

tions include "Traffic Report," "Where am I," and "Swap Map," the last of which lets the driver switch between guidance arrow displays and a map display of the car's vicinity. If the driver misses a turn or travels off the designated route, a voice informs the driver that the car appears to be off the route and asks if a new route should be calculated. If a new route is desired, the driver would press the "OK New Route" button, and the TravTek computers will determine a new route to the destination. The "OK New Route" button would also be used if something were to occur along the planned route to significantly affect the travel time. The voice would suggest that a better route may be available, and the driver would press the "OK New Route" to see the new route.

- In addition to receiving data, the cars transmit their locations and travel times to the TMC every minute. This information is combined with information from the city's traffic signal system, FDOT's freeway system along I-4, and sources such as media traffic reporters, police and emergency agencies, and delivery companies. Travel times for segments of the roadway network, called traffic links, are processed from this information. These real-time travel times are transmitted to the TravTek cars every minute and are used by the TravTek computers in the vehicles to determine the fastest routes, locations of congestion, and major incidents. At the TMC, the TravTek operator workstation can display maps of the TravTek area. Sections of the roadways are displayed in different colors, depending upon their calculated travel times and congestion levels. The TMC operator can also display the locations of the TravTek cars and enter accidents or other incidents that impact the traffic network on the operator workstation.

In closing, Mr. Rupert noted that a fleet of 100 cars driven primarily by out-of-town visitors may not result in a great deal of quantifiable information from a traffic management point of

view. However, the establishment of a TMC as a central information collection point is an invaluable resource for areawide traffic management. The city of Orlando and the metropolitan planning organization for eastern central Florida view TravTek as an element in an overall traffic management plan. Regardless of whether there are "smart" cars with which to communicate, the TMC is planned to continue operations as a cornerstone for integrated traffic management.

Transit Applications of ITMS

Ronald J. Fisher

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Mr. Fisher discussed the need to take a broad view of ITMS development. He believes that the development should not just be limited to traffic concerns, but also should include transit and other modes. During his presentation, Mr. Fisher made the following points.

- Transportation professionals face the challenge of providing good choices for improved mobility to a broad group of travelers or users of transportation services. While by far the greatest number of these travelers are behind the wheel of an automobile, the policy directions contained in ISTEA, clean air, and energy legislation strongly support developing alternatives to single-occupant vehicle travel.
- Taking a broader view of the responsibilities of transportation professionals is not new. In the 1970s the Highway Research Board became the Transportation Research Board, and in the 1980s the Institute of Traffic Engineers changed to the Institute of Transportation Engineers. Although actual practice in the field often lags behind these surface changes, transportation will continue to evolve in the 1990s to meet increasing demands and responsibilities.
- Traffic management and ITMS should encompass a broad focus. The term transportation management, rather than traffic man-

agement, may more accurately reflect the goals and objectives of these programs.

- This broader view should include the provision of information to travelers in their homes and places of work. Effective alternatives to the single-occupant vehicle will be found when all the modes are considered. This means looking at all travel options that could serve the mobility needs of urban areas. The challenge is to broaden the meaning of the "T" in ITMS: it is not just traffic, but transportation. Travelers need information to help them make educated decisions on what time to travel, what mode to use, and/or what route to take.

In closing, Mr. Fisher noted that he would be providing additional comments on many of these ideas at the closing session of the symposium. He challenged the members of the audience to reflect on the traditional mind set of the transportation profession. Mr. Fisher recalled that when he started to practice as a transportation engineer in the late 1950s there was no community involvement in the highway location decision process. This has changed significantly, with community involvement playing a key role today. Environmental, energy, and social concerns are the driving forces that will impact how the profession and decision-makers address mobility for travelers in the 1990s.