

Abridgment

Oregon's Motorist Information System

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ABSTRACT

The Oregon billboard removal program became active in 1970. To date the Oregon State Highway Division has bought and removed approximately 2,000 billboards. The Oregon Travel Information Council, established in 1971, and the Oregon State Highway Division jointly developed informational signing for travelers. The travelers signing service systems used on Interstate and non-Interstate highways, rest areas, and scenic overlooks are described.

Oregon took action under the Federal Highway Beautification Act to remove outdoor advertising billboards on rural and certain urban sections of the state highway system in the early 1970s. The highway division is responsible for the administration of the billboard removal program. Although established earlier, the program became active in 1970. To date the highway division has brought and removed approximately 2,000 billboards. Interstate routes are almost free of commercial advertising signs except for on-premise signs and those located in areas zoned commercial or industrial. In any event, no new billboards can be installed. As time passed and a larger percentage of the billboards were removed, demand increased for some form of motorist services signing and for signing in the related sectors of the tourism business. Also there was an indication from the general public that some form of directional information was needed for those drivers seeking services, but who were not familiar with the area.

The state highway motorist information sign system was implemented in 1971 when the Oregon Legislature passed laws establishing a Travel Information Council. The 13-member council consisted of representatives from the travel industry and from the general public appointed by the governor. Under the legislation the Travel Information Council retained administrative authority over several types of informational signing on the state highway system. Informational signing of interest to travelers placed in rest areas, scenic overlooks, or in gazebo-type shelters or plazas, as well as logo signs and more recently tourist-oriented directional signs, were placed under the administrative authority of the council. Outdoor advertising signs, directional signs (a special type of advertising sign), and on-premise signs erected or maintained outside the right-of-way along state highways and visible to the traveling public from a state highway were also placed under the council's jurisdiction. The council method was chosen rather than establishing a program within the Oregon Department of Transportation because it was believed that credibility and effectiveness would be improved by using an independent council to administer any type of motorist service sign system.

Under the current law, the Oregon State Highway Division provides staff engineering services to the council and establishes all signing standards. Highway division sign crews also install all logo sign-

ing not previously installed under the original contracts. The chief counsel of the Oregon Department of Transportation provides the Travel Information Council necessary legal services. As might be expected, these interlocking services result in a well-coordinated, cooperative working arrangement with the council and its administrator. Such an arrangement is absolutely necessary to provide an information system that is safe, uniform, that meets its intended objectives, and is successful.

Oregon's motorist information system consists of several elements:

1. Generous use of the general services signs (gas, food, lodging);
2. Effective use of visitors' information center signing for those centers contained in various chambers of commerce offices throughout the state;
3. An almost totally completed logo sign program on Oregon's Interstate system;
4. A healthy, popular, off-Interstate logo sign program;
5. Oregon's new off-Interstate experimental tourist-oriented directional sign program; and
6. A series of motorist services information gazebos at 22 Interstate and off-Interstate rest area locations throughout the state.

Interstate logo backboards are fabricated from aluminum extrusions and galvanized steel supports. Off-Interstate logos are a scaled-down version of the Interstate logo signs (backboard and business panel). State crews have installed all non-Interstate backboards, which are fabricated from plywood and use wood supports. The tourist-oriented directional sign is constructed of plywood with wood supports and has a word legend and directional information that consists of the business name, turn arrow, and mileage. The information gazebo design was derived from competitive architectural designs. The gazebos are constructed of wood and are usually pleasing designs that contain interior-illuminated panels. The panels are translucent and contain information about various businesses. Forty percent of the panel space must be devoted to public information--scenic attractions in the area, wild flowers, and so forth.

The majority of Interstate logo backboards were installed on the 600 plus miles of Interstate routes under three major contracts. Material stockpiled from these contracts was used by state crews over the next several years to make installations as development occurred at interchanges. Each business furnished its own logo panel under strict specifications. The units on the logo backboards are installed by state sign crews. Off-Interstate logos are handled the same way; however, both the logo panel and the backboard are installed by state sign crews. Supplemental logo signing for proper traffic operation is required as determined by an engineering investigation.

Except for general service signs, all of the components of Oregon's motorist information system are user-fee supported. Both Interstate and non-Interstate logos require a permit fee of \$75 per year and a rental fee of \$10 per month. The same fee is required for supplemental logo signs and the tourist-oriented directional sign. The information gazebos

are privately operated under contract to the state. Space in the gazebos is rented based on a fee structure established by the private operator. General motorist services signs are installed by the highway division without charge, because they serve many businesses over large areas. Both general service signs and logo signs may be installed at the same interchange.

As with any signing program of this magnitude, some difficulties have been encountered. Early in the 1970s start-up problems with sign material requirements and spacing requirements resulted in a meeting between state and FHWA officials to review possible changes in the National Standards for Specific Information Signs contained in the FHWA program manual transmittal. To eliminate in the future problems similar to the ones that occurred during the first months of the program, the national standards were revised based on information gained from the Oregon experience. These revisions are still contained in the national standards and provide a

more practical approach for motorist services sign installations.

Although Oregon ranks 30th in population (2,656,000 in 1982) and has not realized its full potential in the tourism industry, an estimated 11.8 million pleasure travelers entered the state in the last year. To provide these visitors with information related to their travel needs, 1,100 Interstate and 260 off-Interstate logo signs have been installed.

The tourist-oriented directional sign program is just beginning, so there is no measure of its impact. A 2-year study of the experimental sign program will run concurrently with sign installation. A final report will be published when the study is completed.

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Abridgment

Information Sign Color Evaluation Using a Video Presentation

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ABSTRACT

Signs that provide guidance or navigational information to the motorist are color coded green to facilitate rapid identification and to ensure a clear and unambiguous meaning of the nature of the information. The green color code is not always mandatory at night. The sign backgrounds may have nonreflective green backgrounds that appear black at night unless separately lighted. A laboratory method of evaluating the effectiveness of the green nighttime sign color is presented. This method isolates only the variables of interest--the effectiveness of white-on-green versus white-on-black as a means of providing attention value or target value. The method described uses a video presentation of six identical pairs of highway scenes in which only the color of the guide sign varied. Scenes were presented for a time period of 3.5 seconds, which is comparable to detection and recognition models. The sequence was shown to 313 subjects--all licensed drivers representing all age groups at a variety of locations nationwide. The analysis of results indicated that greater scene complexity and increasing driver age contributed to an increased error rate for both color combinations. There were fewer errors in the recognition and identification

of the white-on-green guide signs than the white-on-black signs. For a combination of scenes, this accuracy was 3.2 times greater for the white-on-green signs and is attributable to the green night color of the signs.

Green was selected for the guide sign color following the accepted practice of applying a distinctive yet uniform color to designate the category of information presented by a traffic sign. This selection followed testing by the Bureau of Public Roads in 1957. The tests included full-scale, outdoor tests of various sign colors during both day and night and included color recognition, legibility, and various other measures of sign and color performance using a public audience of professional and lay drivers (1).

Later testing by Forbes (2), and evaluations conducted by departments of transportation (3,4), also dealt with day and night aspects of guide sign color, including subjective reactions to color determined from interviews and driving tests. Woltman (5,6) has reported typical day and night luminance levels for sign copy, sign backgrounds, and surrounds and has attempted to identify various factors that significantly affect sign luminance such as stream traffic, rainfall, and headlamp modification.