

Now a number of things struck us. One was that the substance of our findings had been known for a number of years. For instance, General Motors, one organization that comes to mind, has had films pointing out the deficiencies of our highways, particularly on roadside obstacles for a number of years; and nobody—let's say few States incorporated the indisputable findings of General Motors research into the construction of their roads. And the staff selected nine States at random with Interstate highways just built, and only one State had incorporated these findings that were well known.

Now I am wondering why it is that when this information was so widely available, it wasn't incorporated in the engineering of brand-new roads?

MR. BRIDWELL. Mr. McCarthy, there are a number of factors involved here. First of all I think my statement and by the statement that the committee will soon hear from Mr. Turner, we would agree with you wholeheartedly that the findings of research, testing, and analysis, have not been as widely and as rapidly applied as they either could be or should be.

I do not believe, however, that the situation is quite as dark as—here is all of the information, why are you not doing it?

There are quite a number of factors that go into it. One is the fact that highways that are actually being constructed today in many, many instances were designed 3 or 4 or even 5 years ago on complicated projects. So that is a factor.

Another factor is that there is not a comprehensive manual in the field, which has been highlighted by these hearings with such things as the example of the guardrail in "Highway Research Bulletin No. 81." So that the people in the field, the people who actually design and are responsible for the construction of these projects, do not have easily available to them a lot of material which is completely known now to the committee because it has been presented to the committee.

It has not been presented to these people in the field that have the responsibility.

Another factor, of course, you referred to the General Motors research specifically. One of the overall conclusions of the General Motors research has been the clear roadside concept which we have followed without any question, at least to some extent, to a great extent. There are cost factors involved in this because obviously if you have a clear roadside and you have general clear slopes extending from the edge of the right-of-way for certain increments of distance, 30 feet is the one that we generally talk about, then there are cost considerations in the acquisition of right-of-way.

There are cost considerations in the design and construction of the project and earthwork and structures and quite a number of things.

So I cite these as factors, not as excuses, but only to point out that it really is not quite as simple as just simply saying the knowledge was there, why does it not show up on the highways?

MR. MCCARTHY. You mentioned that some of these Interstate highways were designed 3 and 4 years ago. Does that mean that we have to wait 3 and 4 years before some of these concepts are incorporated in the construction of future Interstate highways?

MR. BRIDWELL. No, sir. It will depend on the particular item or portion or facet of a design project as to what point in time it can be incorporated.