

# Wyoming Department of Transportation



11 October 2016

Presented By: Sarah Rickgauer, P.E., Assistant Pavement Management Engineer



# Pathway Services Inc.

## INNOVATIVE PRODUCTS Data Collection



Automated Crack Detection added 2016!!



# Data Archives

- Pavement data used for section ratings:
  - Pavement smoothness: International Roughness Index (IRI)
  - Rutting: inches
  - Pavement cracking and distresses: Pavement Condition Index (PCI)
  - Composite: Present Serviceability Rating (PSR)  
Asphalt:  $PSR = PSI - 4 * Rut^2 - 3 * (1 - 0.01 * PCI)$   
 $PSI = 5.35 * \exp(-0.0058 * IRI\_HCS)$   
Concrete:  $PSR = PSI - 5 * (1 - 0.01 * PCI)$   
 $PSI = 5.0 * \exp(-0.0038 * IRI\_HCS)$

# AGILE ASSETS – PAVEMENT ANALYST



Linear Asset Mgmt

[Production] Version AMS\_WY 7.0.2.0-RELEASE development-1509100840 Build

SNRICKGAUER / 6720 - Materials - Bituminous / Linear Asset Mgmt General

Quick Links Settings Help

Utilities Setup Database Analysis Linear Network Tools Reports

Linear Asset Mgmt > Analysis > Network Analysis... > Optimization Analysis

Save Data Retrieve Data

Setup Results Constr Results Report

Find Scenario

Scenarios Actions

\* Analysis Type

Multi-Constraint

Has Results

Scenario Number

360

\* Scenario Name

2023 Candidates Network Master

\* Year of condition data

2015

Analysis Length

8

\* Save Details

\* DT Conn Type

General

Work Plan Type

<< 1 2 3 4 5 >> Row 4 of 5 total rows

Yearly Financial Parameters Actions

Year Interest Rate

1 0.04

<< 1 2 3 4 5 6 7 8 >> Rows 1-1 of 8 total rows

Constraints Actions

Is Objective	Constraint Column	Constr. Type	Constraint Limit Value	Condition ...	Scenario...	Add Constr.	Constrai
<input type="checkbox"/>	Treatment Cost	Total	237685236		1		
<input type="checkbox"/>	Treatment Cost	Total	334624103		2		
<input type="checkbox"/>	Treatment Cost	Total	319447524		3		
<input type="checkbox"/>	Treatment Cost	Total	484909189		4		
<input type="checkbox"/>	Treatment Cost	Total	458739537		5		
<input type="checkbox"/>	Treatment Cost	Total	352220232		6		
<input type="checkbox"/>	Treatment Cost	Total	292747763		7		

<< 1 2 >> Rows 1-7 of 9 total rows

Reporting Functions Actions

Constraint Colu...	Constr. Type	Condition Threshold	Add Constr.	Constraint Subdivision
PSR Index	Weighted Avg	60		

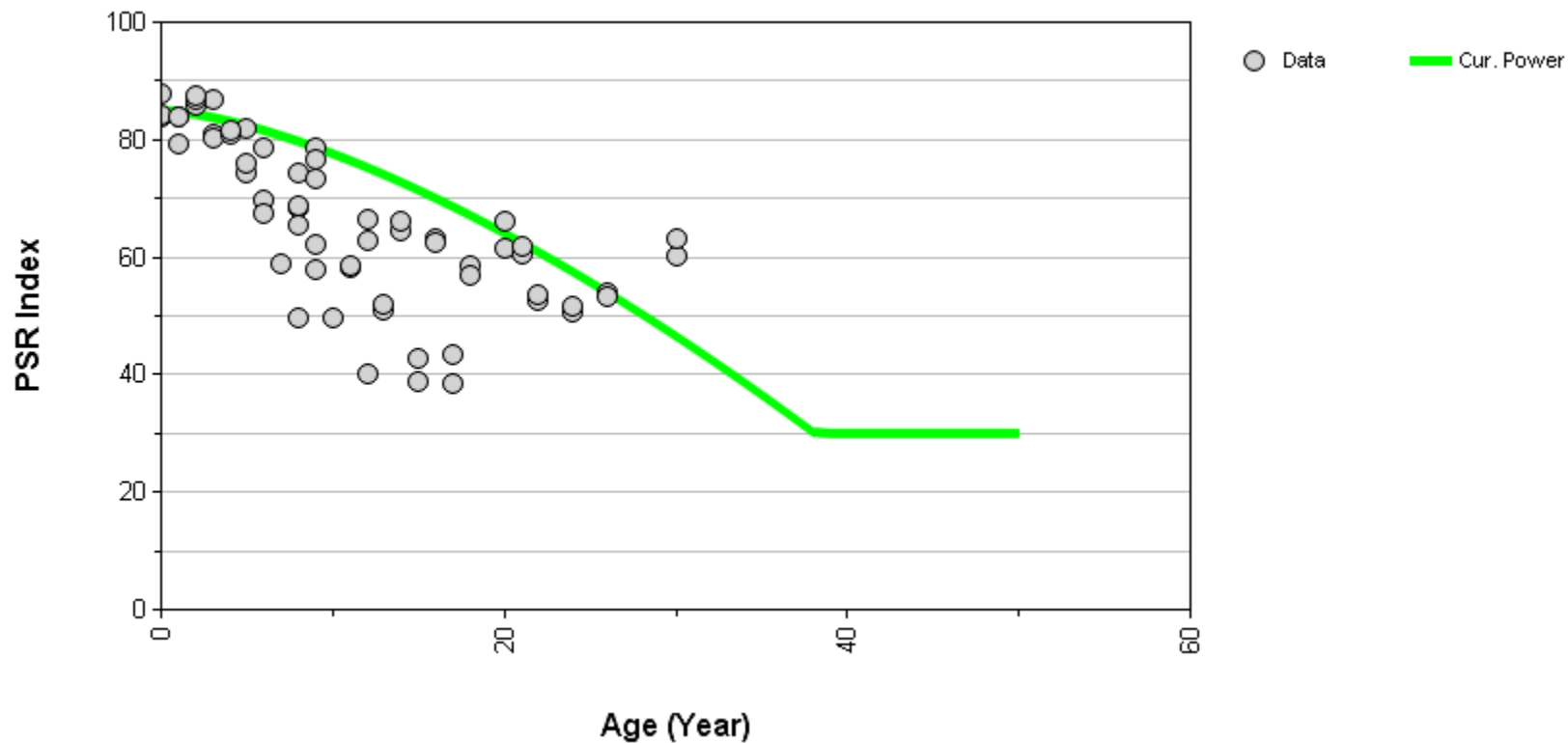
<< 1 >> Rows 1-1 of 1 total rows

- Optimize our system by Treatment Cost
- Broken out in 10 different “buckets”
- By system and by treatment

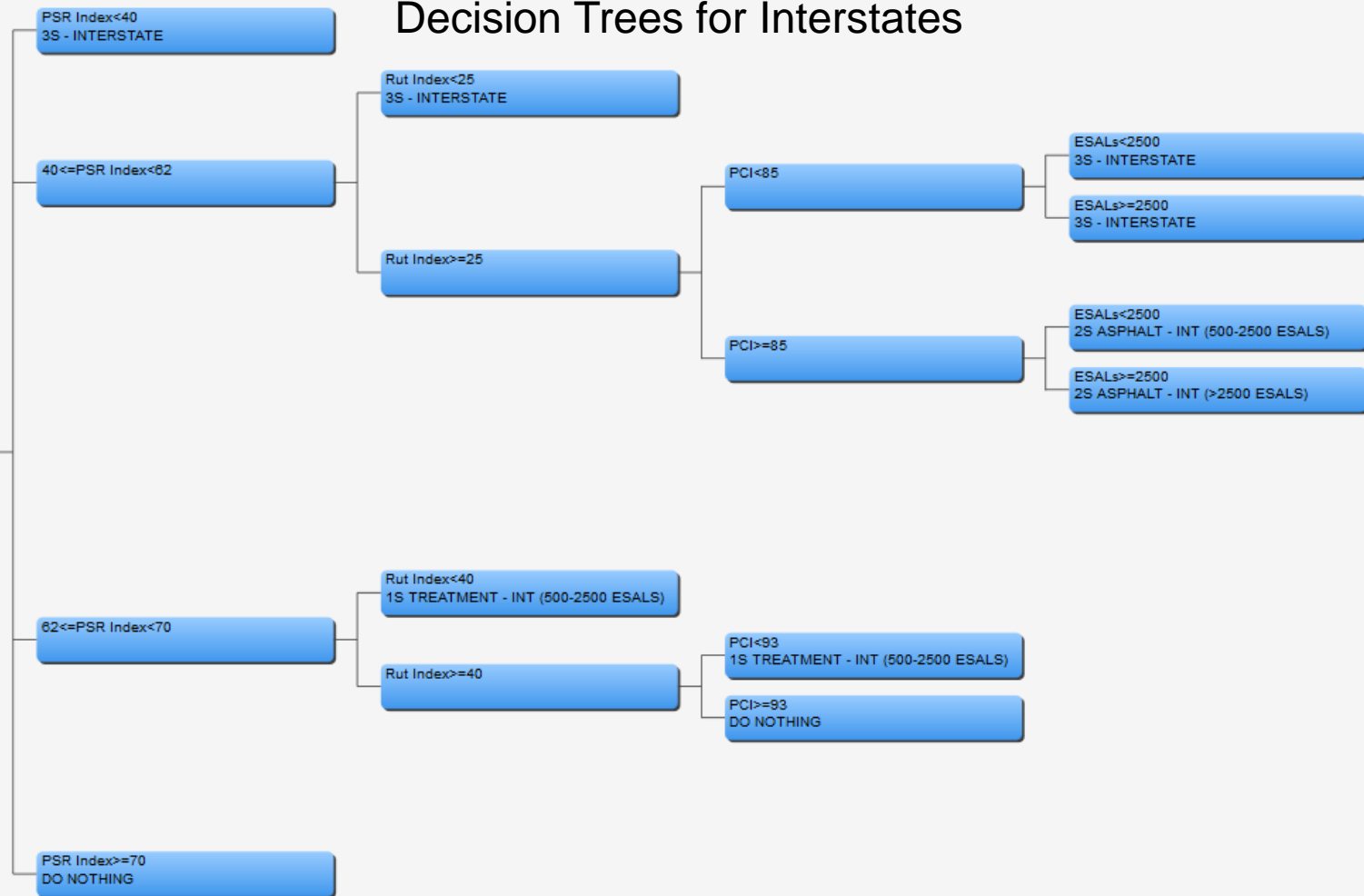




## I-25 & I-90, ESALs $\geq$ 200, HPM over Base, AG Base



# Decision Trees for Interstates



# Budget Categories

- 10 Pavement Funding “Buckets”
  - Interstate
    - 1S, 2S, 3S
  - Non-Interstate NHS
    - 1S, 2S, 3S
  - Non-NHS
    - 1S, 2S, 3S
  - Urban

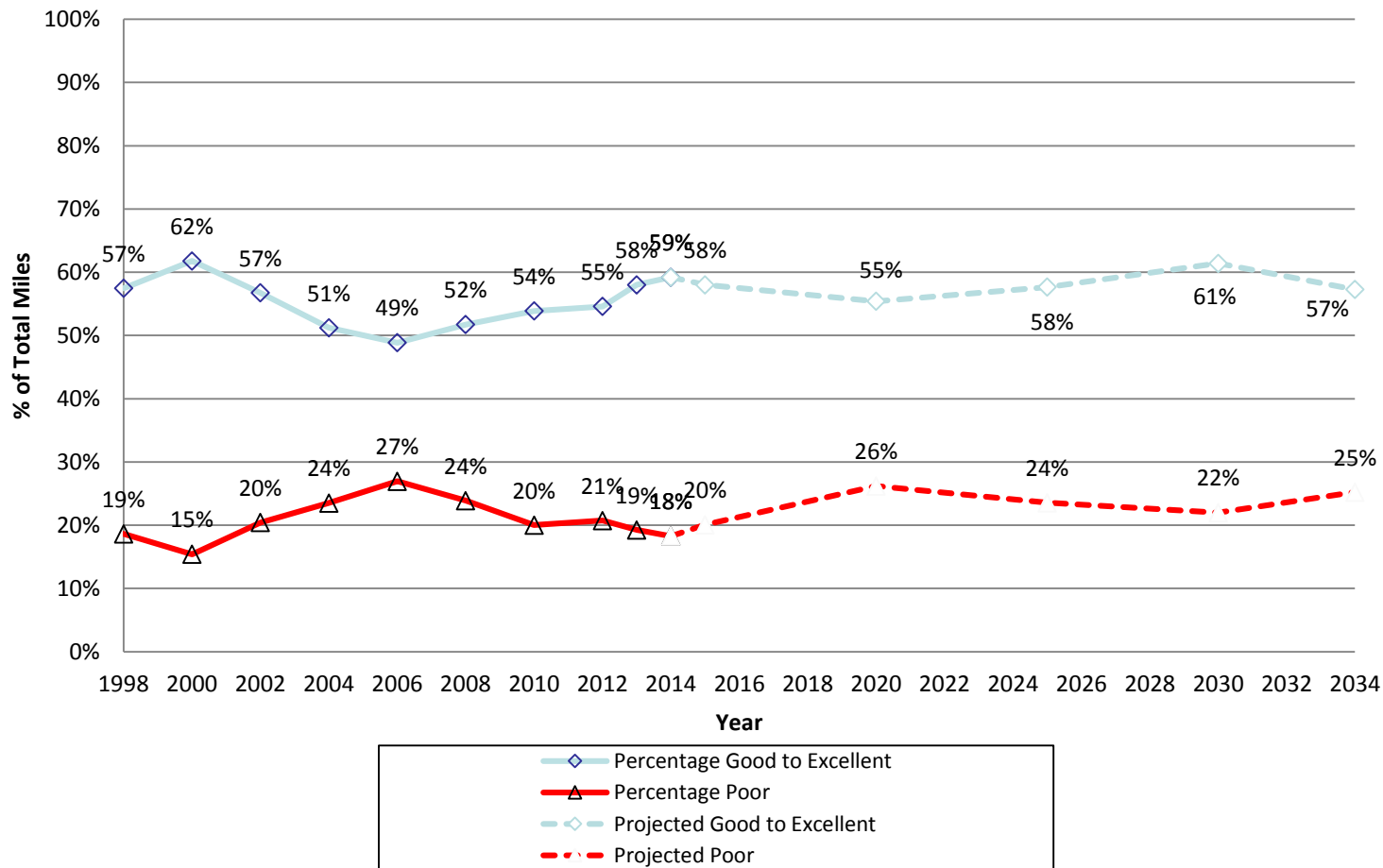


# Pavement Treatment Types

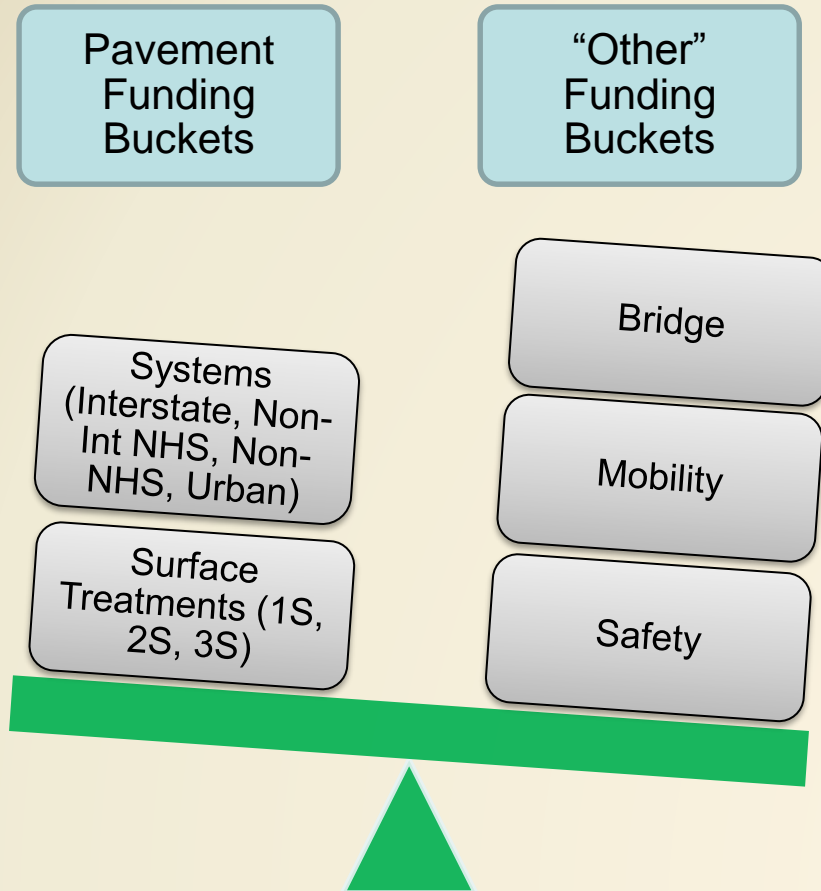
- 1S – Preventative
  - Maintenance: Chip Seals, Patching, Slabs
  - Microsurface
  - Thin overlay ( $< 2''$ )
  - Grind Concrete
- 2S – Rehabilitation
  - Asphalt Placed thickness  $2'' - 3''$
  - Dowel Bar Retrofit (concrete)
- 3S – Structural Rehabilitation
  - Asphalt Thickness Placed  $> 3''$
  - Crack/Seal & Overlay Concrete
- 4S – Full Reconstruction



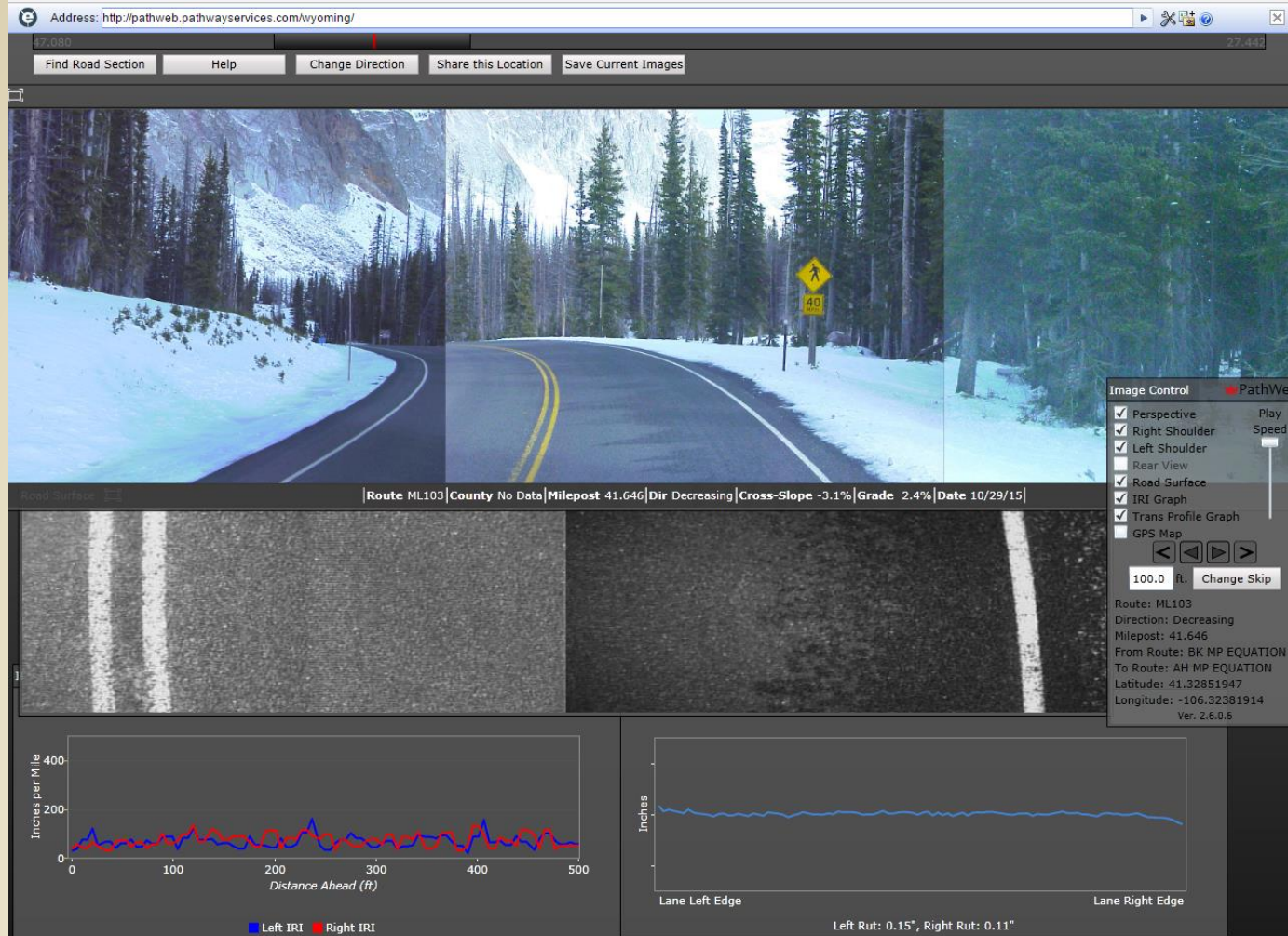
## Statewide 20 Year Pavement Condition Trends Current Funding



# Balancing System Needs



# Pathweb



# Stress Reduction Kit

**Bang  
Head  
Here**

## Directions:

1. Place kit on FIRM surface.
2. Follow directions in circle of kit.
3. Repeat step 2 as necessary, or until unconscious.
4. If unconscious, cease stress reduction activity.

# Questions??

Welcome to Wyoming,

Where this is considered  
“Good Road Conditions”