (See Table 5.)

Similarly for Cities a formula was developed. The Counties are characterized by relatively high adjusted rural mileage and relatively low rural registration and the Cities are characterized by relatively low arterial street mileage and relatively high urban registration, thus heavier weight should be given to mileage in the County formula and to urban registration in the City formula.

Thus with a factor of terrain difficulty of one for all Cities and City formula was:

"Per cent of urban arterials plus 3 times per cent of urban registrations, the total divided by four." (See Table 6.)

## HIGHLIGHTS OF THE REPORT

### Road Systems

1. The Federal Aid Primary and Secondary routes and their urban connections would be a responsibility of the State Highway Department to construct and maintain. At present the State only maintains the roads on the Federal Aid Primary system outside of urban areas. All other existing State Highways are maintained by the Counties.
2. Counties would be responsible for the construction and maintenance of the County systems. Existing State highways off the Federal system generally become part of the County system. Practically all construction work previously accomplished on these roads has been done by the Counties.
3. Cities would construct and maintain City streets except urban connections of the Federal and State routes.
4. The County system would be divided into two systems, County Primary and County Land Service. County Primary roads are those roads forming the main highway transportation net of the County not on the coincidental State and Federal systems.
5. The City Street system would be divided into City Arterials and City local service streets.
6. The roads on the County Primary system would be selected by the Counties subject to approval of a Highway Equalization Board. The City Arterials would be selected in the same manner.
7. County Primary and City Arterial systems would be submitted for approval after public hearing in the County or City.
8. County Commissioners with the aid of County Road Planning Committees selected 15,622.7 miles as the initial County Primary system. The Planning Committee recommended that the system not exceed 16,000 miles.
9. Cities selected 637.4 miles of arterial streets or 15.6% of their total mileage. The Planning Committee recommended that the system not exceed 25% of the streets open to public travel.

## Engineering

1. Each County or group of Counties would have an engineer or road supervisor whose qualifications would be reviewed by the Highway Equalization Board.
2. Each City would have an engineer or road supervisor whose qualifications would be reviewed by the City Street Equalization Board, or, engineering on construction could be contracted to approved firms or individuals.
3. Engineering inspection of construction projects on the County Primary or City Arterial Street systems would be provided by the State since general highway funds would be used. This type of inspection is made by the Bureau of Public Roads on projects on the Federal Aid systems for which the State is responsible.

## Construction Priorities

1. Construction priorities on each road system would be made by the supervising responsible unit of Government after the legislature had made statutory provision for system designation and assignment of responsibility.
2. The controlling or governing body of each governmental unit would make its own construction priorities after public hearing. Construction priorities would be published annually by each governmental unit on the systems for which it is responsible.

## Cost of Overall Program

1. Four program periods were considered and the 20-year period was recommended.
2. On the basis of the recommended systems, total costs for construction and maintenance at 1949 prices were:

	Total Cost of 1949 Prices	Annual Cost for 20-year Program
State Systems.....	\$ 701,772,000	\$35,089,000
County Systems.....	636,997,000	31,850,000
City Systems .....	203,398,000	10,170,000
	<hr/>	<hr/>
All Systems .....	\$1,542,167,000	\$77,109,000

3. Mileage on each system would be:

State	Miles	
Federal Aid Interstate .....	607.1	
Federal Aid Primary .....	3,142.7	
Federal Aid Secondary .....	3,480.6	
City Connections .....	327.6	7,558.0
<hr/>		
County		
Primary .....	15,622.7	
Land Service.....	22,936.3	38,559.0
<hr/>		
Cities		
Arterials .....	637.4	
Local Service.....	3,447.1	4,084.5
<hr/>		
Total all systems as recommended		50,201.5
Mileage of present roads judged by local people as not warranting public expenditure .....		29,494.4
<hr/>		
Total present inventoried mileage		79,695.9

**Financing the Program**

1. On the basis of the type of predominate use and responsibility for systems of roads and streets the recommended financing is:

**State**

Federal Aid Inter- state .....	Statewide Highway User Taxes
Federal Aid Pri- mary .....	Statewide Highway User Taxes
Federal Aid Second- ary .....	Statewide Highway User Taxes
City Connections .....	Statewide Highway User Taxes

**Counties**

County Primary .....	Statewide Highway User Taxes
County Land Service..	County Property Tax Levies

**Cities**

City Arterials.....	Statewide Highway User Taxes
City Local Service....	Citywide and Improvement Dis- trict Property Taxes

2. On the basis of the tax schedule recommended for the 20-year program period the funds that would be raised from various sources and the deficiency would be as follows:

SOURCE OF REVENUE	2 0 - y e a r P e r i o d			
	Estimated Revenue (1000)	Estimated Cost (1000)	Deficiency Amount (1000)	Per cent
<b>Total for all Systems</b>				
Highway User Taxes.....	\$ 997,876	\$1,028,056	\$ 30,180	2.9
Property Taxes .....	137,040	373,965	236,925	63.4
Federal Aid .....	140,146	140,146	.....	0.0
Totals .....	\$1,275,062	\$1,542,167	\$267,105	17.3
<b>Federal Aid and State System</b>				
Highway User Taxes .....	\$ 544,840	\$ 561,626	\$ 16,786	3.0
Federal Aid .....	140,146	140,146	.....	0.0
Totals .....	\$ 684,986	\$ 701,772	\$ 16,786	2.4
<b>County Highways</b>				
Highway User Taxes .....	\$ 359,236	\$ 369,693	\$ 10,457	2.8
Property Taxes .....	131,465	267,304	135,839	50.8
Totals .....	\$ 490,701	\$ 636,997	\$146,296	22.3
<b>City Streets</b>				
Highway User Taxes .....	\$ 93,800	\$ 96,737	\$ 2,937	3.0
Property Taxes .....	5,575	106,661	101,086	94.8
Totals .....	\$ 99,375	\$ 203,398	\$104,023	51.1

3. No recommendation was made by the Committee as to the schedule of the rates for County and City property taxes. Figures used for property taxes were on the basis of present rates estimated for the 20-year period. The Committee left to the Counties and Cities the decision as to the adequacy of their own property taxes for their systems of land service roads and streets and the rate at which they would be improved. The deficiencies of 50.8 per cent and 94.8 per cent on those systems in the above table are not within the recommendations of the Committee.

## Tax Schedule

1. The tax schedule for highway user taxes recommended by the Committee was Alternate III
  - a. \$2.00 basic registration fee for all vehicles.
  - b. 7-cent motor fuel tax.
  - c. Motor vehicle taxes.

Passenger-type vehicles (except busses)....\$ 14.00

### Single-Unit Trucks

#### Empty Weight in Pounds

3500 and under.....	\$ 13.75
3501-4500 .....	30.00
4501-5500 .....	75.00
5501-6500 .....	116.00
6501-7500 .....	163.00
7501-8500 .....	206.00
8501-9500 .....	241.00

### Trailers and Semi-trailers

#### Empty Weight in Pounds

1000 and under .....	\$ 2.00
1001-2000 .....	14.00
2001-2500 .....	54.00
2501-3000 .....	95.50
3001-3500 .....	139.50
3501-4000 .....	184.50
4001-4500 .....	223.50

### Trucks over 9500 pounds

Empty Weight .....	2.0
--------------------	-----

### Combinations with Trailers or Semi-trailers over 4500 pounds

Empty Weight .....	2.4
--------------------	-----

Passenger busses .....	1.0
------------------------	-----

Mills per  
gross  
ton-mile

Mills per  
passenger-  
mile



2. The schedule of fees is based on equal fees for all classes of vehicles. The tax schedule is based upon equal payments per ton mile of road use for all classes of vehicles, with passenger cars as basic vehicles. Both motor fuel tax and motor vehicle tax payments per ton mile have been taken into account. Larger vehicles pay less fuel tax in relation to the gross ton miles of travel than smaller vehicles. Also, the heavier vehicles are driven more miles per year than the lighter vehicles. The motor vehicle fees and mileage taxes are designed to equalize the total tax on a ton-mile basis for all vehicles.
3. Approximately 99.5 per cent of the motor vehicles registered would be taxed at a flat rate schedule for their class. Trucks over 9500 pounds and combinations over 4500 pounds empty weight and passenger busses would number 2628 or half of one per cent of the total vehicles registered.
4. Due to the increased efficiency of diesel engines which is from 40 to 50 per cent greater than gasoline engines, the Committee recommended a 25 per cent increase in the diesel fuel tax. Diesel fuel is now taxed at the same rate as gasoline.
5. The tax schedules shown in the Preliminary Report were based on the unladen weight of the vehicle. After distribution of the Report, recommendations were made to the Committee that similar tax schedules be prepared on the basis of a declared gross weight at the time of registration which would include the weight of the vehicle and the maximum expected load to be hauled. In addition, it was recommended that a flat fee schedule be prepared for each weight group up to the legal limit.

At the direction of the Committee, the Bureau of Business Research, University of Denver, prepared the schedule shown in Table 7. An estimate of the total funds that would be raised from a \$2 basic registration fee for all vehicles, a 7-cent motor fuel tax, and the fee schedule for trucks, tractor trucks, trailers and semi-trailers as shown in Table 7 was prepared and is shown in Table 8.

The Committee unanimously passed a motion "that the original report on tax proposals for trucks, tractors and trailers be adopted for publication, and further, that the alternate plan prepared by the Research Bureau of the University of Denver, based on a gross weight licensing schedule, as directed by the Committee, be included in the Report as an alternate plan having considerable merit and which should be given serious consideration by the Legislature in their deliberations."

Table 7

ALTERNATE FEE SCHEDULE OF TRUCK  
AND TRACTOR TAXES BASED ON THE  
DECLARED GROSS WEIGHT<sup>(1)</sup>

Declared Gross Weight (pounds)	Estimated Number in Gross Weight Groups for 1949 Registration <sup>(2)</sup> (number)	Annual Fee Schedule	Estimated Revenue to be Derived
6000 and less .....	65,154	\$ 13	\$ 847,000
6001- 8000 .....	12,014	20	240,028
8001-10000 .....	9,819	35	343,665
10001-12000 .....	7,509	65	488,085
12001-14000 .....	5,545	110	609,950
14001-16000 .....	3,928	150	589,200
16001-18000 .....	2,888	200	577,600
18001-20000 .....	2,195	270	592,650
20001-22000 .....	1,617	350	565,950
22001-24000 .....	1,271	450	571,950
24001-26000 .....	924	560	517,440
26001-28000 .....	693	690	478,170
28001-30000 .....	578	850	491,300
30001-32000 .....	347	1,020	353,940
32001-34000 .....	231	1,210	279,510
34001-36000 .....	231	1,400	323,400
36001-38000 .....	231	1,570	362,670
38001-40000 .....	115	1,740	200,100
40001-42000 .....	115	1,920	220,800
42001-44000 .....	115	2,090	240,350
44001-46000 .....	-----	2,260	-----
<b>Total .....</b>	<b>115,521</b>		<b>\$8,893,758</b>

<sup>(1)</sup> Fees shown are in addition to a \$2 basic registration fee for each vehicle.

<sup>(2)</sup> Distribution of vehicles by weight groups based on actual experience in five states. Since Colorado now licenses on manufacturers' rated capacity no Colorado data was available.

Table 8

## HIGHWAY USER FUNDS NEEDED FOR FIRST YEAR OF THE PROGRAM PERIOD

	Number	\$14.00 Pass.-Type Tax 0.07 Motor Fuel Tax 2.00 Basic Regis. Fee
<b>Basic Registration Fees at \$2.00</b>		
Passenger-Type Vehicles .....	390,317	\$ 780,634
Trucks and Tractors.....	115,521	231,042
Trailers and Semi-Trailers .....	4,445	8,890
Trailers under 4,000 lbs.....	11,439	22,878
Busses .....	2,011	4,022
Motorcycles .....	4,749	9,498
Total .....		\$ 1,056,964
<b>Motor Fuel Tax (326,188,333 Gals. Times \$0.07) .....</b>		<b>\$22,833,183</b>
<b>Motor Vehicle Tax</b>		
Passenger-Type Vehicles (390,317 times \$14.00) .....		\$ 5,464,438
Trucks and Tractors (See Table 7) .....		8,893,758
Trailers and Semi-Trailers <sup>(1)</sup> .....		2,162,000
Busses <sup>(2)</sup> .....		237,340
Total .....		16,757,536
Grand Total .....		\$40,647,683
Highway User Revenue Needed for First Year's Program <sup>(3)</sup> .....		\$41,000,000

<sup>(1)</sup> Estimated from distribution of trucks.

<sup>(2)</sup> 23,734 bus seats at \$10 each.

<sup>(3)</sup> Average annual highway user taxes required for the 20-year period is \$51,404,000. Estimated increase in number and travel of motor vehicles would yield \$61 million in the 20th year.

## Distribution of Funds

1. The distribution of Highway User Revenues to the three governmental units, State, Counties, and Cities, as recommended by the Committee would be on the basis of dollars needed to bring each of the systems except the County Land and City Local Service systems up to a minimum standard consistent with the use and safety of the road or street.

The needs as determined by the Engineering Study to be financed from user taxes were:

	(000)	Per cent	Per cent recommended by the Committee	Per cent distribution in 1949†
State System .....	\$ 561,626	54.6	55	60.39
County Primary ....	369,693	36.0	36	34.39
City Arterial* .....	96,737	9.4	9	5.22
Total .....	\$1,028,056	100.0	100	100.00

2. The apportionment of the 36 per cent of the highway user revenues between the Counties as recommended by the Committee is composed of three elements, (a) County primary mileage within the County; (b) the rural registration of motor vehicles in the County; and (c) a factor developed from the proportion of plains, rolling, and mountainous area within the Counties designed to reflect differences in construction and maintenance costs in the various types of terrain. This factor of difficulty was multiplied by the County primary mileage to secure a corrected primary mileage.

The formula weighted the per cent of corrected primary mileage by three as follows:

$$\frac{3 (\% \text{ of corrected primary mileage}) + (\% \text{ of rural registration})}{4}$$

3. The apportionment of the 9 per cent of the highway user revenues between the Cities as recommended by the Committee is composed of the same elements as the County formula except that the weighting is different and the factor of difficulty was 1.00 for all Cities.

\* Denver included as a City.

† Counties now responsible for part of construction and all of maintenance on Federal Aid Secondary System roads. Committee recommends this should be a State responsibility.

The formula weighted the urban registrations by 3 as follows:

$$\frac{(\% \text{ of arterial street mileage}) + 3 (\% \text{ of urban motor vehicle registration})}{4}$$

Denver City and County was considered a City and the apportionment was included with the Cities.

4. The development of these formulae for the distribution of funds by the University of Denver Bureau of Business Research reflects a reasonable approach to an extremely difficult problem.

The formula for the distribution to the State, Counties, and Cities based on needs as determined from the Engineering study is logical and capable of being supported by facts.

The distribution between Counties reflects variations in construction and maintenance costs, and is capable of measurement annually, and is related to the need for roads in a County.

The distribution between Cities gives the weight to registrations where it should be, since number of vehicles makes up the core of the urban transportation problem.

## Administration

1. The recommendation that all highway user revenues be placed in a single "Road Fund" for distribution will eliminate the present complicated distribution method of computing amounts for each separate tax.
2. The preparation and publication of reports for each level of government receiving and expending road funds has been particularly poor in Colorado. The Committee recommendation that all governmental units keep records and report the information will make it available for use, as well as complying with the principle of accountability of public funds.

The State now spends money collecting this information from Counties and some Cities. In the preparation of the Needs Study, it was evident that complete information was lacking, and this handicapped some of the essential research, making it necessary to use estimates for data which should be readily available.

3. No recommendation was made to change the present rate of fuel tax refunds; however, it was recommended that a committee be appointed to study possible improvements in the present law.

A fee of \$1.50 for a refund permit to cover the cost of administering claims was recommended.

4. Reclassification of commercial vehicles was recommended into:

- (a) Passenger type to include passenger cars, station wagons, and funeral cars (busses excluded).

- (b) Pickup and panel trucks (trucks under one ton carrying capacity) to be included with the truck classification.

5. The present operator's license fee of \$1.00 for three years was recommended to be increased to \$4.00 for the 3-year period, and after administration costs were deducted, the proceeds to go to the support of the Highway Patrol. Remaining funds for the Highway Patrol would be met from highway user revenues, as at present.

6. As the Congress of the United States may provide Federal Aid for County roads, the Committee recommended that provision be made for Counties to match the Federal funds in such event.

7. In order that both Counties and Cities would adopt a construction program for road and street improvement over the 20-year period, the Committee recommended that annually a Board of Equalization composed of County and State representatives establish the amount of highway user taxes that would be expended for construction work and for maintenance in each county and City.

Without such a provision, the people of the State would have no assurance that the funds raised would actually be used to construct an adequate road system.

## WHAT THE PROGRAM WILL BUY

The increased revenues from highway users and from property tax to be expended on roads and streets over the twenty-year period is expected to result in marked improvement in the highway systems of the State. What is being bought by the people of the State is shown in Table 9 on a comparative basis of the increase of mileage in the more durable surface types required for present and anticipated traffic volumes.

The State System, consisting principally of 4,273 miles of two-inch oil surfaces and 2,013 miles of gravel surfaces at present, would be improved to higher types of surfaces which would include 379 miles of high speed and high traffic volume express-ways. Present gravel surfaces would move up to the light oil surface category, or better, depending on traffic needs.

In the County system, the improvement in the system is even more striking since existing poorly surfaced roads would be brought up to a minimum of an all-weather gravel standard with higher traffic volume roads being improved to surfaces required to serve traffic needs.

Municipal streets proposals for a twenty-year improvement program center principally around the need for a system of high traffic volume arterial streets capable of carrying traffic within and through present congested areas.

At their meeting on December 29, 1950, the Committee accepted the Preliminary Report as prepared and adopted it as the Final Report.

**Table 9**

**MILEAGE OF PROPOSED ROAD AND STREET SYSTEMS BY EXISTING SURFACE TYPE AND PROPOSED SURFACE TYPE UPON COMPLETION OF NEEDS PROGRAM**

SURFACE TYPE (1)	FEDERAL AID AND STATE SYSTEM					
	Total Rural		City Connect.		Total	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Projected	61.4	--	21.4	--	82.8	--
Unimproved	25.4	--	2.8	--	28.2	--
Graded and Drained	452.0	--	--	--	452.0	--
Low	1,992.2	483.7	20.9	--	2,013.1	483.7
Low Medium	158.9	2,109.7	--	--	158.9	2,109.7
Medium	4,100.3	1,213.1	172.9	85.7	4,273.2	1,298.8
High Medium	--	1,503.9	--	--	--	1,503.9
High	440.2	1,568.4	109.6	214.0	549.8	1,782.4
Expressway	(2)	351.6	(2)	27.9	(2)	379.5
<b>TOTAL</b>	<b>7,230.4</b>	<b>7,230.4</b>	<b>327.6</b>	<b>327.6</b>	<b>7,558.0</b>	<b>7,558.0</b>

  

SURFACE TYPE (1)	COUNTY SYSTEMS					
	Primary Rural		Land Service Roads - Rural		Total County	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Projected	137.9	--	896.0	--	1,033.9	--
Unimproved	1,732.7	--	13,557.8	--	15,290.5	--
Graded and Drained	4,489.5	--	5,707.5	--	10,197.0	--
Low	8,791.1	13,376.0	2,649.7	22,451.3	11,440.8	35,827.3
Low Medium	227.6	1,991.4	104.5	464.2	332.1	2,455.6
Medium	238.0	213.2	20.8	20.8	258.8	234.0
High Medium	0.2	36.9	--	--	0.2	36.9
High	5.7	5.2	--	--	5.7	5.2
Expressway	--	--	--	--	--	--
<b>TOTAL</b>	<b>15,622.7</b>	<b>15,622.7</b>	<b>22,936.3</b>	<b>22,936.3</b>	<b>38,559.0</b>	<b>38,559.0</b>

  

SURFACE TYPE (1)	MUNICIPAL SYSTEMS						GRAND TOTAL	
	Arterial		Local Service Streets		Total City		Existing	Proposed
	Existing	Proposed	Existing	Proposed	Existing	Proposed		
Projected	8.3	--	--	--	8.3	--	1,125.0	--
Unimproved	18.1	--	366.7	--	384.8	--	15,703.5	--
Graded and Drained	--	--	--	--	--	--	10,649.0	--
Low	192.4	--	1,127.1	907.0	1,319.5	907.0	14,773.4	37,218.0
Low Medium	--	--	--	--	--	--	491.0	4,565.3
Medium	294.0	320.7	1,843.6	2,437.6	2,137.6	2,758.3	6,669.6	4,291.1
High Medium	--	--	--	--	--	--	0.2	1,540.8
High	124.6	309.5	109.7	102.5	234.3	412.0	789.8	2,199.6
Expressway	--	7.2	--	--	--	7.2	--	386.7
<b>TOTAL</b>	<b>637.4</b>	<b>637.4</b>	<b>3,447.1</b>	<b>3,447.1</b>	<b>4,084.5</b>	<b>4,084.5</b>	<b>50,201.5</b>	<b>50,201.5</b>

(1) Low—Gravel, sand, or crushed rock  
 Low Medium—Light, road mix oil surface treatment.  
 Medium—Plant or road mix oil surfaces over 2" thick.  
 High Medium—Plant mix oil surfaces over 2" thick.  
 High—Portland cement or asphaltic concrete.

(2) 43.8 miles are at present improved to expressway design but are below standard for some reason, such as improper type of surface or deviation from proper surface width, and need correction to bring them to full standard.



## RECOMMENDATIONS AND COMMENTS ON THE PRELIMINARY REPORT

The Preliminary Report of the Colorado Highway Planning Committee was mimeographed and distributed to the Highway Advisory Board, the Governor, members of the Legislature, County Commissioners, City Officials, Chambers of Commerce, and to various organizations throughout the State having an interest in highways and highway transportation. The Committee invited the recommendations, comments, and constructive criticisms of the various organizations on the findings and recommendations contained in the Report.

In addition, the Highway Planning Committee asked associations and organizations in the State to appoint representatives to form an Advisory Committee to review the Report and make their suggestions and recommendations to the Highway Planning Committee. The Advisory Committee agreed upon the Engineering Recommendations in the Report and recommended enactment of this phase of the Report into law. The Advisory Committee further recommended provision for highway strip zoning. Due to the wide divergence of interests represented, no conclusive action could be agreed upon for the method of raising the needed funds or the tax rates necessary.

The Highway Planning Committee was gratified to receive the comments of the many diversified organizations and widely divergent viewpoints in the time that was available after the Report was prepared in November 1950 and before the meeting of the Legislature January 1, 1951. The Committee fully realized that this limited time would not permit the detailed review that many organizations and individuals would like to make. However, in the course of the preparation of the Report a close time schedule was followed and literally the impossible was accomplished to get the Report out in November. The comments received by the Committee indicated that a large number of organizations and individuals did review the Report in detail and familiarize themselves with the findings and recommendations.

Several organizations requested the opportunity to present their review of the Report through their representatives at meetings of the Committee. The Committee allotted time during their meetings to hear these reviews.

The Highway Advisory Board at whose instigation the study was made accepted the Report as a complete report on the responsibilities assigned to the Committee, placed themselves on record as being in accord with the findings and recommended consideration by the Legislature and passage into law. The Board requested the Committee to continue indefinitely and requested the Governor to fill vacancies as they may occur.





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