Experimenting Agency Comments on AFADs

STOP/SLOW AFADs:

Autoflagger -- Minnesota DOT:

- In operation since 1996.
- The use of the autoflagger enhances safety for both the construction workers and the traveling public. The higher visibility provided by the autoflagger allows the driver to see the work zone earlier and prepare for it. In addition, the flagger operation will no longer require the operator to move in and out of traffic, which is consistently the most dangerous part of a (traditional) flagging operation.
- From a survey done of motorists passing through the TTC zone where the autoflagger was present:
    - 85 percent of drivers were not confused by the auto flagger
    - 87 percent of drivers would have acted as if it was a normal flagging operation
    - 83 percent of drivers believe that Minnesota DOT should continue to use the autoflagger

J4 Flagger Workstation – Illinois DOT:

- In operation since 1991.
- In all but two instances there were no observed problems with motorists reacting to the device. Except for these two incidents, all motorists stopped (within) 100 feet of the flagger and only minimal flagger hand signaling was required. This was encouraged since our experience with the flagger operations is that motorists normally stop too close to the flagger.
- The device was used in various types of weather including moderate fog, light rain, overcast, intermittent rain, as well as clear and sunny. The device was subjected to rough usage without any significant mechanical problems.
- The use of the larger 24-inch STOP/SLOW signs coupled with the use of the strobe lights provided better visibility compared to standard 18-inch STOP/SLOW signs.

Red/Yellow Lens AFADs:

RC Flagman - Ohio, Missouri, Wisconsin, and Alaska DOT's:

- Experimentation was conducted using an RC Flagman device at both ends of the TTC zone as well as one human flagger at one end and one RC Flagman device at the opposite end of the TTC zone. No vehicular crashes or incidents involving injury to the human flagger were recorded at any of the experimentation sites. Several key conclusion quotes from the States' reports follow:

- Ohio:
    - This study found that using the RC Flagman can be a cost effective way to provide for a one-lane closure.

- Comments from the traveling public were very favorable, video analysis indicate the public readily accepts the device, stopping in the appropriate location, and proceeding with caution when the arm is raised and light goes to flashing yellow.
- Comments from the flaggers and supervisors using the units were generally favorable as to the performance and usability including quick set up and tear down and ease of use etc.
- No crashes during the 2-year study period.
- In conclusion, the RC Flagman is a useful tool for saving money in traffic control while providing clear instructions to the traveling public. With the proper setup and adjustments to the standard traffic plan (MO) as outlined in this report, the device increases worker safety while saving money and reducing delay by allowing an extra worker to be performing work on the highway.

- Missouri:
  - Predominately, the traveling public stops for the RC Flagman when approached. Some people did not stop due to paying attention to the human flagger on the other side of the work zone (expecting to see a human flagger). RC Flagman located too close to equipment, and confusion on being a new product.
  - The next day when the RC Flagman was placed on the opposite end of the work zone, everyone but one stopped at the unit and gave predominantly positive remarks on the machine.
  - The crews commented in general that they felt confident with the RC Flagman, just as a human flagger. The few exceptions were due to location and terrain of the work zone (ex. around a curve, close to work equipment, etc.).
  - The use of RC Flagman showed a benefit/cost ratio ranging from 1.15-2.5 this year. By using the RC Flagman, the Bridge Maintenance crews did not have to borrow maintenance personnel from the districts for help when working on the bridges. The use of the RC Flagman could save other work units from giving up personnel and still accomplish the work that is required in other areas of MoDOT.
  - No accidents have been recorded since the study started in October 2002.

- Wisconsin:
  - The project engineer stated the presence of the yellow and red lenses on the RC Flagman helped to gain the attention of motorists, and compliance seemed better than with a typical flagging operation. Both the project engineer and the operator of the RC Flagman believed the operation was safer with the RC Flagman than with typical flagging because the operator was removed from the edge of the roadway. Also, the operator was in better position to warn construction equipment operators if a motorist disregarded the stop signal.

- No crashes were recorded during the time the remote flagger was operating.
- Similar to a typical flagging operation, it is critical for the operator of the remote flagger to have approaching traffic in view while operating the device and to follow proper procedures in determining the appropriate time to stop and release traffic. Also, to command respect from an approaching motorist it can be beneficial for the operator to be in view of the driver.
- Adding a flag to the end of the gate arm helps improve the conspicuity of the arm.
- If approved for the Manual on Uniform Traffic Control Devices, WisDOT project specifications could allow use of remote flagger devices at construction equipment crossings, and use at one-lane two-way sites could be considered if the operator demonstrates sufficient knowledge of the device and proper traffic management procedures to appropriately control traffic.
- The remote flagger successfully controlled traffic at the experiment site.

- Alaska:
  - Report not yet prepared, but verbal comments are that the RC Flagman operated successfully without any problems.