VIRGINIA'S EXPERIENCE WITH 39,000 MILES OF SECONDARY ROADS

L. E. Akers, Secondary Roads Engineer
Virginia Department of Highways

Mr. Chairman, Ladies and Gentlemen:

It is always a particularly signal honor to any Virginia highway engineer to be selected to attend one of your Kentucky Highway Conferences. No one of us ever comes to any part of your grand State and particularly to your fine Highway Department and to this great University and returns empty handed. Therefore, should Professor Shaver find half of his senior class missing next Monday morning, I suggest that he would save time by starting his investigation in Richmond.

It was during the latter half of the eighteenth century that there was a restless Pennsylvanian youth by the name of Daniel Boone, who had learned something of this vast empire lying to the west of mighty Alleghanies.

It was he, who came down through Virginia and persuaded a small group of our more ambitious and daring boys to shoulder their axes and rifles and help him to blaze a trail through the Cumberland Gap into the fairyland to the west. Along this trail they erected a few signs. Lo and behold! Before our remaining conservative Virginia ancestors had awakened to what was happening, about all of the young folks who could read had gone to Kentucky!

From the number of requests that we have from the citizens of the counties bordering our 130 mile common frontier for new connecting roads into Kentucky, it is evident that their desire to move westward still exists.

One, thus can understand why to this very day, when one of us is sent out here on a mission, he first must most solemnly pledge that he will come back as quickly as possible after carrying out the assignment. But, despite all of this we are mighty proud of the even small part played by our pioneers in the history of your great and progressive Commonwealth. Whenever a new name is added to your long list of State and National heroes and statesmen, we immediately begin to scan our family trees in the hope of being able to trace his or her ancestry back to one of our own "F.F.V's."

The administrators as well as the engineers in the highway field of today, look to conferences such as this for guidance. More and more, there is a growing common belief that in any State there is but one highway problem. One need only to glance at the program for this Conference to convince one's self that Kentucky shares this belief.
There are the arteries of our Interstate, State, or Primary System. There is the Metropolitan Area — or City and Town Counterparts of these arteries. There are the veins extending out into town and country. There are the capillaries serving only a few farms or rural or suburban dwellings.

Thus it is from the Capillary of a few vehicles per week to arteries of 50,000 vehicles per day, this Highway System in reality but one system.

This system fails to stop at man made political boundaries of cities, counties and towns. Quite naturally and quite properly, the methods of administration of each of these component parts differ from State to State. Nevertheless, the various types of highways found in any State, Inter-state, Urban, Primary and Secondary, are each a part of that State’s one Highway System.

It is my happy privilege this afternoon very briefly to talk to you about that part of this one System in Virginia that by Legislature Acts has been designated as the Secondary System. This comprises what was formerly known as the County roads of 97 of the 100 counties of Virginia.

Briefly the administration set up in Virginia is as follows: The State is divided into eight highway districts or divisions, The State Highway Commission consists of one member from each district and the Highway Commissioner, who is the Chairman and who devotes his entire time to the duties of his Office.

Reporting directly to the Commissioner are:
  The Chief Engineer
  The Executive Assistant to the Commissioner
  The Engineer of Traffic and Planning
  The Right of Way Engineer
  The Purchasing Agent
  The Auditor.

Reporting to the Chief Engineer are:
  The Assistant Chief Engineer
  The Construction Engineer
  The Maintenance Engineer
  The Engineer of Bridges
  The Engineer of Surveys and Plans
  The Equipment Engineer
  The Urban Engineer
  The Secondary Roads Engineer
  The Engineer of Tests
  The Engineer of Research and Investigation.
Each of the eight districts is in charge of a District Engineer, who is responsible for every phase of highway activity of that District. The District Engineer reports directly to the Chief Engineer on matters of general import, and on specific matters to the appropriate assistants of either the Commissioner or the Chief Engineer.

Each district is divided into residencies comprising from one to four counties, and presided over by a resident engineer, who reports to the district engineer of that district.

There is a total of forty-three residencies. The Resident Engineer is responsible to the District Engineer for all highway matters pertaining to the primary, secondary or urban systems.

The average residency comprises a total of slightly more than 1,100 miles of primary, secondary and urban roads or streets.

The unit area system of maintenance is employed. The size of the units vary depending upon specific conditions. Each unit is in charge of a superintendent to whom is assigned such personnel and equipment as are necessary to perform the essential maintenance activities at the proper time.

Particular emphasis is placed on that all important item of drainage. I most whole-heartedly endorse the very special emphasis that this conference has placed upon this most important subject. We have been astounded at the small quantity of stabilizing material that is required to provide an all-weather surface where adequate drainage facilities are provided and by proper maintenance, are kept in condition all the time.

No records were kept of the traffic over the secondary system until about 1937. At that time it was determined that only 15% of all rural highway vehicular miles of traffic was carried by the secondary system.

In 1948, the usage of this system had increased to 21% and present records show that this percentage is continuing to increase with the improvement of the secondary system.

By the year 1925, our general pattern for the Primary System, consisting of the most important State and Inter-state roads had been laid out.

However, the pressure continued to build up, for the inclusion in this System, of an ever increasing greater mileage of the lesser important county roads. As a result, each succeeding Legislature continued to add to this system so that by the year 1932, its mileage had been more than doubled and among which were many miles of purely local roads.
Two schools of thought then existed. On the one hand, there were those who maintained that these county roads were a strictly local problem, and consequently each county, should be left to work out its solution, in its own time, and in its own way. There were others who held that still greater assistance must come to the counties from the State.

It was then that one of our leaders proposed a compromise bill for creating what would be known as the Secondary System of Highways.

This system would comprise all public roads, bridges, landings, wharves, etc., which were not then a part of the primary system. Among the more important provisions of this bill as finally enacted into law were the following:

(1) All rural local taxes for road purposes from real estate assessments would be abolished.

(2) An option period was provided during which any county, where at least 25 per cent of the qualified voters signed a petition so requesting, would be allowed to hold an election to determine by popular vote whether the county should withdraw from the system.

(3) The Boards of Supervisors should continue to exercise certain definite duties and responsibilities, in the administration and development of the system.

By provision No. 1 the taxpayers of Virginia were relieved of what was then more than a $3,700,000 annual tax.

Under provision No. 2, elections were held in some ten or twelve counties with the result that by the end of the option period, 97 of the 100 counties, comprising a total of 35,900 miles of roads had decided to remain in the system. The three counties electing to withdraw – Arlington, Henrico and Warwick, were largely urban in character and have a total of less than 1,000 miles of county roads and streets.

Of all the provisions of this law none at first were viewed with greater skepticism than that of number three.

This provision however, outlining the manner in which the administration of the law is vested jointly with the local and State authorities, has proven to be the wisest of them all.

It is through this provision that the Board of Supervisors of each county, and our Resident Engineer assigned to that county have become the keystone in the arch of whatever degree of success has been attained.
The 442 supervisors of the 97 counties embracing the system, are in direct touch with the more than two million citizens, whom they represent and, therefore, know their road needs. It is thus fitting and proper that to these Boards of Supervisors is delegated that all important duty of directing the Highway Department of these needs. To wisely recommend they must have full information on all road matters. Such knowledge is developed by a very close liaison between the delegated representatives of the Highway Department and these Boards. It is significant that where they have all these facts, reasonable and well balanced recommendations are always forthcoming. Where they are not fully informed the converse is too often true.

It is through these cooperative efforts of our Resident Engineers and these Boards of Supervisors that the most worth-while and successful policies for the development of the secondary system are formulated. Control of local road matters is, therefore, kept where we think it should be kept — in the local communities themselves and not in Richmond.

Of the 35,900 miles of county roads embraced by the Secondary System in 1932 —

2,000 miles — 5.6% were hard surfaced
8,900 miles — 24.8% had some type of light surface
25,000 miles — 69.6% were unimproved.

The almost 19 years since the establishment of this system on July 1, 1932, are marked by three rather distinct periods.

I — The first 9 years included the six financial depression, and three war preparation years from '32 to '41.

II — Then the four war years with its restrictions and hardships from '41 to late '45.

III — Then the six post war years from '45 to date.

Through this first period considerable success had been experienced in the development of the secondary system. Our people at least were sufficiently gratified with the progress that had been made that they were ready to expect and beginning to demand even greater progress.

It was near the end of this period that our able Commissioner, the Honorable Henry G. Shirley was claimed by death. Those in authority realized that his replacement required no less than a man endowed with the leadership of a Moses, the wisdom of a Soloman, the magic of an Houdini, and the energy of an atomic bomb. Those of us who have been privileged to work with him during the past nine years, believe that just such a combination was found when General James A. Anderson was named to fill this important position.
The period from 1941 through 1945 were busy years spent in meeting the many and diversified highway emergencies arising during the war and in planning a course of action for the post war years. It was during this period that a Master Plan that would insure the orderly development of the secondary system in each county was formulated. The objectives of this plan are as follows:

(1) The hard surfacing of all roads carrying an average of 50 or more vehicles per day.
(2) The provision of an all-weather surface for all school bus and mail routes and all roads having an average of less than 50 and more than 10 vehicles per day.
(3) The lightly surfacing of those roads carrying less than 10 vehicles per day.

The completion of this program will insure a year round passable road to every reasonably located farm in Virginia.

It also was during this period that our present formula for the allocation of funds to the secondary system was evolved. This formula is based upon the following factors, each having equal value:

(1) Area, (2) Population, (3) Secondary road mileage, (4) Average daily traffic or vehicular miles.

THE POST WAR PERIOD 1946-51

The end of World War II found us facing many critical problems. The maintenance of our highways had of necessity been neglected due to shortages in materials, labor and equipment.

The consolidation of schools had vastly increased our school bus mileage.

The severe winter of 1945-46 caused many miles of our lightly surfaced roads to become impassable.

As a result our Legislature of 1946 added an extra cent to our motor fuel tax and passed a Resolution asking for the more speedy development of the secondary system, with special emphasis on school bus and rural mail routes. The significance of this Resolution is evidenced by the fact, that since its adoption in March 1946, to date not a single school bus day has been lost due to impassable mud roads. These school bus routes now include more than 20,000 miles of our secondary system.

The Legislation of the National Congress of 1944 and since, providing Federal Aid for the Secondary Farm-to-Market System has greatly stimulated our construction program. Seventy per cent of all
our Secondary Federal Aid funds is spent on our Secondary or County road system. The remaining 30% goes to the secondary primary system. The apportionment of these funds to the individual counties is on the same basis as these funds are distributed to the States, that is on the three factor basis of area, population and road mileage.

At the present time our Secondary Federal Aid System comprises only slightly more than 12,000 miles or about 31% of our now more than 39,000 mile secondary system. Of this 12,000 miles, 67% is hard surfaced, 25% is all weather, and only 8% is either unimproved or lightly surfaced.

It is most essential that our Federal Aid System in each County embrace a sufficient mileage to permit the selection of adaptable projects each year, in the priority order determined by the Master Plan and in the same manner that projects are selected for the use of our regular State funds. We are now making an intensive drive toward the accomplishment of this end.

For the fiscal year beginning July 1, 1951, it is estimated that the net total of all funds, State and Federal for all highway purposes will be about $64,000,000.

These estimated funds have been distributed as follows:

$31,000,000 — 48.4% goes to the Primary System.
6,000,000 — 9.4% to the Urban System with its extensions.
23,500,000 — 36.7% to the Secondary System.
3,500,000 — 5.5% Administration and overhead applicable to all three systems.

The changes in the status of the secondary system from July 1, 1932, to January 1, 1951, are as follows:

Its mileage has been increased from 35,900 to 39,100, and of which 12,100 miles — 30.9% is hard surfaced, 22,900 miles — 58.6% is surfaced to reasonably all weather standards, and 4,100 miles — 10.5% is yet unimproved.

These comparisons merely show what we consider has been reasonable progress in the development of our secondary system of highways. They, in no sense, are intended as a conclusive evidence that a similar method of administration would be successful in other states.

No system of administration will succeed without the whole-hearted support of public sentiment.

It has not been my intent to convey the impression that all of
Virginia's highway problems — either state or local have been solved. These problems continue to increase in number as well as complexity. We are facing those of the secondary system as a component part of our one state-wide highway problem — primary, secondary and urban.

We question that there is such a thing as a completed overall highway system. There is the continuous and ever growing need for reconstruction. Motor vehicle traffic continues to develop so rapidly that obsolescence is now a greater factor on some of our main roads than is deterioration. We are striving to try to close this ever widening gap.

Our goal is no less than a reasonably adequate highway system for all our people all the time. When all officials of each political subdivision of the State are aware of the needs and possibilities and when all citizens are aroused to the demand of the overall highway system, not only is progress assured, but also will our goal be attained.