

Session III
Special Problems:
Bypasses, Traffic Interrelationships,
General Economic Orientation

BYPASS IMPACT

**Planning Bypass Research in Virginia—
The Lexington Pilot Project**

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About three years ago, a research project was begun to study the economic effects of limited access highways and bypasses on roadside business, land value, and land use. We are nearing completion of the phase of the study dealing with the roadside businesses. The project is sponsored jointly by the Bureau of Public Roads and the Virginia Department of Highways under the $1\frac{1}{2}$ percent highway planning funds. The study was begun under the direction of R. B. Goode, now of the University of New Mexico, who selected the Route 11 bypass of Lexington as a pilot study road because it was the first limited access bypass to be available for study in Virginia, and because it was fairly typical of many other bypasses being planned for construction. Lexington is a town of about 7,000 people and is a shopping center for a rural county.

The principal source of data is state business license applications, which report gross receipts and which are filed by retail business with the County Commissioner of Revenue each January. Special permission was secured from the Governor to examine these forms, with the condition that the identity of individual businesses remain strictly confidential. Data for all retail businesses (approximately 700) were secured for the period from 1950 through 1956. The bypass was opened to traffic in November, 1955; therefore, the data cover several years before and one full year after the construction of the bypass.

The mass of data is now being examined case by case in an effort to trace the history of each business through the study period. To those who have not worked with this kind of data it should be pointed out that considerable difficulty in processing is caused by ownership or location changes, and by incomplete or illegible data on the original forms. Great care must be exercised in order to minimize bias when decisions are made to cast out certain unusable cases. After initial processing, questionable cases need to be checked individually by follow-up interviews in the study area in an effort to clear up questions before analysis proceeds.

In Virginia, some businesses, such as motels, are not required to file gross receipts tax forms, and so this source of data is not available. For these businesses, individual interviews with owners and managers will be undertaken to secure data. A pilot study has shown that about 75 percent of the motel operators have good business records, which they will make available once they are assured that the information obtained from them will not be made public so as to reveal their identity.

After the information reflecting individual case histories has been refined to our satisfaction, the mass of data will be put on IBM punched cards. The analysis will use accepted statistical techniques. A careful analysis will be made of business fluctuations annually over the period of study. Appropriate test areas and control areas will be chosen, and businesses will be classified by type.

Fluctuations in business volumes might be expected to occur for many reasons. Changes in local population, purchasing power, traffic volumes, and wage levels in the area, and other factors, can affect business activity. All of these factors must be taken into account before the effect of the bypass itself can be determined. We will look for explanations for observed changes in business volumes by examining all reasonable factors which are probably operating. If a change in volume of business coincides with the opening of the bypass, and if it cannot be explained by the other factors operating, it may be concluded safely that the change was probably caused by the bypass. The approach to conclusions will be distinctly more conservative than that employed in studies that have not thoroughly explored the other factors operating in addition to the bypass.

It is hoped that the results of the phase dealing with the effects of the bypass on business volumes can be reported by September 1957. The results of this study should satisfy, in part, two needs mentioned during this conference. First, it should provide specific data on the effect of the bypass on the particular community under study. Thus it will add another case study to the too few now available for review by administrators on the threshold of the vast highway improvement program. Second, and probably more important, the study will devote much needed attention to adapting or developing methods of analysis to this type of economic problem. One of the principal reports of this study will be a master's thesis being developed at the University of Virginia.

If the pilot study proves to be successful, the methodology will be applied to several other study areas in Virginia. The phase of the project dealing with land values and land use is expected to become active during the summer of 1957.

Limited Access Bypasses in California **Rudolph Hess, California Division of Highways**

Limited access bypass studies of twelve California towns have been completed. Each of these studies has taken into account the various indices that are being considered in the Virginia study.

From a practical viewpoint, there are two functions for this type of project. One is the long-range record that has been built up in the files on these towns; this will continue to be studied over a period of years. The other is to get something out in a short time that is readily understandable.

To achieve both objectives requires the study of identical factors. To take immediate advantage of available material, however, an attempt was made to find the closest comparable unit of measure: in other words, had the area under study followed the pattern of the county, the state, or some nearby community?

If all of the business activity, population growth and general community development were analyzed and the subject community was found to