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The State-Municipal Road Commission—(see inside back cover.)

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TABLE OF CONTENTS

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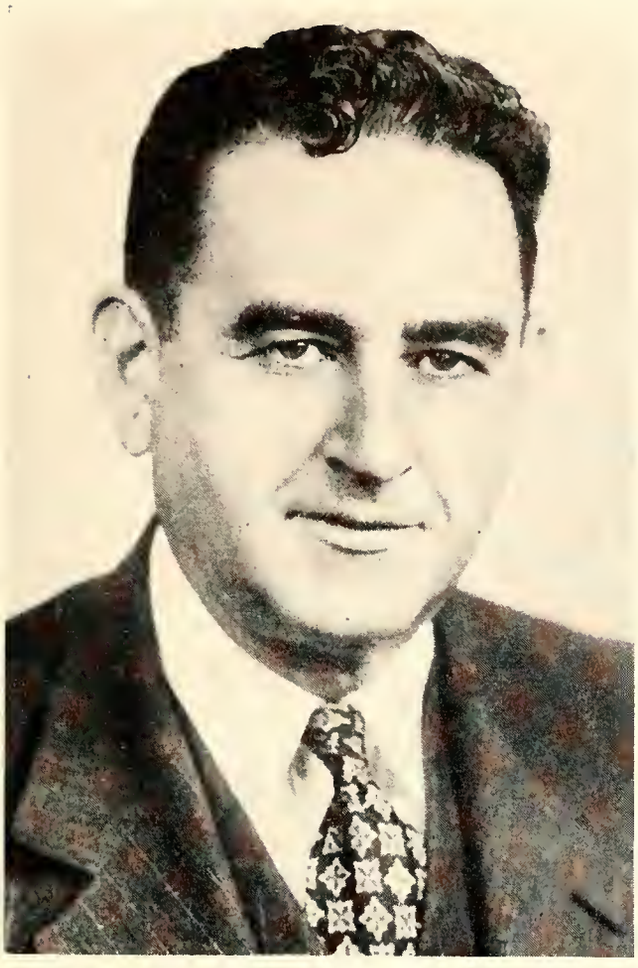
Roads and Streets in North Carolina--a Report to the State-Municipal Road Commission

Prepared by John Alexander McMahon
Assistant Director of the Institute of Government



W. KERR SCOTT
Governor of North Carolina

In 1921 the State of North Carolina took over 5,500 miles of rural roads connecting the one hundred county seats and all cities and towns with three thousand or more people, and this primary system of State Highways has expanded to 10,461 miles in 1950. In 1931 the State took over 45,000 miles of county roads in the one hundred counties of the State, and this secondary system of County Roads has expanded to 51,700 miles in 1950. Both of these road systems run through the rural areas and end at city limits.

In 1935 the State allocated $500,000 annually toward the maintenance of city and town streets carrying State Highways. In 1941 it increased this amount to $1,000,000 and extended State aid to streets serving as connecting links to the County Road System. In 1949 it increased State aid to $2,500,000.

In the effort to determine how much further, if any, the State should go in assuming responsibility for city and town streets, the 1949 General Assembly provided for a State-Municipal Road Commission to study the "just and proper sharing" of State highway revenues with cities and towns. This Commission was appointed by the Governor of North Carolina in the summer of 1949 and called on the Institute of Government for studies and investigations needed as a basis for Commission recommendations. These studies and investigations have been carried on by John Alexander McMahon, Assistant Director of the Institute of Government, in the effort to find the facts throwing light on the Commission's problem. The results of his work have been checked by colleagues on the Institute staff; by accredited representatives of the State Highway and Public Works Commission; by the North Carolina League of Municipalities; and by the full membership of the State-Municipal Road Commission. It is believed that all of these groups are in substantial agreement on the accuracy, fairness, and completeness of the facts presented in this report to the State-Municipal Road Commission, and it is hoped that these facts will be helpful to the Commission as it works on the recommendations that it is required by law to submit to the Governor on or before December 1, 1950.

ALBERT COATES, Director, Institute of Government.

Introduction

A Joint Resolution of the 1949 General Assembly of North Carolina established the State-Municipal Road Commission to "make a careful and complete study of all facts and factors which should enter into the question as to the just and proper sharing by the State with its cities and towns of its highway revenues to be used in the construction and maintenance of streets which are located within the municipalities . . . ."[1] Pursuant to this resolution, Governor W. Kerr Scott appointed the following men to the Commission early in the summer of 1949:

Julian R. Allsbrook, State Senator from Halifax County
James A. Doggett, Chairman of the Guilford County Board of Commissioners
Dr. Ralph Kibler, Mayor of the Town of Morganton
Dr. J. W. Rose, Pikeville
Victor Shaw, Mayor of the City of Charlotte
James A. Speight, Lewiston, Route 1
L. B. Wilson, Newton Grove

These men met and organized in Raleigh on July 14, 1949, with Mr. James A. Doggett as chairman and Mr. Julian R. Allsbrook as secretary.

At this first meeting, the State-Municipal Road Commission, believing that the State Highway and Public Works Commission was most concerned with rural roads and that

[1] Section 2, Resolution No. 31, Session Laws of 1949. The full text of this resolution is set forth in Appendix A.

the League of Municipalities was most concerned with city and town streets, requested the Institute of Government as the fact-finding and research agency serving the cities, the counties, and the State, to assist it in the study of the problems involved in arriving at a fair and just conclusion. It also planned a second meeting on July 28-29 and decided to invite associations, organizations, and individuals interested in roads and streets. Invitations were extended to the State Highway and Public Works Commission; the Department of Tax Research; two departments of the Greater University of North Carolina; about twenty associations and organizations representing public officials, transportation companies, contractors, farmers, private companies, and individuals using roads and streets; and several companies not otherwise represented. All were requested to bring any available information on roads and streets and to recommend sources of additional information.

The second meeting was held in Raleigh as planned. A majority of the invited groups and individuals were present at the first session on July 28, and they presented information, suggested sources of information which they thought would prove fruiful to the Commission, and pledged their cooperation in any service that they might render. At the second session on the following day, the procedings of the first day were discussed in order to determine the next step, and it was decided that the Commission should visit different parts of the State, inspecting street systems and gathering street information from city and town officials.

During September, October, and November the members of the Road Commission spent between ten days and two weeks travelling to cities and towns in different parts of the State for a detailed examination of street systems and street problems. They spent many hours riding over the streets of eighteen cities and towns and one unincorporated community.[2] They held hearings in eight centers,[3] to which officials of all nearby cities and towns were invited and at which officials of 108 cities and towns appeared, exchanged information, and presented their views. They received briefs from ninety cities and towns containing data on street mileage, street expenditures, street needs, and related items. And, to supplement these briefs, they received a written statement prepared by the League of Municipalities containing recommendations for the just sharing of highway revenues.[4]

The Road Commission next decided to obtain all possible information on rural roads. It held a meeting in Raleigh on December 9 for rural organizations such as the North Carolina State Grange and the North Carolina Farm Bureau, and a meeting in Raleigh on February 3, 1950, for the member organizations of the North Carolina Highway Users Conference.[5] Those appearing at the meetings presented information on the importance of rural roads to the economy of the State as well as to cities and towns, and several of the organizations filed briefs with the Commission on road and street problems.

Having obtained a great mass of information on both roads and streets, the Commission then decided to form a study group (1) to review the information presented to the Commission, (2) to make suggestions concerning the significance of that information, and (3) to recommend sources of additional information. The study group was composed of twelve officials from different cities and towns, nine representatives from the State Grange and Farm Bureau, and seven representatives from the Highway Users Conference. This group met with the Commission on February 16 and March 16 and from its discussions came several resolutions which it presented to the Commission.[6]

During the spring of 1950 the Commission held several meetings with members and officials of the State Highway and Public Works Commission in order to gain the benefit of any pertinent data that body had on road and street problems,[7] and in addition it called for additional statements from all organizations which might wish to submit further information.

The Institute of Government, in accordance with the Road Commission's request for assistance, undertook the following projects: (1) preparing a history of roads and streets in North Carolina; (2) studying the allocation of highway revenues to cities and towns in North Carolina and in other states; (3) summarizing the information presented to the Commission at each meeting; (4) consolidating all information from time to time for the use of Commission members; (5) assisting in the preparation of agenda for meetings with representatives of interested organizations; (6) summarizing articles and information appearing in books and in current publications so that the Commission might have all relevent material on road and street problems.

As a result of its work, the State-Municipal Road Commission has amassed a bulk of information: briefs from cities and towns, street maps and road maps, statements from many organizations interested in both roads and streets, studies prepared by the Division of Statistics and Planning of the State Highway and Public Works Commission and the Institute of Government, road and street studies in other states, correspondence, books, magazines, newspapers, and pamphlets. As the Commission looked forward to preparing its report to the Governor in the fall of 1950 it was obvious that this bulk of information needed to be re-examined and organized into summary form, and as a consequence the Institute of Government has prepared this report summarizing all the available information on roads and streets. The information is contained in four chapters: (1) historical background of roads and streets in North Carolina; (2) roads and streets in North Carolina today; (3) suggestions for sharing highway revenues with cities and towns; and (4) problems involved in Highway Commission responsibility for streets.

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[2] The cities and towns were Asheville, Black Mountain, Charlotte, Greensboro, Hickory, High Point, Lexington, Marion, Morganton, Newton, Raleigh, Rocky Mount, Statesville, Tarboro, Thomasville, Williamston, Winston-Salem, and Valdese. The unincorporated community was Kannapolis.

[3] The hearings were held at Morganton, October 5; Winston-Salem, October 6; Greensboro, October 7; Raleigh, November 15; Rocky Mount, November 15; Williamston, November 16; Kinston, November 16; and Fayetteville, November 17. The League of Municipalities helped make arrangements for the hearings and tours.

[4] This statement is set out in full in Appendix N.

[5] Member organizations of the Highway Users Conference include Associated General Contractors, Inc.; Atlantic Greyhound Lines; Carolina Coach Co.; Carolina Motor Club; Carolina Road Builders Association; N. C. Automobile Dealers Association; N. C. Bottlers Association; N. C. Cotton Growers Cooperative Association; N. C. Dairy Products, Inc.; N. C. Motor Carriers' Association; N. C. Oil Jobbers Association; N. C. Petroleum Industries Committee; N. C. State Automobile Association; Portland Cement Association; Travelers Protective Association of America; United Commercial Travelers Association.

[6] These resolutions appear on pages 13 and 14 of this report.

[7] The Commission during its investigation relied on the Division of Statistics and Planning of the State Highway and Public Works Commission for a great deal of information on roads and streets. In addition, members of that Division attended practically every meeting of the Road Commission in order to render all possible assistance in finding facts.

Chapter I

Historical Background of Roads and Streets in North Carolina

This historical statement was prepared by Albert Coates, Director of the Institute of Government

Roads and Streets before 1900

The Charter from the Crown in 1663 granted the Province of Carolina to eight Lords Proprietors with "full and absolute power . . . to [make] any laws whatsoever either appertaining to the publick state of the said province or to the private utility of particular persons . . . with the advice, assent and approbation of the free men of the said province . . . or of their delegates or deputies." The concessions of the Lords Proprietors in 1665 vested this lawmaking power for the Province of Carolina in the General Assembly, where it has continued to this day. From colonial beginnings to the present day the General Assembly of North Carolina has exercised this lawmaking power to direct and control the building of public roads and streets.

From the creation of the County of Albemarle in 1663, throughout the division of the state's territory into one hundred counties, and on to the year 1921, the General Assembly prescribed state-wide road building policies and delegated road building responsibilities to county governing bodies. From the creation of the town of Bath in 1705, throughout the sprinkling of these one hundred counties with nearly five hundred towns and cities by 1935, the General Assembly prescribed city-wide street building policies and delegated street building responsibilities to town and city governing bodies. These five hundred separate town and city street systems, within one hundred separate county road systems, grew out of these General Assembly policies for two hundred and fifty years, concurrently developing on a state-wide scale.

State aid in these road and street building programs appeared in the appointment of commissions to blaze trails from the western frontiers to the eastern coast in the latter 1700's, and in loans, stock subscriptions, and direct appropriations to private companies building turnpikes and plank roads in the middle 1800's.

County road policy from 1663 to 1900

The General Assembly's county road policy, beginning after 1663, crystallized in a general law in 1715, and with few and infrequent changes continued for two hundred years into the early decades of the twentieth century. Throughout these years the General Assembly gave county governing bodies "full power and authority to appoint and settle ferries; and to order the laying out of public roads, where necessary; and to appoint where bridges shall be made, for the use and ease of the inhabitants of each county." Pursuant to this authority these county governing bodies appointed road overseers authorized to call out all "male taxables" between 16 and 60 at first, and later from 18 to 45, for periods varying from six to twelve days each year; to clear a road, first 10 and later 20 feet wide of trees and stumps and cut all overhanging limbs from trees which might interfere with a man on horseback; to build causeways 10 feet wide over swampy stretches with alternate layers of logs and dirt; to build bridges over narrow streams and establish ferries over wide ones.

"The only making they bestow upon the roads in the flat part of the country," wrote a traveler in 1775, "is cutting out the trees to the necessary breadth, in as even a line as they can, and where the ground is wet, they make a small ditch on either side. The roads through swamp land are made by first laying logs in the direction of the road and covering them crossways with small pine trees, laid regularly together over sod, with which the logs are previously covered. . ." Another traveler described a stretch of road in 1828: "The road . . . was fearfully jolty . . . . It was a sort of guess-work driving; for we came ever now and then to pools a quarter of a mile in length, through which the horses splashed and floundered along as well they might, drawing the carriage after them in spite of holes into which the four wheels were dipped almost to the axle trees making every part of the vehicle creak again."

As late as 1902 an Orange County citizen wrote: "I live a mile and a half from Hillsboro and I doubt if 6 mules could have carried a ton of guana from there to my house during the recent bad weather. Since November the roads have been so bad that in going to Hillsboro I prefer to walk rather than go in a buggy."

A typical county road working force around the turn of the century, according to Professor C. K. Brown, consisted of " '10 or 12 men and an overseer, a little gray mule, a small plow, 6 dogs, 3 or 4 guns, and a few tools which often are not considered worth using at home.' Such a road force was said to be hard on the rabbits and hard on the roads."

City street policy from 1705 to 1900

The General Assembly's city street policy evolved through a series of special acts applying to particular towns and cities. In 1705 the commissioners of the town of Bath were authorized to lay out streets, "provided that the principal street in the said town shall be one hundred foot wide at least." These legislative grants of power broadened with the years, as in the grant to the commissioners of Hillsboro in 1784 to "pass an ordinance directing in what manner the streets of the said town shall be paved and otherwise improved . . ." and in the grant to the commissioners of Fayetteville in 1790 "to lay off such new streets as to them shall seem most conformable to regularity and convenience"; and in later grants of power to add sidewalks "curbed with stones or hewed timber six inches above the level of the street."

In the beginning street work, like road work, was done by citizens. The laws of 1740 gave the overseer of the streets of Edenton power to summon "all the male taxables . . . to clear the roads, streets, and public places of all woods, weeds, rubbish and other nuisances." In 1770 inhabitants of the town of Beaufort were required to "clear and repair and keep in order the streets, lanes and passages belonging to the said town." In 1782 each freeholder of Hillsboro was required to "pave six feet wide of the street in full front of his lot with good brick or stone and enclose the same with strong posts and rails." The required working days varied with the towns—"no more than 10 days in any one year" in Hillsboro; and "not exceeding 24 days in any one year" in Tarboro.

Differentiation of roads and streets

In the early towns the principal streets apparently fitted into the pattern of the county roads, and citizens worked streets and roads indiscriminately. In many places the statutes specifically provided that county road overseers should serve as town street overseers.

But oft-travelled town streets called for more work than rarely travelled county roads, and by 1740 signs of differentiation appeared in a legislative act providing that inhabitants of the town of Bath "are for the future exempt from

working on the public roads . . . out of the limits of said town." This exception to the rule crystallized into a statewide policy as this practice spread to other towns, and town residents worked their own streets under the supervision of town street overseers to the exclusion of county roads and county road overseers.

This differentiation increased as town inhabitants found street work "burthensome and inconvenient and not to answer the purpose intended" and began paying taxes to hire others to work streets for them. As early as 1756 the commissioners of the town of New Bern were authorized to levy a tax "sufficient to defray the expense of clearing, making and repairing the streets . . . ." Wilmington changed from citizen labor to citizen taxes in 1771, Hillsboro in 1773, and others followed until these exceptions became the rule in towns and cities throughout the state—setting the policy that counties were to follow a hundred and fifty years later.

State aid to roads and streets from 1663 to 1900

The buffaloes had stamped their own routes across the state before the settlers came; many of these buffalo routes became Indian trails, which in turn became traders' paths, widening into wagon roads as settlements appeared, and furnishing primitive connections between different sections of the state.

In 1766 the General Assembly provided for the opening of a road from the western "frontiers" through the Counties of Mecklenburg, Rowan, Anson, and Bladen to Wilmington and Brunswick and appointed a highway commission to lay out the route. It called on the county governing bodies to divide the route through their respective counties into districts and appoint overseers to call out the "male taxables" along the route to open and maintain the road. It provided for the opening of other roads in similar fashion: in 1771, from the frontier through Mecklenburg, Rowan, Anson, and Cumberland to Campbellton (now Fayetteville); in 1773, from the Dan River through Guilford, Chatham, and Cumberland to Fayetteville, and another from Charlotte to Bladen Courthouse; in 1778, from Burke County westward across the mountains to Jonesboro in Tennessee.

A definite recommendation of state aid in road building came from Governor Alexander to the General Assembly in 1806 for roads running across county lines and connecting different sections of the state, in the following words: "The natural situation of the state being favorable to commerce, it is of the greatest importance to the state that liberal provision should be made . . . for the establishment of good roads . . . . Nothing can be more congenial to the spirit of a republican government than the application of the resources derived from all to the benefit of all;" but for years the General Assembly contented itself with granting charters to private companies to build toll roads and bridges and ferries. When private enterprise alone failed to do the job the General Assembly came to its rescue in the 1820's and 1830's with stock subscriptions, loans, and direct appropriations, running from $25,000 to $30,000, in the Buncombe Turnpike, the Plymouth Turnpike, the Tennessee River Turnpike, the Old Fort and Asheville road, and other road building ventures. In the 1840's and 1850's it subscribed $180,000 to the stock of private companies building a system of plank roads, running to five hundred miles and a total cost of $1,000,000. These plank roads or "mudless highways" were known as the "poor man's railroads."

This movement literally fell by the wayside, according to a description by a traveller who had sung its praises at the start: "A few years later, I traveled the road again. The plank had begun to decay. Frequent holes kept one always on the alert. Deep furrows, leading away from the plank road and back to it again at convenient distances from each toll-house, told but too plainly that the drivers had learned how to pass behind the toll-house, where the eyes of the toll-keeper never looked. . . . The tolls did not even pay the keepers, so nothing was left for 'maintenance of way' nor for dividends."

Roads and Streets since 1900

City street policy since the turn of the century

The differentiation between county roads and city street systems widened toward the end of the nineteenth century with the rapid concentration of people in cities and towns and the attendant increase of town and city travel—calling insistently for hard surfacing of streets and sidewalks and other improvements. When permissible tax rates failed to finance these needed street improvements as fast as people wanted them, towns and cities supplemented taxes with special assessments on abutting property owners, running into the hundreds of thousands of dollars in the decades following the turn of the century. When special assessments could not add street improvements fast enough, towns and cities began to issue bonds, running into the tens of millions of dollars by the 1930's, and in many cities street expenditures were claiming 25% to 75% of city tax revenues.

County road policy since the turn of the century

Toward the end of the nineteenth century the counties began to break away from their two-hundred-year-old road building policies by supplementing private labor with convict labor and public taxes, and after the turn of the century by doing away with private labor altogether. Mecklenburg County led the way in 1879 by getting permission from the General Assembly to levy a small property tax for county roads—increased in 1885 to a county tax of seven to twenty cents on $100 worth of property, which might be supplemented by an added ten cent tax in any township, and by 1900 it had completed seventy-five miles of macadam-type roads. Twenty-seven counties followed this lead by 1901, and Edgecombe and Forsyth had gone a step further by doing away with private labor altogether. When private labor and convict labor, supplemented by poll and property taxes, did not build roads fast enough, counties began to issue bonds. Wake County issued a small amount of bonds for bridges in 1889; New Hanover issued $50,000 worth of bonds in 1902; Guilford issued $300,000 in 1903; eighteen counties had followed this lead by 1910, and around eighty by 1920; and by 1926 ninety-eight counties owed over $76,000,000 in outstanding road bonds, and townships and special districts over $8,000,000—for topsoil, sand-clay, and hard surfaced roads. These expenditures represented all building and no maintenance, and all too many counties were paying forty-year bonds for roads worn out in five years. In the beginning some of the towns opposed the taxation of town property for improving county roads, but this opposition disappeared as towns aspiring to be commercial centers aided and abetted tax levies and bond issues for roads to the county lines by specific provisions that town property should not be exempt from the county road tax. After all was said and done, the one hundred counties had one hundred separate road systems, built with little regard for each other, with roads often stopping short of county lines for fear of diverting trade to rival commercial centers in neighboring counties.

State aid to roads and streets since the turn of the century

Roads.—In 1901 the General Assembly established a State Highway Commission of three members to advise with

county officials on road building problems, but this commission went out with the biennium. In 1909 it gave $5,000 to the State Geological Survey to provide engineering assistance to the counties. In 1911 it established a Central Highway Committee, reminiscent of commissions appointed during the latter part of the 18th century, to lay out a route of travel through the state beginning at Moreheard City and running through Raleigh, Greensboro, Salisbury, and Asheville to the Tennessee line, to be built by the counties through which it ran. In 1915 it established a State Highway Commission, gave it $10,000 a year, and authorized it to appoint a State Highway Engineer with offices in Raleigh, to assist counties in surveying roads, estimating costs, and carrying on construction. In 1921 it went into the road building business by taking on the task of constructing and maintaining a state-wide system of 5,500 miles of "hard surface and other dependable highways," running through all towns and cities with three thousand people or more and connecting the one hundred county seats, to be financed by issuing $50,000,000 in bonds secured by automobile license fees and a cent-a-gallon tax on gasoline. Fifteen million more in bonds was added in 1923, $20,000,000 in 1925, and $30,000,000 in 1927. In 1931 it went further into the road building business by taking over 45,000 miles of county roads. Around 5,000 miles have been added to the state highway system since 1931, and 6,500 miles to the county road system. These two systems maintained by the state are growing as much as 1,500 miles a year.

State highway revenues for road construction and maintenance include license fees, beginning in 1909; gasoline taxes, beginning in 1921; and Federal Aid, beginning in 1916.

Streets.—When taxes, special assessments, and bond issues could not keep up with the demand for needed street improvements, towns and cities called on the counties for help. To illustrate: during the early 1900's special acts were passed requiring Mecklenburg County commissioners to furnish convict labor or the cash equivalent for "building and repairing highways and bridges within the corporate limits of the city" of Charlotte. After the state took over the county roads, towns and cities transferred their call for help from the counties to the state. In 1935 the General Assembly allocated $500,000 annually toward the maintenance of city streets carrying state highways; in 1941 it increased this amount to $1,000,000 and extended state aid to city streets serving as connecting links to the county road system; in 1949 it increased state aid to city streets to $2,500,000; all of these allocations came from state highway revenues composed of license fees, gasoline taxes, and Federal Aid. Around 1,100 miles of city streets carrying state highways are receiving state aid; around 1,200 miles of city streets serving as connecting links to the county road system are receiving state aid; and around 4,700 miles of city streets are maintained by cities and towns without state aid. In the effort to determine how much further, if any, the state should go in assuming responsibility for city streets, the 1949 General Assembly provided for a State-Municipal Road Commission to study the "just and proper sharing" of state highway revenues with cities and towns.

Chapter II

Roads and Streets in North Carolina Today

This chapter contains the available information on (1) the framework of the road and street systems, (2) the service rendered by the road and street systems, (3) the needs of the road and street systems, (4) the revenues for the road and street systems, (5) the expenditures on the road and street systems, (6) some comparisons of the road and street systems. It indicates (7) the basic unity of all roads and streets and points to (8) some conclusions which may be drawn from the available road and street information.

The information in this chapter came from a variety of sources including the Division of Statistics and Planning of the State Highway and Public Works Commission; the League of Municipalities and many officials of cities and towns; the North Carolina Highway Users Conference and representatives of organizations interested in the State Highway System; representatives of the Grange, the Farm Bureau, and other organizations interested in all rural roads.

Framework of the Road and Street Systems

The existing framework of the road and street systems in North Carolina can best be understood by an examination of the different kinds of roads, the different kinds of streets, and the mileage of paved roads and streets.

The different kinds of roads

Basically roads are of two kinds: roads maintained by governmental units and roads maintained by private individuals or commercial enterprises. The chief governmental unit maintaining roads in North Carolina is the State Highway and Public Works Commission, and it maintains 62,161 miles of roads.[1] These roads are divided into two systems: the rural State Highway System and the rural County Road Sysem.

There are 10,461 miles of rural State Highways in North Carolina. These highways are the outgrowth of 5,500 miles of roads, connecting county seats and principal cities and towns, which were taken over from the counties by the Highway Commission in 1921. They are today readily identifiable by the U. S. Route numbers or N. C. Route numbers that they carry.

There are 51,700 miles of rural County Roads in North Carolina. These roads are the outgrowth of the 45,091 miles of roads taken over from the counties by the Highway Commission in 1931. The present County Road System includes, among others, (1) roads connecting agricultural areas off the State Highway System with that system or with cities and towns—often called "farm-to-market" roads; (2) roads connecting industrial areas, mining areas, and fishing areas off the State Highway System with that system or with cities and towns; (3) roads which serve as the streets in unincorporated centers of population such as

[1] Appendix B contains information on road mileage. All mileage figures mentioned in the text are as of January 1, 1950.

The only other governmental unit maintaining roads in North Carolina is the federal government which maintains the Blue Ridge Parkway and some roads on federal land.

Erwin, Haw River, Yanceyville, Badin, Kannapolis, Caroleen, and hundreds of similar places; (4) roads which serve as the streets in Bessemer Sanitary District and many other sanitary districts; (5) roads which serve as the streets in built-up areas on the outskirts of cities and towns.

It is believed that there are many thousand miles of privately maintained roads in the State, connecting land not abutting on a State-maintained road with that road, extending from a few hundred yards to perhaps a mile or more, reaching perhaps one, two, or three families, or providing access to logging areas, farm areas, fishing areas, and the like. County commissioners of one county presented a resolution to the State-Municipal Road Commission indicating that in their opinion the total mileage of privately maintained roads in that county exceeded the mileage of State-maintained roads in the county. No estimate of the total mileage of these roads throughout the State is available.

The different kinds of streets

The approximately 7,000 miles[2] of streets in North Carolina are of three different kinds: (1) streets on the State systems, including streets carrying State Highways and streets serving as connecting links to the County Road System; (2) other major streets including cross-town streets and business streets; (3) residential streets.

There are 2,260[3] miles of streets on the State systems, including 1,073 miles carrying State Highways and 1,187 miles serving as connecting links to the County Road System. The streets carrying State Highways are readily identifiable by the U. S. Route numbers or N. C. Route numbers posted along their length. The streets serving as connecting links to the County Road System are those designated by the Highway Commission to connect a County Road at the corporate limits with the nearest street carrying a State Highway. Streets on the State systems comprise from 15% to 20% of total street mileage in the large cities, more than 50% of mileage in small towns, and about 30% of the total street mileage in the State.

There are major streets in addition to those on the State systems in all but the smallest towns. These include (1) streets connecting different parts of town, often identifiable by the fact that streets crossing them are marked by "stop" signs; (2) streets used by individuals knowing the layout of the town in order to avoid congestion in the business area; (3) business and commercial streets. The total mileage of major streets is not known, though it might be estimated that these streets will comprise about 20% of total street mileage in the larger cities and towns.

There are residential streets whose purpose is to provide access to property. These streets for the most part carry traffic headed to or coming from property abutting on the street. The total mileage of these streets is not known, though it might be estimated that these streets will comprise 50% or more of total street mileage.

Mileage of paved roads and streets

On January 1, 1950, 9,776 miles of rural State Highways were paved out of the total of 10,461 miles. In other words, 93% were paved and 7% were not paved. The Highway Commission has paved 3,776 miles of rural State Highways since 1931 and has rebuilt a large part of the 6,000 miles paved before that date.

On January 1, 1950, 6,372 miles of rural County Roads were paved out of the total of 51,700 miles. In other words, 12% were paved and 88% were not paved. The Highway Commission, from 1931 through 1949, had paved 5,459 miles of County Roads, adding this to the 913 miles of paved roads existing in 1931. At the present time the mileage of paved County Roads is growing rapidly because of the $200,000,000 bond program for the paving of these roads. It has been hoped that the program will pave about 12,000 miles of County Roads, and that this mileage, added to the approximately 5,000 paved miles existing before the beginning of the program in 1949, will make a total of 17,000 paved miles. If this goal can be reached, 33% of all County Roads will have been paved, and 43% of all rural roads (including State Highways) will have been paved.[4]

It can be estimated that about 3,300 miles of streets are paved out of the total of around 7,000 miles.[5] In other words, 47% are paved and 53% are not paved. In the average city or town of more than 2,500 people, more than 50% of the streets are paved, and in the average town of less than 2,500 people, less than 50% of the streets are paved.[6]

Service Rendered by the Road and Street Systems

The service rendered by the different road and street systems may be indicated by a look at (1) people living in rural and urban areas; (2) motor vehicles registered in rural and urban areas; (3) miles driven on the road and street systems; and (4) people using the road and street systems.

People living in rural and urban areas

According to the 1940 census, the total population of North Carolina was 3,571,623.[7] The population of all incorporated cities and towns was 1,257,094, and the population of the rural areas was 2,314,529. Around 1,657,000 of the rural people were farmers, and 658,000 were non-farmers.

It was estimated in 1949 that there was an average of 10.6 dwellings on each mile of the rural State Highway System, and an average of 6.2 dwellings on each mile of the rural County Road System.[8] According to the 1940 census there was an average of 4.7 people living in every rural dwelling, which would indicate an average of around 50 people living on each mile of the rural State Highway System, and an average of around 30 people living on each mile of the rural County Road System. The use of 1940 census figures for city and town population would indicate that there is an average of more than 180 people living on each mile of streets.[9] It may therefore be estimated from these averages that there are more than 500,000 people living on the rural State Highway System, and more than

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[2] A statistical approximation by Mr. James S. Burch, Engineer of Statistics and Planning, State Highway and Public Works Commission, contained in a May 23, 1950, letter to Mr. James A. Doggett, Chairman, State-Municipal Road Commission, arrived at a figure of 6,835 miles of streets. This approximation, according to Mr. Burch's letter, strengthens the use of the estimate of "about 7,000 miles" for total street mileage in the State. An exact figure on street milage would be obtainable only by measuring each street in each city and town.

[3] Appendix B contains information on street mileage. All mileage figures mentioned in the text are as of January 1, 1950.

[4] Appendix B contains road paving information in tabular form.

[5] Based on reports of officials of ninety cities and towns to the State-Municipal Road Commission.

[6] Appendix B contains further information on paving in cities and towns.

[7] Complete census figures for 1950 were not available at the time this report was written. A preliminary estimate of North Carolina's 1950 population is 4,034,858.

[8] Estimate made by the Division of Statistics and Planning, State Highway and Public Works Commission. Appendix C contains further figures on dwellings per mile.

[9] This average is computed by dividing the 1940 city and town population by the total estimated mileage of streets.

1,500,000 living on the rural County Road System. The total of these people living on the rural systems falls short of the 2,314,000 rural people counted by the 1940 census, indicating that many people live near, but not on, the rural systems.

Motor vehicles registered in rural and urban areas

According to a 1936 Vehicle Allocation Study,[10] 46% of the passenger cars and 52% of the private trucks in North Carolina were registered by people living in cities and towns having a 1930 population of more than 1,000. This percentage would of course be higher if it included people living in the 339 towns of less than 1,000 people. The study also determined that 54% of passenger cars and 48% of trucks were registered by rural people, but these percentages included people living in the 339 towns mentioned above.

Miles driven on the road and street systems

It has been estimated that around 9⅓ billion miles were driven by all types of motor vehicles in North Carolina during 1948, and that around 10 billion miles were driven in 1949.[11] Miles driven in 1950 may exceed 11 billion.

It has also been estimated that around 43% of total mileage travelled is on the rural State Highway System, around 19% is on the rural County Road System, around 33% is on city streets, and around 5% is on roads not on the State systems, on roads on private property, and on roads on federal lands.[12] These percentages, applied to an estimate of 11 billion miles driven in 1950, indicate that

the rural State Highway System is carrying
4,700,000,000 vehicle miles
the rural County Road System is carrying
2,100,000,000 vehicle miles
the city and town streets are carrying
3,600,000,000 vehicle miles
and that driving elsewhere amounts to
600,000,000 vehicle miles

It might similarly be stated that the average mile of the rural State Highway System carries 1,200 vehicles a day, the average mile of rural County Roads carries 110 vehicles a day, and the average mile of city and town streets carries 1,400 vehicles a day.[13]

People using the road and street systems

According to studies in seventeen other states,[14] an average of around 50% of travel on rural state highways is by rural people and 50% is by urban people; 75% of travel on important secondary roads is by rural people and 25% is by urban people; 85% of travel on local roads is by rural people and 15% is by urban people; 10% of travel on streets is by rural people and 90% is by urban people. If these studies are applicable to North Carolina conditions, and there is little reason to believe they are not, it can be estimated that 50% of travel on rural State Highways is by rural people and 50% is by urban people; 80% of travel on County Roads is by rural people and 20% is by urban people;[15] 10% of travel on streets is by rural people and 90% is by urban people.

To the extent that the above estimation is correct, it may be said that city and town people do

50% of the driving on State Highways, which carry
43% of total traffic
20% of the driving on County Roads, which carry
19% of total traffic
90% of the driving on city streets, which carry
33% of total traffic
50% of the driving elsewhere, which only amounts to
5% of total traffic

This would mean that city and town people do 58% of the total driving in the State, and that rural people do 42%[16]

It is interesting to compare this result with the 1936 Vehicle Allocation Study[17] which determined that 53% of all driving was done in vehicles owned by people living in cities and towns having a 1930 population of more than 1,000. This percentage would of course be higher if it included people living in the 339 towns of less than 1,000 people.

Needs of the Road and Street Systems

State Highway System needs

Most, if not all, of the people and officials concerned with rural State Highways agree that many miles must be widened, many miles must be relocated, and many miles must be resurfaced. These needs appear in the form of narrow pavement, narrow bridges, short sight distances, crooked sections, steep grades, narrow shoulders, congestion, delay, and weaving traffic. Exact figures on the cost of fulfilling these needs will appear from a study begun by the State Highway and Public Works Commission in the summer of 1950 involving practically every mile of major highways.

An indication of the needs of the State Highway System can be seen from the results of a State-wide study made in the fall of 1949 by the engineers of the State Highway and Public Works Commission and the United States Bureau of Public Roads. This study revealed that it would cost about $300,000,000 to make improvements needed then on the portion of the rural State Highway System studied, and only about 85% of that system was included. While some improvements have been made since the completion of this 1949 study, increased traffic in 1950 has added to the cost of needed improvement because many miles of highways and many bridges have been made obsolete that were previously capable of carrying the lower volumes of 1949 traffic. It can probably be estimated, until exact figures are known from the 1950 study, that needed improvement on the 85% of the rural State Highway System studied will still cost around $300,000,000.

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[10] The 1936 Vehicle Allocation Study was prepared by the State Highway and Public Works Commission. No more recent study has been made.

[11] The estimate was made by the Division of Statistics and Planning, State Highway and Public Works Commission. The 1948 estimate was contained in a memorandum from Mr. James S. Burch of that Division to Dr. Henry W. Jordan, Chairman of the Commission, dated December 27, 1949. This memorandum was made available to the State-Municipal Road Commission.

[12] This estimate was contained in a letter from Mr. James S. Burch to the author of this report, dated April 7, 1950. Mr. Burch stated that the estimate was made on the basis of limited data.

[13] The figures are obtained by dividing the total mileage driven on each system given in the preceeding paragraph by the total mileage of the system (page 21), and then dividing the result by the number of days in the year.

[14] The seventeen states were: Cal., Fla., Iowa, La., Mich., Minn., Mo., Mont., N. Y., Ohio, Okla., Ore., Pa., S. D., Utah, Wash., Wisc. These studies were summarized by the Federal Coordinator of Transportation in *Public Aids to Transportation*, Vol. IV (Washington: U. S. Government Printing Office, 1940), page 19.

[15] The percentages for County Roads were arrived at by averaging the percentages in the other states for both important secondary roads and local roads.

[16] The 58% for city and town people is arrived at by determining the percentage they drive on each system and then adding those percentages. Thus .50 x .43 plus .20 x .19 plus .90 x .33 plus .50 x .05 equals .5750, or 58%. The percentage for rural people is arrived at similarly.

[17] The 1936 Vehicle Allocation Study was prepared by the State Highway and Public Works Commission.

During the meetings of the State-Municipal Road Commission; no person questioned the fact that vast improvement was needed on the rural State Highway System, and there seemed to be a tacit understanding that these needs were at least as important as, if not more important than, the needs of County Roads and city and town streets. This unanimity of opinion in a field where there is so much difference of opinion undoubtedly stems from the fact that travel on the rural State Highway System is about equally divided between rural and urban people, that about 43% of all travel in the State is on this system, and that both County Roads and city and town streets depend on this system as the very backbone of motor vehicle transportation in the State.[18]

County Road System needs

Most rural people have long agreed on the need for additional County Road paving for the following reasons: (1) to enable children to travel the road to school every day in the year by motor vehicle; (2) to encourage people to live in rural areas and commute to work in cities and towns; (3) to encourage business to locate in rural areas and employ rural people. The $200,000,000 bond program for paving County Roads is evidence of this need and may go far to satisfy it. It has been pointed out in connection with rural road paving that a recent report to the U. S. Congress[19] stated that the cost of a hard surface may be economically justified only for roads carrying 50 to 100 or more vehicles a day. North Carolina's bond program may pave 80% or more of the County Roads carrying more than 50 vehicles a day.[20]

Many rural people are agreed on the need for State maintenance of additional roads which are at the present time maintained from private funds. In past years the State Highway and Public Works Commission had limited the mileage of new roads taken over each year to 750 miles, and had required that at least four or five families live on each mile before it was taken over. In response to demands that more roads be taken over, the Commission has recently increased the quota of new roads to 1,500 miles a year and may soon accept roads with fewer families per mile.

Street needs

Officials of 32 cities and towns appearing before the State-Municipal Road Commission stressed the need for paving and resurfacing. To illustrate: an official of the Town of Wallace pointed out that farm markets in the town are on dirt streets, but the town cannot afford to pave the streets, and it cannot receive help from the State because the streets are not on the State systems; an official of the City of Raleigh pointed out that 41% of the houses in the city are on dirt streets; and other officials pointed out that many city and town schools are on dirt streets, requiring children to walk through mud to get to school.

Officials of 28 cities and towns stressed the need for cutting down traffic congestion. In many places the main streets form the business and commercial streets and also carry State Highways, making congestion a part of the daily life of the city or town. These officials stated that by-pass streets are needed (1) to carry through traffic around the city or town; (2) to carry through traffic around the business section; (3) to keep heavy traffic away from schools and churches. They added that by-pass streets need additional right-of-way and expensive surfaces, making the cost of these streets too great for the cities and towns to bear without State help.

Officials of 15 cities and towns stressed the need for street widening. Narrow streets built in the days of light and slow traffic are now inadequate, present a traffic hazard, and prevent parking along the curb. These officials stated that widening these streets is an expensive process because of heavy right-of-way cost.

Other officials stressed the need for drainage of streets in low, flat places, and the need for traffic control beyond the financial capabilities of local units of government.

Some estimates of street costs were mentioned by city and town officials. Paving costs mentioned varied from $15,000 a mile for residential streets with a light surface, to $100,000 a mile for wide heavily-traveled streets with a high-type surface, to a million or more dollars a mile for boulevards and expressways in the large cities.[21] Estimates of the cost of fulfilling all needs varied from $10,000 a year in some cities and towns to $1,000,000 a year in others. No one has ventured an estimate of the cost of total street needs in the State except to indicate that it runs into the tens of millions if not into the hundreds of millions.

City and town officials mentioned their inability to finance the above needs in the same breath with the statement of their needs. Cities and towns are limited by law to a tax rate of $1.50 per $100 valuation, and mention has been made of the fact that street expenditures have claimed 25% of total ad valorem tax revenues in some cities and towns, and 75% in others; facts will be pointed out on a subsequent page which can serve as the basis for a statement that street expenditures are currently claiming half of ad valorem tax revenues in the cities and towns of the State. In addition, officials of smaller towns stated that they cannot finance street improvements by means of bond issues because of the legal limitation on the total debt they may incur and because of the legal limitation on the period within which bonds for street purposes must be paid. Officials of a number of cities and towns have said that with street expenditures costing so much they cannot make needed improvements on their streets, and further that financing present street work prohibits them from undertaking other improvements demanded by their citizens—additional water and sewer facilities, sewage treatment plants, and the like.

It has been argued by some that the above considerations should be given no weight in examining the problem of the just sharing of highway revenues with cities and towns, because the question of other municipal needs and the question of municipal finances are not germane. In opposition to this argument, it has been said that it was the financial inability of counties to construct and maintain their roads that resulted in the State's assumption of responsibility for all rural roads in 1931.

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[18] Appendix D contains the statement of the Carolina Motor Club on the importance and the need for improvement of the State Highway System.

[19] This report was summarized in an Information Service Bulletin of the National Highway Users Conference, dated February 24, 1950, and entitled "Bureau of Public Roads Submits Local Rural Road Report to Congress."

[20] It has been hoped that the bond program will pave 12,000 miles in addition to the 5,000 miles paved before the program began; total paving may then be 17,000 miles. Traffic counts by the State Highway and Public Works Commission set out in Appendix E indicate that 21,000 miles of County Roads carry more than 50 vehicles a day. The 17,000 miles of paving will comprise 81% of the 21,000 miles carrying more than 50 vehicles a day, assuming that the more heavily travelled roads will be paved.

[21] Some estimates of recent street costs in another state are set forth in the table in Appendix H. Though costs vary from state to state and from year to year, these are helpful in showing some typical costs.

Revenues for the Road and Street Systems

Road revenues

Roads are financed from the State Highway Fund,[22] which is composed of highway user taxes, such as gasoline taxes and license fees, and receipts of Federal Aid. Highway Fund revenues have been increasing rapidly in recent years —from $56,000,000 in fiscal year 1945-46, to $69,000,000 in 1947-48, to $83,000,000 in 1949-50. Gasoline taxes provide the largest source of revenue, and brought in $53,000,000 in fiscal year 1949-50; license fees brought in $20,000,000, and Federal Aid amounted to $10,000,000.[23]

City and town people probably pay more gasoline taxes than rural people. If it may be assumed that city and town people use about the same amount of gasoline per mile that rural people do,[24] and if city and town people drive 58% of the total miles, then city and town people pay 58% of the total gasoline taxes. Moreover, the 1936 Vehicle Allocation Study[25] determined that 56% of all gasoline taxes in that year were paid by people living in cities and towns having a 1930 population of more than 1,000. This percentage would of course be higher if it included people living in the 339 towns of less than 1,000 people.

City and town people probably pay more license fees than rural people. The 1936 Vehicle Allocation Study[26] determined that 52% of all registration fees on motor vehicles were paid by people living in cities and towns having a 1930 population of more than 1,000. As before, this percentage would be higher if it included the people living in the 339 towns of less than 1,000 people.

Federal funds received in 1949-50 were earmarked for three uses: (1) $4,800,000 for the Federal Aid (Primary) System, comprising federally designated highways on the rural and urban State Highway System; (2) $3,900,000 for the Federal Aid (Secondary) System, comprising federally designated highways and roads on both the State Highway System and the County Road System; (3) $1,400,000 under the Federal Aid Urban Program for streets carrying highways on the Federal Aid (Primary) System in or just adjacent to cities of 5,000 or more people. All of these funds are spent on the system referred to, are matched by like amounts of State funds, and are spent on projects approved by the federal government.

Street revenues

Streets are financed from local, State, and federal funds. In 1948-49 street revenues for all cities and towns amounted to $23,600,000[27] including $13,700,000 from the General Fund of cities and towns, $2,500,000 from local bond and note issues, $1,300,000 from street assessements, $350,000 from other local sources, $4,300,000 from State funds, and $1,400,000 from federal funds.

Ad valorem taxes provide the largest source of revenues for street work. Figures are not available to indicate the total amount of ad valorem taxes spent on streets, but it can be estimated that if the $13,700,000 of General Fund revenues spent on streets in 1948-49 came from these taxes, a levy of $.70 on the $100 valuation of property in all cities and towns would have been required.[28]

Proceeds of bonds and notes issued by cities and towns provided around $2,500,000 in 1948-49. Payment of principal and interest will come mostly from ad valorem taxes levied in future years.

Street assessments provided around $1,300,000 in 1948-49. Cities and towns differ in the manner used to assess the cost of street paving against abutting property: in some cities and towns the property owners on each side bear the total cost of paving, excluding only the cost of intersections, while in others they bear 50% to 66% of the cost, the city or town paying the rest; in some cities and towns the property owners are required to put up their share in advance, while in others they may have from five to ten years to pay. As a result of these different assessment policies and the differences in street costs, some assessments have been as low as $.94 per front foot and others have been as high as $10 per front foot.[29]

Other local revenues provided around $350,000 in 1948-49 and came from such sources as contributions from commercial enterprises and public utilities, Capital Reserve Funds, and some public assessments.

State and federal funds provided $5,700,000 in 1948-49. About $4,300,000 was from State funds and included (1) around $1,500,000 from the legislative allocation for maintenance of city and town streets;[30] (2) around $1,400,000 for improvement projects on streets on the State systems tying into similar projects on adjacent rural roads; and (3) around $1,400,000 for matching federal funds. About $1,400,000 was from federal funds for work on streets carrying Federal Aid (Primary) Highways.

Expenditures on the Road and Street Systems

Road and street expenditures from State and federal funds, 1931-1949

From July 1, 1931, when the State took over County Roads, to June 30, 1949, the State Highway and Public Works Commission spent around $250,000,000 for construction and maintenance of rural State Highways, slightly less than $250,000,000 for rural County Roads, and something more than $30,000,000 for streets. These figures include both State and federal funds. Expenditures on County Roads from the $200,000,000 bond program are not reflected in these figures for none of those bonds were issued before June 30, 1949.[31]

Road and street expenditures from federal, State, and local funds, 1948-49

During fiscal year 1948-49, the latest year for which detailed figures are available, the State Highway and Public Works Commission spent about $85,200,000 of State and federal funds. Of this amount, around $30,500,000 (36%) was spent on rural State Highways; around $38,000,000

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[22] Exceptions to this statement have occurred in some instances where rural people have contributed land for a right-of-way. The Highway Commission, however, has also spent millions of dollars for rural right-of-way.

[23] Appendix F contains full information on Highway Fund revenues for every year since 1939-40.

[24] It might be argued that because heavy trucks are registered in cities and towns and because street driving, the bulk of which is done by city and town people, consumes more fuel than rural driving, that city and town people actually consume more gasoline per mile than rural people.

[25] Prepared by the State Highway and Public Works Commission.

[26] *Ibid.*

[27] Revenue figures for streets are based on summary data collected by the Division of Statistics and Planning, State Highway and Public Works Commission, but not ready for publication at the writing of this report. Appendix G, Table I contains a breakdown of these revenues for 1946-47, 1947-48, and 1948-49.

[28] Appendix G, page 25 to 26, contains detailed information on tax rates for cities and towns of different sizes.

[29] Appendix H of this report contains further information on assessement policies and some actual assessements paid.

[30] The General Assembly had appropriated $1,000,000 for maintenance for the year, but unspent funds from previous years' appropriations added $500,000. This appropriation was increased to $2,500,000 a year, beginning in 1949-50.

[31] Appendix I contains detailed expenditure figures for the period 1931-1949.

(44%) was spent on rural County Roads; around $5,700,000 (7%) was spent on streets; and around $11,000,000 (13%) was spent on debt service and overhead.

During the same fiscal year, 1948-49, $23,600,000 of federal, State, and local funds was spent on streets.[32] Around $15,200,000 was spent for construction and maintenance of the streets themselves, including $9,100,000 for construction, $5,800,000 for maintenance, and $300,000 for right-of-way; of the $15,200,000 total, $5,700,000, or 38%, came from State and federal funds and $9,500,000, or 62%, came from local funds. About $8,400,000 was spent for other purposes, including $700,000 for administration, $2,400,000 for traffic control, $1,100,000 for street lighting, $1,200,000 for street cleaning, $500,000 for storm sewers, and $2,500,000 for debt service; of the $8,400,000 total, 100% came from local funds.

Current road and street expenditures from State funds

It has been estimated[33] that at the present time the rural State Highway System is receiving 36% of State gasoline taxes and license fees, that the rural County Road System is receiving 53%, that streets are receiving 4%, and that overhead functions are receiving 7%. The percentage for County Roads is higher than ever before because the recent one-cent gasoline tax increase is being used to finance the $200,000,000 bond issue for County Roads. The percentage for streets is lower than it was in 1948-49, presumably because expenditures for streets are not increasing as rapidly as are expenditures for State Highways and County Roads.

Similar figures from forty-four other states indicate that, on the average, state highways receive 66% of state funds, county roads receive 23%, streets receive 6%, and overhead functions receive 5%.[34] These percentages are higher for state highways and lower for county roads than they are in North Carolina, because in most of the other states county roads are maintained by local units of government and are supported mainly from local funds; most state funds are used on state highways though some funds are given to the local units.

Some Comparisons of the Road and Street Systems

Per capita expenditures in 1948-49

The State spent $25 on the rural County Road System for every person living on that system, and $5 on streets for every person living in cities and towns.[35] People living in cities and towns supplemented this $5 by an expenditure of $14 per person raised from their own local sources.

At the present time, because of the $200,000,000 bond issue for County Roads, per capita expenditures on the rural County Road System are more than twice the 1948-49 amount.

Expenditures per vehicle mile in 1948-49

The State spent $.68 for every 100 vehicle miles driven on the rural State Highway System, $1.90 for every 100 vehicle miles driven on the rural County Road System, and $.17 for every 100 vehicle miles driven on streets. In other words, the State spent three times as much per vehicle mile on the rural County Road System as on the rural State Highway System, and eleven times as much on the rural County Road System as on streets.[36]

At the present time, because of the $200,000,000 bond issue for County Roads, expenditures per vehicle mile on the rural County Road System are more than twice the 1948-49 amount.

People per system and expenditures per system

About 42% of the people of the State live on the rural County Road System and that system is now receiving about 53% of gasoline taxes and license fees. About 35% of the people of the State live on streets, and streets are now receiving about 4% of gasoline taxes and license fees.[37]

Traffic per system and expenditures per system

The rural State Highway System carries 43% of all traffic and is now receiving 36% of gasoline taxes and license fees; the rural County Road System carries 19% and is receiving 53%; streets carry 33% and are receiving 4%.[38]

Driving by rural and urban people and benefits received by them

It has been estimated that rural people drive 42% of total mileage, and city and town people drive 58%.[39] It can be estimated that rural people receive 61% of gasoline taxes

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[32] Street expenditure information for 1948-49 is based on summary data collected by the Division of Statistics and Planning, State Highway and Public Works Commission, but not ready for publication at the writing of this report. Appendix G, Table I, contains a breakdown of expenditures for 1946-47, 1947-48, and 1948-49.

[33] See letter from Mr. James S. Burch, Engineer of Statistics and Planning, State Highway and Public Works Commission, to Mr. James A. Doggett, Chairman, State-Municipal Road Commission, dated March 17, 1950. Mr. Burch indicates in the letter that these percentages involve making certain rough assumptions as to the yield of gasoline tax levies.

[34] *Ibid.* Figures for other states represent expenditures in 1949 and 1950.

[35] These figures are obtained by dividing the State's 1948-49 expenditure on the systems by the population on the system (see page 6).

[36] These figures are arrived at by computing the 1949 mileage driven per system (the percentages driven on each system as set out on page 7 applied to the estimate of 10,000,000,000 vehicle miles driven), dividing the 1948-49 expenditure by the mileage driven, and multiplying the result by 100.

[37] Population figures are based on information on page 6, which estimated that 1,500,000 people live on County Roads and 1,257,000 people live on streets out of a total population of 3,572,000. The others live on the State Highway System or near, but not on, the different systems. Information on receipt of gasoline taxes and license fees is set forth on this page.

[38] Information on traffic carried is set forth on page 7, and information on receipt of gasoline taxes and license fees is set forth on this page.

One city official made a similar comparison in this way: the $200,000,000 bond issue for County Roads is being financed in the main by a one-cent increase in the gas tax. Since driving on streets is 33% of all driving, driving on streets contributes 33% of this one cent, and since each cent of gas tax brings in $7,500,000 annually, driving on streets contributes $2,500,000. The last General Assembly increased the annual appropriation of highway revenues for street maintenance from $1,000,000 to $2,500,000. Thus, he argues, streets get an increase of $1,500,000, but driving on streets contributes an additional $2,500,000 in gas taxes.

[39] See page 7.

and license fees on the systems they use, and city and town people receive 32%.[40]

The significance of these comparisons

The foregoing comparisons indicate that (1) rural County Roads have less people per mile and carry less traffic per mile than either rural State Highways or streets, but they receive more money per vehicle mile than either rural State Highways or streets, and receive more money per person living on the system than streets; (2) people living in cities and towns drive more miles, probably pay more gasoline taxes, and probably pay more license fees than do people living in rural areas, but they receive a smaller percentage of gasoline taxes and license fees on the streets they live on and the systems they use than rural people receive on the roads they live on and the systems they use.

It should be noted that these comparisons proceed on the assumption that the State Highway System, the County Road System, and city and town streets are self-contained systems, when it is obvious to anyone driving an automobile or looking at a map that all roads and streets tie into each other in the manner of a seamless web. Thus to compare one group of roads and streets with another attempts to make a distinction where none in fact exists. It is necessary next to examine the basic unity underlying North Carolina's roads and streets in order to see what light is shed on the road and street problem.

The Basic Unity Underlying All Roads and Streets

Information taken from *The Highway Transportation Story . . . In Facts*, published in 1950 by the National Highway Users Conference, Inc., gives some idea of what motor vehicles, and the highways, roads, and streets they use, mean to every person in the United States. The information is set forth under the following appropriate headings.

Defense: The mobility of man power, supplies, and weapons of defense, made possible by motor vehicle transportation, is of indispensable military importance.

Farm Products: About 90% of farm products, 85% of milk, and 65% of livestock go to market by truck. This is of importance to both the farmer-producer and the consumer, whoever he may be.

Industry: The nation's 7,740,000 trucks are vital supply lines keeping raw materials and components flowing to industry, and industry's products flowing to market.

Population in general: The motor vehicle presents an opportunity to alleviate that portion of the congestion of large cities attributable to the fact that people must live near their jobs. This opportunity can be measured by the fact that 34% of all metropolitan populations now live in suburban areas. At the present time 56% of all automobile trips are made by family earners in getting to their jobs or business. In addition, more than 25,000 U. S. communities depend almost entirely on highways and roads for their existence, and because of the motor vehicle the social and economic isolation of many small cities, towns, and unincorporated places has been ended. (Hundreds of North Carolina communities have no rail service and must depend exclusively on cars, buses, and trucks for their existence.)

Workers: A recent survey in another state showed that 75% of the workers in a given area depended on cars to reach their work. Motor vehicle transportation has given the worker a chance to live away from the shadow of the factories and to live in more pleasant surroundings.

Merchants: Motor vehicle transportation gives to the merchant the ability to attract trade from a much widened area, and to serve that trade more efficiently and at lower cost.

Other transportation facilities: Air transportation is dependent on motor transportation to connect airports with the adjacent areas of population. Water transportation is dependent on both railroads and motor vehicles to move goods and passengers to and from modern harbors. Motor vehicles supplement the rail service rendered by the railroads.

Utilities: More than 125,000,000 miles of telephone wires and thousands of miles of electric transmission lines are kept in service through the ready access that motor vehicle transportation provides.

Education: At least one school pupil in five in America (and two in five in North Carolina) travels to school by school bus, and millions more in the cities ride to schools in commercial buses and cars. With the school bus has come consolidated schools to provide better and fuller education. Mobile libraries now bring books to millions of people, in both urban and rural communities.

Mail service: Almost every piece of domestic mail is at one time or another carried by motor vehicle. In addition, 60,000,000 rural residents are served by rural mail carriers.

Sports: Cars provide access to hunting and fishing areas, golf courses, tennis clubs, and swimming clubs. Automotive traffic at football games is a phenomenon well known to everyone.

Entertainment: Attendance at many of the nation's theatres is dependent on motor vehicle transportation. North Carolina's "Lost Colony" and "Unto These Hills" can be reached, and are made possible, only by the motor vehicle.

Vacations: Eight out of ten vacationists (60,000,000 vacationing people) travel by car, and many others go by bus. The economy of motor vehicle travel has made possible vacations away from home to millions of people who could not otherwise afford them.

None of the preceding statements would be true if it were not for the fact that there is an interdependent and interrelated system of rural roads and city and town streets. Each road and street makes its contribution to the total motor vehicle transportation system, though the contribution of one may be a thousand times as great as another. Nevertheless without the contribution of each to the total, the significance of the others and the significance of motor vehicle transportation itself would be decreased in varying degrees. Thus the interdependence and interrelation of all roads and streets indicates the basic unity underlying them all.

This concept can be phrased in terms of the different road and street systems in North Carolina. State Highways are the main traffic arteries in the State, yet much of the traffic these highways carry has its origin or destination on County Roads or city and town streets. The average street carries more traffic per mile per day than either of

[40] These figures were calculated as follows: rural people do 50% of the driving on rural State Highways (which receives 36% of all gas taxes and license fees), 80% of the driving on rural County Roads (which receives 53%), and 10% of the driving on streets (which receive 4%); .50 x .36 plus .80 x .53 plus .10 x .04 equals .6080, or 61% Similarly, city and town people do 50% of the driving on rural State Highways, 20% of the driving on County Roads, and 90% of the driving on streets; .50 x .36 plus .20 x .53 plus .90 x .04 equals .3220, or 32%. The other 7% represents expenditures for overhead. It must be remembered that these percentages involve much estimation, assumption, and approximation. Though they can not be taken literally for these reasons, they can indicate the relative positions of rural and urban people.

the rural systems, yet much of the traffic it carries is dependent in some degree on the existence of the rural systems. The County Road System, serving a dispersed population, carries less traffic per mile than the other systems, yet much of this traffic represents a large portion of the farm products and raw materials produced in the State; this traffic usually depends on the State Highways or city and town streets to reach its destination. Thus it might be said that the State Highways without the other systems would have little traffic to carry, and the other systems, without the State Highways, would serve strictly local traffic. This interdependence and interrelation of the road and street systems in North Carolina emphasizes the basic unity underlying them all.

North Carolina's cities and towns depend largely on the vehicular traffic brought to them from the rural areas, or brought to them through the rural areas from other cities and towns. Thus a city or town served by an excellent adjacent rural road system can be economically prosperous, for traffic can reach that city or town, and this is true even though it has a poor street system. On the other hand, a city or town served by a rutted, muddy, and at times impassable rural road system may stagnate economically, even though it has the best street system that money can buy. This is not to deny that a good street system may itself draw traffic, but merely to point out the large dependence of a city or town on the adjacent rural road system. This dependence stresses the basic unity underlying all roads and streets.

The preceding discussion points to the conclusion that there is but *one* road and street system in North Carolina. All of the different parts of the road and street system, the State Highways, the County Roads, and the streets, are so interdependent and interrelated that any attempt to consider them as separate integers obscures the unity that underlies them all. For example, when any North Carolinian drives from one place to another he is not interested in the *different* systems that he is using, and perhaps is not even aware that he is using *different* systems. He is solely interested in the route that he travels, though it encompasses State Highways, County Roads, and streets, and this route to him is but a part of the *one* road and street system in North Carolina. If the route is in satisfactory condition, then the entire road and street system to him, for the purposes of that trip, is satisfactory. It makes no difference that two of the three so-called systems are in good shape; if the third is not and hinders his travel, then to him the entire system is unsatisfactory.

Therefore, the unity of the road and street system in North Carolina must be kept in mind in attempting any comparison of State Highways, County Roads, and streets. With this in mind, it is time to re-examine the comparisons in the preceding section to determine what conclusions can be drawn from them.

Some Conclusions Which May Be Drawn from the Available Road and Street Information

In this chapter, the available information on the road and street systems has been summarized, and comparisons of these systems have been made. These comparisons tend to show that County Roads benefit beyond State Highways and beyond town and city streets in terms of traffic carried or people served, and that town and city streets benefit least. If these facts are looked at apart from other considerations, the conclusion might be drawn that the allocation of highway revenues among the different systems has been inequitable.

The possibility of drawing this conclusion must be accepted with the caution that there is but *one* road and street system in North Carolina rather than three separate and distinct systems. This *one* system is made up of many parts, each doing a different job, serving different types of people, carrying different types of traffic. There is danger in dividing the one system into three, and then comparing the three as though each were a whole unto itself, subject to comparison on an objective basis with each of the others.

Perhaps this caution should be carried further. A comparison of the three systems in terms of linear mileage, traffic carried, or population served invites the conclusion that highway revenues might be apportioned among the systems in terms of mileage, traffic, or population, but it would seem to be as inadvisable to allot highway revenues precisely among the different systems on any of these bases as to allot highway revenues to each mile of road or street on any of these bases. For example, allocation to each road and street on the basis of linear mileage would benefit long, little-used roads and streets at the expense of short, heavily-travelled roads and streets; allocation on the basis of traffic carried would benefit heavily-travelled roads and streets at the expense of less-travelled roads and streets carrying traffic important to the economy of the State; allocation on the basis of population would benefit heavily-populated roads and streets at the expense of sparsely-populated roads and streets connecting large centers of population. It would seem that the basic unity underlying all roads and streets suggests the need for flexibility in using highway revenues to benefit the entire system and threby the economy of the State, rather than for the allocation of those revenues on an objective basis like mileage, traffic, or population.

It has been pointed out above that the comparisons of the different systems have tended to show that the allocation of highway revenues has been inequitable. The consideration of the basic unity underlying all roads and streets, though cautioning against a too literal use of the comparisons, reaches the same result in a different way. This unity reveals inequity because the different parts of the *one* road and street system have not been treated alike by the State of North Carolina: rural State Highways and rural County Roads are the complete financial responsibility of the State, but streets are not—not even those streets carrying State Highways or serving as connecting links to County Roads.

But the fact that State Highways and County Roads have been the complete financial responsibility of the State and streets have not, does not in itself reveal the solution to the problem of the just sharing of highway revenues. The solution would seem to revolve around the determination of those streets which, because of their contribution to North Carolina's *one* road and street system, are comparable to these rural roads and should be accorded the same treatment. Does this definition include those streets which carry State Highways? those streets which form connecting links to the County Road System? cross-town streets? business streets? residential streets? alleys?[41] Perhaps the answer to this question does not depend so much on abstract logic as on how far the State can go in providing services for its people.

At any rate the information available on roads and streets does not seem to point to one clear-cut solution to the problem of the "just sharing" of highway revenues, though perhaps it points in the direction in which that solution may be found: determining which streets are comparable to State Highways and County Roads and making them the responsibility of the State. With these things in mind, attention can now be given to the many suggested solutions.

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[41] As evidence that opinions may differ on what streets should be eligible for State help, see pages 14 to 15 in the chapter on suggested solutions.

Chapter III

Suggestions for Sharing Highway Revenues with Cities and Towns

Different individuals and groups appearing before the State-Municipal Road Commission suggested the following solutions to the problem of sharing highway revenues with cities and towns: (1) the present allocation is equitable; (2) a portion of highway revenues should be allocated to cities and towns; (3) a portion of highway revenues should be used to pave dirt streets; (4) the Highway Commission should be given responsibility over streets. Other individuals and groups made the following additional suggestions on steps to be taken regardless of what decision is made about sharing highway revenues: a consulting agency should be organized within the Highway Commission to render advice about streets; an engineering survey of every mile of road and street should be undertaken; the method of allocating funds for road construction and maintenance should be re-examined; cities and towns should not be required to pay State gasoline taxes. In addition the State-Municipal Road Commission asked the Institute of Government to study the sharing of highway revenues in other states to see if that would offer any further suggestions. Questions raised regarding all of these suggestions are brought out in the following discussion.

The Suggestion That the Present Allocation Is Equitable

The suggestion was made by the Carolina Road Builders Association, Inc.,[1] that there is no need to change the present method of allocation because the economic benefits that rural roads provide to cities and towns, plus the present allocation to cities and towns, is more than sufficient to offset the cost of providing adequate streets. In support of this suggestion, the Road Builders state: (1) that federal funds plus State matching funds will provide $20,000,000 in the next four years, and that this will be sufficient to eliminate all deficiencies in streets eligible to receive federal funds; (2) that the $20,000,000 qualization fund set up by the $200,000,000 County Road bond act can be used to pave all dirt streets; (3) that the present annual $2,500,000 allocation for street maintenance is sufficient to maintain all streets in the State.

The following comments have been made regarding this suggestion. First, if the $20,000,000 of federal funds and State matching funds were divided among all eligible streets, it would amount to an average of only around $50,000 a mile, whereas some of the present and proposed construction projects from these funds cost as much as a million dollars a mile because of the right-of-way requirements, the width necessary, and the surface and structures required. Second, the $20,000,000 equalization fund set up by the $200,000,000 County Road bond act can be used to pave only those streets "which form important connecting links to the State Highway system or the county highway system or farm to market roads. . ."[2] and there are only 550 miles meeting this definition out of a total of about 3,700 miles of dirt streets. Third, the $2,500,000 allocation from State funds is not sufficient to defray the cost of street maintenance because cities and towns are now spending almost $6,000,000 for this work.

A further question concerning this suggestion has been raised: even though it may be true that rural roads by bringing people to town provide economic benefits in sufficient amount to offset the cost to cities and towns of providing streets, is it fair to consider this fact when rural roads provide economic benefits to rural areas without cost to those areas?

If the present method of sharing highway revenues is to be continued, the formula by which the $2,500,000 for maintenance is allocated to cities and towns should perhaps be re-examined by the State-Municipal Road Commission in the light of criticisms made of it by city and town officials. These criticisms are set forth in Appendix K.

The Suggestion That a Portion of Highway Revenues Should Be Allocated to Cities and Towns

Three suggestions were made for allocating a portion of State highway revenues to cities and towns for streets. First, the suggestion was made that cities and towns be given the proceeds of one cent of the present 7-cent gasoline tax, which at the present time would mean an allocation of more than $8,000,000. It has been pointed out that this is as much a compromise as the present allocation of $2,500,000, that it can not be supported on any objective basis, and that it would be only a temporary solution subject to reopening at any time.

Second, the suggestion was made that State highway revenues be allocated to roads and streets on the basis of population. According to the 1940 census, around 1/3 of the people of the State lived in cities and towns, and so under this suggestion cities and towns would receive 1/3 of total revenues. It has been pointed out that this method of allocation ignores traffic volume, so that if it were carried to its logical conclusion by further allocating revenues among the different cities and towns according to population, then small cities and towns whose streets carry heavy volumes of traffic would be penalized, and if it were carried still further by allocating revenues to each mile of road and street according to population, then it would seem to bar construction of roads and streets in sparsely populated areas, rural and urban, though the roads and streets carry heavy traffic.[3]

Third, the suggestion was made that State highway revenues be allocated to roads and streets on the basis of traffic carried. According to estimates, streets carry around 33% of total traffic, and so under this suggestion also cities and towns would receive 1/3 of total revenues. It has been pointed out that this method of allocation takes into account only numbers of vehicles and ignores the purpose of the vehicles' travel, so that if it were carried to its logical conclusion by further allocating revenues among the different cities and towns according to traffic, then cities and towns with a heavy percentage of truck traffic would be penalized,[4] and if it were carried still further by allocating revenues to each mile of road and street according to traffic carried, then roads and streets in undeveloped areas

[1] The statement of the Road Builders which contains this suggestion is set forth in Appendix J.

[2] The quoted language is from section 2, Chapter 1250, Session Laws of 1949, the $200,000,000 County Road bond act.

[3] Representatives of cities and towns, of rural groups, and of organizations primarily interested in the State Highway System presented the following resolution to the State-Municipal Road Commission at the Commission's March, 1950, meeting: "That population density is only one of several important factors to be considered in apportioning highway revenues."

[4] Traffic with a heavy percentage of trucks requires a road or street surface that is more expensive to construct and maintain than a surface carrying the same number of vehicles with a lesser percentage of trucks.

would perhaps never receive enough money to improve them to the point where they would encourage development of those areas.[5]

It has been pointed out that such suggestions as these seem to ignore the idea that there is actually but *one* road and street system in the State, not several systems which can be treated as separate and equal, and that any attempt to divide the one system into several may hinder the orderly growth of the whole. It has been further pointed out that such suggestions as these, unless accompanied by controls over the use of funds allocated to cities and towns, raise this policy question: is it good practice to place control over the expenditure of State-collected revenues in the hands of local governmental units?[6]

The Suggestion That a Portion of Highway Revenues Should Be Used to Pave Dirt Streets

The suggestion was made that the State Highway and Public Works Commission should pave dirt streets out of State highway revenues, and that cities and towns should lay down curb and gutter at the same time. Presumably, this suggestion would be carried out over a period of years. It has been pointed out that this suggestion leaves open the question of responsibility for maintenance and periodic replacement, which over a number of years would dwarf the cost of the original paving, and that this suggestion would penalize those cities and towns which have themselves paved a great majority of their streets.

The Suggestion That the Highway Commission Should Be Given Responsibility for Streets

Three suggestions were made on this point: (1) that the State Highway and Public Works Commission be given responsibility for streets on the State systems; (2) that it be given responsibility for streets on the State systems plus other major streets; and (3) that it be given responsibility for all streets.

Responsibility for streets on the State systems

The suggestion was made that streets carrying State Highways and streets forming connecting links with the County Road System should be made the responsibility of the Highway Commission. Representatives of cities and towns, of rural groups, and of organizations primarily interested in the State Highway System presented the following resolution to the State-Municipal Road Commission at the Commission's March, 1950, meeting: "That the building and maintenance of primary and secondary highways,[7] both in and out of town be the responsibility of the State Highway Commission." It has been pointed out that this suggestion would give cities and towns more help than they receive now because the $2,500,000 State allocation is not sufficient to cover maintenance costs on these streets.

Statements by the North Carolina State Grange and the North Carolina Farm Bureau mentioning this suggestion are set out in Appendices L and M.

Responsibility for streets on the State systems plus other major streets

The suggestion was made that streets on the State systems plus other major streets should be made the responsibility of the Highway Commission. Representatives of cities and towns, of rural groups, and of organizations primarily interested in the State Highway System presented this additional resolution to the State-Municipal Road Commission at the Commission's March, 1950, meeting: "That the group[8] approve as a policy, to be executed as funds become available, that primary highways[9] and county roads, in and out of town, and all other public thoroughfares used primarily by large volumes of non-neighborhood traffic, whether in urban or rural areas, be considered the responsibility of the Highway Commission. And, further, that all other public thoroughfares be considered together and that a formula be worked out to treat them the same, as the needs of traffic and the total welfare of North Carolina dictate." Read in conjunction with the resolution quoted in the preceding section, this resolution means that streets on the State systems should be made the responsibility of the Highway Commission immediately; that major streets carrying large volumes of non-neighborhood traffic should be added to this responsibility as funds become available; that residential streets and public roads not maintained by the State would be treated alike, as the needs of traffic and the State's welfare dictate.

In support of this suggestion it has been argued that rural roads in general have been laid out to take the shortest route between the places they connect rather than to take a route which will come closest to the rural dwellings along the route. As a result, many rural people must build for themselves private roads to their dwellings, these private roads perhaps varying from a few yards to a mile or more. On the other hand, according to this argument, cities and towns lay out residential streets to the doorsteps of their people, eliminating the need for the private roads found in the rural areas.[10] The argument concludes that purely residential streets would remain the responsibility of the cities and towns but that responsibility for all other streets, like the rural roads on the State systems, should be transferred to the Highway Commission.

Responsibility for all streets

The suggestion was made that all streets should be the responsibility of the Highway Commission. On January 3, 1950, Governor Scott suggested that this might be the eventual solution to the street problem, and on July 18 that he might support such a solution if city and town people were in favor of it. In a written statement filed

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[5] For example, if a dirt road to a scenic wooded area is paved, development of the residential and recreational possibilities of the area is encouraged. It is to be noted also that with an allocation of revenues on the basis of traffic, some roads and streets would receive more than they need. For example, one street in Raleigh carries about 25,000 vehicles a day, thus earning about $50,000 a year in gasoline tax revenues; if revenues were put where they were earned, the question would be raised as to whether that street needs so large an amount of money year in and year out.

[6] It is to be noted that this policy question is not raised by the State-collected intangibles tax, 80% of the proceeds of which is turned over to the local governmental units, because the intangibles tax replaces an ad valorem tax on intangible personal property which might be either unenforceable or confiscatory at the county and city level. For example, the State-collected intangibles tax on corporate stock is 25c on the $100 valuation, but if this stock were subject to ad valorem taxes in places where the county and city tax rates combined amount to, say, $3 per $100 valuation, few stocks might be listed for taxation, and many of those that were listed might cost more in taxes than the revenue they produce for their owners.

[7] The term "primary and secondary highways" is equivalent to "State Highways and County Roads."

[8] The group presenting the resolution.

[9] The term "primary highways" is equivalent to "State Highways."

[10] Driveways on city property provide off-street parking for motor vehicles rather than access to the dwelling.

with the State-Municipal Road Commission on January 12, 1950, the League of Municipalities suggested that the "construction, maintenance and improvement" of all streets should be financed from State highway revenues so as to relieve the cities and towns from the necessity of taxing property for these items, and further suggested, in case this proposal cannot be carried out all at once, that it be done in three stages: (1) the Highway Commission should immediately be given responsibility for the streets on the State systems, and the present $2,500,000 allocation should be made available to cities and towns for use on other streets in accordance with a plan prepared by the cities and towns and approved by the Highway Commission; (2) the Highway Commission should next be given responsibility for major streets in addition to those on the state systems, or the $2,500,000 should be increased to cover the maintenance and improvement of such streets; (3) the Highway Commission should finally be given responsibility for all streets, or the $2,500,000 should be increased to cover the maintenance and improvement of all streets.[11]

The suggestion that the State be given responsibility for all streets has been the subject of so much debate that a summary of arguments pro and con may be helpful. The argument urged for the suggestion is that roads and streets, being public thoroughfares, are alike and deserve the same treatment at the hands of the State; that though they may carry different types of traffic, all of it bears on the economy of North Carolina and cannot be differentiated. One of the arguments urged against the suggestion is that roads deserve more attention at the hands of the State because roads are the lifelines of the economy, moving farm produce and raw materials from the rural areas to the cities and towns. Proponents of the suggestion meet this argument by saying that much in-town driving is by people going to market to buy farm produce or finished goods, or going to industrial plants to work on the raw materials brought in from the country. Another argument urged against the suggestion is that roads, being longer than streets, are more in need of State help, because it is more difficult to travel a two-mile dirt road to a paved one than it is to travel a two-block dirt street to a paved one. Proponents of the suggestion meet this argument by saying that at the present time the dirt road is maintained by the State without cost to the rural dweller, whereas the dirt street is maintained from property taxes on city and town property, and that this inequity should be remedied.

Questions raised concerning Highway Commission responsibility for streets

Many questions have been raised concerning the three preceding suggestions on Highway Commission responsibility for streets, and since all of them apply in equal measure to each suggestion, they may be considered together. The most important of these questions is the meaning of the term "Highway Commission responsibility." To some people the term seems to mean that the Highway Commission would "take over" streets, constructing and maintaining them from State highway revenues with its own personnel;[12] to others it seems to mean that the Highway Commission would be financially responsible for streets, furnishing money to those cities and towns with adequate street departments to construct and maintain their own streets, and furnishing work to those cities and towns not capable of doing their own street work. The difference between "taking over" and "financial responsibility" can best be illustrated by possible procedures: (1) if the Highway Commission were to "take over" streets (a) a determination of what was to be taken over would first have to be made, that is whether in addition to the street surface, curbs, gutters, storm sewers, sidewalks, etc., would be taken over or left to the cities and towns;[13] (b) the cost of taking over would have to be determined, and this cost would have to be covered by a legislative appropriation for streets;[14] (c) the Highway Commission would use this appropriation as it saw fit to construct and maintain the streets that it had taken over, using its own forces to do the work; and (d) the construction and maintenance work to be done would be decided by the Highway Commission. (2) If the Highway Commission were given "financial responsibility" for streets (a) a determination of what financial responsibility encompassed would have to be made, that is, whether responsibility would extend to curbs, gutters, storm sewers, sidewalks, etc.;[15] (b) the cost of the items included in financial responsibility would have to be determined, perhaps in terms of square feet of streets, population, mileage, or traffic, and this cost would have to be covered by a legislative appropriation for streets; (c) the appropriation would be allotted to cities and towns on a fixed formula basis, perhaps on the same basis as that by which total cost was determined; and (d) the allocation to those cities and towns with adequate street departments would be paid in cash so the street department could construct and maintain streets, and the allocation to other cities and towns would be spent by the Highway Commission on the streets of the town according to a joint agreement between the town and the Highway Commission.[16] These possible procedures, set forth for illustrative purposes, indicate the type of decision that must be made on the meaning of "Highway Commission responsibility." Some city and town officials have expressed a preference for the second type of procedure, as it removes the allocation of funds from the discretion of the Highway Commission and puts it on a readily computable basis.

Many other questions grew out of the suggestions concerning Highway Commission responsibility over streets, including (1) the scope of construction work, (2) the scope of maintenance work, (3) the responsibility for traffic control, (4) the effect on the tort liability of cities and towns, (5) the effect of added responsibility on the organization of the Highway Commission. The following chapter contains a list of these questions.

One final question concerned the cost of carrying out the suggestions. No estimates have been presented to the Commission on the cost of constructing and maintaining different kinds of streets, so the cost of Highway Commission responsibility over any or all streets can not be computed. Information is available, however, on street expenditures in the active cities and towns for fiscal years 1946-47, 1947-48, and 1948-49, and is set forth in Table I of Appendix E, page 24.

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[11] Appendix N contains the League's full statement.

[12] For a statement indicating that taking over streets is a better approach than allocating money to cities and towns, see the Statement of the North Carolina State Grange, Appendix L, pages 29-30.

[13] Chapter IV, page 17, contains a full discussion of the different items to be considered.

[14] The General Assembly now appropriates sums from the Highway Fund for yearly maintenance and construction of both State Highways and County Roads.

[15] Chapter IV, page 17, contains a full discussion of the different items to be considered.

[16] It is to be noted here that a similar procedure is now being followed with regard to the $2,500,000 appropriation for street maintenance. In 1948-49 the Highway Commission authorized 16 cities and towns to spend their share of the appropriation themselves, while in the other 470 or so cities and towns the Highway Commission did work and charged it to the particular city or town's share of the appropriation. This has been discussed in Appendix K.

Additional Suggestions

The suggestion that a consulting agency should be organized within the Highway Commission to render advice about streets

It was suggested that an agency be established within the Highway Commission to furnish street and traffic engineering advice and planning assistance to cities and towns because many towns do not have the funds to employ consultants. It has been pointed out that the time has come for all cities and towns to plan new street development because, with rapidly increasing traffic, the haphazard growth that has marked street development in the past cannot continue without undue waste.

Additional ideas on the same line were elaborated by the Road Builders (see Appendix J, page 28) and by the League of Municipalities (see Appendix N, page 31).

The suggestion that an engineering survey of every mile of road and street should be undertaken

It was suggested that a detailed survey be undertaken to determine the needs of all roads and streets in the State in order to plan future construction and reconstruction. Such a study involves (1) examining each mile of road and street to ascertain whether or not it is satisfactory in terms of the traffic it carries; (2) estimating the cost of improving all unsatisfactory roads and streets; (3) determining the total cost of eliminating these deficiencies and then planning expenditures over a long period so as to eliminate the worst deficiencies first. The State Highway and Public Works Commission began a survey of this type in the summer of 1950 but it was limited to the major portions of the State Highway System. According to the suggestion, further surveys should be made, including (1) the remainder of the State Highway System; (2) the County Road System, giving particular attention to those roads which will not be paved under the present $200,000,000 bond program to determine which, if any, should be paved; (3) streets, giving particular attention to those dirt streets which should be paved from State highway revenues because of their contribution to the traffic of the State and to those which should be paved locally if they are to be paved at all.

Appendix O contains a summary of an article by Mr. G. Donald Kennedy concerning this type of survey.

The suggestion that the method of allocating funds for road construction and maintenance should be re-examined

It was suggested that the method of allocating funds for road construction and maintenance be re-examined. At the present time, the General Assembly appropriates certain amounts of money from the Highway Fund for Statewide construction and maintenance of both State Highways and County Roads, and these appropriations are allocated among the ten highway divisions in the State generally on the basis of area, population, and mileage. Great latitude is given to the division commissioner and division engineer as to how and where these funds will be spent. Several disadvantages have been said to arise from this procedure: (1) it has been said that this method of allocation does not take into consideration the differences in the geography of the several parts of the State—the coastal plain, the piedmont, and the mountainous west—and the varying difficulties in road and bridge construction and maintenance caused by the differences in geography; (2) it has been said that the latitude in spending funds results in the existence of ten highway policies in the State rather than one, with some division commissioners doing more for roads than others and some doing more for streets. It has been said that these disadvantages combine to endanger the orderly growth of roads and streets. It has been said in opposition to this point of view that the present method of allocating and spending funds provides an advantageous decentralization of road and street decisions, making for flexibility in a State where no one highway policy could adequately meet the needs of the different sections. But it has been said that the fact of disagreement over the merits of the present method of allocating and spending money lends support to the suggestion that it be re-examined.

The suggestion that cities and towns should not be required to pay State gasoline taxes

The suggestion was made that cities and towns should be exempted from paying taxes on gasoline used in municipally-owned vehicles when performing city and town business. It has been estimated that cities and towns are now paying about $275,000 in gasoline taxes, an amount equal to about 10% of the $2,500,000 which the General Assembly has appropriated for maintenance in cities and towns. It has been argued in support of this suggestion that one governmental unit should not tax another while the latter is in the exercise of its governmental functions. Both the Road Builders (see Appendix J, page 28) and the League of Municipalities (see Appendix N, page 31) have elaborated this suggestion.

Appendix P contains further information on gasoline taxes paid by cities and towns.

How Other States Share Highway Revenues With Cities and Towns

Pursuant to a request of the State-Municipal Road Commission, the Institute of Government made three studies of the experiences of other states in the sharing of highway revenues with cities and towns: (1) a study of states which have taken over a large portion of rural roads; (2) a study of states which have examined the allocation of funds to roads and streets; (3) a study of states which make a substantial contribution to streets.

States which have taken over a large portion of rural roads

In addition to North Carolina, three states, Delaware, Virginia, and West Virginia, have transferred all rural roads from the counties to the state highway commission. South Carolina is transfering about 1,600 miles of county roads each year from the counties to the state highway commission.[17] Maryland allows any county to transfer its roads to the state highway commission, and the latter then maintains the roads from what would otherwise have been a cash grant to the county for roads. In all the 42 other states the state highway commission is responsible for the state highway system and in some cases for a limited mileage of major county roads, but the county roads for the most part are still in the hands of the counties.

In Delaware and West Virginia, streets carrying state

[17] Throughout this chapter, roads and streets in other states have been called by the designation they would bear in North Carolina. For example, some states have two road systems: a primary, and a secondary; in this chapter they are called state highways and county roads, because they are comparable to these roads in North Carolina. Similarly the state road governing body has been called the state highway commission, a name similar to the one it bears in North Carolina.

highways as well as some streets forming connecting links to the county road system are constructed and maintained by the state highway commission. In South Carolina, all streets carrying state highways and all streets forming connecting links to state-maintained county roads are constructed and maintained by the state highway commission, including curbs, gutters, storm drains, and sidewalks. In Virginia, cities of more than 3,500 people receive cash grants for each mile of streets carrying state highways and for each mile of other streets meeting certain width and paving specifications, and cities and towns of less than 3,500 people have streets carring state highways and an increasing mileage of other streets constructed and maintained by the state. In Maryland, each city and town shares in the state highway revenues on the basis of street mileage, and it may transfer responsibility for construction and maintenance of streets carrying state highways to the state highway commission.

None of the above five states has made a study of the just sharing of highway revenues with cities and towns, and therefore there is no guarantee that any of the methods used to aid streets represent a just sharing of highway revenues.

Appendix Q contains the details of the study made of these five states.

States which have examined the allocation of funds to roads and streets

Studies throughout the United States in recent years have recognized two sources of revenue for road and street work: highway user taxes, such as gasoline taxes and license fees; and general taxes, such as property taxes, sales taxes, and the like. Each of these studies has attempted to determine the percent of road and street cost that should be borne by highway user taxes and the percent that should be borne by general taxes. These studies have generally assumed that state highways are the responsibility of the state highway commission, that county roads are the responsibility of the counties, and that streets are the responsibility of the cities and towns; hence they are not particularly applicable to North Carolina so long as all her rural roads are the complete financial and administrative responsibility of the State Highway and Public Works Commission.

These studies and the methods they employ for determining the burden of road and street costs are set out in Appendix R. The possible application of two of these methods to North Carolina is outlined in Appendix S.

States which make a substantial contribution to streets

Information published by the Bureau of Public Roads of the United States Department of Commerce[18] indicates that several states make substantial allocations for construction and maintenance of streets. A letter was written to the highway commission in each state to ascertain how the allocation had been determined. So far as could be ascertained, none of the allocations, except one, had been determined following a study like the one being undertaken by the North Carolina State-Municipal Road Commission, and the allocation in the one exception had no clear relation to the findings of the study. The allocations in all of these states seem to have resulted from legislative compromise, as has the present North Carolina policy.

Appendix T contains an explanation of the allocations in these states.

It is apparent from the foregoing that the experiences of other states in the sharing of highway revenues with cities and towns is of little benefit to the State-Municipal Road Commission. In states where all road responsibility is in the hands of the state highway commission, no studies have been made. In states where studies have been made, road responsibility is not comparable to that responsibility in North Carolina.

Summary

This chapter has set forth the suggestions of different groups and individuals on the solution of the problem of the just sharing of State highway revenues with cities and towns, together with the comments and questions directed at each one. No one suggestion has received unanimous support as the proper solution to the problem, and the available street and road information in the preceding chapter does not point to one single solution as the proper one. The determination of the solution to the problem is the task of the State-Municipal Road Commission in preparing its report to the Governor in the fall of 1950.

[18] This information was published in *Highway Statistics, 1947* (Washington: U. S. Government Printing Office, 1948), Table SF-6, page 55.

Chapter IV

Problems Involved in Highway Commission Responsibility for Streets

In view of the attention focused throughout the State on the suggestions concerning Highway Commission responsibility for some, or all, streets, a discussion of the problems involved is advisable because, if solutions for problems are found before a suggestion is put into operation, they will prevent complications if and when the suggestion is finally put into operation.

The problems involved deal as much with the meaning of terms as with the mechanics of administering such a program if it were undertaken. To indicate the scope of these problems, they are mentioned here in question form under the following headings: (1) what streets will be made the responsibility of the Highway Commission? (2) what street activities will be made the responsibility of the Highway Commission? (3) what will street construction include? (4) what will street maintenance include? (5) how will problems allied to construction and maintenance be handled? (6) who will be responsible for traffic control? (7) what effect will Highway Commission responsibility have over tort liability? (8) what effect will Highway Commission responsibility have over the organization of the Highway Commission and city and town street departments? (9) how will Highway Commission responsibility be financed?

What streets will be made the responsibility of the Highway Commission?

1. Should streets in those chartered cities and towns which have no active governments be considered as rural

roads by the Highway Commission, constructed and maintained as rural roads, and entirely excluded from consideration along with streets in active incorporated cities and towns?

2. If it is decided to make the Highway Commission responsible for "streets on the State systems", how will such streets be defined? Will they be defined merely as those so designated by the Highway Commission? Who will choose the streets that are to carry State Highways or to form connecting links with the County Road System—the Highway Commission, the cities and towns, or both together?

3. If it is decided to make the Highway Commission responsible for "other major streets," how will such streets be defined? Will the definition be in terms of the percentage of non-neighborhood traffic, for example by defining a major street as "one on which 50% of the traffic is neither headed to nor coming from property on the street"? Will the definition specifically include or exclude business or commercial streets, which might perhaps be defined as "streets on which 75% of abutting property is used for business or industrial purposes"? Will the definition have a limiting factor, as for example limiting the mileage of "other major streets" in a particular city or town to not more than 20% of total street mileage? Who will determine what streets fit the definition—the Highway Commission, the cities and towns, or both together?

4. If it is decided to make the Highway Commission responsible for all streets, how will "street" be defined? Will it be defined in terms of people living on the street, as for example four families to the block? Will it be defined so as to exclude alleys or other subsidiary ways which serve the side or back of property facing on and also served by a street?

5. Should any of the above definitions include a provision on minimum right-of-way? It has been pointed out that the State might be saddled with heavy right-of-way expenditures in case the Highway Commission were made responsible for narrow streets that would have to be widened shortly after being taken over. For example, if no street were to be taken over unless it had an unrestricted right-of-way width of 30 feet, then presumably a 25-foot street would remain the responsibility of the city or town until the city or town expanded the right-of-way to 30 feet.

6. What provision will be made for laying out new streets, so that the right-of-way will be adequate for future traffic needs? What provision will be made for major streets in newly-developed areas, so that they will be wide enough to serve future traffic without incurring excessive right-of-way expense? Should persons subdeveloping property be required to secure approval of the Highway Commission with regard to street plans, or should they need only the approval of the cities and towns, given perhaps in accordance with regulations published by the Highway Commission? Should these regulations include right-of-way, set-back lines, and street surface?

What street activities will be made the responsibility of the Highway Commission?[1]

Which of the following street activities should be made the responsibility of the Highway Commission and which should remain the responsibility of the cities and towns?

Street construction
Street maintenance
Median strips and parks bisecting streets longitudinally
Curbs and gutters (It has been pointed out on the one hand that curbs and gutters are similar to drainage ditches and shoulders in rural areas and so should be the responsibility of the Highway Commission, and on the other hand that cities and towns themselves assess the cost of curbs and gutters against abutting property owners and so should retain responsibility for curbs and gutters.)
Storm sewers
Sidewalks
Street cleaning, and such items as snow removal, water removal, leaf removal, dirt removal, and mud removal
Street lighting
Installation and maintenance of underground facilities
Traffic signs, signals, and markings (Should there be any difference in assigning responsibility for these items, between streets on the State systems and other streets?)
Traffic law enforcement
Outstanding indebtedness for bonds issued for street purposes, and outstanding assessments against property owners for the cost of prior street paving.

What does street construction include?

1. Does street construction include the purchase of necessary right-of-way? Does street construction include the establishment of grades? Does it include the erection of such structures as railroad crossings, grade separation devices, and pedestrian crossings?

2. Who will determine the type of surface required, (i.e., whether asphalt, concrete, etc.) and the width of right-of-way—the Highway Commission, the cities and towns, or both together?

3. How will the amount of street construction to be done in any particular year be determined? Will a fixed amount be appropriated by the General Assembly, and this amount allocated among the cities and towns on an objective formula? Or will a program of necessary street construction be worked out, priorities established, and the work done as funds appropriated by the General Assembly are available? How will the General Assembly decide the amount to be appropriated for street construction? Will it decide it on the basis of the need for street construction as compared to the need for rural road construction? Or will it decide it on the basis of a fixed sum arrived at in some other way?

4. Will the Highway Commission do the construction work in all cities and towns, either with its own forces or by a contract awarded by it? Or will construction funds be allocated to those cities and towns capable of doing the work themselves?

5. If responsibility for street construction is in the hands of the Highway Commission, and responsibility for laying water and sewer lines, curbs, gutters, and storm sewers is in the hands of the cities and towns, what cooperative procedure should be worked out to plan and execute a construction project?

What does street maintenarce include?

1. Who will be responsible for resurfacing streets? Who will decide whether resurfacing or reconstruction is better on a particular street—the Highway Commission, the cities and towns, or both together? Who will decide on the type of resurfacing treatment best suited to the street?

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[1] In the statement submitted to the State-Municipal Road Commission by the League of Municipalities, a suggestion was made that certain of these items be the responsibility of cities and towns. This suggestion is to be found in Appendix N, Part II, page 31.

2. Who will be responsible for repairing breaks and holes in streets—the Highway Commission or the cities and towns? If the Highway Commission is responsible, how may repairs be made soon after breaks or holes appear? If the Highway Commission is responsible, a very bad break appears, and the Highway Commission cannot repair it immediately, will the city or town be responsible for repair, for blocking off the street or the broken portion, or for posting warning signs?

3. Who will be responsible for repairing cave-ins or wash-outs of the street surface? How will these be repaired quickly so as not to disrupt the flow of traffic?

4. Who will be responsible for repairs made necessary by public utilities using a portion of the right-of-way?

5. Does maintenance include removal of obstructions that fall into the roadway, like limbs of trees or signs? Does it include removal of obstructions like debris from automobile accidents?

6. If the Highway Commission maintains streets, will the cities and towns be responsible for reporting breaks, holes, cave-ins, wash-outs, obstructions, etc., to the Highway Commission? Or will the Highway Commission be responsible for regular inspection?

7. How will the cost of maintenance be determined? Will the cost of doing the required maintenance work be calculated in terms of a street mile, a square foot of street, population, area, or a combination of these? Or will the cost be determined by establishing a fixed sum beyond which no State expenditures can be made for street maintenance? After the cost has been determined will the Highway Commission spend the money as it sees fit in the cities and towns? Will a share of the total be set aside for each city and town on perhaps the same basis as used to determine the total cost, as for example on the basis of miles of streets? Will a share of the total be set aside for each city and town on the basis of an objective formula not specifically related to maintenance cost?[2]

8. Will the Highway Commission do the maintenance work in all cities and towns with its own forces? Or will funds be allocated to those cities and towns capable of doing the work themselves?

How will problems allied to construction and maintenance be handled?

1. If the Highway Commission is responsible for construction and maintenance, how will cuts in the street for the placement and repair of water, sewer, and other utility lines be made? Will the city or town make the cut after permission is granted by the Highway Commission? Will the Commission have control over the manner in which the city or town repairs the cut?

2. Who will be responsible for maintenance and replacement of manhole covers?

3. If the Highway Commission is responsible for maintenance, should it have some control over trees, bushes, banners, and signs that may interfere with vision along the right-of-way, or that may fall into the right-of-way and present a hazard?

4. If the Highway Commission is responsible for maintenance, how will clogged drains and storm sewers be cleaned out and kept free? If this is the responsibility of cities and towns, how can the Highway Commission enforce proper performance?

Who will be responsible for traffic control?

1. Should the Highway Commission have some control over traffic movement on streets carrying State Highways in order to provide uniformity in signs, signals, and markings throughout the State? Should it have such control in order to provide for the expeditious movement of traffic through cities and towns?

2. If the cities and towns are responsible for traffic control, should the Highway Commission have any control over the placing of stop signs and stop lights on streets carrying State Highways? If such control is given to the Highway Commission, who should bear the cost of the signs and lights required?

3. Should there be joint State-city traffic control surveys in order to plan the movement of traffic in cities and towns? Will a conflict arise in planning for traffic movement because of the Highway Commission's interest in servicing through traffic and the cities and towns' interest in servicing traffic headed to and from the business area? How will such surveys be financed?

What effect will Highway Commission responsibility have over tort liability?

1. If the Highway Commission is given responsibility for street maintenance, what will be the effect on the present tort liability of cities and towns for injuries resulting from faulty street maintenance? (It is to be noted here that Chapter 862, Session Laws of 1949, amends G.S. 160-54 to provide that "so long as the maintenance of any streets and/or bridges within the corporate limits of any town be taken over by the State Highway and Public Works Commission, such town shall not be responsible for injuries to persons or property resulting from the failure to maintain such streets and bridges.") If tort liability is taken away from cities and towns, should the State be liable for injuries resulting from faulty maintenance?

2. If the Highway Commission is given responsibility for street construction, what will be the effect on the present tort liability of cities and towns for injuries resulting from failure to construct streets in a "reasonably safe manner"?[3]

3. If cities and towns are relieved of tort liability for injuries resulting from faulty maintenance and construction, will they still be responsible for injuries resulting from the improper performance of that portion of street activity for which they are responsible?

What effect will Highway Commission responsibility have over the organization of the Highway Commission and city and town street departments?

1. If the Highway Commission becomes responsible for streets, will it need an engineer experienced in street work at the staff level, reporting to the State Highway Engineer, to administer all street work? Will it need experienced personnel in all divisional and district offices to handle street work? Or can the present organization merely be expanded to do street work?

2. Will street departments in cities and towns be abolished? If they are left with limited functions can they operate economically? At the present time street maintenance crews may do construction work, street cleaning work, mud, water, and snow removal, and other jobs for their townspeople. If maintenance work is taken away, can the department do the remaining things efficiently, so as to provide a real saving to the city and town taxpayers?

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[2] For an example of this type of formula, see Appendix K, page 28, where the present allocation formula is described.

[3] For mention of this liability, see *Willis v. New Bern*. 191 N.C. 507, 132 S.E. 286 (1926).

3. In case some cities and towns are given money by the Highway Commission to do street work in the town, to whom will the street department be responsible—the city or town council, or the Highway Commission?

4. In case cooperative procedures must be worked out in order to handle the division of responsibility and authority between the Highway Commission and the cities and towns regarding certain features of street work, what individuals in the governmental agencies concerned will be responsible for the steps in these procedures?

How will Highway Commission responsibility be financed?

1. Will Highway Commission responsibility be financed from existing revenues, perhaps decreasing appropriations to other activities in order to provide funds for street activity?

2. Will Highway Commission responsibility be financed from the increase in revenues from existing taxes? The information on Highway Fund revenues on page 9 indicates that the revenues from existing taxes have been increasing at an average rate of perhaps $7,000,000 a year since 1945. Will future increases be set aside for increased street activity?

3. Will Highway Commission responsibility be financed from an increase in taxes? If increased taxes are necessary, should the increase come in the form of higher gasoline taxes? Should it come in the form of higher registration fees? Should it come in the form of the elimination of gasoline tax refunds? Should it come in the form of higher general fund taxes, such as income taxes or sales taxes?

Summary

These questions, by showing the scope of street work, indicate why there is disagreement as to what activities the Highway Commission should be responsible for, that is, whether responsibility should extend to the street surface, to curbs and gutters, to sidewalks, to street cleaning, to street lighting, and so forth; and there are almost as many opinions as there are combinations of activities. These questions, by showing the problems involved in constructing and maintaining streets, indicate why some people have said that, in their opinion, Highway Commission responsibility will not bring wide, paved streets to all cities and towns immediately just as Highway Commission responsibility did not bring very much paving to the County Road System during its first 18 years; these people add that the first 18 years of responsibility over County Roads resulted in paving only about 10% of the system, and that not until the present bond program was very much construction done. These questions, by showing the many street activities to be financed, indicate why some people believe that Highway Commission responsibility over streets will immediately eliminate local ad valorem taxation for street work, and why others believe that cities and towns will still have to tax their citizens for many street items.

Appendices

APPENDIX A

RESOLUTION NO. 31 PASSED BY THE 1949 GENERAL ASSEMBLY

A JOINT RESOLUTION AUTHORIZING THE GOVERNOR TO APPOINT A COMMISSION TO STUDY JUST SHARING OF STATE HIGHWAY REVENUES WITH MUNICIPALITIES

WHEREAS, the cities and towns of North Carolina are confronted with the greatly increased costs of paving and maintenance of streets in municipalities which are not parts of the State Highway System and maintained by the State; and

WHEREAS, such increased costs added to other advancing costs of municipal governments has posed a difficult problem for mayors and boards of aldermen of these local units of government; and

WHEREAS, the cities and towns of this State are asking the General Assembly now in session to allocate to them a definite part or percentage of the highway revenues allocated by the State to be used by the municipalities in the construction and maintenance of streets therein which are not on the highway system; and

WHEREAS, it is now contemplated that after this session of the General Assembly there will be set apart from highway funds a substantially larger sum than has heretofore been made available for this purpose; and

WHEREAS, the same causes for the increased costs with which the local governments are faced have, in like manner, affected the costs of construction and maintenance of State highways; and

WHEREAS, increasing demands are now being made upon the State for paving and betterments of its primary and secondary road systems which calls for the annual expenditure of all available State and Federal funds; and

WHEREAS, the just and proper sharing of the State with its municipalities of State highway revenues poses a difficult question of great importance, the correct solution of which should be the subject of a careful, painstaking and elaborate study which cannot well be made by legislative body while in a limited and busy session:

NOW, therefore, be it resolved by the House of Representatives, the Senate concurring:

Section 1. The Governor shall, on or before June 1st, 1949, appoint a commission composed of seven persons, which shall be known as the *State-Municipal Road Commission*, the members of which commission shall be so appointed as to fairly represent the whole interest of the State in this problem. The said commission shall organize by electing its own chairman and secretary. The State Highway and Public Works Commission is authorized to furnish such clerical assistance as necessary in order to collect and study all available information on the subject to be considered by the commission. Expenses of the commission shall be paid from the revenues of the State Highway Commission when allocated by the Director of the Budget, including the per diem of the members of the said commission at the rate of seven dollars ($7.00) per day, and actual costs of travel and subsistence while attending meetings of the commission.

Sec. 2. The commission shall make a careful and complete study of all facts and factors which should enter into the question as to the just and proper sharing by the State with its cities and towns of its highway revenues to be used in the construction and maintenance of streets which are located within the municipalities; whether such sharing should be by further allocations of funds to the municipalities on a percentage basis of highway revenues or by definite appropriations therefor or by the maintenance and construction by the State of streets within the municipalities or by any other means which may be considered by the commission to be a just and proper approach to this problem.

Sec. 3. The said commission shall make available to all interested citizens of the State opportunities for presenting all data which may be considered material on the subject of this study and shall, at such times as it may determine, hold public hearings and make stenographic records thereof. The said commission shall, on or before the first day of December, 1950, file with the Governor a copy of its report, which the Governor shall cause to be printed, and which shall be distributed to the press and the public. The printing costs thereof shall be paid by allocations made by the Director of the Budget from highway funds.

Sec. 4. This Resolution shall be in full force and effect from and after its ratification.

In the General Assembly read three times and ratified, this the 13th day of April, 1949.

H. P. Taylor
President of the Senate
Kerr Craige Ramsay
Speaker of the House of Representatives

Examined and found correct,
Fred D. Pass, for Committee.

APPENDIX B

ROAD AND STREET MILEAGE IN NORTH CAROLINA

TABLE I

North Carolina Road and Street Mileage on January 1, 1950

System	Total Miles	Miles Paved	Miles Unpaved	Percent Paved
1. State Highways (rural)	10,461	9,776	685	93%
2. County Roads (rural)	51,700	6,372	45,328	12%
3. Total Highways and Roads	62,161	16,148	46,013	26%
4. Streets Carrying State Highways	1,073	1,060	13	99%
5. Streets Serving as Links to County Roads	1,187	667	520	56%
6. All Other Streets (estimated)	4,740*	1,573*	3,167*	33%
7. Total Streets (sum of lines 4, 5, 6)	7,000	3,300	3,700	47%
8. TOTAL (Sum of lines 3 and 7)	69,161	19,448	49,713	28%

* Estimated

Source: Division of Statistics and Planning, State Highway and Public Works Commission, for all except lines 6 and 7.
Line 7 is based on the estimate of 7,000 miles of streets used in the body of the report at page 6
Line 6 is arrived at by subtracting lines 4 and 5 from line 7.

Table II

North Carolina Street Mileage By Population Group – 1949

Population Group	Number of Cities and Towns	Average Total Street Mileage Per City or Town	Average Total Mileage Paved Per City or Town	Percent of Streets Paved	Average State Highway Mileage Per City or Town	Highway Mileage as a Percent of Total Mileage
Over 50,000	5	260	155	60%	24.2	9%
25,000 to 50,000	4	127	72	56%	11.6	9%
15,000 to 25,000	7	81	41	51%	9.3	11%
10,000 to 15,000	10	69	37	54%	7.9	11%
5,000 to 10,000	19	38	19	50%	4.6	12%
2,500 to 5,000	31	18.5	10.2	55%	3.0	16%
1,000 to 2,500	96	12.1	4.7	39%	2.2	18%
Under 1,000	315	6*	1.8*	30%*	1.4*	24%*

* Because of the limited data available on towns of less than 1,000 people, the averages for that population group are mere estimates. Estimates of the average total street mileage per town of that size have ranged from 4 miles to 8 miles.

Source: Population from 1940 Census. Street information from reports submitted by 90 cities and towns to the State-Municipal Road Commission.

APPENDIX C

YEAR-ROUND DWELLINGS PER MILE IN NORTH CAROLINA

The Division of Statistics and Planning, State Highway and Public Works Commission, has made a study of farm and non-farm buildings, visible from any System road, having the appearance of use as dwellings for year-round occupancy. This study was made in June, 1949, and covered detailed examinations on State System roads outside incorporated areas in 20 representative counties.[1] The results of this study in terms of dwellings per mile were as follows:

State System	Hard Surfaced[2]	Not Hard Surfaced	All Types
State Highways	11.0	5.4[3]	10.6
County Roads	10.2	5.7	6.2
Both Systems	10.7	5.7	6.9

The study points out that frequency of dwellings per mile is 71% greater on State Highways than on county roads (10.6 as opposed to 6.2), and that the frequency is 89% greater on hard surfaced roads than on non-hard surfaced roads (10.7 as opposed to 5.7).

APPENDIX D

FULL TEXT OF STATEMENT SUBMITTED TO THE STATE-MUNICIPAL ROAD COMMISSION BY THE CAROLINA MOTOR CLUB—SEPTEMBER 13, 1950

The Carolina Motor Club interested in the highway system of this state appreciates the opportunity of presenting this brief to your Commission. Motor vehicle owners pay considerable taxes, and provide a necessary and vital service to the people and industries of North Carolina.

A study of the resolution establishing your Commission reveals a desire on the part of the Legislature to ascertain the facts regarding the distribution of highway revenue to cities. We are confident you have received materials and facts which will aid you in making recommendations on this important subject. However, in any study of distribution of highway revenue, the importance of and the need for improvement in our primary highways should be considered.

The Carolina Motor Club, interested in all highways, submit the following information with the hope that it will be helpful in your deliberation.

First of all, it seems that such a study boils down in its simplest terms to this: The highway users pay into the highway fund a certain amount of money. This is a special tax and should be spent to best serve the people of North Carolina, its industries and the people who provide tax revenue through motor vehicle taxes. Highway users are not the only beneficiaries of improved roads.

We fully realize that it is a physical impossibility to satisfy all road and street needs simultaneously. However, in any highway improvement program there should be equitable distribution of available funds based upon the need of all. Any study of equitable distribution must consider the effects upon the entire system. Without going into the details of the pros and cons of each category of roads in the highway system, we would like to present some facts concerning the primary highways for your consideration.

What roads make up our highway system?

Rural State Highways	10,461 miles	16.3%
Rural County Roads	51,700 miles	80.3%
City State Highways	1,073 miles	1.6%
City County Road Extensions	1,187 miles	1.8%
	64,421 miles	100. %

City street mileage including state and secondary highways—7,035 miles—10.8%.

Where do motor vehicles travel?

Rural State Highway System	43%
Rural County Roads	19%
All City Streets	33%
Parkways, etc.	5%
	100%

You will note from the above statistics that county roads make up more than 80% of the highway system but carry less than 20% of the traffic. Included in the 33% travel on all city streets are the State Primary and Secondary Highways and County Road Extensions.

How much have traffic and motor vehicle registrations increased in past 10 years?

	*Traffic	Change	Registration (all vehicles)
1940	Using last prewar year as	100%	669,259
1946	First post-war year	112% +12%	779,930
1947		120% +20%	883,498
1948		133% +33%	958,541
1949		143% +43%	1,030,319—increase of 47%
1950	Estimated	150% +50%	over 50% increase

* Information from 20 counting machines distributed over the state on average state highways. (Not the most traveled—not the least traveled.)

It will be noted that traffic on the average highway in the state has increased approximately 50%. The same is true with registrations. This fact has a definite bearing upon highway revenue. The increased use of motor vehicles means increased revenue. However, these vehicles are operating over substantially the same primary system that existed years ago and was built for lighter vehicles and less traffic. The responsibility of the state toward this system is obvious and is also mentioned in the resolution establishing your Commission. The problem is brought to your attention because it is real and has an important bearing upon future highway revenue of the state. The problems of highway safety are also most urgent. Looking toward the future we must provide for a greater number of vehicles.

How does each system serve the motor vehicle?

A preliminary study of a survey made by the Highway Commission reveals some pertinent information regarding motor vehicle traffic in three cities in the state.

	Percentage of mileage on System	Total Vehicle Miles Mileage	Percent
Clinton:			
State Highways	20%	13,096	64.3
County Road Ext.	12%	1,747	8.8
Other Streets	68%	5,498	26.9
	100%	20,351	100.0
Washington:			
State Highways	8%	10,128	30.0
County Road Ext.	7%	7,285	21.0
Other Streets	85%	16,529	49.0
	100%	33,942	100.0
Concord:			
State Highways	10%	43,487	54.0
County Road Ext.	1%	2,397	3.0
Other Streets	89%	38,738	43.0
	100%	88,622	100.0

The study reveals that the primary system in the above cities is a small percentage of the total streets but carries the bulk of the traffic. In Clinton the state highways are only 20% of the streets but carry over 64% of the traffic. In Concord only 10% carries over half of the traffic. In Washington, "Other Streets" make up 85% of the system but carry less than half of the traffic.

[1] The counties were: Alamance, Alexander, Anson, Bladen, Caswell, Forsyth, Granville, Harnett, Hertford, Lincoln, Moore, Nash, Pender, Randolph, Scotland, Stanly, Stokes, Transylvania, Warren, and Wayne.

[2] Bituminous surface treatment or better.

[3] Includes much mileage traversing uninhabited areas, i.e., swamps, national parks, national forests, mountain wilderness, non-agricultural areas, etc.

How have we been spending our highway revenue and how do we compare with other states?

	State Highways*		County Roads*	
Fiscal Yr.	Maintenance & Betterment	Const.	Maintenance & Betterment	Const.
1945-6	$ 9,957,672	$ 8,545,357	$ 20,243,682	$ 1,435,315
1946-7	10,798,524	14,807,311	50,491,534	4,990,922
1947-8	9,249,801	15,397,889	25,610,398	7,122,052
1948-9	11,111,521	23,487,359	30,849,222	7,385,056
Total	$ 41,117,518	$62,237,916	$107,194,836	$20,943,345
Average	10,279,379	15,559,479	26,798,710	5,235,836
Grand Tot.	$103,355,434		$128,138,181	
Average	25,838,858		32,034,546	

* Includes Federal Aid. Both include construction and betterment in cities which did not come from City Aid Fund. (one million each year.)

A recent survey shows that in 45 states the average division of gasoline tax revenue is as follows:

	Rural State Hwys.	Rural Rds.	City Sts.
45 State average	66%	23%	6%
North Carolina	42%	45%	4%
N. C. after bond issue	36%	53%	4%

It appears from the above study that North Carolina has been spending a greater share of its funds on rural roads than the average state, even before the bond issue. We have also been spending less upon our primary system.

You will note that percentage-wise we are far below the expenditures of other states on the primary system and slightly below on city streets. North Carolina could not be expected to closely adhere to the national averages due to the predominance of agriculture and small deversified industries in its economy.

What do the major studies of the responsibility for roads and street costs show?

Percentages of Responsibility for Road and Street Costs Assigned to Motor Vehicle by Various Investigators

Study	Percentage of Responsibility For Primary Highways	Secondary Roads	City Sts.
Board of Investigation & Research (US)	85%	30%	40%
Federal Coordinator (Eastman) Report (US)	83	34	30
Ennis (New Jersey)	85	85	51
Duncan (US)	82	82	25
Glover (Illinois)	90	60	50
Oregon Highway Commission	81	11	19
A.A.R. Report (Breed, Older & Downs, US)	91	91	48
Allen (Iowa)	100	44	73
New Mexico	100	30	15
Utah	90	60	50

Griffenhagen Associates, Chicago—Study for the State of New York

Item	User Share (Percent)	Non-User Share (Percent)
Rural primary roads (state)	100	—
Rural secondary roads (counties)	60	40
Rural access roads (towns)	—	100
Urban primary streets (state)	100	—
Urban secondary streets (cities)	75	25
Urban access streets (cities)	—	100

We do not agree with the conclusions of all the above reports, but, it will be noted that all the studies show that some contribution should be made for road and street improvement from sources other than motor vehicle operators. We strongly urge a thorough study of the Eastman Report which is the only exhaustive official report that has withstood the test of time as a basis for assigning costs to the several beneficiaries of streets and roads.

Summary

1. Nobody can argue against an equitable distribution of highway revenue. The problem is to determine equity.
2. In determining equity, inequities must be considered where they exist.
3. The primary purpose of a highway system is to move goods and persons from one location to another. The primary system, therefore, ties the entire road and street system together. It is an integral part of farm to market roads and the city street system.
4. A breakdown in our primary system would have disasterous effects upon other classes of roads.
5. The state has a moral obligation to improve the primary system to meet the continuous expansion of motor vehicle ownership, and operation. Increased operation and ownership means more highway revenue for all roads.
6. The bulk of the traffic and hence the bulk of the highway revenue comes from the primary system.
7. The state's policy of charging the entire cost of all rural roads to the motor vehicle operator has focused the attention of city officials upon municipal taxes from private property for city streets.
8. It is admitted that there are beneficiaries of improved roads other than motor vehicle owners and that they should contribute to the cost of these improvements.
9. It is an unsound policy from the long range point of view to continue to improve any class of road at the expense of another.
10. There is a limit to the ability of the motor vehicle owner to pay taxes.
11. In order that our own citizens appreciate and tourist be encouraged in greater numbers to visit the many attractions and see the scenic beauty of our state, an improved access system is very important. The millions of dollars that benefit practically every business in the state, spent by tourist annually, is new money and a resource that needs expanding.

After giving due consideration to these facts there is one major factor that should not be overlooked or neglected because it affects every single person in North Carolina as well as the thousands of out of state visitors who use our highway system.

Highway safety is one of the most critical problems facing North Carolina today. We anticipate the death of 1,000 persons on our highways and streets this year, as well as an estimated property damage of $50,000,000.

The greatest loss in lives and property occurs on our primary highway system because of the heavy traffic involved.

This one factor alone is sufficient to justify the continuous improvement and expansion of our primary highway system because it cannot be measured in dollars.

We must look to the improvement of primary highways as one of the major solutions to this problem.

Finally, we recognize the difficulties involved in trying to solve a problem of this nature. Further, we do not envy your position.

APPENDIX E

MILEAGE OF THE RURAL COUNTY ROAD SYSTEM BY TRAFFIC BRACKET—NORTH CAROLINA—1949

Traffic Brackets (Vehicles per day)	Miles	Per Cent
0-20	9,298.9	17.99
21-50	21,156.6	40.92
51-70	7,982.2	15.44
71-100	4,432.4	8.57
101-150	2,635.7	5.10
151-200	1,516.3	2.93
201-300	1,831.8	3.54
301-500	1,612.7	3.12
501-1000	975.6	1.89
1001-2000	220.5	.43
2001-3000	27.8	.05
Over 3000	9.2	.02
Total	51,699.9	100.00

Source: "Traffic Service of the County Road System in North Carolina," by James S. Burch, Engineer of Statistics and Planning, State Highway and Public Works Commission (June, 1950).

APPENDIX F

NORTH CAROLINA HIGHWAY FUND SOURCES AND AMOUNTS OF INCOME

July 1, 1939 - June 30, 1950

Year	Licenss	Gasoline Tax	Titles	Federal Aid	Bus Investigation Fees	Sunday Revenue	Total
1939-40	$ 8,458,887	$ 25,323,753	$ 175,777	$ 3,206,207	$ 3,763	$17,981	$ 37,213,369
1940-41	9,713,300	28,663,500	224,885	4,341,033	4,210	8,013	42,954,941
1941-42	10,089,675	29,112,111	171,073	6,154,089	4,883	978	45,532,809
1942-43	10,169,556	20,624,181	119,408	5,001,625	4,584	685	35,920,039
1943-44	10,865,551	21,268,262	135,962	987,515	4,008	1,035	33,262,333
1944-45	11,121,536	22,276,764	116,504	335,133	3,773	2,224	33,855,934
1945-46	12,648,909	31,355,085	171,038	11,459,610	2,537	468	55,637,647
1946-47	15,197,558	37,906,826	255,485	11,376,902	3,183	2,213	64,742,167
1947-48	16,506,445	40,699,063	275,871	11,020,719	17,541	1,154	68,520,793
1948-49	17,968,701	44,546,748	288,638	527,265	7,642	4,989	63,343,983
1949-50	19,952,336	52,835,659	363,455	10,176,628	9,424	3,446	83,348,270*
11-Year Total	$142,719,454	$354,611,952	$2,298,096	$64,586,726	$65,548	$43,186	$564,332,284

*Includes $7,322 of undistributed revenue.

Prepared by: Division of Statistics and Planning, State Highway and Public Works Commission.

APPENDIX G

STREET EXPENDITURES IN NORTH CAROLINA[1]

The following information on street expenditures in 362 active cities and towns in North Carolina is set forth as supplementary to that in the body of the report.

TABLE I
Street Expenditures by Purpose and Source in North Carolina

Purpose of Expenditure	1946-1947 Total	1946-1947 Percent	1947-1948 Total	1947-1948 Percent	1948-1949 Total	1948-1949 Percent
Right-of-way	30,681	0.2	165,518	0.9	284,724	1.2
Street Construction & Reconstion (v)	4,415,620	30.7	5,304,433	27.9	9,057,616	38.4
Street Mainten.	4,101,505	28.5	5,616,153	29.6	5,842,011	24.8
Administration & Engineering	419,977	2.9	654,777	3.4	861,949	3.7
Traffic Control	681,368	4.8	1,861,490	9.8	2,359,521	10.0
Street Lighting	981,246	6.8	1,057,422	5.6	1,121,731	4.7
Street Cleaning	1,250,399	8.7	1,295,815	6.8	1,199,853	5.1
Storm Sewers	249,851	1.8	327,286	1.7	461,813	2.0
Principal & Int. Payments	2,243,119	15.6	2,724,289	14.3	2,388,009	10.1
	14,373,766 (f)	100.0	19,007,183 (f)	100.0	23,577,227 (f)	100.0
Source of Rev.						
General Fuod	9,374,554	65.2	11,692,406	61.5	13,660,388	
Special Ass.	417,762	2.9	858,678	4.5	1,336,479	57.9
Bond Issues	2,537,618	17.7	1,689,441	8.9	2,359,820	5.7
Note Issues	153,735	1.1	341,499	1.8	115,000	10.0
State Highway City Aid Fund (b)	892,075	6.2	1,702,190	9.0	1,521,452	0.5
State & Fed. Con. Moocy	737,072	5.1	1,799,582	9.4	4,216,170	6.4
Other State Sources	29,402	0.2				17.9
Other Local Sources	231,548	1.6	923,387	4.9	367,918	1.6
	14,373,766 (f)	100.0	19,007,183 (f)	100.0	23,577,227 (f)	100.0

(f) Includes expenditure of State and federal construction money explained in footnote (c)
(b) Spent in part by municipalities and in part by the Highway Commission on account from the then million dollar allocation to municipalities.
(c) Represents money spent by the State Highway Commission from State and federal funds on construction, reconstruction, and betterments inside the corporate limits of cities and towns.

Source: **Local Road Finance Reports**, prepared by the Division of Statistics and Planning, State Highway and Public Works Commission, in conjunction with the U. S. Bureau of Public Roads. The 1948-49 figures are based on summary data which were not ready for publication at the writing of this report.

[1] This presentation of information was prepared for the State-Municipal Road Commission by the Institute of Government. The source of basic information is indicated throughout.

Expeditures by purpose and source

The upper half of Table I in the other column compares street expenditures by purpose for 1946-47, 1947-48, and 1948-49. The percentage that the expenditure for each purpose bears to the total is also included. The lower half makes a similar actual and percentage comparison of the sources of revenue available for street expenditures.

Per capita and per mile street expenditures

Table II on page 25 has been prepared from information for 1947-48. Its purpose is to compare street expenditures by population group with the average population of the group and the average total street mileage of the group. An explanation of the columns follows:

Column 1—Population group.

Column 2—Average population for cities and towns in the group.

Column 3—Average total mileage of streets in cities and towns in the group.

Column 4—Average total street expenditure for the group, including expenditures for construction, maintenance, street cleaning, street lighting, traffic control, administration, storm sewer work, and debt service.

Column 5—Average expenditure per capita represented by the total expenditure in Column 4.

Column 6—Average expenditure per mile of streets represented by the total expenditure in Column 4.

Column 7—Average total expenditure for right-of-way, construction, and maintenance.

Column 8—Average expenditure per capita represented by the expenditure in Column 7.

Column 9—Average expenditure per mile of streets represented by the expenditure in Column 7.

It will be noticed from the table that, as the population declines, the per capita total expenditures (in column 5) increase to a high in the 5,000 to 10,000 population group, and then decrease. A comparison of the 1947-48 figures with similar figures for 1946-47 indicates that per capita figures are likely to fluctuate from year to year, and that

the total expenditure per capita will fluctuate pretty much with per capita construction. For example, in 1947-48 per capita construction was highest in the 5,000 to 10,000 group, and this accounts for the fact that the total per capita figure is highest for this group in that fiscal year. In 1946-47 per capita construction was highest in the 10,000 to 25,000 group, and the total per capita was highest in that group for the year.

Though no precise conclusions can be drawn from this data, it does seem safe to say that, in general, per capita construction and maintenance figures (column 8) will increase as the size of the towns decrease. The reason is probably due to a loss of efficiency in the smaller towns where the street mileage is not large enough to allow the employment of large-scale and hence relatively cheaper methods of street work. In addition, as the Highway Commission also points out in the *Local Road Finance Report*, the streets in the smaller towns are more often dirt streets and require more frequent maintenance. The report also indicates that cities and towns under 2,500 seem to employ the issuance of bonds and notes in a less measure, for per capita figures for debt service are smaller in those groups. This seems to account for the fact that while their per capita expenditures for construction and maintenance (column 8) are higher than most of the other groups their total per capita expenditures (column 5) are in fact smaller.

Table II

Per Capita And Per Mile Street Expenditures
North Carolina – 1947-48

Population Group	Average Pop.	Average Total Mileage of Streets	Average Total Street Expenditure	Average Expenditure Per Capita	Average Expenditure Per Mile	Average Right-of-way, Construction, & Maintenance Expenditure	Average Per Capita	Average Per Mile
Over 100,000*	100,899	289	$816,840	$ 8.09	$2,826	$302,049	$ 2.99	$1,045
50,000 to 100,000	62,646	252	$813,146	$12.98	$3,227	$385,948	$ 6.16	$1,532
25,000 to 50,000	36,114	127	$592,280	$16.40	$4,664	$221,232	$ 6.12	$1,742
10,000 to 25,000	14,378	74	$217,215	$15.11	$2,935	$117,151	$ 8.15	$1,583
5,000 to 10,000	6,466	38	$116,870	$18.07	$3,076	$ 72,494	$11.21	$1,908
2,500 to 5,000	3,580	18	$ 56,619	$15.82	$3,146	$ 30,260	$ 8.45	$1,681
1,000 to 2,500	1,578	12	$ 19,265	$12.21	$1,605	$ 13,286	$ 8.42	$1,107
Under 1,000	517	6	$ 6,847	$13.24	$1,141	$ 5,291	$10.23	$ 882

*One city only.

Source: Expenditure figures from Local Road Finance Report for fiscal 1947-48. Street mileage information from the table on page 21

Comparative tax rates for different types of street expenditures

The data from the *Local Road Finance Report* for 1947-48 have been arranged in another manner in Table III, in order to show the amount of tax that would have to be levied to produce the revenue to cover a certain type of expenditure. An explanation of the columns follows:

Column 1—Population group.

Column 2—Average assessed valuation for towns in the group.

Column 3—Average valuation per capita. This is included to show that there is not a great deal of variation in the per capita valuation between the groups.

Column 4—Average miscellaneous expenditure. This comprises expenditures for administration, traffic control, street cleaning, street lighting, storm sewer work, and debt service. From the total of these items found in the *Local Road Finance Report* there has been deducted revenues from parking meters, as these revenues are generally used for traffic control. The rest of the expenditure is usually raised from tax sources.

Column 5—Average tax rate for each town in the group necessary to raise the total amount of the average miscellaneous expenditure.

Column 6—Average expenditure from the General Fund for right-of-way, construction, and maintenance. This figure is arrived at by taking the total expenditure for these three items, as found in the *Local Road Finance Report*, and subtracting from it the proceeds of bond and note issues, revenues from other local sources, and State and federal aid. This figure then represents the average expenditure from the General Fund for these purposes.

Column 7—Average tax rate necessary to raise the expenditure in Column 6.

(1949 valuations were available from the reports submitted by the cities and towns to the Road Commission. These valuations were used in computing this table in order to show what the present tax rates would have to be in order to raise the money spent in 1947-48. The trend of expenditures has been to increase, so it is probable that these tax rates are low in relation to rates based on current expenditures.)

Table III

Comparative Tax Rates For Different Types of Street Expenditures
North Carolina – 1947-48

Population Group	Average Valuation (in millions)	Average Valuation Per Capita (in thousands)	Average Misc. Street Expense (in thousands)	Average cents per $100 valuation to raise misc expense	Average Construction & Maintenance Cost, Less Bonds, State aid & Other Sources (in thousands)	Average Cents Per $100 Valuation to raise Construction and Maintenance Cost
Over 100,000	$190.0	$1.9	$458	$.24	$168.2	$.09
50,000-100,000	120.2	1.9	388	.32	174.1	.14
25,000-50,000	64.2	1.8	334	.52	48.2	.08
10,000-25,000	20.5	1.4	79	.39	71.9	.35
5,000-10,000	9.9	1.5	34	.34	36.8	.37
2,500- 5,000	4.8	1.3	23	.48	21.3	.44
1,000- 2,500	1.9	1.2	5.5	.29	7.3	.38
Under 1,000	.6	1.2	1.5	.25	1.7	.28

Source: Expenditure figures from 1947-48 Local Road Finance Report; valuation figures from reports submitted to the Road Commission by cities and towns; Highway Allocation from State Highway Commission.

The significant thing to note in the table is the fact that miscellaneous expense generally represents the largest item in those cities and towns over 2,500. As a result, even if the State took over the construction and maintenance of all city streets, a significant amount of the budgets of these cities would still be spent on streets.

The fact that the number of cents necessary to raise construction and maintenance expenditures increases as the size of the towns decreases seems to stem from several things: (1) the larger cities do more bond financing and construction by street assessment, hence, they do not expend General Fund revenues for these purposes; (2) as has been mentioned before, the efficiency decreases and the cost increases as the size of the town gets smaller.

APPENDIX H

STREET ASSESSMENTS IN NORTH CAROLINA[1]

The most common method of paving residential streets in cities and towns in the State is to assess the abutting property owners a certain percent of the cost of the paving. The policies of assessments vary widely throughout the State. Officials of about 60 cities and towns discussed their policies with the Road Commission at the hearings held for those officials. The most common policy is a 50-50 one, whereby the property owners put up 50% of the cost of the work (the property owner on each side paying 25%), and the city pays 50%; 21 municipalities employ this method. Officials of 19 municipalities indicated the use of a 2/3-1/3 policy, whereby the property owner on each side pays a third and the city pays a third. Thirteen towns assess the total cost of the paving against abutting property owners, with the city paying only for intersections. In many of the municipalities the property owner must put up his share of the cost before work is begun, whereas in other municipalities owners have from 5 to 10 years to pay the cost of the assessment.

There are numerous disadvantages to paving by assessment. For one thing, it puts the city in a strait-jacket. Having once embarked on a street assessment policy and assessed abutters for their share of the cost of certain streets, officials do not feel that they can deviate from the policy to pave even needed streets, for to do so would be unfair to those who were assessed. A second problem arises in those cities which bear a certain portion of the cost of residential paving themselves. Often a town will float a bond issue to raise its share of the cost of an assessment program. The town may then get into a position where it can issue no more bonds, and property owners living on dirt streets and paying taxes to liquidate the outstanding bonds have no chance of having their street paved in the near future. Greensboro affords an example of this situation. There the debt is so high that additional bonds cannot be issued, and yet there are on hand many petitions to pave streets from owners who are paying taxes to liquidate the present debt. That city cannot now raise the money for its share of the cost of the requested paving. A third disadvantage arises in the case of those property owners who cannot pay the cost of the assessment and so have to forfeit their property to the city for nonpayment. In Winston-Salem in the early 1930's, 2100 lots were foreclosed because the owners could not pay the street assessments. These lots were acquired by the city for the amount of the assessment plus penalties, a total of $1,300,000. To date, 1500 of these lots have been sold at a net loss to the city of several hundred thousand dollars. Greensboro has had a similar history. During the past several years 3677 owners have been foreclosed, the amount of the assessments being about $2,500,000. These lots have been sold with a net loss to the city of about $800,000, or 1/3 of the assessments. Of course, the loss to the property owners foreclosed has been as great or greater.

Discrimination is also to be noticed in assessments policies. In Statesville, through streets have been paved by the issuance of bonds. In Greensboro, on the other hand, even these streets are paved under assessment policies, the result being that abutting property owners pay for paving streets that carry much traffic having neither its origin nor its destination on the streets themselves. The situation on some streets in Greensboro has been aggravated because the city has had to prohibit curb parking on some heavily travelled streets whose surface has been paid for by the abutters. These abutters, having paid to have the street paved, can no longer park on the streets and have to incur additional expense for off-street parking.

Actual assessments were indicated to the Commission by some of the town officials. The difference in the amount of assessments per front foot is tremendous. In Clinton, for example, recent work has cost the abutter $.94 a front foot. In Raleigh some recent work has cost $1.55, in Burlington $2.25, and in Hickory $2.50. In Winston-Salem assessments have been as low as $2.00 and as high as $6.00. In Greensboro the variation has run from $3.00 to $10.00, and a recent project in a new real estate development cost $9.00 a front foot to each owner. The reason for the variation seems to be that the lower assessments have provided merely a low-type pavement, whereas the high assessments have resulted from projects requiring a high-type pavement because of the heavy traffic that will use the street. In other words, a man living on a street which, when paved, will carry a great deal of traffic (traffic which may be objectionable to his residential property), may have to pay ten times as much as he would have had to pay if he had lived on a different type of street.

The following table has been prepared to indicate what the different types of front foot street assessments under different assessment policies might be. The standards, i.e., the width and surface types, have been taken from a post-war Michigan study of street and road needs. The assessments have been worked out from the cost figures indicated.

It is apparent from this table that the front foot street assessments can vary widely and depend, not only on the street assessment policy, but on the type of surface and width of the street. There is a variation in the table itself of from $.83 a front foot to $9.80 a front foot, a variation similar to that found in the reports of cities and towns to the Road Commission.

One statement made to the Road Commission is worth noting. The city clerk of Tarboro told the Commission that Tarboro had abandoned its policy of street assessments because it was convinced that the benefit received by the property owner was far less than the cost of paving to him. Though it cuts off a source of revenue that amounts to a good deal, officials of Tarboro are sure that it is fairer in the long run to pave streets out of general revenues, because then a property owner is not assessed to provide a pavement for traffic. (Tarboro owns and operates its own utility plants and derives a profit from them. Other cities and towns may not be so fortunate as to have this type of revenue, and hence can not abandon street assessments.)

Table I

Possible Street Assessments Under Different Policies
For Different Type Streets

Street Class	Pavement Width, curb to curb (in feet)	Surface type	Cost of Paving per sq. yard	Approximate cost of paving per mile	Assessment per front foot if abutters pay 100%	Assessment per front foot if abutters pay 2-3	Assessment per front foot if abutters pay 50%
Major Streets Carrying Very Heavy Traffic*	44-48	High	To be determined by special study	------	------	------	------
Apartment House Districts-high population density	36	High	$3.50	$75,000	$7.00	$4.67	$3.50
Single Family Residences (medium pop. density)	30	Intermediate	$2.20	$40,000	$3.66	$2.41	$1.83
Country homes (low population density)	20	Intermediate	$1.50	$18,000	$1.66	$1.11	$ .83
Access to Large Warehouse or Terminal Area	44	High	$4.00	$100,000	$9.80	$6.53	$4.90
Access to Business Areas and Small Industry	40	Intermediate	$2.20	$50,000	$4.88	$3.25	$2.44

*This class includes streets carrying primary highways and truck routes, and heavily travelled arterial or cross-town streets.

Source: First four columns from "Bases and Procedures for Determining Highway, Road and Street Deficiencies in Michigan", published by the Highway Study Committee of the Michigan Good Roads Federations. Last four columns are computations based on columns two and four.

[1] Prepared for the State-Municipal Road Commission by the Institute of Government.

APPENDIX I

ROAD AND STREET EXPENDITURES FROM STATE AND FEDERAL FUNDS FROM 1931 TO 1949[1]

The following table gives a breakdown of expenditures from State and federal funds by the State Highway and Public Works Commission between July 1, 1931 and June 30, 1949:[2]

State Highway Expenditures		
Maintenance	$117,000,000	
Construction	142,000,000	$259,000,000
County Road Expenditures		
Maintenance	216,000,000	
Construction	33,000,000	249,000,000
Allocated to Maintenance in Cities and Towns		11,000,000
Other Expenditures		
Debt Service	151,000,000	
Motor Vehicle Bureau, Patrol and Safety	22,000,000	
Miscellaneous (including Probation and Parole Commissions, Prison Camps, etc	16,000,000	
Transfers to General Fund	4,000,000	
Administration	3,000,000	196,000,000
Total		$715,000,000

Of this total, $101,000,000 was from federal funds and the rest was from State funds.

Some of the money indicated in the table as spent on State Highways and County Roads was actually spent on streets on those Systems, but the exact amount is not readily ascertainable. It is known that about $15,000,000 of State and federal funds (composed of $7,500,000 Federal Aid and $7,500,000 of matching State funds) was spent under the Federal Aid Urban Program. Probably $4,000,000 or more was spent on streets on the State Systems in conjunction with improvement projects on adjacent rural roads. These expenditures added to the $11,000,000 indicated in the above table as "allocated to maintenance in cities and towns" probably exceeds $30,000,000.

The table set out below presents detailed expenditure figures for each fiscal year beginning with 1940-41.

[1] Prepared for the State-Municipal Road Commission by the Institute of Government.

[2] This breakdown was contained in a memorandum from Mr. James S. Burch, Engineer of Statistics and Planning, State Highway and Public Works Commission, to Dr. Henry W. Jordan, Chairman, State Highway and Public Works Commission, dated December 27, 1949. This memorandum was made available to the State-Municipal Road Commission.

Distribution Of The North Carolina Highway Fund

	1949-50 Budget	1948-49	1947-48	1946-47	1945-46	1944-45	1943-44	1942-43	1941-42	1940-41
Administration	353,557	306,169	277,420	185,886	179,797	135,993	136,029	142,780	164,071	177,664
Department of Motor Vehicles	3,878,512	3,170,560	3,087,454	1,978,045	1,319,402	1,241,429	1,387,741	1,269,312	1,331,838	1,243,980
Debt Service	4,037,802	5,612,864	7,278,114	7,441,239	7,576,708	7,734,458	7,939,021	8,130,442	8,337,600	8,651,764
Maintenance-State Highways	60,250,000	11,111,521	9,249,801	10,798,524	9,956,672	5,996,096	6,096,324	1,706,637	9,446,936	8,924,778
Construction-State Highways	(breakdown) not available)	23,487,360	15,397,881	14,807,311	8,545,356	1,180,748	855,733	1,751,738	6,061,232	6,847,532
Maintenance-County Highways		30,849,222	25,610,398	30,401,534	20,243,682	8,083,936	7,282,145	5,492,304	10,237,681	9,209,209
Construction-County Highways		7,385,056	7,132,052	4,990,922	1,435,315	321,246	820,357	913,003	1,135,817	299,019
Scenic Highways	200,000	200,000	200,000	200,000	200,000			150,000	200,000	225,000
City Street Fund	2,500,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	500,000
Miscellaneous*	1,336,210	2,078,788	1,372,769	2,752,634	1,175,475	1,237,497	1,232,642	775,032	434,179	289,508
Total	72,556,081	85,201,540	70,605,880	74,646,095	51,632,407	26,931,403	26,749,992	21,331,248	38,349,354	36,368,454
Total Maintenance and Construction of State, County, and Scenic Highways	60,450,000	73,033,159	57,590,132	61,288,291	40,381,025	15,582,026	15,059,105	10,013,682	27,142,964	25,505,538
City Street Fund**	2,500,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	500,000
City Street Fund as a Percentage of above 2 items combined.**	4.0%	1.4%	1.7%	1.6%	2.4%	6.0%	6.2%	9.1%	3.6%	1.9%

*Includes expenditures for Probation Commission, Parole Commission, Prison Camp construction, Bus Investigations, Employer's Contribution to Retirement system, and Reserves for Salary Increases.

**It must be remembered that some funds have been spent in municipalities over and above the City Street Fund. Exact data on these expenditures, however, are not available.

Source: Division of Statistics and Planning, State Highway and Public Works Commission.

APPENDIX J

FULL TEXT OF STATEMENT SUBMITTED TO THE STATE-MUNICIPAL ROAD COMMISSION BY THE CAROLINA ROAD BUILDERS ASSOCIATION, INC., MARCH 1, 1950

In the recommendations submitted by the North Carolina League of Municipalities[1] that the Legislature amend the law so as to establish equity in the expenditure of highway user revenues for the construction, maintenance and improvement of all highways, roads and streets in accordance with the present principle whereby the highway user pays the total cost of the present state and county highway system, the question can then be asked—what is equity?

In its broadest and most general signification, the term denotes the spirit in the habit of fairness, justness and right dealing which would regulate the action of men with men. Therefore, we can say the highway transportation industry, which pays the highway user revenues, is a kind of cooperative enterprise in which the people through their governmental agencies provide the roadbed while private corporations and individuals alike furnish the rolling stock and all the incidental equipment and fuel which make highway traffic possible, whereby the people of the State, including both rural and urban alike, receive benefits of economical transportation in lowered transportation costs of the goods and services they produce and consume, or they pay the added cost of deficient highways in higher transportation and consumer costs. Good rural road transportation is a necessity to the economic needs of a State, county and municipality.

A municipality with the best paved streets cannot in any way be economically prosperous without good paved highways to serve its purpose. However, on the other hand, a municipality with unimproved streets can be economically

[1] See Appendix N, page 31.

prosperous when there are improved rural highways serving the town. We find ourselves in agreement that equity in taxing of fuel for use on streets and highways by municipally-owned equipment is unjust. One level of government should not have the power to tax any other level of government for services it renders to its people.

The urban traffic problem is, we all know, a tremendous one and has the municipal officials in a quandry. The real estate developer has capitalized on the idea of designing attractive subdivisions and creating shopping centers that give the customer in her car the same consideration she receives when she actually enters the store. These subdivisions have paved streets to be paid for by those who purchase lots in such subdivisions, and in some cases these subdivisions are outside of the corporate limits of the municipality.

Peter P. Hale, Research Associate of the Bureau of Highway Traffic at Yale University, in making special reference to such subdivision undertakings, said: "The city means nothing to traffic. There is nothing holy about land values, land ownership, city finance, bankruptcy, or any of the multiple facts of the municipal structure. If their agents refuse to gear them to modern traffic demands, the unlimited mobility that traffic offers will allow the tremendous economic power it represents to move off to the environment it seeks—in a new urban center, a metropolitan area, or even in another region."

He said further "that traffic is not a curse destroying something that is good. It is an instrument of freedom high lighting obsolescence, provoking thought and action—a powerful new tool with which to build."

Therefore, in equity, we firmly believe that the construction and improvement of state and county highways connecting and leading into the municipalities of the state provide economic benefits to urban enterprise. This economic benefit, plus the financial contribution from State Highway User taxes, is believed to be sufficient to more than offset the cost of providing for adequate traffic facilities. This has been demonstrated by the real estate developer who pays the entire cost of such traffic and parking facilities. If it is to the economic advantage of such development to attract an increased amount of traffic and parking to that particular development, it is also to the economic advantage to any municipality to attract more traffic and parking which will bring prosperity to any community or municipality.

It is generally agreed that the municipalities of the State are in need of a considerable amount of reconstruction to modernize their traffic facilities, and we all know from everyday problems the provoking parking problem in every municipality, regardless of size. We should first realize that solving the parking problem would go a long way in eliminating a great deal of slow moving traffic that is moving over the streets in search of parking space. The entire problem is very difficult. It is easy to compare the same situation with rural highway needs. In the Economic Report to the President of the United States, Senator Joseph C. O'Mahoney, Chairman of the Joint Committee on this report, said "Current deficiencies on the highways, roads and streets of the Nation, as indicated in the reports from the States, total $41,000,000,000. The largest single need, $23,-000,000,000 is for modernizing our state highway systems and their urban extensions." North Carolina needs are estimated to be approximately $150,000,000 over and above the program we now have underway.

We can then ask the question how can these needs best be financed? We can apply this question to the municipal needs of North Carolina alone.

The present program of $200,000,000 in bonds will benefit considerably in solving the problem of deficiency in rural secondary roads. The State's primary highway system with its mounting deficiencies will require an additional $150,-000,000, as previously stated. There is an increasing demand for immediate expenditure of large sums of money for this purpose.

The municipal needs will also require large sums of money for modernizing traffic facilities for present day demands. (It has been estimated that) the total mileage of streets carrying state highways in towns of 5,000 population and over is 398 miles. This total mileage can qualify for Federal Aid funds under the agreement of the Federal Aid Highway Act. This fund over a period of four years will under the present formula of allocation amount to some ten millions of dollars. This amount with matching funds from the State will total twenty millions of dollars. At an average cost of $25,000 per mile for rebuilding these 398 miles to meet present day needs, it can be financed from these Federal Aid and State funds over a four-year period. It is estimated that this amount of money would eliminate all deficiencies in the urban highway system of towns over 5,000 population in the state. Under such a plan it should be the responsibility of the municipality to absorb all of the right-of-way costs, including the re-arrangement of public utilities necessary for such undertakings.

Also (it has been estimated that) there is a total of 3801 miles of unpaved streets in all the municipal corporate limits of the State. With an estimate of $5,000 per mile for paving these 3801 miles, making a total of $19,005,000, all streets in all the municipalities could be paved. It is believed that this estimate is adequate to accomplish this undertaking. Under the terms of the Bond Act providing for the issuance of $200,000,000 in bonds for the construction of secondary roads,[2] Section 2, outlining the allocation of these funds to the various counties of the State, provides that the State Highway and Public Works Commission may retain an amount not exceeding ten per cent (10%) of the total of said fund as an equalization fund to be used by the said Commission for secondary road purposes, such purposes, to include any and all streets and extensions thereof in incorporated cities and towns which form important connecting links to the State highway system or the county highway system or farm-to-market roads, and including roads or streets in that border or fringe section which is neither city nor county. This entire 10 per cent of $200,000,000 can and should be applied to construction of these 3801 miles of streets.

With adequate funds in sight for these two construction programs, all the municipalities of the State should have a modern and all-weather street system totaling 7128 miles, as the 605 miles carrying state highways in towns under 5,000 population should be a direct responsibility of the State Highway and Public Works Commission.

Under the present system, the municipalities of the State receive $2,500,000 of the State Highway User taxes which can be allocated for maintenance of the 7128 miles as it is estimated that such maintenance cost would average approximately $350 per mile per year, or a total of $2,-494,800. It is believed that a financing program can be worked out along these lines, that will solve the present problem of city street deficiencies for many years to come.

In order that such a program can be carried to efficient and economical completion, it is believed that the State Highway and Public Works Commission should provide engineering and technical assistants to all municipalities by creating a Municipal Division within its own organization, to be financed under the item of regular State Highway overhead expense. Under an agreement of this nature, there could be uniform practices and standard type of construction and maintenance for the entire State, making great economic benefit to all the municipalities.

APPENDIX K

THE ALLOCATION TO CITIES AND TOWNS OF THE LEGISLATIVE APPROPRIATION FOR STREET MAINTENANCE, AND CRITICISMS MADE OF THE ALLOCATION BY CITY AND TOWN OFFICIALS[1]

The allocation

In 1935 the General Assembly made the first appropriation for street maintenance in cities and towns, $500,000 being appropriated for fiscal year 1935-36. This remained the annual appropriation until 1941-42 when the amount was increased to $1,000,000. In 1949 the General Assembly increased the appropriation to $2,500,000 a year beginning in 1949-50.

The present $2,500,000 is allocated to the cities and towns under the following formula: ⅓ is distributed on the basis of population, each city or town getting that percentage that its population bears to the total combined population of all cities and town; ⅓ is distributed on the basis of mileage of streets carrying State Highways, each city or town getting that percentage that the mileage of streets carrying State Highways within its borders bears to the total combined mileage of streets in all cities and

[2] Chapter 1250, Session Laws of 1949.

[1] Prepared for the State-Municipal Road Commission by the Institute of Government. The information on the criticisms of the allocation comes from oral statements made to the Road Commission by city and town officials.

towns carrying State Highways; ⅓ is distributed on the basis of need as determined by the State Highway and Public Works Commission. All cities and towns which have been chartered by the General Assembly, share in the appropriation, including those which have no actively operating government. There are about 489 cities and towns with charters and it has been estimated that about 125 of this number have no active government. An estimate based on actual allocations to 90 cities and towns indicates that these inactive towns receive about $125,000 a year, or 5% of the total $2,500,000.

The following table has been prepared to show the average allocation to different sized cities and towns, and the allocation per person, per mile of all streets, and per mile of streets carrying State Highways.

Table I

Allocations From The City Street Fund
North Carolina – 1949-50

Population Group	Average Population	Average Total Miles	Average Highway Miles	Average Allocation	Allocation Per Person	Allocation Per Total Mile	Allocation Per Highway Mile
Over 50,000	70,295	260	24.2	$89,090	$1.27	$342	$3,708
25,000 to 50,000	36,114	127	11.6	48,000	1.33	378	4,138
10,000 to 25,000	14,378	74	8.5	23,000	1.60	311	2,706
5,000 to 10,000	6,466	38	4.6	11,000	1.70	289	2,391
2,500 to 5,000	3,580	18.5	3.0	7,900	2.21	427	2,633
1,000 to 2,500	1,578	12.1	2.2	4,000	2.53	331	1,818
Under 1,000	517	6*	1.4*	2,700	5.22	450	1,929

*Estimated on the basis of limited information.

Source: Allocation column from State Highway Commission Allocation List. Other information from reports from 90 individual cities and towns.

The allocation to each city and town must be spent first on streets carrying State Highways and second on streets forming connecting links to the County Road System. Only when these streets are in satisfactory condition in the opinion of the State Highway and Public Works Commission may the funds be spent on other streets in the city or town.

The allocation is usually spent on the streets of the city or town by the Highway Commission, the Commission doing necessary work and charging the cost to the allocation of the city or town. In some cities, however, the Highway Commission will allow the street department to do the work that would otherwise be done by the Highway Commission and then will reimburse the city for funds thus expended. In 1948-49 there were 16 cities doing this work: Asheville, Burlington, Concord, Durham, Gastonia, Goldsboro, Greensboro, Henderson, High Point, Lexington, Raleigh, Rocky Mount, Salisbury, Wilmington, Wilson, and Winston-Salem.

Criticisms of the allocation

Several criticisms have been directed at the present allocation by officials of cities and towns. One concerns the distribution of ⅓ of the appropriation on the basis of need, it being said that this puts too much power over allocation in the hands of the Highway Commission. It has been suggested that this be changed so as to distribute ⅓ on the basis of area of the cities and towns. It has also been suggested that the distribution be left as is, but that "need" be defined so as to guide the Highway Commission in this regard.

A second criticism was directed at the distribution of ⅓ on the basis of mileage of streets carrying State Highways. It has been pointed out that this benefits those cities and towns with a comparatively high percentage of streets carrying State Highways at the expense of cities and towns with a lower percentage. It has been suggested that this ⅓ be distributed on the basis of total street mileage. This suggestion seems to be based on the premise that the State should help all *cities and towns* in similar measure rather than all *streets* carrying State Highways in similar measure.

A third criticism was directed at the allocation to inactive towns. It has been argued that once a town ceases to function it becomes like any other rural area and should get the same treatment that rural areas do. By the same token other cities and towns should not be deprived of the funds allocated to inactive places any more than the appropriation itself should be spent in rural areas.

A fourth criticism was directed at the bookkeeping procedures employed when the Highway Commission does work and charges it to the city or town allocation, some municipal officials claiming that they have not gotten the full value of their allocation.

A final criticism concerns the priority of expenditure of the allocation. It has been pointed out that the allocation must first be spent on streets carrying State Highways and next on streets forming connecting links to the County Road System; when these streets are in satisfactory condition in the opinion of the Highway Commission, any unspent portion of the allocation may be used on other streets. City and town officials have stated that they have not been able to use unspent funds on other streets, even when the unspent portion has piled up to two or three times the amount of the annual allocation. For example, an official of one town stated that the town's unspent portion had accumulated over several years to $11,369, whereas the town's current allocation was only $4,507. The official could not understand why the town could not use these funds on other streets, since the Highway Commission did not seem to be using the funds on streets on the State systems.

APPENDIX I

FULL TEXT OF STATEMENT TO THE STATE-MUNICIPAL ROAD COMMISSION BY THE NORTH CAROLINA STATE GRANGE—DECEMBER 9, 1949

We appreciate this opportunity to meet with the members of the Municipal Road Commission. Members of the Grange have been interested in the road program from its beginning. The National Grange was one of the first organizations to become active in the development of adequate highway transportation systems for all of the citizens of the United States. Farmers are interested in all roads. Any road including a city street which leads to a farm market or a customer is important to the farmer regardless of its location. The primary purpose of streets or highways is to move goods, services, and passengers. "The chain is as strong as its weakest link." The farmers are interested primarily in the first link which connects him with the primary system, but this does not eliminate his general interest in the total highway program.

Press reports indicate that your Commission has visited cities and towns in every section of North Carolina during recent weeks. It is apparent from these press releases that the cities and towns are anxious to have the State of North Carolina assume a much larger financial responsibility for building and maintaining the city streets. We note that the representatives of the cities and towns base their argument on the desperate need of cities and towns for additional revenue. We feel confident that the members of this Commission recognize that the name of the Commission itself, Municipal Road Commission, would seem to restrict your considerations to the road aspect of the city problem.

The present primary highway system in North Carolina was the outgrowth of urban demands for inter-city traffic. The first announced objective was to connect county seats, cities, and towns by a network of highways. The records show that the State Highway Commission has been composed largely of business men from the urban areas. Our road program in the past has been primarily designed to take care of the inter-city traffic. While farm people have benefited by the improvement of our primary road system, we must remember that these roads were not built with the idea of serving rural communities. We must also remember that civic-minded leaders in our cities and towns have maintained "good road" committees for many years. They have applied pressure on the State Highway Commission to get those roads that will attract the most people to their community approved for construction. It is a mistake for the cities to cry discrimination now in view of the fact that the present program was designed largely by their leaders to meet the demands of their people and their industries.

The highway system links the towns and cities with food,

raw materials and markets. It has enabled the development of our service agencies and business enterprises. Without roads, farmers could live by processing their own materials into useable goods, but our cities would shrivel and die. Much of our boasted industrial progress, which is centered largely in urban communities, has been made possible by our improved highway system which links people and communities together so that production, processing, merchandising, and service programs can be developed and maintained. The cave man had no roads, no industries, and no service agencies, but he lived. Civilization has marched forward on wheels and transportation. The motor vehicle and roads have changed this nation from a country of self-reliant citizens making what they use to a nation with the highest standard of living in the world.

The farm people of North Carolina recognize that some city streets probably meet the accepted definition of roads. The State Highway and Public Works Commission has built and maintained many of the roads in the unincorporated cities and towns of North Carolina. It is our opinion that some discrimination may exist in the distribution of highway funds under our present set-up. It is our hope that the recommendations of this Commission will lead to the elimination of discrimination as far as feasible.

In checking the records we find that there are approximately 62,000 miles of roads in the State Highway system at present. Of this amount about 16,000 miles were paved as of January 1, 1948. Practically all of the paved roads were a part of the primary system so that very few miles of the secondary road system which directly serves farmers have been hard-surfaced. We also find that there are approximately 48,000 miles of secondary roads on the state system. It is hoped that at least 12,000 miles of the secondary road mileage can be hard-surfaced out of the $200,000,000 bond issue. It seems reasonable to assume that the state will have from 28,000 to 30,000 miles of paved roads within the near future. This will represent a little less than ½ of the total road mileage in the state system. When the secondary road improvement program is completed we will have about 25 per cent of the total secondary road mileage paved. When we recognize the importance of these roads to the total economy of the towns and cities, to the farming communities, to our school systems, and to the state and national welfare we will agree that the major job is not complete. Highway engineers tell us that much of our primary system needs to be overhauled and brought up to date. Many of our main highways, including urban extensions, are too narrow to carry the inter-city traffic with safety. We have narrow bridges and dangerous curves that are little more than death traps. These conditions must be corrected and the total highway system kept in usable all-weather condition by the State Highway Commission if we are to "go forward" with our business and recreational developments in North Carolina.

We understand that there are approximately 6,000 miles of city streets in the incorporated cities and towns of North Carolina of which about 3,000 miles have been paved. The problems presented to you by the representatives of city government must be weighed in the light of existing obligations upon the Highway Commission for the maintenance of an adequate highway system to carry transportation needed by the state and nation.

If your Commission concludes that the state has an additional obligation for building and maintaining roads within the incorporated limits of cities and towns then it is our opinion that some definitions and decisions must be made. It will be necessary to define what constitutes roads when located within the limits of a city or town. The Highway Commission would become responsible for alleys and streets which clearly could not be classified as roads under the usual definition of highways and roads. It is our opinion that the definition should include standards of width for right-of-way and be limited to those streets which are connecting links for highways and roads to and from towns and cities.

Our organization feels that if and when city streets are to receive additional aid from the state and meets the definition established for a highway or road that it should be added to the state highway system on exactly the same basis as other roads are added to the system for maintenance and construction purposes. The obligation of the state should be limited to the road aspect of the street. The city or town should be responsible for curbing and other phases of construction not included as a part of our highway building program. The N. C. State Grange has said that it would be a tragic mistake for the state to appropriate money to the cities and towns for road building purposes. Waste, inefficiency, duplication, and diversion of funds would result in many instances. The Grange has constantly opposed the using of highway funds for non-highway purposes and it is our belief that all of the roads included in the state highway system whether they be located within the incorporated limits of a town or in the country should be under the complete supervision of the State Highway Commission.

We do not know how many additional miles would be added to the state highway system by the adoption of the suggested formula or any other formula that might be recommended for use in handling this problem. Nor do we know how much will be required to finance the maintenance and construction of this additional road mileage. We assume that your commission will establish accurate figures on this and at the same time determine whether or not the state has available money over and above the amount required to fulfill existing obligations before any recommendations are made. We feel that it is the obligation of the commission to limit its recommendation to the ability of the state to carry the financial burden or to find ways for the state to assume the additional burden without interfering with its existing obligations in this field.

On behalf of the State Grange I wish to commend the Commission for the manner in which you are analyzing the problem. It is our hope that the Commission's recommendations will provide for an equitable distribution of highway funds based upon the fundamental definitions and obligation of the state for building and maintaining the roads and highways that serve the people of the state.

APPENDIX M

FULL TEXT OF STATEMENT SUBMITTED TO THE STATE-MUNICIPAL ROAD COMMISSION BY THE NORTH CAROLINA FARM BUREAU—APRIL 24, 1950

At the request of the Commission, the North Carolina Farm Bureau files herewith a brief statement of its ideas as to a "just sharing of State Highway Revenues with Municipalities."

We would like to point out in the beginning that we appreciate the fine work your Committee has done and is doing on this project. You have approached it in a realistic way, have listened to those who wished to be heard, solicited expressions of opinions from all concerned and have compiled valuable information not heretofore available. We realize the difficulties with which you are faced but the importance of your findings justifies the efforts of all.

Section 2 of the Resolution authorizing the Commission provides "whether such sharing should be by further allocations of funds to the municipalities on a percentage basis of highway revenues or by definite appropriations therefor or by the maintenance and construction by the State of streets within the municipalities or by any other means which may be considered by the commission to be a just and proper approach to this problem."

It would therefore appear that the first problem for your determination would be the method by which you would recommend that the municipalities be assisted or share in the highway revenues in the construction and maintenance of streets which are located within the municipalities. After careful and considered study the North Carolina Farm Bureau takes the position that we would support a recommendation that the Highway Commission take over the construction and maintenance of state marked highways and cross county thoroughfares and connecting links which pass through or by-pass municipalities. We realize that the recommendation will entail tremendous cost but it embodies, in our opinion, the greatest need to the greatest number of people for the economic welfare of North Carolina.

North Carolina should have for its guidance a sound long-range highway program based on a realistic approach, balancing actual and reasonable anticipated needs with our ability and willingness to pay. The trend in this country in highway expenditures in the past two or three decades has been toward state construction and maintenance and with the abolition of the ad valorem tax in North Carolina, further steps in that direction may be warranted. The support of the above recommendation is a long step in that direction.

It is, of course, physically impossible to satisfy all road needs, simultaneously. The cost of maintenance of the additional roads constructed this year and to be constructed under the two hundred million dollar bond issue will increase. It is, therefore, imperative that we establish a priority schedule for future construction of roads, looking toward the betterment of the economic good of the State as a whole. Population density, amount of traffic and revenue producing areas are not all of the elements to be considered in determining the greatest need for highway improvement or construction. For example, we may have a rural community with a low population density, small amount of traffic and not much highway revenue produced therein but it may have a school bus route, a dairy route and a rural free delivery route with great economic possibilities. Primary roads did not have the percentage of population density, etc., at the time of construction and road improvement in other communities can and will develop them accordingly. North Carolina is a State of Communities and one of the first objectives of a highway program is to connect them and then the people in the community.

We do not anticipate too much increase in highway revenue and no additional sources are apparent to us at this time. Our primary system of roads is in need of repair and the additional liability of construction and maintenance of additional miles within municipalities will, in our opinion, absorb most if not all our highway revenue. Every precaution should be used in determining additional construction to see that the most good will be derived therefrom.

North Carolina has made great progress in most of our endeavors. We must continue to go forward but with caution and on a sound business-like basis. Every effort in a program similar to this one should be directed toward obtaining for all of the people of North Carolina the greatest contribution possible.

In conclusion, we wish to express our sincere appreciation to each member of the Commission. We believe you will recommend what you think best for the people of North Carolina and we trust that we will be able to support your findings in full.

APPENDIX N

FULL TEXT OF STATEMENT SUBMITTED TO THE STATE-MUNICIPAL ROAD COMMISSION BY THE NORTH CAROLINA LEAGUE OF MUNICIPALITIES JANUARY 12, 1950

Recommendations for the Construction, Maintenance and Improvement of Municipal Streets[1]

The League recognizes that the solution to the municipal street problem cannot be immediate. Therefore, it submits its following recommendations in two parts: Part I suggests an ultimate all-time solution, and Part II the immediate steps.

PART I

The Commission should recommend an ultimate solution:

1. That the legislature amend the law so as to establish equity in the expenditure of highway revenues for the construction, maintenance and improvement of all highways, roads and streets, in accordance with the present principle whereby the highway user pays the total cost of the present state and county highway systems. This would eliminate the present discrimination against urban property, which now bears better than 85% of the total city street costs.

2. That municipalities be exempt from the gasoline tax imposed by the State of North Carolina on gasoline used in municipality owned vehicles operated for public progress.

3. That the State Highway and Public Works Commission provide for the municipalities of the state, without cost, a consulting service on traffic, and street planning and construction.

[1]See in connection with these recommendations a clarifying statement set forth at the end of this Appendix, page 32.

PART II

In the event that the Commission is of the opinion that it would be impractical for the legislature in the next session to correct the gross inequity now existing between urban and rural street and highway systems in the expenditure of highway revenues, the Commission should recommend that the General Assembly seek this ultimate goal by creating a long-range program. Such a program to be designed to eliminate by stages the existing inequitable apportionment of state and highway revenues as between urban and rural areas.

THE FIRST STAGE to be enacted at the next session of the legislature follows:

1. That the State Highway and Public Works Commission should assume the responsibility for the construction, maintenance, and improvement of all extensions of the primary and secondary highway systems in and through the corporate limits of the several municipalities of the state without charging the cost thereof to the present $2½ million annual allocation; the municipalities to retain control over the establishment of grades, areas beyond curb lines, underground facilities, illumination, cleaning, traffic and parking regulations.

2. That the municipal street fund law be amended to permit the expenditure of the present municipal fund for the construction, improvement and maintenance of *any* street within the corporate limits of the several cities and towns, in accordance with a predetermined program submitted to and approved by the State Highway and Public Works Commission, subject to adequate and complete reports and accounting by the municipalities to the State Highway Commission of such expenditures. That allocations be paid in cash to those municipalities that in the opinion of the State Highway Commission have competent local forces and adequate equipment to efficiently and economically perform the work or to supervise the contracting thereof. That the State Highway and Public Works Commission undertake the work in all other municipalities either by force account or contract.

3. That the present municipal street fund law be amended to provide that in the allocation of the funds, only those towns which at the time of the allocation are actually active and operating as a municipality receive the benefit therefrom.

4. That the formula for distribution under the present municipal street fund law be amended so as to eliminate the "need" factor to the end that all funds will be distributed on a predetermined and known formula without discretionary authority on the part of any agency with respect to the amount thereof.

5. That the state tax on gasoline used in municipally owned vehicles which are operated for public purposes be eliminated.

THE SECOND STAGE:

The State Highway and Public Works Commission should assume the responsibility for the maintenance and improvement of all arterial or heavily travelled major thoroughfares or streets which are not extensions of the primary or secondary highway systems, or, increase the municipal street fund in an amount adequate for the improvement and maintenance of such streets.

THE SUCCEEDING STAGES:

The State of North Carolina should increase the municipal fund in such amounts as will eventually eliminate the necessity of municipalities taxing real property for street and highway purposes, or should assume the responsibility for maintenance and improvement of such streets as is now being accomplished in the rural areas, thus insuring equal benefits to both our urban and rural citizens.

Data Supporting Recommendations of the N. C. League of Municipalities for Maintenance, Construction and Improvement of Municipal Streets, January, 1950

The North Carolina League of Municipalities, with 277 members, is the official organization of the cities and towns in the state. As such, it submits the foregoing official recommendation to your Commission for your consideration of the municipal street problem and its relation to the State Highway system and the economic development of the state as a whole. This organization has, since its inception, concerned itself with the growing municipal street problem and has given it years of study.

The League is grateful to your Commission for the privilege of being heard at your public hearings and its final

recommendation is predicated upon the evidence of the problem presented at these hearings, upon the findings of the League, and upon the reports submitted to your Commission by the Institute of Government of the University at Chapel Hill and by Mr. James Burch of the Statistical Division of the State Highway and Public Works Commission.

The following data is submitted to substantiate the recommendations submitted.

Roads and streets are an essential, costly and comprehensive function of organized government. The rapid growth of automotive transportation and its close relationship to our economy has brought new demands, which the municipal street system is not now meeting, and which it cannot meet without greater state aid or without imposing confiscatory taxes on all real property.

The North Carolina League of Municipalities believes that this problem should be considered by the State-Municipal Roads Commission from two points of view. First, from the standpoint of equity in expending highway user revenues, and, second, from the standpoint of the well-being of all the people of the state.

Since 1931, the State of North Carolina has assumed sole responsibility for the maintenance and improvement of its primary and secondary rural roads, financing them exclusively from a highway users' tax. However, in adopting that policy of 100% contribution by the motor vehicle user for state and county highway systems, the state has discriminated against 35% of its citizens who live in its municipalities, for the cost to urban roads or streets is borne primarily by a tax on the land.

According to the Bureau of Planning and Statistics of the N. C. State Highway Commission, and a study made by the Institute of Government at the request of your Commission, urban motor vehicle traffic contributes from 30% to 37% of the total highway department revenues, and only benefits to the extent of approximately 4% of the State Highway Department's expenditures. It can readily be seen that this spread between revenues and expenditures, as far as the urban citizen is concerned, is grossly unfair and inequitable.

The Bureau of Planning and Statistics further shows for the year 1948 that municipalities of the State spent $17 million in construction and maintaining those roads called "streets." The state paid 9.8% of this cost (not including funds to match Federal funds). However, at the same time that the state made this contribution towards the cost of mainaining the municipal street system, it imposed a gasoline tax on the fuel used in municipally owned and operated motor vehicles in the amount of $275,000 (according to Institute of Government report), which amounts to approximately ¼ of the State's allocation for 1948 for road work inside the corporate limits of the municipalities. From the highway user's viewpoint, this means that 96% of the revenues extracted from him are spent on roads that carry only from 63% to 70% of the total traffic. The recent rural road bond issue greatly increases these figures.

Municipal streets are now maintained from the levy of an ad valorem tax which averages on a state-wide basis to an equivalent of 62c on each $100 valuation, this being in excess of ⅓ of the total amount of tax which the municipalities are permitted by law to levy for all their general operating purposes. And, the maintenance and construction of streets is but one of the many functions municipalities are required to perform efficiently and effectively.

Contrary to the expressed opinion of some, the financial crisis municipalities face is an important factor in the consideration of the problem. At the time the State Highway Commission relieved the counties of their road responsibility, the determining factor was the inability of the counties to carry on their road program and the resultant economic effect upon the state as a whole. This is exactly the condition that now exists in the municipalities. Municipalities, levying all the tax that property can bear, are unable to meet the street demands of modern traffic. In some instances, an urban property owner will pay three taxes for a single street improvement. In other instances, urban citizens are being denied streets because of the cost involved. The municipal financial condition has resulted in the astounding fact that over 50% of municipal streets are unimproved. This is in the face of the fact, that, on a statewide basis, there are more than 200 people per mile of streets in the urban areas as compared to 41.5 on the rural state highways and 27.1 on the rural county roads.

Failure of the state to recognize the facts will inevitably lead to municipal bankruptcy, for already their financial pressure has created obsolete municipal street systems, overtaxed property, and a second class citizenry so far as sharing in state benefits is concerned.

Reports compiled by the Institute of Government at Chapel Hill and the Division of Planning and Statistics of the State Highway Commission have been filed with your Commission. For this reason the League has foregone the filing with your Commission of a more detailed brief setting forth statistical data to support its recommendations. The League commends the two aforementioned reports to your Commission as they substantiate the League's recommendations.

Statement Clarifying the Foregoing Recommendations[2]

Since the League filed its recommendations for the construction, maintenance and improvement of municipal streets with the State-Municipal Road Commission, some misunderstanding has arisen over the use of the word "responsibility" in those recommendations in referring to the suggestion that the State Highway and Public Works Commission construct, maintain and improve city streets. . . .

The word "responsibility" in these recommendations was intended to mean financial responsibility in the way of direct allocations of funds to municipalities or by services, the circumstances deciding the factor.

APPENDIX O

STUDYING TOTAL ROAD NEEDS[1]

Mr. G. Donald Kennedy has written an article entitled "Planning the Statewide System of Highway Transportation," appearing in *Traffic Quarterly* (July, 1949). Mr. Kennedy was, at the time, Vice President of the Automotive Safety Foundation, Washington, D. C.

Mr. Kennedy suggests that building highways in a state over a period of years without a formulated plan is an open invitation to waste and loss of time. The type of study that he suggests to formulate such a plan is one to measure total requirements in a state on all road systems. "All of the road and street systems within a state should be studied on a statewide basis. To attack state primary needs, or local road needs or street-needs alone is like setting up a family budget without counting all the children."

"Modern highway planning, by analyzing all factors that have to do with highway transportation, has the aim of producing a comprehensive report and guide which will portray highway needs and will outline long-range programs for all road systems to adequately meet these needs."

Such a study,[2] as Mr. Kennedy sees it, should include the following parts:

Historical Study—This shows the development of the present highway system, how the relationships between the state, counties, and cities have developed, and the sources and allocation of present highway funds.

Highway Usage—Origin and destination surveys are made, and traffic volumes on the road and street systems by the hour, day, week, and month are determined. This indicates traffic trends and permits estimates of future traffic as an underlying guide to road design.

Relation of Highways to State Economy—This involves an examination of the per capita income, wealth, population density, and land use of the state in order to determine the permanency or growth of the state economy, which is in turn of vital concern in the determination of the annual highway program.

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[2]This statement was contained in a letter dated August 25, 1950, from Mrs. Davetta L. Steed, Executive Secretary of the League of Municipalities, to the author of this report.

[1] This summary of the article cited in the first paragraph was prepared for the State-Municipal Road Commission by the Institute of Government.

[2] The Automotive Safety Foundation, of which Mr. Kennedy was an officer, has participated in at least 8 such studies. Studies in California, Michigan, Washington, Nebraska, Oregon, Kansas, and Mississippi have already been completed, and one in Ohio is underway. As a consequence, Mr. Kennedy is speaking at first-hand of these studies.

Traffic Operations—This is an investigation of the best use that can be made of present facilities through the use of traffic engineering devices and procedures; of the increase in present capacity and safety with improvements of a minor nature; of the adoption of a long-range plan to provide major traffic facilities. The latter includes expressways where necessary to carry large volumes of traffic.

Classification—This involves the classification of roads and streets into manageable systems, according to the predominant type of service. This divides the roads and streets into major traffic arteries and land service routes. It enables the best use to be made of present facilities, which, though below par, contain much valuable service, and is the basis for a recording of deficiencies with a program of correcting such deficiencies according to a priority of need.

Determination of Annual Program—This analyzes the future needs to synthesize required stop-gap improvements, maintenance costs, and the long-range improvement needs; it investigates costs and anticipated revenue in order to present to the state all factors relevant to the determination of the annual program within a long-range 10-, 15- or 20-year improvement program.

Administration—This is an investigation of present highway administration with recommendations deemed necessary for the execution of the program.

Mr. Kennedy closes the article by recommending the making of such state-wide surveys, indicating that the support given the ones already made reveals the wisdom of them. He adds: "Certainly the huge investments in various phases of highway transportation, and the vast use of facilities, warrant top-level study and management."

APPENDIX P

GASOLINE TAXES PAID BY NORTH CAROLINA CITIES AND TOWNS[1]

One of the complaints voiced most often by the cities and towns is the fact that they have to pay gasoline taxes on gas burned in municipally-owned vehicles while driving over city streets. This has been most dramatically stated in the case where a city fire truck has gone to a fire on State property; gas taxes have been paid on gas burned going to the fire and on gas burned while pumping water on the fire. Thus while serving the State the town has had to pay gas taxes to the State.

Other facts regarding this problem were mentioned to the Road Commission. In Tarboro in 1948-49 the town's share of the Highway Fund allocation was $2,600, and gas taxes paid on city vehicles amounted to $2,400. In Rocky Mount, the city pays in gas taxes an amount equal to more than 20% of its present allocation.

The table on this page has been prepared to indicate by population group the gas taxes paid by the 362 active cities and towns. Information was presented to the Commission by about 60 towns, and this has been expanded to represent the total for all cities and towns in the State.

In the last column of the table the percentage of the population group's average allocation from the Highway Fund that is represented by the gas taxes paid is indicated. The average allocation was set out in the fifth column of Table I, Appendix K. For example, in the group of cities having a population of over 50,000, the average allocation is seen from the latter table to be $89,000; the average gas taxes paid amount to $10,000, as can be seen in the table on this page. Consequently, 11% of the allocation in that group is returned to the State in the form of gasoline taxes paid on city-owned vehicles. (Again it must be remembered that the allocation is not the only aid received by cities and towns from the State, and these percentage figures must be read with this in mind.)

[1] This summary of city and town officials' arguments on gas tax payments by cities and towns has been prepared for the State-Municipal Road Commission by the Institute of Government.

TABLE I
Gasoline Taxes Paid by Cities and Towns in North Carolina

Population Group	Average Gas Tax Paid	Total Gas Tax Paid by Group	Gas Taxes Paid as a Percent of Allocation
Over 50,000	$10,000	$50,000	11%
25,000-50,000	6,300	25,000	13%
10,000-25,000	2,800	48,000	12%
5,000-10,000	1,600	30,000	15%
2,500-5,000	600	19,000	8%
1,000-2,500	300	28,000	8%
Under 1,000	400	78,000	15%
Total		$278,000	12%

Source: Reports of cities and towns to the State-Municipal Road Commission.

APPENDIX Q

STATE AID TO CITIES AND TOWNS IN STATES WHERE THE HIGHWAY COMMISSION CONSTRUCTS AND MAINTAINS A LARGE PORTION OF RURAL ROADS[1]

In most of the states of the United States the state highway commission or its counterpart constructs and maintains only those rural roads forming the state, or primary, highway system, leaving to the counties the construction and maintenance of the rural roads forming the county, or secondary, road system. Three states, Virginia, West Virginia, and Delaware, are like North Carolina in that the highway commission is responsible for all rural roads. Another, South Carolina, has embarked on a program whereby the state is taking over approximately 1600 miles of secondary roads each year. One other, Maryland, has an optional system whereby each county can ask that the State Roads Commission construct and maintain the secondary road system in the county, using the county's share of the highway fund to do the work. Since these five states are meeting the road problem in a way that is somewhat similar to North Carolina's, there follows a summary of the aid given to cities and towns in those states for the construction and maintenance of streets.

Delaware, West Virginia, and Virginia

Of the three states that have taken over all primary and secondary highways and roads, two, Delaware and West Virginia, have met the question of aid to municipalities in a similar way: the streets that form part of the primary highway system are constructed and maintained by the Highway Commission; in addition, some of the streets that form part of the secondary system are constructed and maintained by the Commission, Delaware having taken over a larger percentage of such streets than West Virginia. The responsibility for the remaining street mileage lies with each city and town, and no allocations from highway user revenues are made to cities and towns.[2] Virginia, on the other hand, has a more complex policy. In cities and towns containing less than 3,500 people, the Highway Department builds and maintains all streets forming part of the primary highway system and up to two miles of secondary streets. After 1948, the mileage of secondary streets to be constructed and maintained can increase at the rate of one-fourth mile per year. Cities containing over 3,500 people receive two types of aid: (1) they receive $4,000 a mile per year for the construction and/or maintenance of streets forming part of the primary highway system, and (2) they receive $300 a mile for all other streets which have an unrestricted right-of-way width of 40 feet and a hard surface width of 20 feet. These per-mile payments will increase or decrease in the future in relation to the general increase or decrease in funds available for all highway purposes. In addition, cities of over 5,000 people are eligible for Federal Aid, and when such a

[1] Information contained herein was compiled for the State-Municipal Road Commission by the Institute of Government.

[2] See letters from the State Highway Department of Delaware (Exhibit 1) and from the State Road Commission of West Virginia (Exhibit 2) below.

city receives Federal Aid, the state matches that city 50-50 in putting up the funds required to match the Federal funds.[3] In the absence of Federal Aid, the state can match these cities 50-50 for construction projects on streets forming part of the primary highway system.

South Carolina

South Carolina, like Delaware and West Virginia, allocates no funds to municipalities, but instead the Highway Department constructs and maintains all streets forming part of the primary highway system. The responsibility of the Department extends to curbs, gutters, storm drains, and sidewalks.[4] In addition, the 1600 miles of secondary roads added to the state highway system each year include a considerable mileage of streets connecting with such roads, and these streets are then taken over by the Highway Department.[5]

Maryland

In Maryland the situation is different from that in the other four states in that the State Roads Commission takes over a county road system only when asked to do so by the county. Road policy in Maryland consists of a basic allocation of revenues with two possible variations. Basically, highway revenues are allocated 50% to the State Roads Commission for constructing and maintaining the rural state highway system, 30% to Baltimore City, and 20% to the counties of the state. The share of each county is determined by the proportion that the mileage of roads (excluding primary highway system roads) in the county plus the mileage of streets in the cities and towns in the county bears to the total mileage of all county roads and streets. Within each county the money is allocated to each city and town in the proportion that the total mileage of streets in that city or town bears to the total mileage of all roads (excluding primary highway system roads) and streets in the county. Under this basic allocation the county and each city and town maintain their own roads and streets respectively, the cities and towns being responsible for all streets. The first variation of the basic allocation provides that any county may ask the State Roads Commission to take over all county roads in that county, and in such a case the Commission constructs and maintains the roads from the county's share of the highway revenues that would otherwise be paid to the county in cash. About thirteen counties in Maryland have their roads handled by the Commission. In these counties the share of the revenues that is allocable to the cities and towns is still paid to the latter in cash. The second variation concerns additional aid to cities and towns and provides that the Commission may, at the request of a city or town, take over the streets that form part of the primary highway system. This involves giving to the Commission complete authority over such streets except as regards police protection, and not all cities and towns have requested the Commission to do so.[6]

No information is available at this time with respect to the money spent in cities and towns by the Highway Commissions of Delaware, West Virginia, and South Carolina. The Virginia Highway Department estimated in 1949 that the contribution to cities and towns would amount to about $3,600,000 from the state and about $1,400,000 from the federal government. In Maryland the contribution was about $417,000 in 1947-48, exclusive of the amount transferred to Baltimore City; the latter received over $8,000,000.

As can be seen from the letters attached, there seem to have been no studies of the problem of allocating highway revenues to cities and towns in these five states.

For comparative purposes a table (Exhibit 6) is set out to show the mileage of rural roads and city and town streets under the control of the respective highway commissions, and to compare such mileage with total highway user revenues.

[3] See letter from the Department of Highways of Virginia (Exhibit 3) below.

[4] For mention of this responsibility, see *Public Roads* (June 1949), p. 178.

[5] See letter from the State Highway Department of South Carolina (Exhibit 4) below.

[6] See letter from the State Roads Commission of Maryland (Exhibit 5) below.

EXHIBIT 1

STATE OF DELAWARE
STATE HIGHWAY DEPARTMENT

Dover, Delaware
August 4, 1949

Mr. John Alexander McMahon
Assistant Director
Institute of Government
University of North Carolina
Chapel Hill, N. C.

Dear Mr. McMahon:

I wish to acknowledge your letter of August 1st, with reference to the problem of allocation of state highway revenues to municipalities as an aid to them in the construction and maintenance of city streets.

There have been no studies conducted in the State of Delaware relative to this problem. In Delaware the State Highway Department is responsible for all rural highways and approximately 140 miles of through and connecting links within municipalities. The responsibility for the remaining street mileage in municipalities lies with the local authorities. In addition we do not allocate funds to the municipalities for the construction or maintenance of their local street system. However, there are many occasions when the Department agrees to cooperate with the local authorities on specific projects.

I trust that the information contained herein will satisfy your requirements and if there is any further information that we can supply, please do not hesitate to call upon us.

Very truly yours,
STATE HIGHWAY DEPARTMENT
/s/ W. B. McKendrick, Jr.
Assistant Chief Engineer

WBMcK.Jr.ch

EXHIBIT 2

THE STATE ROAD COMMISSION
OF WEST VIRGINIA
CHARLESTON 5

August 11, 1949

Mr. John Alexander McMahon
Assistant Director
Institute of Government
Chapel Hill, North Carolina

Dear Mr. McMahon:

This will acknowledge receipt of your letter of August 1, 1949, on the subject of allocation of State Highway Revenues to Municipalities as an aid to the latter in the construction and maintenance of City streets.

In reply, you are advised that those sections of city streets which are integral parts of the State Highway System are constructed and maintained by the State Road Commission. No contributions or allocations are made to municipalities from highway revenues. Such allocations are barred by Constitutional Amendment adopted in 1942, whereby, the use of highway funds was limited to highway construction and maintenance.

As a possible aid in your investigation, I call to your attention Page 21 of the Annual Report of the American Association of Highway Officials for the year 1947. Page referred to is enclosed herewith. You will note that only seven states make allocations of $3,000,000 or more to Municipalities from Highway funds.[7]

The above information of page 21 was prepared by the Public Roads Administration. It is suggested that you might obtain a large amount of data by communicating with the Public Roads Administration Federal Works Agency, Washington, D. C.

Very truly yours,
/s/ Ray Cavendish
Commissioner

RC/kf

[7] Footnote by addressee: The reference is to Table SF-6 of the Publication entitled "Highway Statistics - 1946," published by the Public Roads Administration. The seven states allocating more than $3,000,000 a year to municipalities in 1946 were California, Illinois, Indiana, Maryland, New York, Ohio and Washington.

EXHIBIT 3

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HIGHWAYS
RICHMOND 19

Urban Aid

August 8, 1949

Mr. John Alexander McMahon
Assistant Director
Institute of Government
University of North Carolina
Chapel Hill, North Carolina

Dear Mr. McMahon:

This is in answer to your inquiry of August 1 regarding highway aid to cities:

1. Based on the traffic of 1948 cities of 3500 population and over receive for the maintenance and/or construction of extensions and connections of the primary system within such cities, aid at the rate of $4,000 per mile. This $4,000 per mile is a "floor." The rate of payment increases after 1948 in relation to the general increase in funds available for all highway purposes.
2. Cities above 3500 population receive for all streets, other than extensions of the primary highway system, which have an unrestricted right of way width of 40 feet and a hard surface width of 20 feet, aid at the rate of $300 per mile, based on the traffic of 1948. After 1948 the per mile payment increases or decreases in the same relation that funds available for all highway purposes increase or decrease.
3. In cities of 5,000 population and over the State matches the cities 50-50 in matching urban Federal-aid. For example, Virginia receives from the Federal Government approximately $1,400,000 per year, which can only be spent on the Federal Aid System within cities of 5,000 population and over. Federal funds can be used to the extent of only one-third of the total cost of rights of way and one-half the cost of construction. An urban project would be financed as regards rights of way, one-third Federal, one-third State, and one-third City. As regards construction, it would be financed one-half Federal, one-fourth State, and one-fourth City.
4. Where no Federal aid is available, the Highway Department can match the cities 50-50 in the construction of extensions of the primary highway system. This past year $1,000,000 of State funds were provided for matching a like amount from the cities where no Federal funds were available.

In places of less than 3500 population, the Highway Department builds and maintains at its own expense all extensions of the primary highway system and up to two miles of secondary streets. After 1948, the mileage of secondary streets can increase at the rate of one-fourth mile per year.

The payments to cities have not been based on any scientific study and analysis; rather, it has been by legislation, simply to give the cities some aid in the construction and maintenance of highways. Whether or not it is an equitable or justifiable method could be the subject of endless debate. All in all the contribution to cities in State and Federal funds amounts this year, roughly to $5,000,000.

Sincerely yours,
/s/ Burton Marye, Jr.
Assistant Chief Engineer

BMjr:ek

EXHIBIT 4

SOUTH CAROLINA
STATE HIGHWAY DEPARTMENT
COLUMBIA

August 5, 1949

Mr. John Alexander McMahon
Assistant Director
Institute of Government
University of North Carolina
Chapel Hill, North Carolina

Dear Mr. McMahon:

I have your letter of August 1st requesting information concerning the allocation of State highway revenues to municipalities in this State for use in the construction and maintenance of city streets.

No highway funds are allocated directly to municipalities in this State, but a large amount of street work is performed within the cities and towns under Highway Department supervision. In 1938, the Highway Department incorporated into the State Highway System all extensions of State highways into and through municipalities. The construction, reconstruction, and maintenance of these streets is now a Department responsibility.

In addition to these through-highways, approximately 1600 miles of secondary roads are being added to the State Highway System each year, and these additions include a considerable mileage of city streets. Both the mileage to be added and funds for secondary road construction are allocated to the various counties of the State based one-third on area, one-third on population, and one-third on road mileage. The final allocation of mileage and construction funds is then made upon the recommendation of the legislative delegation in each county. In actual practice, therefore, the use of Secondary State Highway funds within municipalities is left to the discretion of the county delegations.

If any additional information is desired in connection with this matter, please let me know.

Your very truly,
/s/ C. R. McMillan,
Chief Highway Commissioner

EXHIBIT 5

STATE OF MARYLAND
STATE ROADS COMMISSION

108 East Lexington Street
Baltimore 3, Md.
August 10, 1949

Mr. John Alexander McMahon
Assistant Director
Institute of Government
University of North Carolina
Chapel Hill, North Carolina

Dear Mr. McMahon:

This is to advise in connection with your inquiry relative to assistance rendered the various municipalities of this State as follows:

The allocation of receipts of the Gasoline Tax and funds from the Commissioner of Motor Vehicles are made 50 percent to the State Roads Commission, 30 percent to Baltimore City, and 20 percent to the counties of the State.

Incorporated towns or areas within the counties receive proportionately the share of funds paid the county based on the mileage of roads and/or streets within the town as compared to the total mileage of the individual county.

To give you a specific idea of the amounts received by the individual towns in this State, I am forwarding the last report of the State Roads Commission covering the years 1947-1948 and would refer you specifically to pages 186-190 for details.

Further, there is made available under the Federal Aid Urban Highway Act to towns having a population in excess of 5,000 the proportionate part of the Urban funds that the population of the individual town bears to the total population of all towns in excess of 5,000.

I trust that this will clarify the operation within the State of assistance rendered to the municipalities.

Very truly yours,
/s/ Robert M. Reindollar
Chairman

ASG:R

EXHIBIT 6

Mileage Of Roads And Streets Under State Control
December 31, 1947

State	Rural Roads Under State Control: State Highway (Primary) System	Rural Roads Under State Control: Secondary, or County Road System	Rural Roads Under State Control: Total	Streets Under State Control Forming Part of: (a) State Highway (Primary) System	Streets Under State Control Forming Part of: (a) Secondary, or County Road System	Streets Under State Control Forming Part of: (a) Total	Total Highway Revenues, 1947*
N. C.	10,330	50,449	60,779	1,032	1,124	$57,515,000	2,156
Dela.	1,015	2,741	3,756	103	45	4,222,000	148
W. Va.	4,485	28,349	32,834	399	46	25,252,000	445
Va.	9,047	38,456	47,503	277	(b)	45,150,000	------
S. C.	7,264	9,195	16,459	(c)	(c)	24,778,000	1,063
Md.	4,428	(d)	4,428	93	(e)	29,416,000	93

(a) The figures hereunder are not strictly comparable. The totals for Delaware, West Virginia, South Carolina and Maryland represent streets constructed and maintained by the respective Highway Commissions; the total for Virginia seems to represent streets in cities under 3500 people which are constructed and maintained by the Highway Department, and does not include streets in cities over 3500 which receive $4,000 per mile per year. The total for North Carolina represents all city streets forming part of the State Highway and County Road Systems; generally speaking, these streets are constructed and maintained in part by the municipalities' share of highway revenues ($1,000,000 in 1947) and the rest of the expense is borne by cities and towns themselves.
(b) The mileage of secondary streets is included in the mileage of secondary roads; the exact figure is not available.
(c) A breakdown of the total of 1,063 miles of streets under State control as between the Primary System and the Secondary System was not available.
(d) At this time the State Roads Commission was maintaining 3,738 miles of county roads in 11 counties but the cost of the work was defrayed from each county's share of the highway revenues (From the Report of the State Roads Commission of Maryland, Operating Report and Financial Report for the Fiscal Years 1947-1948.)
(e) No secondary streets are maintained by the State Roads Commission.

*Source: Table SF-1 Highway Statistics-1947; Total Highway Revenues include gas taxes, registration fees motor carrier taxes and road, bridge and ferry tolls.

Source: Table SM-1, Highway Statistics—1947, Public Roads Administration, Federal Works Agency, published by U. S. Government Printing Office.

APPENDIX R

METHODS OF DETERMINING THE ALLOCATION OF HIGHWAY REVENUES AMONG DIFFERENT CLASSES OF ROADS AND STREETS[1]

There have been a number of studies made in the United States concerning the financing of roads and streets with a view toward determining what proportion of the total cost of roads and streets should be borne by the people who use them. These people, usually called "highway users," pay gasoline taxes, registration and license fees, and motor carrier taxes, most of the proceeds of which are used on roads and streets in the particular state levying the taxes. The revenue that these taxes bring, however, is never sufficient to pay for the expense of all roads and streets in the state, and so some of the expense must be borne by other types of taxation. Ad valorem taxes and street assessments are the most common of these latter types. The studies attempt to determine what proportion of the total expense should be borne by highways users and what proportion should be borne by other taxation.

Included herein are the findings of fourteen such studies. The significant thing about all of them is the universal agreement that roads and streets provide joint benefits to both highway users and the general public, and that road and street costs should be borne by them jointly. The benefit to the highway user is, of course, his use of roads and streets to get from one place to another in his motor vehicle. The benefit to the general public consists of: (a) the value that the road or street provides to adjacent property in providing ingress and egress to it, for access to property would be necessary even if there were no motor vehicles; (b) the value to the public from the telephone and telegraph lines, drainage systems, water and sewer lines, and gas and power lines that occupy the right-of-way; (c) the value to the public from the use of the road or street by governmental agencies in providing mail service, police and fire protection, and transportation to the public schools; (d) the value to the public that accrues from ease in transportation in the growth of trade, culture, and learning.

The agreement on the fact that roads and streets provide joint benefits to both highway users and the general public does not result in agreement on the methods of measuring the relative benefits to each nor to the determination of what portion of the cost should be borne by each. In the fourteen studies there are found six different methods of measuring the benefits, and even when studies use similar methods they fail to agree on the proportion of costs to be borne by highway users and by the general public.

Before examining the studies themselves, one other thing must be pointed out: the underlying purpose of all the studies was not the same. Four were made to determine whether or not highway users are being subsidized by the general public. The railroads have contended for a long time that motor vehicle taxes were not sufficient to pay the share of road and street expense properly attributable to the highway user, and hence that motor carriers were being subsidized by the general public to the detriment of the railroads. Two studies were made to prove that motor vehicle taxes were not excessive, and hence that particular state taxes were not a burden on interstate commerce. Eight were made to determine what proportion of future road needs should be raised by motor vehicle taxes and what by other taxes. In all the studies, however, an examination of the problem was made that involved analyzing separately the primary highway system, the county road system, and the street system, in order to determine what proportion of the cost of each system should be borne by the highway user. Consequently each has attacked the problem of what joint benefits arise from the use of streets as a prelude to determining what part of the cost of streets should be borne by highway users. It is the solution to this problem that is relevant to the question of the sharing of highway revenues with cities and towns. Furthermore, in getting the answer to that question the difference in underlying purpose has had no effect and hence will not be taken into account beyond pointing out what the purpose has actually been in each study.

The studies have been arranged, in the paragraphs that follow, according to the different methods of determining what proportion of the road and street cost should be borne by highway users and what by other types of taxation.

The Added Expenditure Method

This method is based on the assumption that highway users should bear all that part of the cost of roads and streets that has been added by virtue of the advent of the motor vehicle. Conversely, that part of the cost of roads and streets that is equal to the cost of pre-motor-vehicle roads and streets should be borne by other taxes. For example, if the average city or town in North Carolina spent $6 per capita each year on streets back around the turn of the century before motor vehicles appeared in any numbers, and now spends $10 per capita each year, then according to this method, motor vehicle taxation should pay for the added $4, or 40% of the total street bill in such an average city or town. And other taxes, such as ad valorem taxes and street assessments, should provide the rest.

The following studies were made using this method, and the percentages of the cost of each road or street system assignable to motor vehicle taxation is indicated.

[1] The analysis of these methods was made for the State-Municipal Road Commission by the Institute of Government.

Study	Primary Highways	Secondary and Local Roads	Streets
Federal Coordinator of Transportation	83	34	30
Breed, Older, and Downs	91	91	48
Ennis	88	88	42.5
Glover	90	60	50
Werbitsky	90	66	50

The study of the Federal Coordinator of Transportation is to be found in Vol. IV of *Public Aids to Transportation*, (U. S. Government Printing Office, 1940). The study was made at the request of the railroads to find out whether or not motor vehicles were paying their fair share of the cost of roads and streets. The percentages indicated in the above table represent the share of each road system that was attributable to highway users in the years 1933-1937. In effect, the study indicates that 30% of the cost of city streets during the period in question should have been paid from motor vehicle taxation. This figure was arrived at by taking the average per capita expenditure for streets for the years 1903-1915, comparing it to the per capita expenditure in 1933-1937, and after making allowances for the change in the price index, charging the increased cost to motor vehicle users.

The study by C. B. Breed, Clifford Older, and W. S. Downs is found in a book entitled *Highway Costs*, published in 1939, a report to the Association of American Railroads. The authors also determined, for the period 1933-1937, the percentages of road and street costs assignable to motor vehicle taxation. The difference in these results from those of the Federal Coordinator seems to stem from the fact that Breed, Older, and Downs did not choose to consider the change in the price index through the years, and in addition selected a different year, 1904, to represent pre-motor-vehicle expenditures.

The study by W. D. Ennis is entitled *Motor Vehicle Taxation in New Jersey* and was published in 1935. Unlike the first two, which were nation-wide studies, this study is limited to highway and street costs in New Jersey. The study itself was a report to the New Jersey Taxpayers Association and was prepared at the request of the Associated Railroads of New Jersey. In the study, one of the methods used of ascertaining the proper share of highway costs attributable to the highway user was the added expenditure method, and Mr. Ennis' result is indicated in the above table.

The study by V. L. Glover, of the Illinois Division of Highways, is entitled *A Study of Highway Costs and Motor Vehicle Taxation in Illinois* and was published in 1938. It is limited to the costs in Illinois. The purpose of the study was to ascertain the share of highway costs properly attributable to the motor vehicle and to find out whether motor vehicle taxes were an undue burden on interstate commerce.

The study by H. M. Werbitsky, of the Missouri State Highway Department, is entitled *Study of Missouri Highway and Street Cost Chargeable to Motor Vehicles* and was published in 1937. It is to be found in a brief submitted for the defendant State Highway Commission in the case of *Bashear Freight Lines, Inc. v Public Service Commission of the State of Missouri, et al*, in the U. S. District Court for the Central Division of the Western District of Missouri (date and citation not known). The study was limited to costs in Missouri and was for the purpose of showing that motor vehicle taxation in that state was not an undue burden on interstate commerce.

The best statement of the argument in support of the use of the added expenditure method as a way of ascertaining the fair share of the different road systems attributable to highway users is made by Mr. Glover. He takes the position that the amount which the public was willing to contribute through general taxation for road and street expense before the advent of the motor vehicle is the logical measure of the non-highway use of streets, and hence is that amount which should now be borne by taxes other than motor vehicle taxes. The arguments against the use of the added expenditure method are numerous. For one thing, if the per capita expenditure did not increase from 1900 to the present, then by this method the motor vehicle would pay nothing for the use of the highways. In addition to the fact that old records are bad, there is a great deal of arbitrariness in deciding what year or years are to be considered the base period, or in other words, what year marks the advent of the motor vehicle. This difficulty is clearly seen in the divergent results of the five studies. For another thing, this method assumes that roads and streets were adequate for transportation purposes before the advent of the motor vehicle and ignores the fact that "good roads movements" antedated automobiles. Finally, there is the problem of comparing dollar expenditures 50 years ago with dollar expenditures today, because methods of construction have changed, along with the cost of materials and labor, and there is no way of setting one of these off against the other.

The Predominant Purpose Method

This method was suggested by Thomas H. MacDonald in 1932. (See the Proceedings of the Tenth Annual Asphalt Paving Conference, 1932, pp. 7-14, and also MacDonald's statement in "Making the Public Roads Pay," *Bus Transportation* (January 1933), p. 8.) According to this method the entire cost of each type of road would be paid for by those who receive the most benefit. The result is that property owners would pay the entire cost of local roads, and motor vehicle operators would pay the entire cost of federal and state highways and major county and intermediate roads.

A similar approach has been suggested by Charles L. Dearing in *American Highway Policy* (1941), esp. pp. 154-63. He would divide roads into three classes, financed as follows: (1) general purpose or inter-community roads, the cost of which would be paid by highway users; (2) local or land-service roads, to be paid for by assessments against abutting property owners; (3) an intermediate group of community-service roads, to be paid for by a "general levy on local taxpayers."

Streets are not considered in either of these studies.[2]

The Predominant Purpose Method has been used in three recent studies concerned with financing future highway development, one in Washington, one in California, and one in Kansas. In the Washington study (by Mr. James C. Nelson, entitled *Financing Washington's Highways, Roads and Streets* and made in 1948) this method was used as one of the recommended ways to finance future development. As interpreted therein, the method resulted in the assignment of the following types of roads and streets to the State Department of Highways for construction and maintenance, the cost of which would be borne by motor vehicle taxation: (1) the intercommunity highway system carrying interstate and intrastate travel and transport; this corresponds to the State Highway System in North Carolina and includes streets which form a part of the system; (2) county trunk roads, which are the major arterial roads in each county, and which "connect major populated areas within the county, provide connections between state highways and alternative service for state routes, and serve consolidated schools and recreational areas;" (3) arterial streets (other than those forming part of the State Highway System) which "include the principal streets upon which the activity of a city is built; they move large volumes of traffic between outlying areas and the downtown district and link the major units of the city so as to facilitate traffic interchange." Under this procedure the local feeder county roads and the local access city streets would be the responsibility of the taxpayers of the locality.

A somewhat similar result was obtained in California in a study made by Bertram H. Lindman entitled *A Proposed System of Highway Financing for the State of California*, made in 1946. That study recommended (1) that the cost of constructing and maintaining the State Highway System, including streets forming a part thereof, be borne by motor vehicle taxation; (2) that the cost of constructing and maintaining local roads and streets be borne by the taxpayers of the locality; (3) that the cost of *constructing* county primary roads and streets of major importance be borne by motor vehicle taxation, but that the cost of *maintaining* such roads and streets be borne by the taxpayers of the locality. (It is to be noted that in the legislation that resulted from the California study the Highway Commission was made responsible for constructing and maintaining streets on the primary system; that the proceeds of 3/8 of a cent of the gas tax was allocated to cities to construct streets of major importance; and an

[2]The Institute of Government was not able to find copies of the two studies referred to. The discussion of them was taken from the *Report on Public Aids to Domestic Transportation*, House Document 159, 79th Congress, 1st Session, at page 253.

additional 2/8 of a cent was allocated for maintenance of both streets of major importance and other streets.)

The Kansas study, made in 1948 by the Research Department of the Kansas Legislative Council and entitled *Highway Finance Estimates*, came to a result identical with that of the California study.

This Predominant Purpose Method has the appeal of simplicity. The disadvantages to it arise in the problem of definitions and deciding into what class a road or street falls.

The Relative Benefit Method

This method was used in the *Report on Public Aids to Domestic Transportation* (House Document 159, 79th Congress, 1st session), prepared by the Board of Investigation and Research. Like the study of the Federal Coordinator of Transportation, it was prepared in answer to the question of whether or not motor transportation was being subsidized. The method attempts to assign road and street costs among highway users, abutting property owners, and the general public, according to the relative benefit that accrues to each class. The study decided that a short trip is more of a benefit to people in their capacities as property owners and residents of a local community rather than as members of the general class of highway users, and so the cost of providing the facilities for the trip should be borne by general taxation. Conversely, the facilities for long trips should be paid for by motor vehicle taxation. The study compares travel on primary highways, secondary highways, and streets and the local and non-local use of each system, examines origin and destination studies and length-of-trip statistics, investigates land improvement adjacent to roads in the different systems, and analyzes the costs of the different road systems.

After examining the above considerations the Board arbitrarily assigns the following percentage shares of road and street cost to highway users for the different classes of roads in 1940:

Primary Highways	Secondary and Local Roads	Streets
85	30	40

The Public Roads Administration, in commenting on the study, agrees with the choice of method for allocating costs of the different systems among the several beneficiaries. Like the Board it sees little merit in either the "added expenditure method" or the "predominant purpose method." The PRA takes notice of the fact that there is no statistical support for the figures arrived at, but says that statistical support in any case would be based on arbitrary decisions. It finds that the conclusions on vehicle use and land use are sound and moderate.

The General vs. Local Use Method

This is the method recommended by the Joint Committee of Railroads and Highway Users and is as follows:

> "Motor vehicles should pay the entire cost of the State highway system. They should pay also a part of the cost of county and/or township highways, that part to be determined by the extent to which such county and/or township highways are in general use rather than local use. Furthermore, motor vehicles should contribute in part to the cost of arterial routes through cities. The Classification of highways between those of general use and those of local use, and the determination of the extent to which special motor taxes should be used to pay part of the cost of arterial routes through cities, should be made by the authorities in each State in the light of its local conditions."

This method was used in a study of the New Mexico State Highway Commission, entitled *Future Highway Requirements* of New Mexico, made in 1940. The study resulted in the assignment of the following percentage shares of future road and street costs to highway users:

Primary Highways, Including Streets forming part of the primary system	County Roads	Streets, Excluding Streets on the Primary System
100	30	15

The Highway Commission first decided that short trips (of less than ten miles) constitute a local use of roads rather than a general use. It then found from traffic surveys that 55% of the total travel on primary highways was by urban residents and assumed that this was general rather than local use. Next it found that 90% of all travel in New Mexico by foreign vehicles was on the primary system. It then decided these factors coupled with "the general use purpose for which the (primary) system is intended" led to the conclusion that the cost of the entire system should be paid by highway users. In addition, though there is no positive statement made, it seems that the cost of streets forming part of the primary highway system is to be borne in the same manner.

The Commission next determined from traffic surveys that about 70% of travel on county roads "is by rural residents served by the roads" and about 30% is by urban residents; travel by foreign vehicles on such roads is negligible. "It is entirely reasonable to assume that the travel on these roads by rural residents is largely local in character and consequently is primarily a benefit to property. On the other hand, the travel by urban residents is more nearly a direct benent to the road user. Of course, there is some road user benefit received by rural residents but, likewise, there is some property benefit received by urban residents and it is highly probable that these benefits offset each other." Following this reasoning the Commission concluded that about 30% of the cost of county roads should be borne by highway users.

In a similar way the Commission found that 84% of the travel on streets is by urban residents and 16% by rural residents; in addition, 10% of the total travel in New Mexico by foreign vehicles is on streets. The Commission then decided that 15% of the cost of streets should be borne by highway users. Here again there is no clear statement as to what is meant by "streets," but from reading the study as a whole it seems that streets other than streets forming part of the primary highway system are being considered. It is possible, however, to read into the study the following interpretation of street cost allocation: If a primary highway outside a city or town is two-lane, then the cost of putting a two-lane highway through the city or town should be borne completely by the highway user; if the highway inside the city or town becomes four-lane, either to provide for increased traffic or to provide for parking facilities, then the cost of the additional two lanes should be borne by the city or town; 15% of this cost, like the cost of the other streets, is then to be borne by the highway user.

The Basic Access Highway Responsibility Method

This method is presented in a study entitled *A Highway Improvement Program for Illinois* prepared by Griffenhagen and Associates. It "involves the assumption that the cost of a basic highway, i.e., a rural road or a street constructed to a minimum standard necessary to give abutting property owners reasonably good access to their properties, should be borne by others than highway users. The cost of highways constructed to standards over and above such a basic minimum, under this assumption, would be borne by highway users. The application of this method would result in the assignment of practically all of the cost of rural access roads to non-highway users, of a considerably smaller proportion of the cost of rural community service roads to non-highway users, and of practically none of the costs of rural through service routes to non-highway users. Similarly, practically all of the cost of purely 'local' streets would be borne by non-highway users, while most of the cost of urban through routes would be borne by highway users."

The advantages of this method, as pointed out in the Illinois study, are as follows: "(1) The fraction allocated to non-highway users is arrived at on what seems to be a fair basis. It has long been considered, for example, that the cost of a purely access street is a proper charge against abutting property. (2) The calculations entering into the fraction can be based on fairly definite figures. The need for arbitrariness is not so great as in the case of other methods. Estimates are more meaningful. (3) Joint benefits are recognized and costs are apportioned on a rational basis taking the joint benefits into account." In fairness to previous methods discussed, it should be pointed out that this is a very recent study, and hence this method has not been discussed or criticized in the other studies. Probably the only attack possible on this method is on its basic assumption that the cost of an access street or road is a proper charge against abutting property.

The authors of the study examined the road and street system in Illinois to ascertain what improvements were

necessary and then estimated the construction costs of these improvements. The results made up the proposed Illinois highway program. Following this, the "Basic Access Highway Responsibility Method" was applied to the program, and it yielded the following percentage shares to be paid by highway users:

Highway System	Improvement Program Cost per Improvement Mile (a)	Estimated Cost of Improvement Program per Mile of Basic Access Road	Percent Attributable to Highway Users
Primary rural	$124,754	$ 8,000	93.6
Primary urban	972,551	76,000	92.2
Primary System total	$242,598	$17,450(b)	92.8(b)
City thoroughfares	$289,745	$76,000	73.8
City access streets	77,239	76,000	1.6
City total	$137,757	$76,000	44.8
State aid (c)	$ 17,137	$ 8,000	53.3
Township (c)	8,730	8,000	8.3

(a) To arrive at this figure, the authors have taken the total cost of improvement needs in Illinois as determined by this study, and divided it by the number of miles that need improving.

(b) Weighted average.

(c) Illinois has divided the road system that in North Carolina is called the County Road System into two systems: the state aid system and the township system.

The authors of the Illinois report have, on the basis of the above figures, recommended that highway users bear the following percentages of the cost of improvements to the different systems:

Primary, rural and urban	100%
State aid (secondary rural thoroughfares)	53.3%
Township (rural access system	0%
City thoroughfares	73.8%
City access streets	0%

The New Jersey Study

W. D. Ennis made a study in 1935 entitled *Motor Vehicle Taxation in New Jersey*. The study was a report to the New Jersey Taxpayers Association and was prepared at the request of the Associated Railroads of New Jersey. Probably as a result of the numerous methods available to compute the proper share of road and street costs attributable to highway users and the criticism directed at each, Mr. Ennis compromised and used the average of three of them. Like many compromises, the result attempts to combine conflicting theories of determining the highway users' share of road and street costs, and while such a maneuver may be supported as an attempt to answer the question of whether or not motor vehicles are being subsidized, it probably should not be carried to the extent of attempting to determine the share of future road and street costs to be allocated to highway users and to general taxpayers.

Of the three methods used to arrive at the final average, two we have seen before: the Added Expenditure Method, and the General vs. Local Use Method. The third is different from the ones discussed in the preceding pages and is called the "Extent of Use Method." It attempts to arrive at a figure which represents the percentage of total use of roads and streets attributable to taxable motor vehicles; hence, it excludes the proportion of use attributable to horse-drawn vehicles, bicycles, pedestrians, and governmental vehicles of all kinds such as military vehicles, postal service vehicles, and school buses.

No attempt is made, as there has been in all other studies, to separate primary highways from county or secondary highways; instead all rural roads are considered as a class. The following figures are arrived at for each method:

	Percent of Cost to Be Borne By Motor Vehicles	
	Rural Roads	Streets
Extent of Use Method	86	70
Added Expenditure Method	88	42.5
General vs. Local Use Method	75	30
Average	85	51

The average is not a strict numerical average, as Mr. Ennis gives only one-half the weight to the General vs. Local Use Method that he gives to the other two, because he says, the data is less comprehensive and accurate, and it is a less logical method.

APPENDIX S

APPROACHES TO THE ALLOCATION OF HIGHWAY REVENUES AMONG DIFFERENT TYPES OF ROADS AND STREETS AS USED IN STUDIES IN OTHER STATES[1]

There follow two approaches to the allocation of highway revenues among the different types of roads and streets. These approaches have been recommended in studies made of the road and street problem in other states. Included in the discussion of each is the possible application of the approach to North Carolina.

The "Predominant Purpose" approach

This approach has been recommended in three recent studies in Washington, Kansas, and California. It is discussed in Appendix R on pages 37 to 38.

Basically the predominant purpose approach divides the street and road systems in the state into different classifications. The predominant purpose of each classification is then determined, that is, who benefits most from the classification. It has been ascertained on the one hand that primary roads and the streets over which they are routed are of main benefit to the highway user generally; therefore, these roads and streets are constructed and maintained from highway revenues. Local roads and streets, which in North Carolina would include the bulk of secondary roads and all residential streets, are of primary benefit to property owners; therefore, these roads and streets are constructed and maintained by ad valorem taxation or property assessment. Arterial streets and important rural roads not on the primary system are constructed and maintained partially from ad valorem taxes and partially from highway revenues.

If this were to be applied to the streets of North Carolina, then the streets carrying State Highways would be constructed and maintained by the State. Other major streets, i.e., those which are cross-town arteries or business streets, would be supported partially by the State and partially by the town. Residential streets would be supported by the property owners, either from ad valorem taxation or by street assessments. One problem with this method, and it is one of the simplest methods there is, is classifying streets. When, for example, does a residential street become used to such an extent by traffic whose origin and destination is not on the street itself that it becomes an arterial street? When 25% of the traffic has neither its origin nor its destination on the street? Or not until 50% of the traffic has neither its origin nor its destination on the street?

The application of this method to North Carolina meets the additional problem of the present State policy with respect to rural roads. Is it fair to apply this approach to the street problem when all State Highways and County Roads are constructed and maintained by the State? There is no question about the fact that this method would give the cities and towns of the State more help than they are getting now, but is it sufficient when all secondary roads, most of which are "local-use" roads, are completely maintained by the State? Is it an answer to say that there are many rural roads not on the State Systems which must be maintained by the property owners themselves? These roads are seldom public ways. Moreover, almost all roads with a population density of 4 families to a mile are on the State Systems, and the mileage of streets with such a low density of population is very small if not infinitestimal.

The Illinois approach

This suggestion can best be explained by a quotation from a study entitled "A Highway Improvement Program for Illinois," by Griffenhagen and Associates, the quotation being found on page 201. "(It) involves the assumption that the cost of a basic highway, i.e., a rural road or street constructed to a minimum standard necessary to give abutting property owners reasonably good access to their properties, should be borne by others than highway users. The cost of highways constructed to standards over and above such a basic minimum, under this assumption, would be borne by highway users. The application of this method

[1]Prepared for the State-Municipal Road Commission by the Institute of Government.

would result in the assignment of practically all of the cost of rural access roads to non-highway users, of a considerably smaller portion of the cost of rural community service roads to non-highway users, and of practically none of the costs of rural through service routes to non-highway users. Similarly, practically all of the costs of purely 'local' urban streets would be borne by non-highway users, while most of the cost of urban through routes would be borne by highway users." (For a discussion of this approach in Illinois see Appendix R, pages 38 to 39.

Again we meet the problem of discrimination if such a method were applied to streets while all County Roads, including those which are purely rural access roads, are constructed and maintained by the State. For this method to be most fair would it not require that rural people as well as urban people be charged with the costs of construction of basic access roads or streets which provide them with access to their property?

This approach, if applied to city streets, would be more fair than the present allocation, for it would at least put all urban people on the same basis. Mention was made in the discussion of street assessments, in Appendix H, of the difference in the front foot assessments charged to different property owners in the State. Some were charged less than a dollar a front foot, whereas others were charged up to $10 a front foot. This approach could be applied to North Carolina in the following way: The cost of a purely residential street could be determined, and let's assume for the purposes of the example that the cost is $20,000 a mile without curb or gutter. If the property owners had to put up two-thirds of the cost exclusive of intersections this would amount to an assessment of about $1 a front foot, or $100 for a lot with 100-foot frontage. Curb and gutter might add an additional $1.50 a front foot. Now no matter what kind of a street had to be laid down in front of an owner's property, his only assessment for the street itself (exclusive of curb and gutter) would be $1.00 a front foot. The present discrimination between differently situated urban owners would thus be abolished. Since the cost of wider and better streets would be caused by additional traffic on the street, this cost might logically be borne by the State. Finally, the State Highway Commission could be charged with construction, the town paying the property owners' share and being later reimbursed by those owners.

A similar situation could be worked out with regard to maintenance. The cost of maintaining purely residential streets could be ascertained. Since there would be a difference between dirt and paved streets, this might be worked out for both dirt and paved streets. The mileage of paved and dirt streets for a particular town would be ascertained, and these multiplied by the figures for maintenance arrived at for a residential street. For example, if maintenance of a residential paved street amounted to $400 a year, and maintenance of a residential dirt street amounted to $600 a year, and a particular town had 6 miles of paved streets and 4 miles of dirt streets, then it would pay to the State Highway Commission from its own funds the sum of $4,800 a year, and the Highway Commission would then maintain all streets in the town. Or, conversely, the State might allocate to the town for street maintenance the difference between total maintenance cost and $4,800.

Another possibility with regard to maintenance would be to have the Highway Commission maintain all streets in the cities and towns without contribution from them. This might be fairer to the cities and towns than the procedure mentioned in the foregoing paragraph, since the Highway Commission maintains all State Highways and County Roads. Again it should be pointed out that cities and towns would still be left with the cost of traffic control, street cleaning, street lighting, and storm sewer work; debt service would diminish with the cessation of bond issues for street construction.

APPENDIX T

A SUMMARY OF THE ALLOCATION OF HIGHWAY REVENUES TO CITIES AND TOWNS IN SEVERAL STATES[1]

There follows a summary of the allocation of highway revenues to cities and towns in eleven states. So far as can be ascertained, none of the allocations discussed, except the Nebraska one, grew out of studies such as the one being undertaken by the North Carolina State Municipal Road Commission. Rather the allocations seem to have resulted from legislative compromise as has the present North Carolina policy. These summaries are presented merely to show how those states are operating that are allocating the most money to cities and towns.

Colorado—Cities and towns get about 4% of the gas tax revenue which is divided among the cities and towns on the basis of motor vehicle registration. In 1947 the total allocated was $830,000.

Illinois—In addition to having the highway commission construct and maintain streets forming part of the state highway system, cities and towns get the proceeds of one cent of the three-cent gas tax. This amounted to $13,310,000 in 1947, in addition to the work done on streets on the state highway system.

Indiana—The highway commission maintains streets forming part of the state highway system; in addition it constructs streets on the highway system when necessary in conjunction with new highway construction, though in such cases the city or town seems to be responsible for the cost in excess of the cost of the road adjacent to the city or town limits; for example, if the road outside the city or town has two lanes, and the street inside has four lanes, the city or town is responsible for the cost of the additional two lanes. In addition, 15% of the total highway revenues is allocated to cities and towns for street work; this will amount to about $7 million a year at current gas consumption, and Indiana estimates that it will amount to about $9½ million a year during the 1950's.

Iowa—The highway commission is authorized to do and does some construction and maintenance work on the streets that form part of the primary highway system. This work, however, is solely in the discretion of the commission and is not done according to any fixed plan. In addition, 8% of the state road use tax fund is allocated to the cities and towns on the basis of population, and this amounts to about $4,400.00 a year.

Michigan—The counties share the registration fees with cities and towns. In 1947 cities and towns received $9,250,000 as their share.

Nebraska—The Nebraska Highway Advisory Committee recommended after a study of road needs in that state that the state responsibility for streets forming part of the primary highway system should be as follows:

City Classification	Percentage of Responsibility for Maintenance	Percentage of Responsibility for Construction
Under 2500	100%	100%
Over 2500, but less than 5000	50%	100%
Over 5000	50%	50%

Everything else would be the responsibility of the municipalities themselves. Legislation was put through the 1949 Legislature giving cities a certain part of the motor vehicle registration revenue, but the Institute of Government has not been able to determine what the annual revenue to cities and towns would be from this allocation, nor whether the allocation was based specifically on the results of the study.

Ohio—25% of the motor vehicle registration fees and 18¾% of the gas tax revenue are distributed to the cities and towns of Ohio for the construction, maintenance, cleaning, and traffic-lighting of city streets. This amounted to $17,535,000 in 1947.

Oklahoma—Cities and towns get the proceeds of 1/5 of a cent of the gas tax, and about 25% of the proceeds of commercial vehicle licenses and bus mileage taxes. This amounted to $1,933,000 in 1947.

Oregon—The state highway commission constructs and maintains streets forming part of the state highway system. In addition, a year-to-year appropriation is made to cities and towns for the construction and maintenance of other streets; this amounted to about $1,100,000 in 1947.

Washington—Prior to the 1948 study of Washington's highway needs, cities and towns were receiving 15% of total motor vehicle taxes. This amounted to about $4,800,000 in 1947.

Wisconsin—Cities of over 2500 people receive $500 a mile for every mile of streets on the state highway system. In addition, cities receive $140, $260, $390, or $520 a

[1]Information contained herein was prepared for the State-Municipal Road Commission by the Institute of Government. It was taken in part from Table SF-6 of *Highway Statistics*, 1947 (U. S. Government Printing Office, Washington, D. C., 1948), and taken in part from correspondence with Highway Commission personnel in the respective states.

mile for streets not on the highway system, depending on their population. No study has ever been made to justify these allocations; rather they have just grown up over the years. The total distribution in 1946 was about $1,700,000. Since 1947 these allotments have been supplemented by the distribution of a portion of the highway revenues. In 1947 this resulted in a total distribution to the cities of $3,255,000.

Cover: The State-Municipal Road Commission at the meeting in Charlotte, September 9, 1949. Left to right: Mayor Victor Shaw, Dr. J. W. Rose, Mr. L. B. Wilson, Mr. James A. Doggett, Mr. James A. Speight, and Mr. Julian R. Allsbrock. Dr. Ralph Kibler was not present when this picture was taken.

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