



# I-70 Hanging Lake Tunnel ATFMS

**Client: Colorado DOT**

**Location: Glenwood Canyon, CO**



## System Features

- Intrusion Detection
- Automatic Incident Detection
- 32-bit Servers
- Remote Terminal Units
- Dynamic Message Signs
- CCTV
- Embedded Loops
- Overheight Vehicle Detection
- Lane Use Signals
- Traffic Controllers (TC170)
- Highway Advisory Radio
- Telephone
- AM/FM Rebroadcast
- Fire Detection
- Environmental Monitors
- Fiber Optic Data Network

Owned and operated by Colorado DOT, Interstate 70 through Colorado's Glenwood Canyon traverses a stretch of the Colorado River using unique construction techniques to minimize environmental impacts to the scenic beauty of the region.

An Advanced Traffic and Facilities Management System (ATFMS) was developed and installed by Transdyn in two tunnels and four miles of I-70 through the Canyon. This system monitors vehicle speed, vehicle length and height, traffic congestion and incidents, traffic lane devices, dynamic message signs, tunnel ventilation system, fire detection system and electrical distribution.

The system runs on redundant servers and provides an interface to all field devices and operator workstations. The field devices are connected to remote terminal units (for data acquisition and control), traffic controllers connected to over 150 embedded loop detectors, twenty dynamic message signs, fire alarm system, voice communication system, highway advisory system, and closed circuit video cameras communicating to the computer system via a redundant fiber network.

A low-volume incident detection algorithm was developed and implemented to meet the requirement of detecting a single stalled vehicle in a remote mountain location. This algorithm compensates for lane and speed changes generated by the loop detectors.