

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



This grain elevator and warehouse, constructed adjacent to the Fresno Freeway in California, is typical of many similar uses along this highway of modern design. It has access to a county road to the rear. The economics of the Fresno Freeway have also been investigated.



Property abutting the frontage road of this recently improved section of a California arterial constituted the subject of another land economics study.

compare favorably or about the same in its advance or decrease with other comparable cities or counties, it could be assumed that it would continue to follow that trend, all things being equal.

Having arrived at this point and having decided that things were equal, the comparison was fitted to the other area. Thus, there was obtained not only an individual comparison before and after, but a comparison in relationship to another area to which it compared reasonably well through its past history.

In bringing this information to the public, certain problems arise. All of the studies will have a great mountain of information behind them. There are files and files on California areas affected by highway improvement. But when it comes to publication of the information, the data must be arranged and presented so that people understand them. Otherwise they are academic in nature and not usable. On the other hand, even despite the simplification that has been attempted in the California studies, the press has taken the studies and over-simplified them. In some cases it would be better to develop a simple approach and direct comparison that can be depicted in a chart. This is a plea for simplification.

The following is an example of how the information given to the public becomes misinterpreted. A certain magazine took all of the California studies and just combined percentages. In this case, the percentages come out fairly well, except that they failed to differentiate between the various types of bypasses, and there are all kinds of bypasses—some bypass towns at quite a distance, whereas others are only a block or so away from business districts.

There are many types of bypasses that should be studied. For example, in Oakland, where a bypass goes through a completely built-up area, the main concern is the resulting effect on a group of businesses that are just a block removed. But the traffic will be raised overhead and put down on both sides of these businesses just a few blocks away.

What effect will this have on these businesses? The area is completely built up and is largely self-supporting. It has a backing of residential area to support the business. This is just one type of bypass effect on which no information has so far been collected.

In conclusion, a plea is made for short studies produced in as concise and simple a form as possible for initial publication.

### **Indiana Bypass Research Combines Economic and Traffic Data** **Harold L. Michael, Assistant Director** **Joint Highway Research Project, Purdue University**

All of the studies by the Joint Highway Research Project actually are made in cooperation with the Indiana State Highway Department. Under this arrangement it was decided several years ago to undertake studies to determine what the effects of bypasses were on communities.

The case study approach was used; in other words, before-and-after studies were made in two Indiana cities. Not only were the two cities different in size, but the bypasses also were located differently in relation to the cities. One was a city of about 50,000, the other of about 10,000. In the case of the larger community location was very near the developed area; in the other, the location was some distance from the developed area.