

# OPPORTUNITIES FOR RESEARCH ON ROADSIDE REST AREAS AND THEIR ROLE IN MOTORIST SERVICE

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Today's traveler has begun to look to rest areas as far more than a "wide spot in the road" on which to pull off and relax. Particularly on Interstate highways, today's rest areas must be equipped to satisfy more than the need for rest. They must provide clean, well-lighted sanitary facilities, picnic and parking areas, safe drinking water, telephones, motorist information, and an ever growing list of support services. Other needs of motorists will have to be defined, and all needs will have to be quantified. Various classes of motorists, such as long distance truckers, casual travelers, tourists, or families on vacation, may have differing needs. Methods of best satisfying their needs will have to be provided. Another facet of the problem is the rest area and how it can be most effectively used to meet motorists' needs. Operation and maintenance problems are becoming increasingly complicated and costly. The need to clean and service the rest area, prevent vandalism, and operate sophisticated sewage-treatment and drinking-water purification equipment has created additional problems. An information gap has developed that motorist information systems at rest areas may help to fill. Research can play an important role in furnishing solutions to these problems.

•THE UNITED STATES has the most extensive highway system in the world. There are over 36,000 miles (58 000 km) of completed Interstate highways alone. Although some look disparagingly upon the highway system, it has brought to the country wealth and opportunity, and its social impact has been equally as great. The natural and historic scenic wonders of our country are now available to everyone. Because of the highway network and the diversity of relatively inexpensive transportation, the average family can vacation almost anywhere in the country.

The limited-access Interstate system has shortened travel time and distance. In 1950, it took 70 h at 40 miles/h (64 km/h) to cross the country. Today, even at 55 miles/h (89 km/h), the same trip can be made in 50 h. The Interstate system has simplified cross-country navigation and has made travel safer. The Interstate system was estimated to have prevented 7,500 fatalities and 347,000 injuries in 1975 (1, p. I-2). The aim to get travelers to their destinations more quickly, more easily, and more safely has been accomplished. But much work remains.

## REST AREA PROGRESS

One of the greatest advances associated with highway travel is the development of the rest area. Thirty years ago a picnic table, a trash can, and a bush constituted a rest area. For the harried family or weary driver, there was little opportunity to escape from the highway environment. In most instances the picnic lunch was eaten 10 ft (3 m) from passing vehicles.

The early roadside parks have considerably evolved from little more than wide spots in the road to today's modern tourist information centers that have many of the

comforts of home. The impetus for rest area development began with a provision of the Federal-Aid Highway Act of 1938. This act stated that "the States, with the aid of Federal funds, may include . . . such sanitary and other facilities as may be deemed necessary to provide for the suitable accommodations of the public." The objective of this legislation was to provide for increased motorist safety and comfort through the provision of occasional facilities for stopping and resting. With it was born the safety rest area (2, p. 38). Although the basic premise of the rest area is safety, motorist comfort and service are essential ingredients. Subsequent Federal-Aid Highway Acts, including one that established the Highway Trust Fund and the Highway Beautification Act of 1965, fostered the advancement and improvement of rest areas through funding and stimulus of rest area development concurrent with highway development (3, pp. 1-2).

In the early stages of rest area development, some states limited facilities to picnic tables and trash barrels at widened shoulder turnouts along the roadside. Others developed reasonably complete facilities with pit or vault privies, parking, picnic areas, and landscaping. The original purpose for rest areas was to provide safety and service to motorists, and that is still basically the purpose today. Expanded travel and increased rest area use have demonstrated a favorable response to rest areas. That response and the expressed desires of motorists for services guide the development of rest today (4). According to the FHWA's Office of Highway Planning there are today over 7,700 rest areas, 1,300 of which are on the Interstate system.

Growth in safety rest areas began with the Interstate Highway Act of 1956. As an extensive network of rest areas on Interstate highways developed, the limitations of existing facilities became apparent. These deficiencies created the need for research to

1. Determine the capacity of a rest area,
2. Formulate techniques to predict the number of people who would use a given facility during different times of the year, and
3. Evolve more representative criteria for the selection of rest area locations.

With the decision by the federal government in the fall of 1965 to participate in the cost of constructing sanitary facilities in rest areas, research in neighboring fields became absolutely necessary to properly select, design, construct, and maintain complete rest areas. One of the first steps in a rest area research program is to obtain a good knowledge of the highway user. Regrettably some rest area facilities do not reflect the broad range of motorist needs. We have opened the door to travelers; now we must determine who they are, what they need, and how they can be served.

## USE OF TODAY'S REST AREAS

Motorists look for more than an opportunity to rest in the safety rest areas. They expect clean and well-lighted sanitary facilities, ample shaded picnic areas, scenic landscaping, sufficient parking facilities, telephones, litter receptacles, and informational displays (4). So that rest areas will be able to adequately serve motorists' needs, the Federally Coordinated Program for Research and Development in Highway Transportation (FCP) has under way a research project concerning rest areas. Currently, research studies are being conducted on rest area water supply and waste disposal requirements and sewage treatment technology that are aimed at improving these essential motorist services.

Nearly 95 percent of all persons stopping at rest areas make use of the sanitary facilities. According to the Federal Highway Administration's Office of Highway Planning nearly 60 percent of Interstate rest areas provide toilet facilities. To provide adequate rest room facilities, one must have basic information to determine what portion of those people traveling stop at a rest area and what the relationships are among distance from adjacent areas, towns, and types of travelers. These data are essential for the physical layout and design of rest rooms and facilities and are basic for providing adequate water supplies and sewage treatment facilities. Information shows that the bases of past design

are not always adequate for today's use (5). Research into the technology of rest area sewage treatment is needed to respond to the requirements of the Water Pollution Control Act (Public Law 92-500) and to ensure adequate protection of public health and safety.

Providing safe and sufficient drinking water for rest areas is another problem where research is needed. With the increased mobility of the American public, there has developed a potential public health hazard. An estimated 1 million people per day use water supply systems at rest areas along the Interstate Highway System. Thirty-five percent of Interstate rest areas provide drinking water. Treatment for this water supply ranges from none at all to extensive treatment fully capable of ensuring the health and safety of travelers (6). Legislation has passed Congress recently that will require the treatment of all public water supplies. Numerous rest areas are located in areas where available water is unfit for human consumption because of contamination. Research to study techniques that will ensure the quantity and quality of public drinking water supplies at rest areas is contemplated as a part of this year's FCP.

A rest area is more than parking spaces and rest rooms. The components that make up a rest area vary from one area to another, and there is a need for research into component serviceability, ability to function, and cost effectiveness (7). Because of rising construction, operation, and maintenance costs, rest area designers and operators must be provided with information on the extent to which components provide the intended services with minimum maintenance requirements.

The objective of a recent FHWA contract, Cost-Effective Rest Area Components, will be development of a compendium of information on the ability to function and cost effectiveness of rest area components. It will provide component alternatives for use in the design, renovation, operation, and maintenance of rest areas.

Vandalism is a problem at some rest areas. Research into what motivates vandals and how to reduce and prevent vandalism is needed not just for rest areas or highway facilities, but for all public facilities.

## INFORMATION PROBLEMS

As specified under parts 655 and 705, title 23 of the U.S. Code, severe limitations have been placed on outdoor advertising and specific "information" in the interest of the traveling public. In essence, information is limited to signs at interchanges to indicate gas, food, lodging, and camping. However, in creating an uncluttered, aesthetically pleasing view for travelers, we have isolated them on the Interstate highway. Although it is difficult to argue with increasing capacity, speeds, and safety and beautifying the highway environment, the isolation of the Interstate highway creates serious problems for the motorist in obtaining information on both public and commercial facilities.

The blue and white food and lodging signs call for quick decisions by motorists. The signs fail to inform the driver how far away restaurants are and when they are open. So drivers sometimes take a 20-min ride in the country and return to the Interstate.

A new approach now being evaluated in Virginia and Oregon provides signs at exits with logos for gas stations, restaurants, motels, and camping grounds (8). To facilitate reading, each sign can carry logos for no more than 6 gas stations or 4 motels, restaurants, and campgrounds. Firms must meet certain highway department criteria, and sign priority is based on distance from the exit. This solution still does not offer motorists an opportunity to plan their trips, and decisions still must be made in a matter of seconds. Interstate highway travelers need information on road conditions and the location of hospitals and emergency centers; police stations; hotels that accept pets; and scenic, historic, and amusement areas. These information gaps are the areas we need to address in our research. The most difficult aspect of the problem is ascertaining the method by which travel information is transmitted to the motorist. Although a number of methods might come to mind, not all are economically feasible or practical for motorists to use.

Roadside rest areas have potential for communicating with the motorist. Many states have taken advantage of this to provide a variety of information to the motorist

through tourist information centers. Much remains to be done in this area, however.

## RESEARCH

To accomplish the goals set in rest area research and development, research should focus on establishing and maintaining high standards of water quality and development of sewage treatment facilities that not only will meet government standards but also will be cost effective and easy to maintain. Research should be directed to those areas dictated by the evolutionary development of rest area facilities. A genuine need exists to improve motorist information services on the Interstate system; therefore, a concerted effort should be made in this area.

## REFERENCES

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