

INTRODUCTION

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OVERVIEW

Everyone agrees that road agencies are required to do more with less. Sound decisions based on good information are needed to avoid mistakes in allocating the limited resources because such mistakes can have far reaching effects, both socially and economically. Dealing with inadequate funding for low-volume roads is an especially difficult task.

A significant number of studies on low-volume roads are conducted in isolation. Hence, the results of such efforts generally remain within the realms of respective individual agencies. Often, the other low-volume roads operating agencies are not even aware that such valuable information exists that could benefit their day-to-day operation. One of the areas of emphasis for the TRB Low-Volume Roads Committee has been to facilitate dissemination of and to improve accessibility to information on low-volume roads to the operating agencies worldwide. This is the goal of this Circular.

This Circular contains information on assessing worldwide low-volume roads' problems, needs, and impacts. Information presented covers 4 continents — Australia, Europe, Africa, and North America. Highlights of the several approaches that are presented in this Circular are as follows:

Monitoring Performance of Existing Roads

There is a significant amount of information available on roads that have been in existence for many years and are performing well. Generally, one sees the information on roads that were built recently and have not performed well. The reverse of this should be able to provide us with a large amount of valuable information. Why is a road which has been in place for 30 years and appears to have been constructed to a low standard, still performing well today? That is possibly a more important question to ask than why a road built 5 years ago is already failing. This concept advocates monitoring the performance of existing roads.

Vehicle Operating Costs (VOC)

It has been argued for many years that the work undertaken to date on vehicle operating costs is only the tip of

the iceberg. In the past, pleas have been made to organizations to do more work on the applicability of their existing VOC information, and to expand that information.

Personal Computers (PCs) and Micro Computers

This is the age of the PC and micro computers. Consequently, road agencies are interested in building "systems." This is a logical approach provided the systems are built from the best possible information and are of genuine assistance to the decision maker, specifically by enabling one to make more use of the information that is already available. Unfortunately, there is a plethora of systems. However, no system exists, or ever will exist, that will be adequate for all the needs of the low-volume roads community. What we have is a large number of systems that do many valuable things. Hence, what is needed is a much better assessment of what the systems do, what they do not do, what we want them to do, in order to get the right level of information. The comments of several contributors to this Circular demonstrate that this need is well understood.

The Use of Expert Systems

The use of expert systems is also discussed. Expert systems on low-volume roads really mean the application of engineering experience. Ultimately, it is the engineering experience backing up the information systems that will enable us to make the maximum use of the funding that is available for low-volume roads.

Central Tire Inflation (CTI)

Among the research and development items that are described is the work that the USDA Forest Service is conducting on central tire inflation. A Central Tire Inflation (CTI) system allows the tire pressure to be varied over a wide range while the vehicle is in motion. A driver of a vehicle equipped with a CTI system can change tire pressure to an appropriate low level that is suited to low-speed, low-traffic roads or to a high level that is better suited for high-speed, high-traffic roads. In effect, CTI allows vehicles to run on a sponge instead of

a hard tire. This effort has significant potential value at this time for both extending the life of paved and unpaved roads and extending the life and lowering the cost of the vehicle.

Appropriate Standards

The subject of appropriate engineering and maintenance standards is addressed in several contributions. "Appropriate standards" have to be achievable. There is no point in defining a standard if we cannot provide a system or the data to support it. One of the many valuable points made is to stress the ability to get the data that we need. This echoes another comment that if the information is not available, or cannot be obtained simply and cheaply and with the enthusiastic support of the people who are collecting the data, then the use to which it is being put, the system which it is driving, is of no use.

Funding

Funding is always the major concern facing road agencies. It always has been and it always will be a fact of life that there will be limits on funding. There will never be the money available which we think ought to be available. Therefore, it is time to maximize what we can do with the funds that are available.

Information Dissemination

Probably the most important and critical issue is *information dissemination*. Presenting all available and relevant information to practitioners is essential to implementing improved procedures and new techniques. Given the amount of research and development that is still being undertaken, the ability to disseminate this information quickly and simply is the key to advancing the low-volume roads situation. How this is done is probably going to need some concerted action. But with the goodwill and the participation and support of the low-volume roads community, there is no reason why this cannot be achieved.