

A decorative graphic on the left side of the slide, consisting of a network of white lines and circles on a blue background, resembling a circuit board or a stylized tree structure.

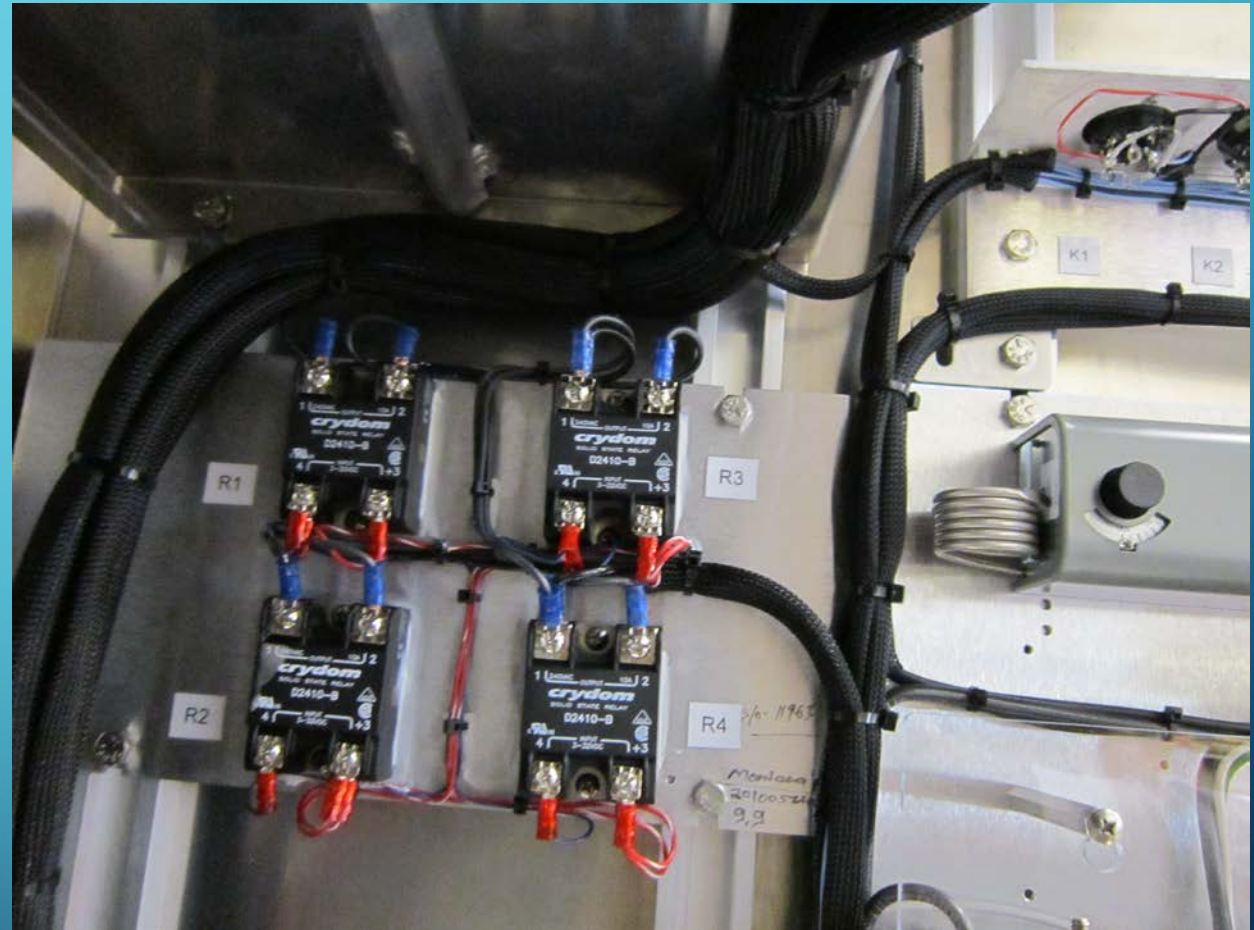
# RURAL SAFETY PROJECTS USING TECHNOLOGY

## APPLICATIONS:

ADVANCE FLASHERS FOR SIGNALS,  
CURVE WARNINGS,  
ICY CONDITIONS, HILLS, CURVES  
CROSS STREET TRAFFIC,  
NARROW ROADWAYS,  
BRIDGE DECKS,  
OVER HEIGHT DETECTORS  
SEQUENTIAL CHEVRONS

# ADVANCE FLASHER PANEL FOR CONTROL CABINETS

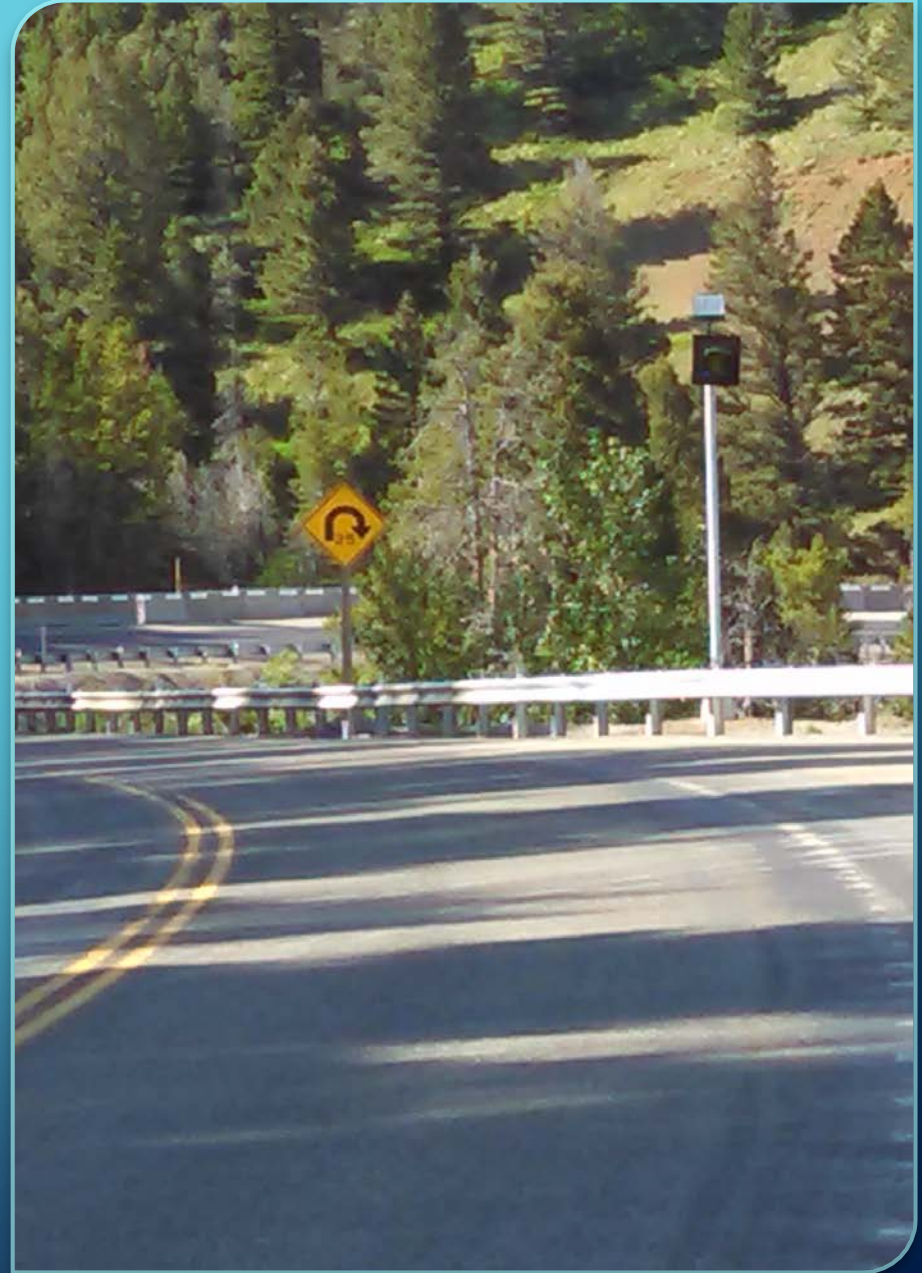
This panel can be wired into an existing cabinet or a new cabinet for turning ON/OFF Advanced Flashers





# WINTER/SUMMER ROAD CONDITIONS CHANGE RAPIDLY

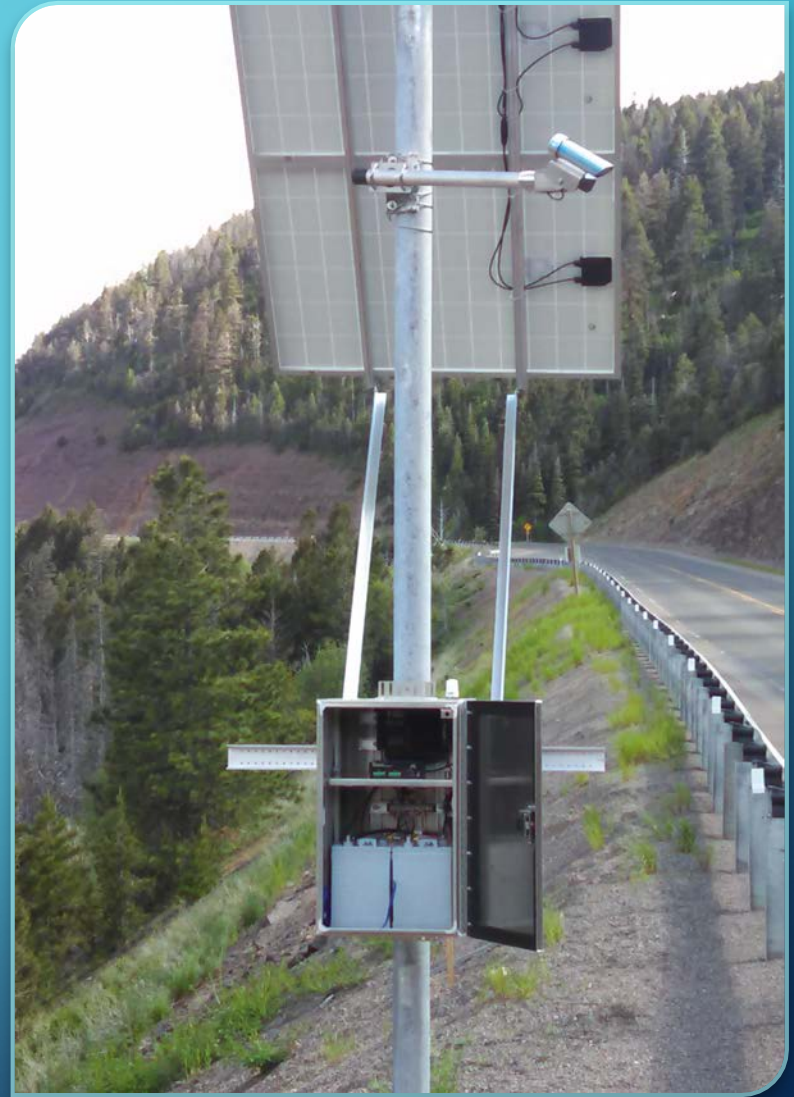
Currently there is no easy answer for curve warning systems for poor vehicle traction.



# MOUNTAIN PASS CURVE WARNING SYSTEM

Rogers Pass, MT —

Coldest location in the lower 48 states record of -70 F





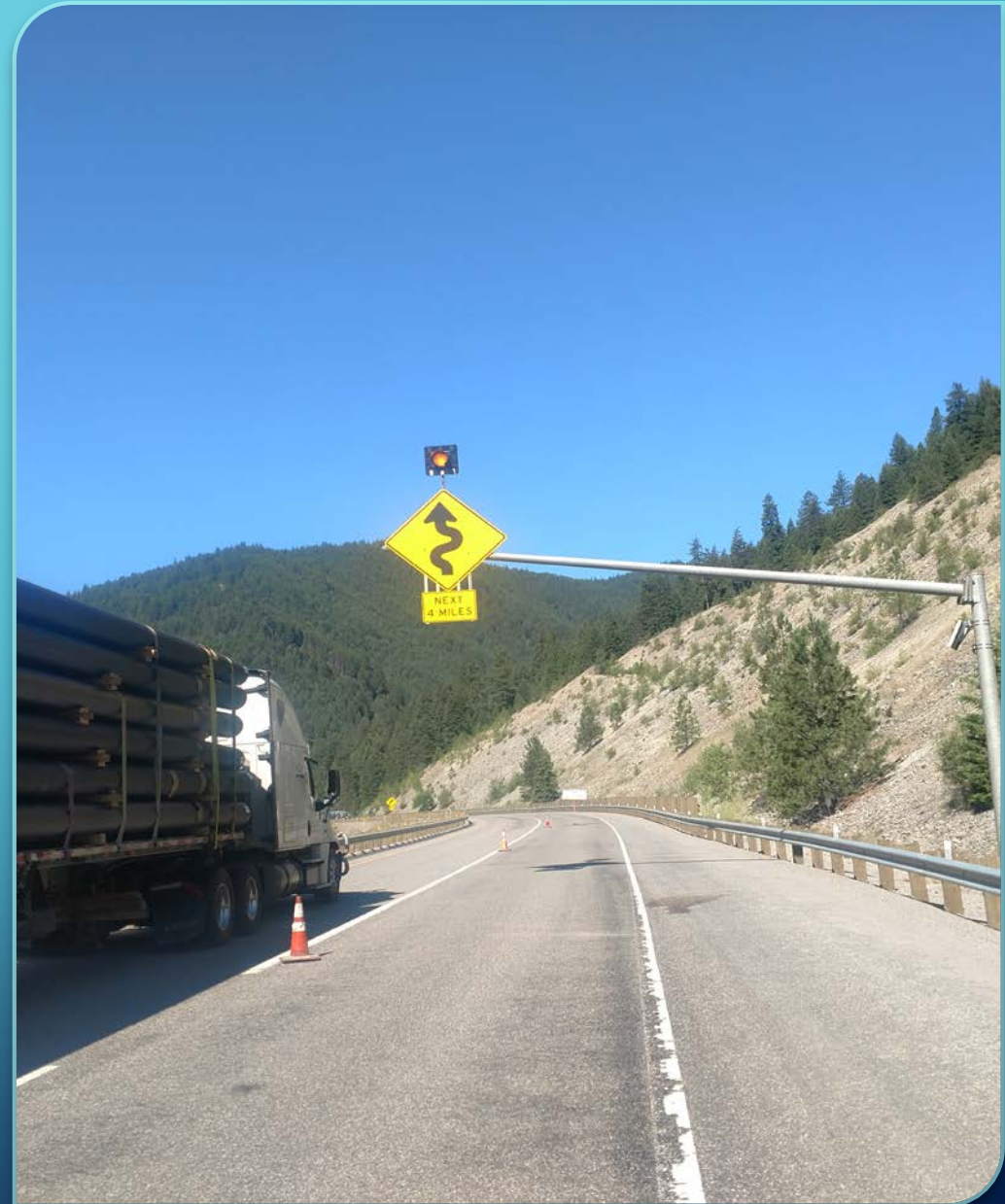
# LOOKOUT PASS E.B. I-90 MONTANA

Radar Activated Beacon



# LOOKOUT PASS W.B. I-90 MONTANA

Radar Activated Beacon





# SOLAR ENGINE

60 Watt Solar Panel and Engine

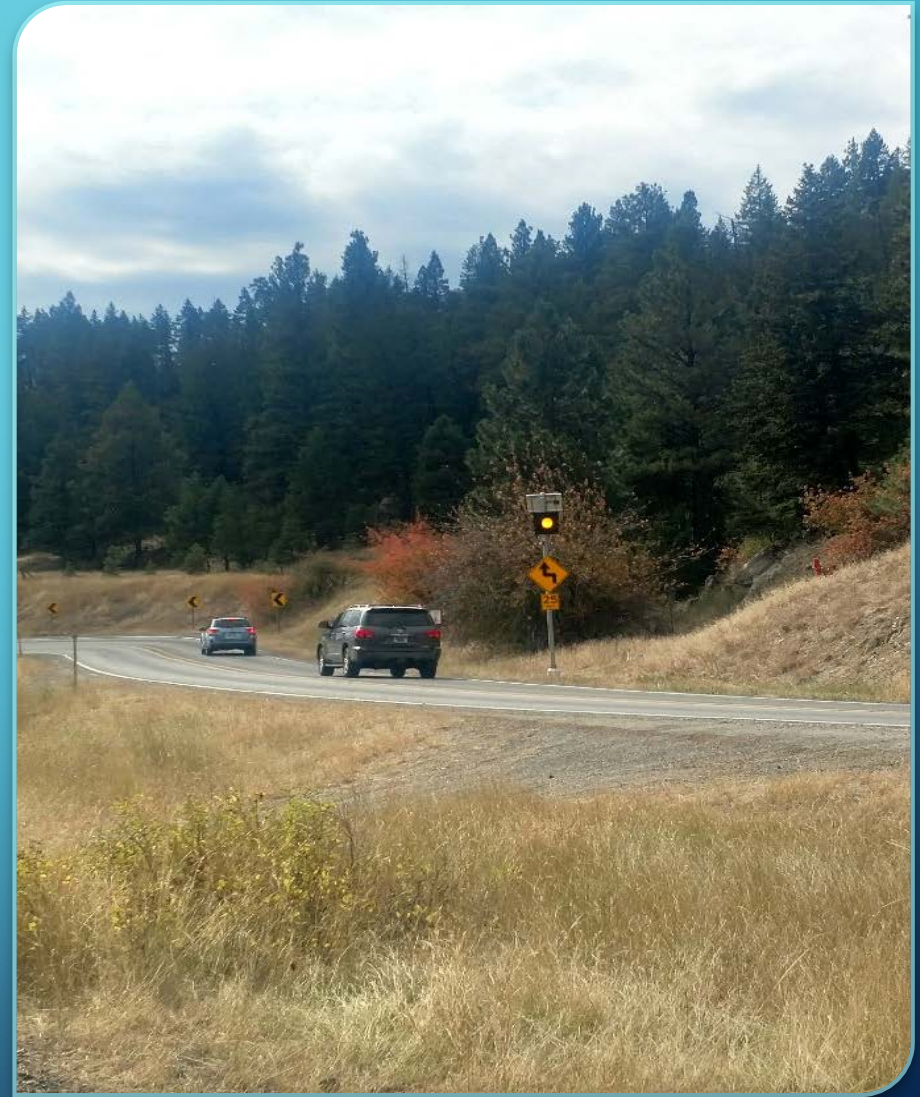




MONTANA CITY, MT

## EXTREME CURVE

Radar Activated Beacon

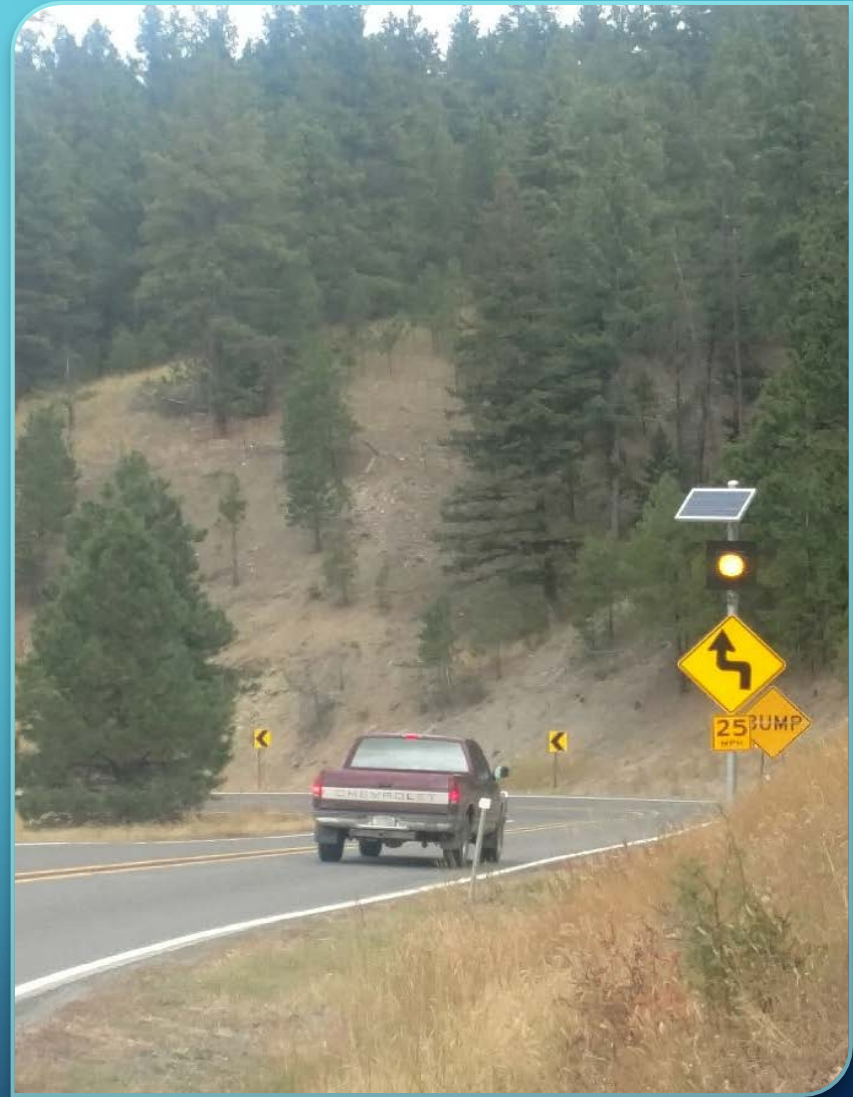




# MONTANA CITY, MT

## EXTREME CURVE

Beacon Activated



# CROSS STREET TRAFFIC HIGH SPEED INTERSECTION

Stop Signs Flash when Vehicles  
approach Stop Signs





# CROSS STREET TRAFFIC – HIGH SPEED INTERSECTIONS

FLASHING WARNING SIGNS - Warning motorists of on-coming traffic

All approaches – MAIN LINE AND SIDE STREET ARE NOTIFIED



# SIDE STREET TRAFFIC ON US 212

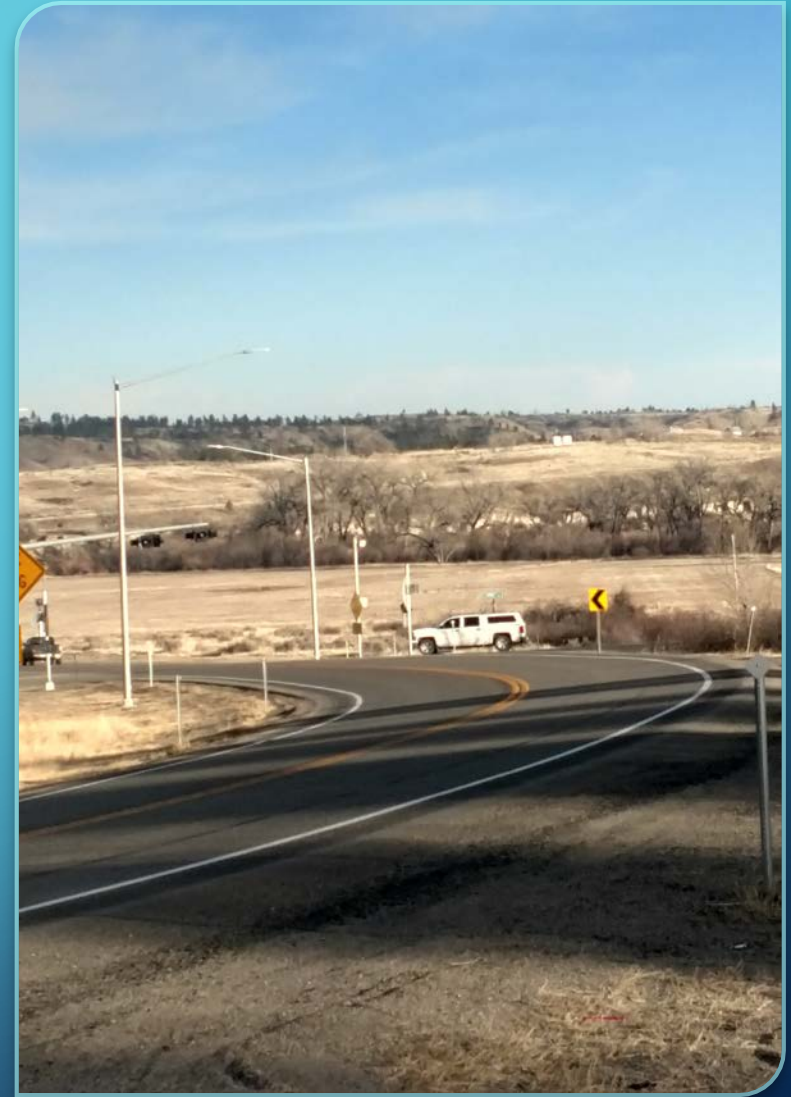
Cross street traffic – Loops on main line and  
Wavetronix side street detection





# DEAD MAN'S CURVE

Located outside Northern Cheyenne  
Reservation near Ashland, MT



# TYPICAL MAINLINE SIGNAGE

Flashing Beacon on Mainline alerts that vehicles  
are about to enter roadway







## ADVANCE FLASHER FOR CURVE

Two signs flash in advance of intersection. These signs are on all the time.







# STILLWATER MINE

- Beacon alerts motorists of crossing traffic





# STILLWATER MINE

- Mining truck is alerted a vehicle is about to pass thru the roadway





# SIDE STREET ENTRANCE ON US95 IN LEWISTON IDAHO

Originally there was two exits.

This last year it was reduced to one  
Left turn exit.

The side street is alerted when a  
vehicle on the highway is detected.





# NARROW ROAD WARNING

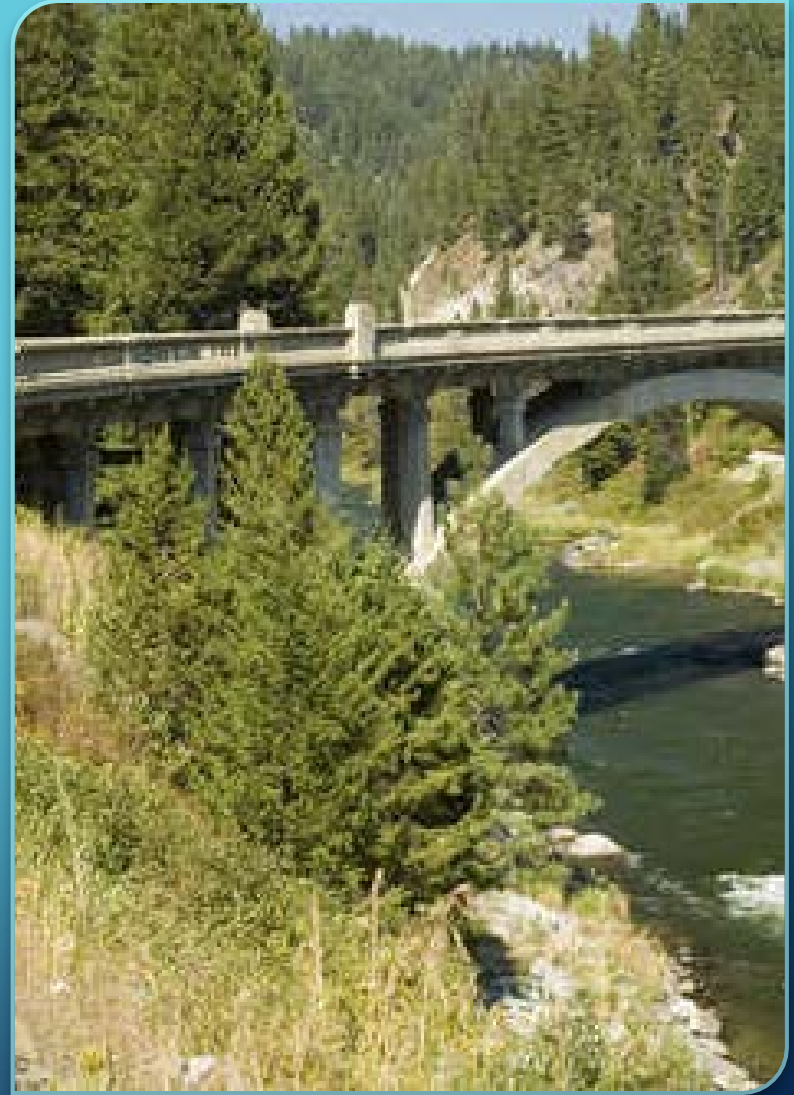
- Lets oncoming traffic know large vehicles/trucks are on-coming





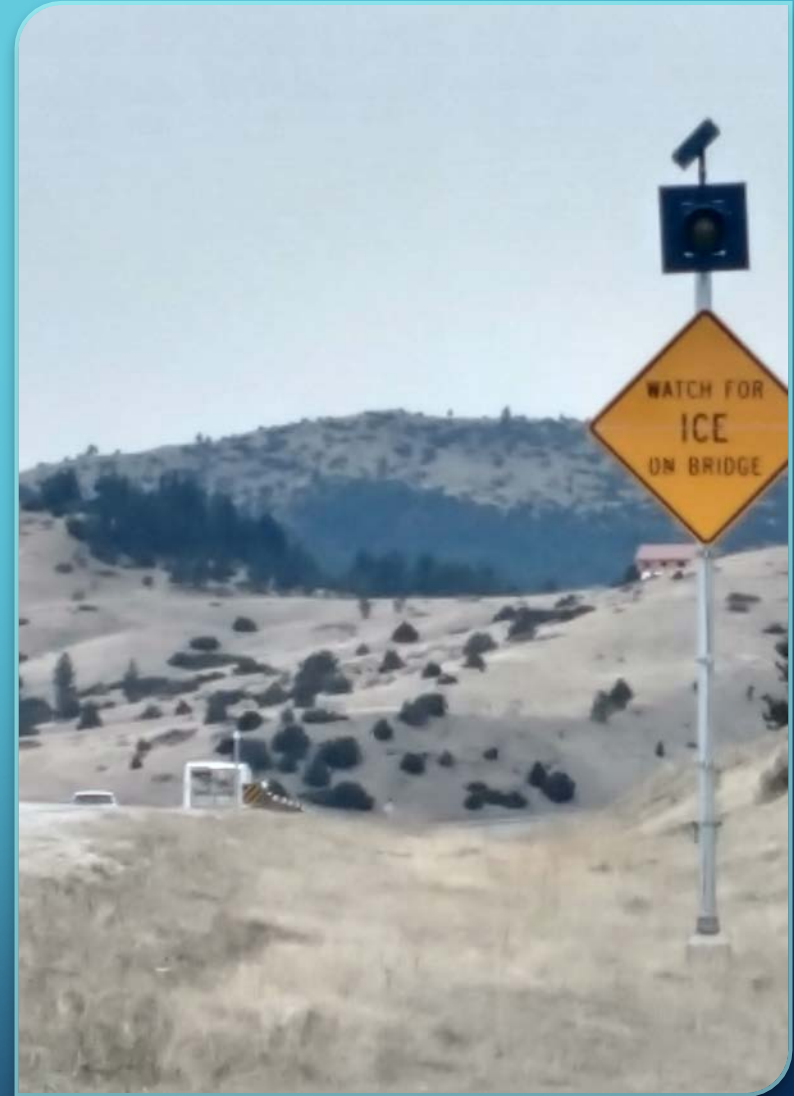
# BRIDGE DECKS

- There are more than 10,000 bridges in Idaho and Montana alone



# FLASHING BALLS ARE CURRENTLY USED FOR THESE APPLICATIONS

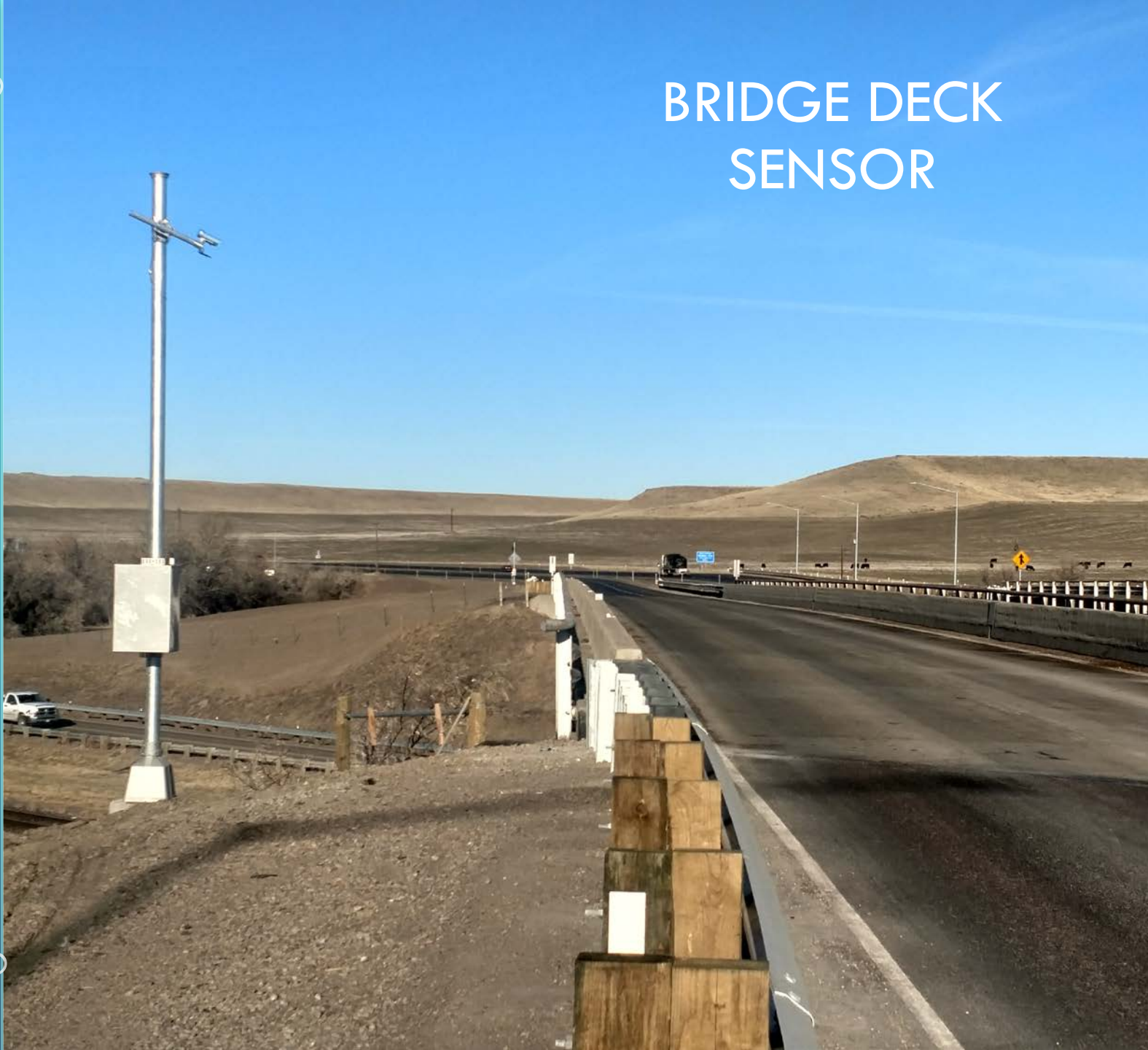
Flashing Beacons – Are not effective for slowing down motorists. These Flashers are flashing 24/7 whether the road condition is problematic or not.





# BRIDGE DECK SENSOR

- Sensor monitors Bridge deck and only turns on Flasher when temperature is within the selected limits



# FLASHING BEACON FOR BRIDGE DECK

- This is located in Great Falls





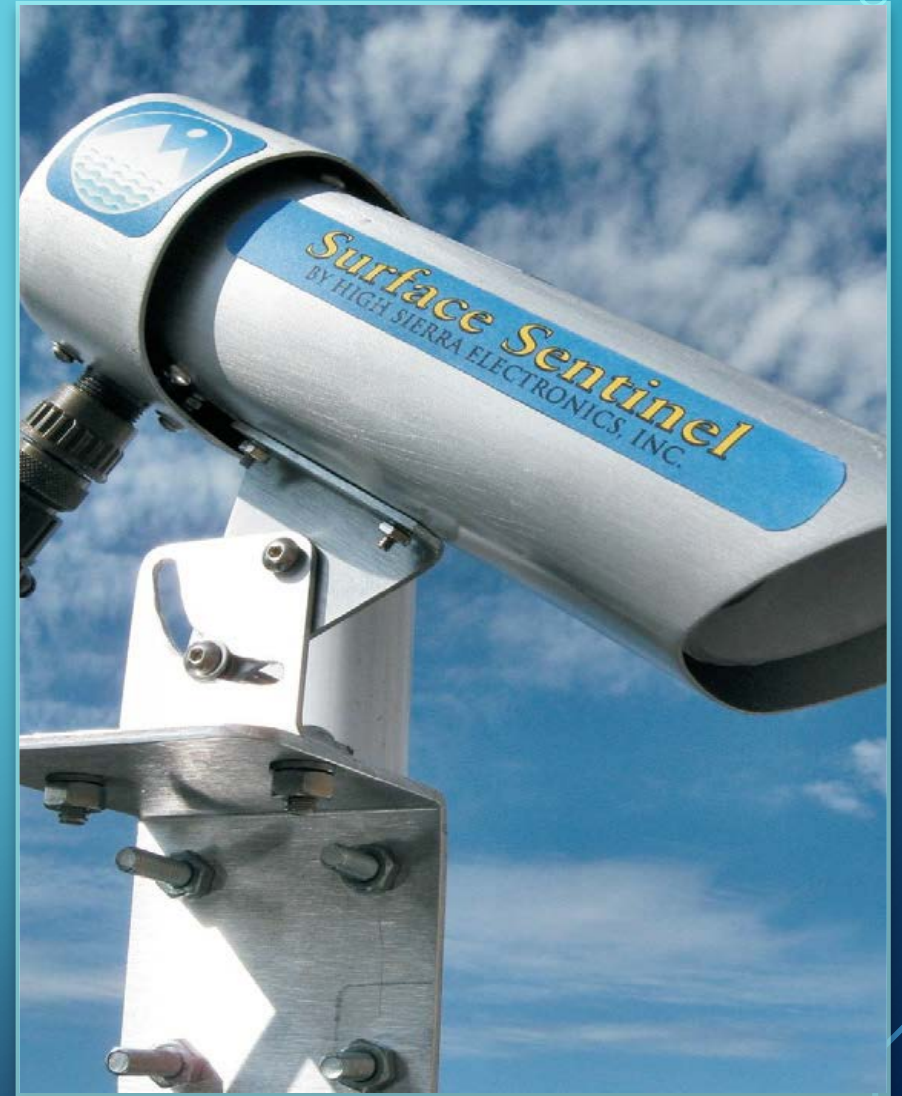
# FLASHING WARNING SIGNS ARE DIFFERENT

- They're more likely to get your attention
- These warning signs can Flash only when there's traffic
- These warning signs Flash only when there is potential for bad road conditions



# TEMPERATURE SENSOR

- Temperature sensor allows 2' diameter area at 10' height
- Temperature sensor uses only 150 microamps





# COMPONENTS FOR TEMPERATURE DETECTOR TYPICALLY LOCATED ON ROADSIDE OR THE JERSEY BARRIER

- Solar Panels
- Batteries
- Temperature Sensor
- Radio with digital outputs
- Device is small and mounts to Jersey barrier, center guard rail, or pole mounted
- Device wakes up at a predetermined time and checks roadway temperature
  - If the roadway temperature meets selected flasher temperature it radios an "ON" signal to up/down stream flashers.
  - When the roadway returns to a warmer temperature it radios an "OFF" signal to the up/down stream flashers

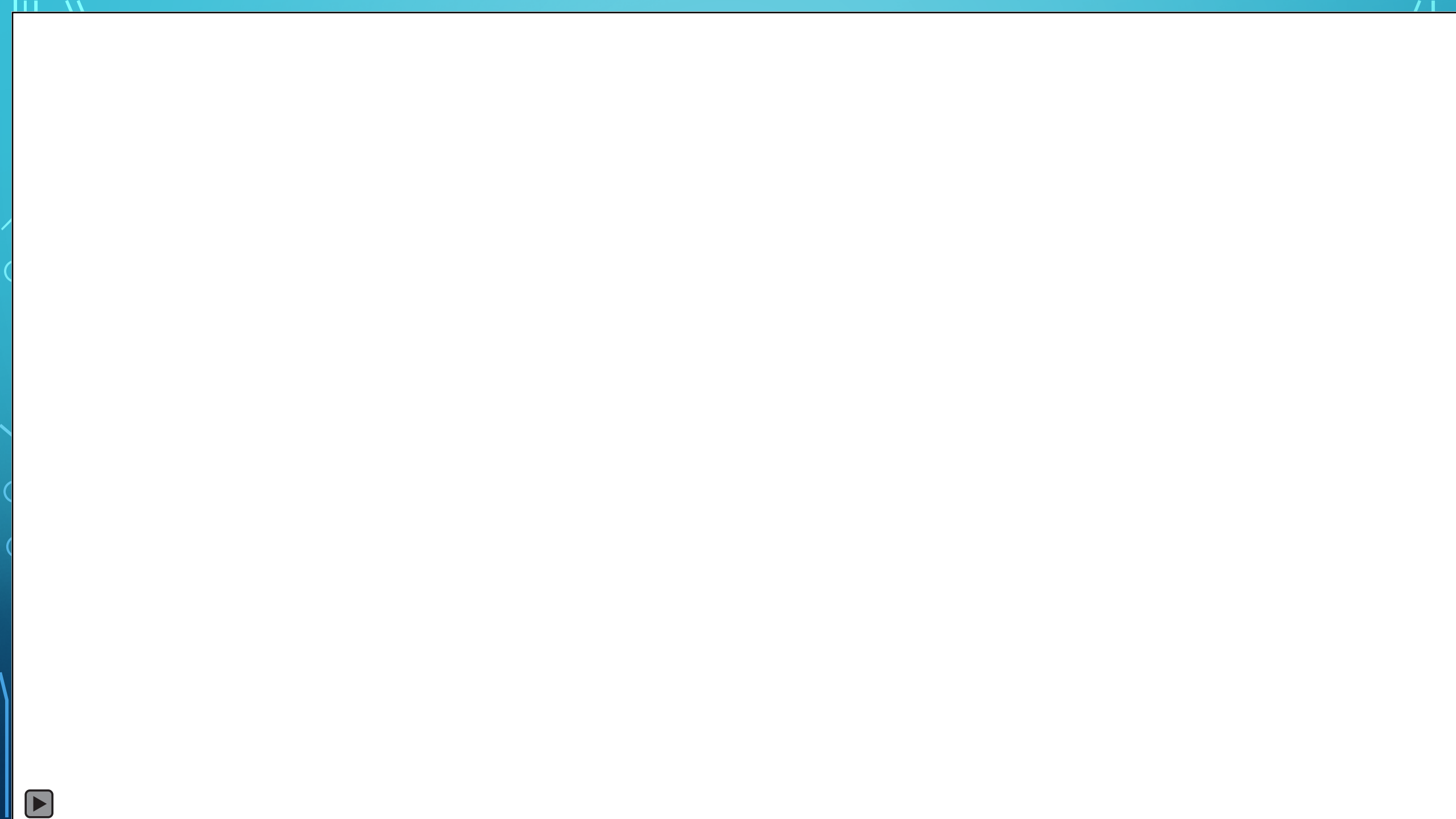
# COMPONENTS FOR TEMPERATURE FLASHER, SIDE STREET FLASHER, NARROW ROADWAY SYSTEMS

- Pole mounted
- Flashing Warning Sign/ 12VDC or 120VAC
- Radio (multiple channels) with digital outputs and/or Repeater operation
- Solar Panels and charger or 120VAC
- Radar unit



# SEQUENTIAL CHEVRONS

- CHEVRON SIGNS
- RADIOS
- POWER 120 VAC/12VDC SOLAR
- RADAR
- BATTERY BACKED UP FOR AC





# OVER HEIGHT DETECTOR

Located in Coeur D Alene, ID

- Lets motorists know that their load is too high.
- Flashers Beacons and Sign rings when detected





**Source**

**Detector**

**Freeway Over height Detector**



# FLASHING BEACONS AND SIGN RINGS

City of CD'A







# QUESTIONS?

- **Contact: Kevin Hanson at Western Systems**
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- **[Khanson@westernsystems-inc.com](mailto:Khanson@westernsystems-inc.com)**