

Variable Speed Limit Project

I-80 Coalition

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Introduction

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Agenda

- Variable Speed Limits (VSL)
- Enhanced Citizen Assisted Report (ECAR)
- 511 Notify & WYDOT Authorized Travel (WAT)
- Chain Law
- Maintenance statistics for I-80
- Snow Fence

Variable Speed Limit Project

Components

- Legislation
- Physical devices
 - Mechanical
 - LED
- Communication system
- People
 - Patrol
 - Maintenance
 - TMC Operators

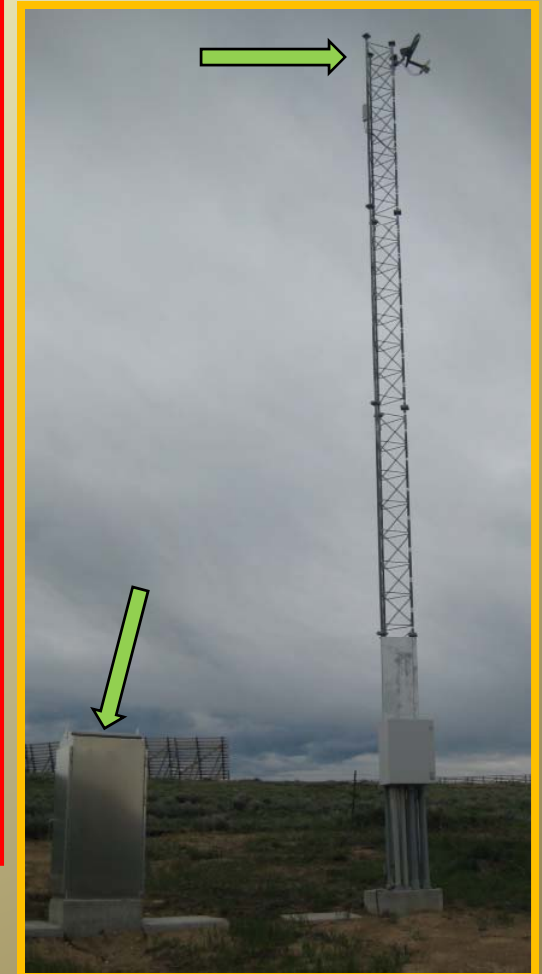
Components (Cont.)

- Feedback (speed sensors)
- Protocol/process
- Evaluation

Legislation

- Legislation went into effect 7/1/2008
 - Grants authority to set the speed limit based on "**vehicle or weather emergency**"
 - "...differing limits may be established for different times of day, different types of vehicles, varying weather conditions, and other factors bearing on safe speeds, which shall be effective when posted upon appropriate fixed or **variable signs**. ◆"

What Does a VSL Sign Look Like?



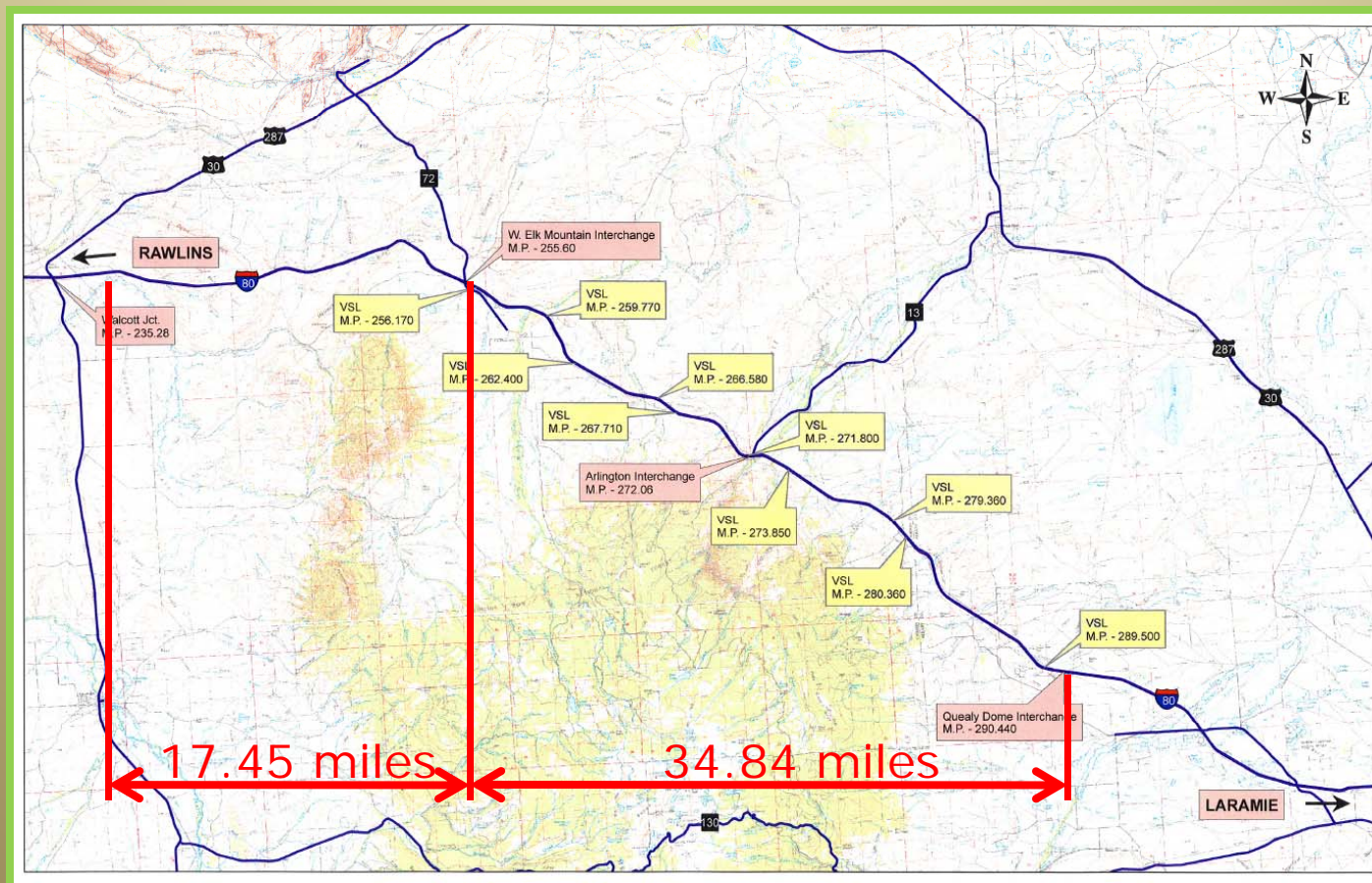
Project Location – State View

South-central Wyoming



Project Location

- Peterson Int. (MP 238.15) to Quealy Dome (MP 290.44)

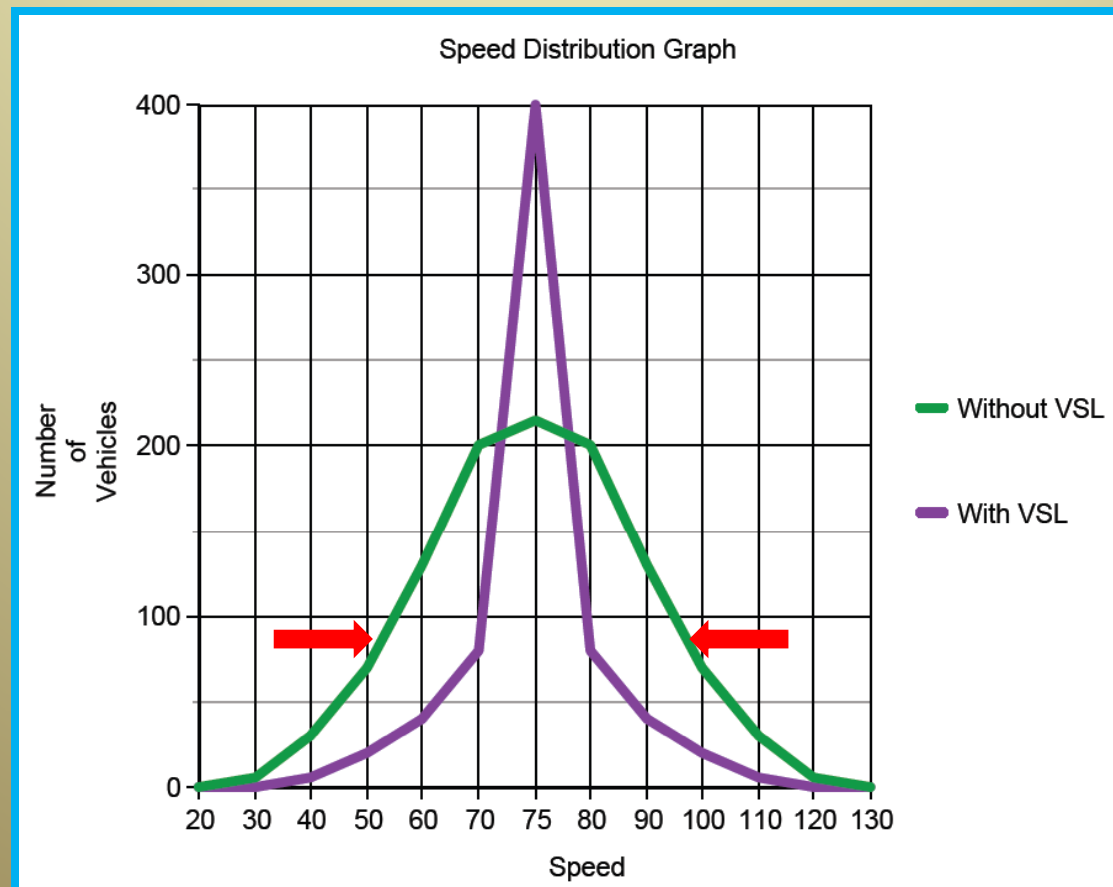


VSL Approach

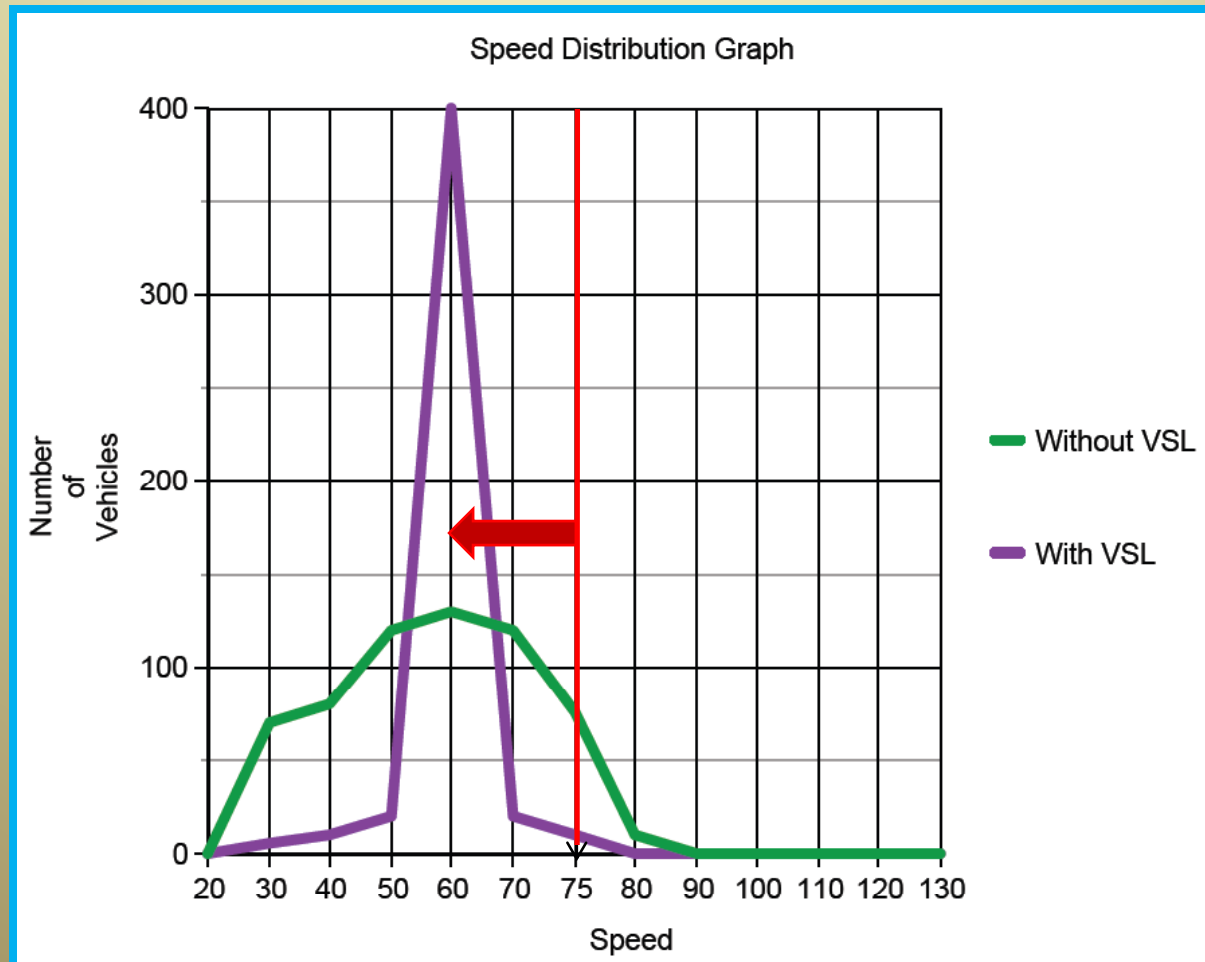
- Provide timely and site-specific regulatory speed limit to guide travelers through the corridor
- Conduct research to determine if a positive benefit is realized and to develop processes - research conducted by Dr. Rhonda Young

VSL Approach

- Focus: tighten speed distribution



Representative Scenario



VSL Approach

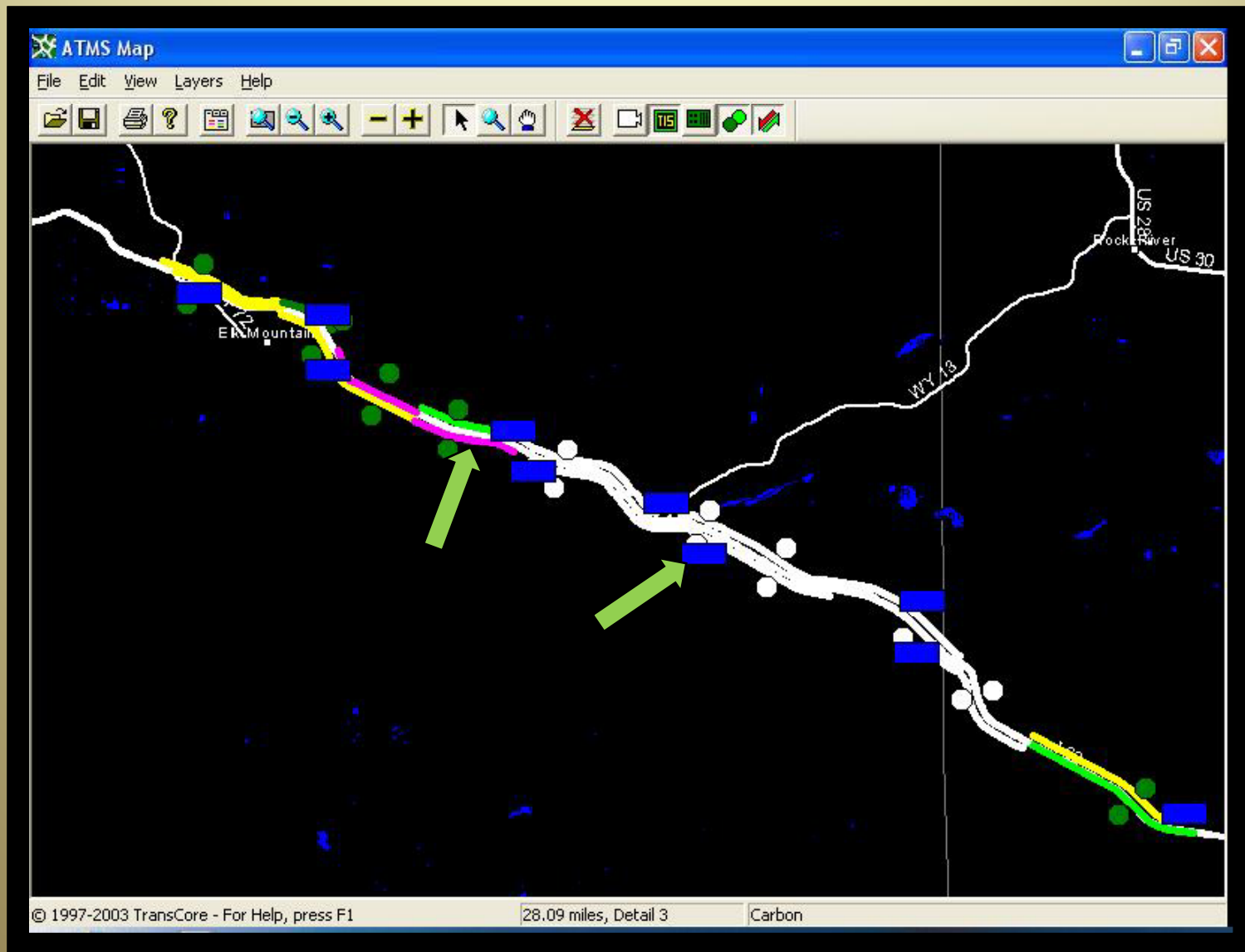
- Encourage drivers to travel at the same speed AND set a speed that is appropriate to conditions
 - System would act more like a train
 - Risk of crashes is reduced
 - Risk of severe crash is reduced
 - Risk of closure is reduced
 - Economic benefits

VSL Process

- Interim Protocol/Policy
 - WHP or Maintenance Foreman may lower speed based on visual inspection
 - TMC can lower speed if speed varies more than 10 mph and no one is available for visual inspection
 - Only WHP or Maintenance can raise speed limit

- Interim Protocol Used until Decision Support System completed

Interstate 80 – VSL Project



Interstate 80 – VSL Project

The image displays a traffic sign control interface for Interstate 80. The central focus is a large white sign with a black border that reads "REDUCED SPEED LIMIT 35". To the left and right of this sign are two smaller, semi-transparent images of the physical sign, each featuring a red light at the top and the text "REDUCED SPEED LIMIT 35".

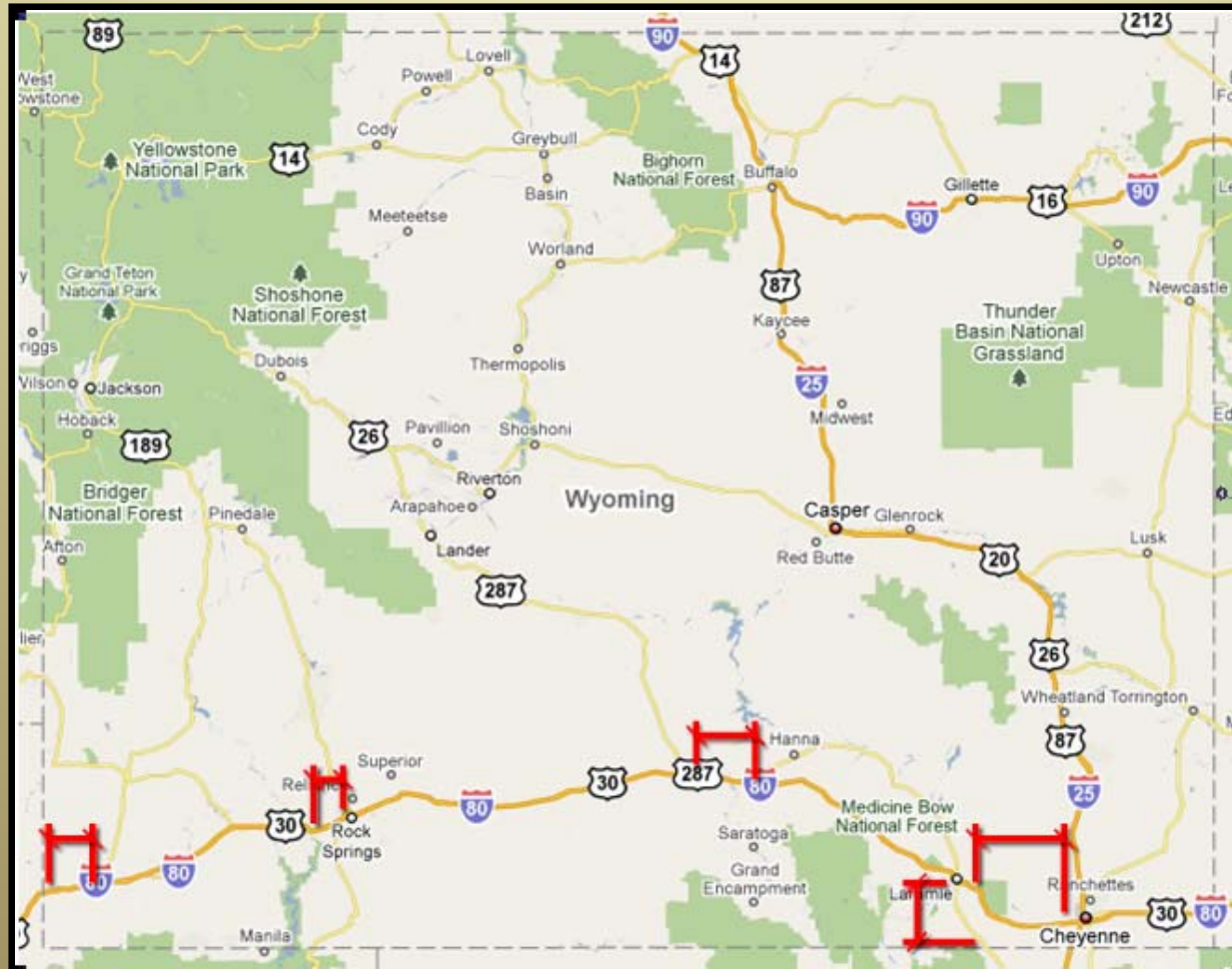
The control interface is a software window titled "Page: 80 WB 289.5 (Quealy Dome) Left Lane". It includes a dropdown menu with "LOW" selected. A "Selected Sign" field contains the text "80 WB 289.5 (Quealy Dome) Left Lane". Below this, there are two rotors: "Rotor: 1" is set to "REDUCED" (indicated by a green arrow), and "Rotor: 2" is set to "35" (indicated by a green arrow).

VSL Results

- Speed sensors indicate drivers are responding to posted speeds during storm events
- Preliminary results indicate a 0.74 to 1.1 mph speed reduction for every mph hour reduction in posted speed

Future Plans

- Favorable response – 5 more projects



Future Plans

Cabinet



VSL sign



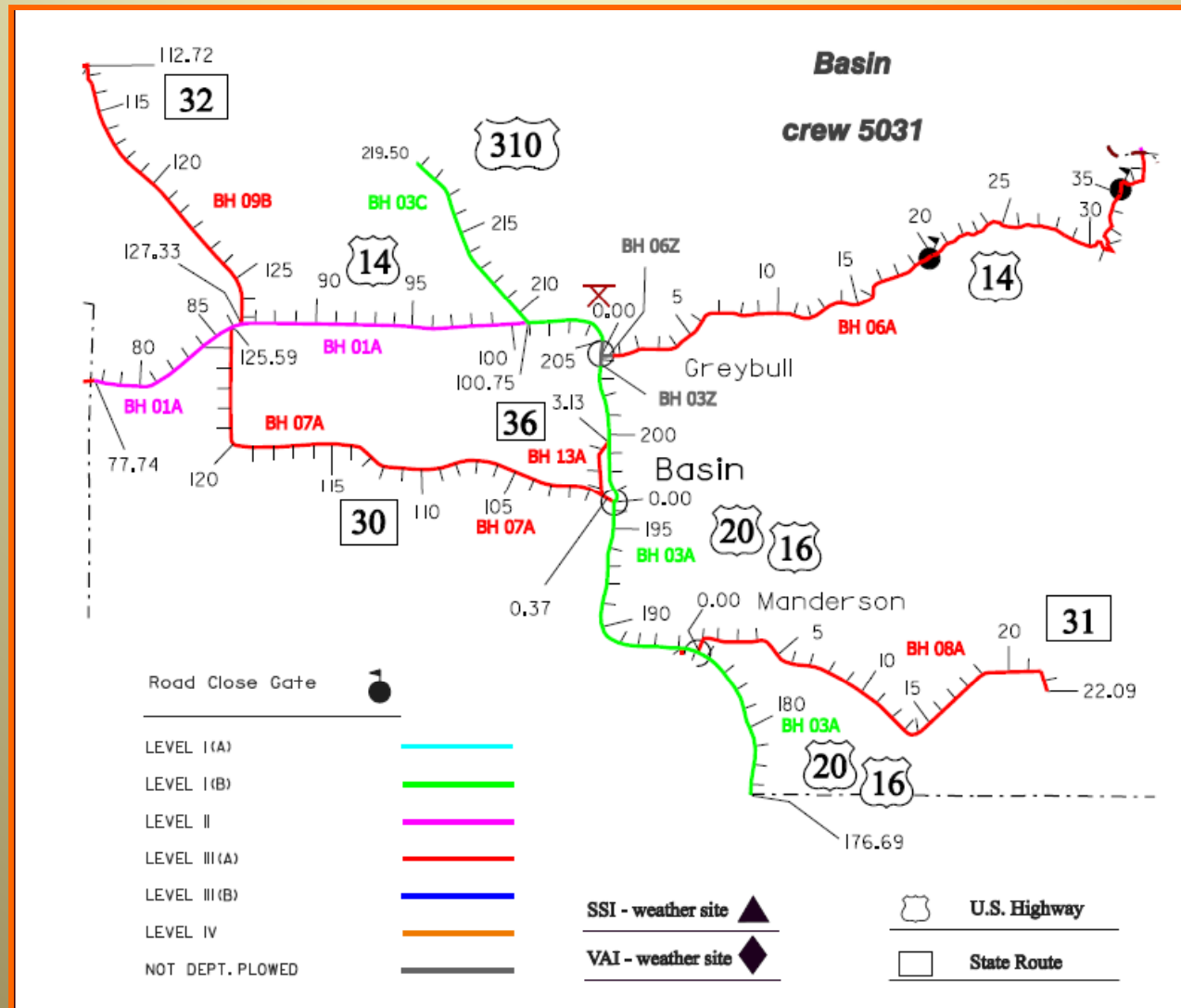
ECAR

ECAR

- Enhanced Citizen Assisted Reporting
- Statewide effort
- Citizens
road co
reports



Picture Flip Book



Picture Flip Book



Picture Flip Book



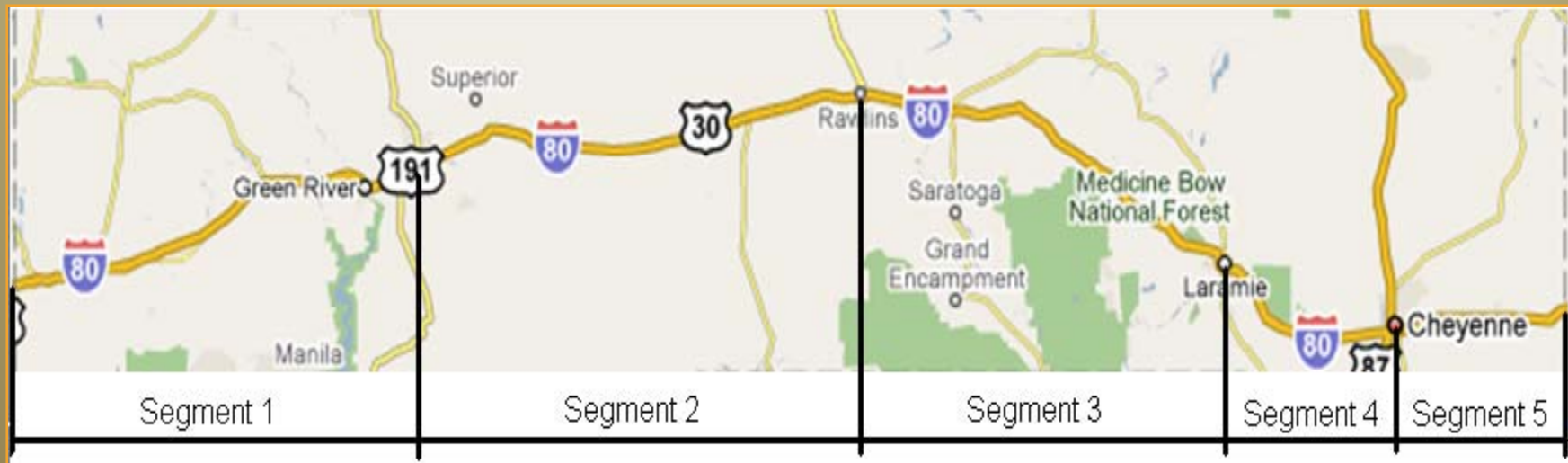
511 Notify

What is 511 Notify?

- **What is 511 Notify?**
 - 511 Notify is a messaging system that allows a recipient to receive important messages via email and text messaging.
- **How does 511 Notify work?**
 - Subscribers can choose the route segment(s) and time(s) for which they are interested in receiving messages. Messages will be sent to the primary email address listed on a subscribers' account and may also be sent to a secondary email address or cell phone number.

Routes/Segments – I-80

- Each route is broken into 1 or more segments
- Segments follow our 511 (telephone) system



511 Notify (cont.)

- What does the **GENERAL PUBLIC** receive?
 - Temporary and Seasonal Closures/Opening
 - Travel Advisories Currently in Effect:
 - Chain Law
 - No Unnecessary Travel
 - Reduced Visibility
 - No Light Trailers
 - High Wind
 - Black Ice
 - No Trailer Traffic
 - Falling Rock
 - Speed limit adjustments

511 Notify (cont.)

- What do **WYDOT EMPLOYEES** receive?
 - For each segment, we have created a "RESTRICTED" message Item
 - Must have DOT email address to subscribe
 - Receive:
 - Temporary and Seasonal Closures/Opening
 - Speed limit adjustments (Laramie to Rawlins)
 - Internal Communications
 - Expected closure and opening times
 - Problems associated with roadway
 - Etc.

WYDOT Authorized Travel

WYDOT Authorized Travel

■ Old process

- Trooper sits at a gate and authorizes travel
 - Works well but manpower is an issue
- Individual calls into WHP Dispatch Center to request permission
 - Works well but process is not well publicized and it creates a burden on the Dispatch Center
 - Burden could increase as people become aware of this process
 - Burden peaks during times when Dispatch is busiest

New Process

- No change to existing methods for approving travel (at gates and via Dispatch Center)
- Use 511 Notify (GovDelivery) as a new option
 - Allow local residents to APPLY for permission to travel when conditions are not dangerous
 - Application process details individual responsibilities
 - Carte blanche travel is NOT allowed
 - Individual must receive permission on a closure-by-closure basis

New Process

- Applications received/approved by Patrol
- Once approved, individuals are subscribed to a hidden 511 Notify item called, "WYDOT Authorized Travel (WAT)"
- There is one WAT segment per roadway segment

New Process

- Messages to WAT item state locations for which travel is authorized
- Messages updated as conditions change
- Numerous applicants receive the authorization within seconds of delivery

Chain Law

Chain Law

- Old (Tier 1) Chain Law permits vehicles with adequate snow tires to travel
- New (Tier 2) Chain Law restricts travel to All-Wheel Drive Vehicles or vehicles with Chains.
- Two pilot sections for 2009-2010 season

Maintenance



Maintenance

- I-80 Physical Characteristics
 - 400 Centerline Miles
 - High Desert
 - Majority of length well over 6,000 feet in elevation
 - Relatively little vegetation
 - Few large land features
 - Consistent Winds
 - Significant wind farms both existing and proposed along much of its entire length within Wyoming

Maintenance

■ Traffic

- AADT Range: 7,500 to 25,000
- Average: approx 13,500
- Truck Percentage Range: 30% to 60%
- Average: approx 50%

Maintenance

- Resources

- 14 Maintenance Stations

- 114 Full-time Employees
- 9 Temporary Employees during winter

- Equipment

- 14 Single Axle Dump Trucks w/ plow & spreader
- 72 Tandem Axle Dump trucks w/ plow & spreader

Maintenance

- Resources

- Equipment (cont')

- 26 Loaders
- 5 Motorgraders
- 3 Dozers
- 5 Large Rotary Snow Plows
- 1 Loader-Mounted Rotary Snow Plow

Maintenance

- Slowly adding ability to use more chemicals to our snow fighting arsenal
 - Salt Brine Plants in 3 locations
 - Magnesium Chloride Solutions
 - Ice Slicer
 - Higher Salt Content in Salt-Sand

Maintenance

- Snow Fences
 - Structural
 - Living
- 397,900 LF (75.4 miles)

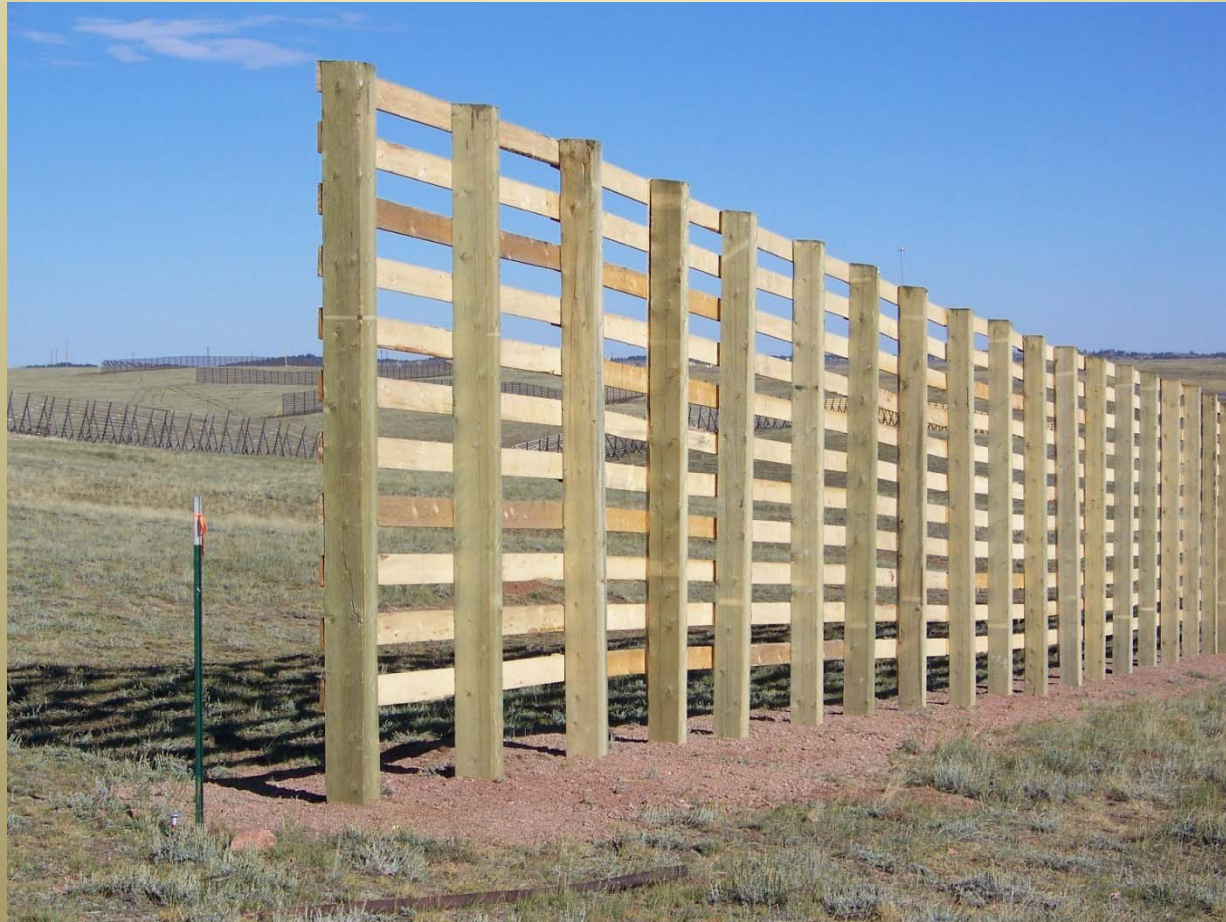
Maintenance

Structural Snow Fences

Maintenance



Maintenance



Maintenance



Maintenance



Maintenance



Maintenance



Maintenance



Maintenance



Maintenance

Living Snow Fences

Maintenance



Maintenance



Questions/Comments

