9. STUDY FINDINGS - OTHER ITI

This section offers a review of the various other innovative ITS systems or applications by individual ADOT Districts around the state of Arizona. Some, but not all of these ITS concepts would represent new solutions to local or regional concerns.

Operations Centers (Other than in Phoenix and Tucson)

The Holbrook District currently has an operations center located in Holbrook. The Flagstaff District has an operations center located in Flagstaff; it is open 7:00 AM to 5:00 PM Monday through Friday and as needed in emergencies.

Opinions vary widely between Districts in their desire to have independent, full-featured operations centers locally. The "24/7" availability of the Phoenix TOC is generally considered extremely beneficial, particularly in view of the limited operations schedule of the Districts (generally 8:00 AM to 5:00 PM). At the same time, a number of local ADOT staff mentioned a desire to increase local traffic operations and communications capabilities; however, no clear indication of desired features was provided to the Consultant. The overall impression gained through district interviews is that if the local districts were provided with sufficient staffing, a self-sufficient local TOC would be welcomed by most districts.

Snow Desks

When required (during winter storms), the Kingman, Flagstaff and Holbrook Districts operate "snow desks" to coordinate the Districts' snow plowing and other winter storm activities. The snow desk will normally remain open as long as any snow plows are still being operated. The ADOT TOC Operations Manual (12:39) provides the following operational guidelines to TOC operators:

1. DPS or ADOT personnel usually report snow and ice problems to the TOC.

2. The operator will advise on-duty DPS and ADOT personnel in the affected area that snow removal is being done.

3. If a call-out is necessary, refer to the district procedure for guidance.

4. The snow desk will notify the TOC when snow removal assignments have been completed.

Truck-Mounted Message Boards

Many maintenance organizations in ADOT Districts operate truck-mounted electronic message boards. These boards offer two lines of text and are found useful by most maintenance staff, due to the flexibility with which they can be moved about, compared

to the less mobile and flexible trailer-mounted portable VMS. The drawbacks of these truck-mounted signs are a smaller total message length and lesser board brightness, again compared to the trailer-mounted VMS.

Visibility Sensors

Visibility sensors are now part of the standard RWIS equipment. Generally, districts with significantly varying winter weather conditions (Kingman, Flagstaff, Prescott, Holbrook) and those experiencing dust storms (Safford) value this type of sensor as it allows their staff to detect potentially unsafe driving conditions. For example, the Safford District desires better visibility sensors, deployed over a wider range of locations. Districts equipped with remote cameras (also part of standard RWIS equipment), utilize them for visual verification of approximate weather conditions. A wider deployment of high-quality visibility sensors would result in more reliable estimates of actual visibility along the highways. The Tucson and Yuma Districts feel they have little or no need for these devices as they do not frequently experience severe reductions in visibility due to dust storms or severe precipitation or fog conditions. However, the Yuma District said that a potential application of visibility sensors would be to monitor I-10 near the Hope City truck stop for blowing dust.

Temperature Sensors on Snowplows

Northern ADOT Districts use air temperature and pavement (road surface) temperature sensors mounted on snow plows to assess the need for chemical anti-icing/de-icing during adverse weather. The Districts would prefer relying on the pavement sensors that are integral to the deployed RWIS stations; however, these units typically fail within the first year after installation and are considered unreliable by every District where they have been implemented.

Variable Speed Limit Systems

The Flagstaff District reported having researched variable speed limits. A software program to implement variable speed limits was developed and bench-tested, and it was determined that the system was capable of working. However, due to a number of factors including liability concerns, the effort was put on hold indefinitely. The Safford District expressed an interest in using variable-speed limit signs in school zones and long construction areas. However, enforcing the lower speeds could require special legislation. The District is aware of variable speed limits based on congestion levels being used successfully elsewhere.