Vehicle Infrastructure Integration In Rural Transit Systems

Electronic Signs:
The common ITS use in small transit systems is electronic signs and the most prevalent information displayed on signs is:
• Current time and date
• Route number and final destination of vehicle
• Waiting time (countdown or time range)
• Service messages (disruptions or other important information)

Having reliable communication coverage in the service area is one of the most critical, yet most difficult for rural areas, to the success of real-time information on electronic signs.

Transmitted information can take the form of conventional telephone lines (most common), cellular communications (cellular digital package data), short range beacons, digital networks, and dedicated telephone lines (T1 lines).

Public Address Systems:
Driver initiated public address systems that use radio transmissions to announce arrival and departure information are in wide use. Systems vary in complexity and sophistication based on technology available at the time of installation and the funding available to purchase and maintain the systems.

Display Maps:
Display maps provide actual vehicle location (AVL) on a map of the service area made available via the Internet or at bus station/stop kiosks. Maps that display AVL often have routes highlighted with vehicle location and direction of travel. Predicted arrival time can also be provided using arrival/departure prediction software (Busview). A system of route maps with AVL data was used in the Barrow Transit System with information displayed on cable television. Barrow Transit ended service in June 2005.
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**Data Input:**
Automatic vehicle location (AVL) devices can be combined with a variety of technologies to provide information on present bus location, expected arrival/departure times, and system delays.

Driver initiated information (DII), although considered low-tech, can provide users with similar information through loud speakers, portable electronic devices and digital display technology.

**Processing:**
Most information requires some type of processing to be useful to the user. Digital information centers process and distribute information. Predicted arrival time can also be provided using arrival/departure prediction software (Busview). Processing DII can be as simple as converting a radio transmission into a audible message.

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**Information Distribution:**
The most prevalent information displayed on electronic signs is:
- Current time and date
- Route number and final destination of vehicle
- Waiting time (countdown or time range)
- Service messages (disruptions or other information)

Displays of actual vehicle location (AVL) on a map of the service area can be made available via the Internet or at bus station/stop kiosks. AVL displays often have routes highlighted with vehicle location and direction of travel. A system of route maps with AVL data was used in the Barrow Transit System. Information was displayed on cable television. Barrow Transit ended service in June 2005.

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