

UDOT's Pavement Preservation Program

Strengths
Weaknesses
Opportunities
Challenges

Lloyd Neeley, Engineer for Maintenance
David Gill, Region 3 Pavement Management Engineer



Rocky Mountain West Pavement Preservation
Partnership Meeting
Anchorage, Alaska
October 8, 2013

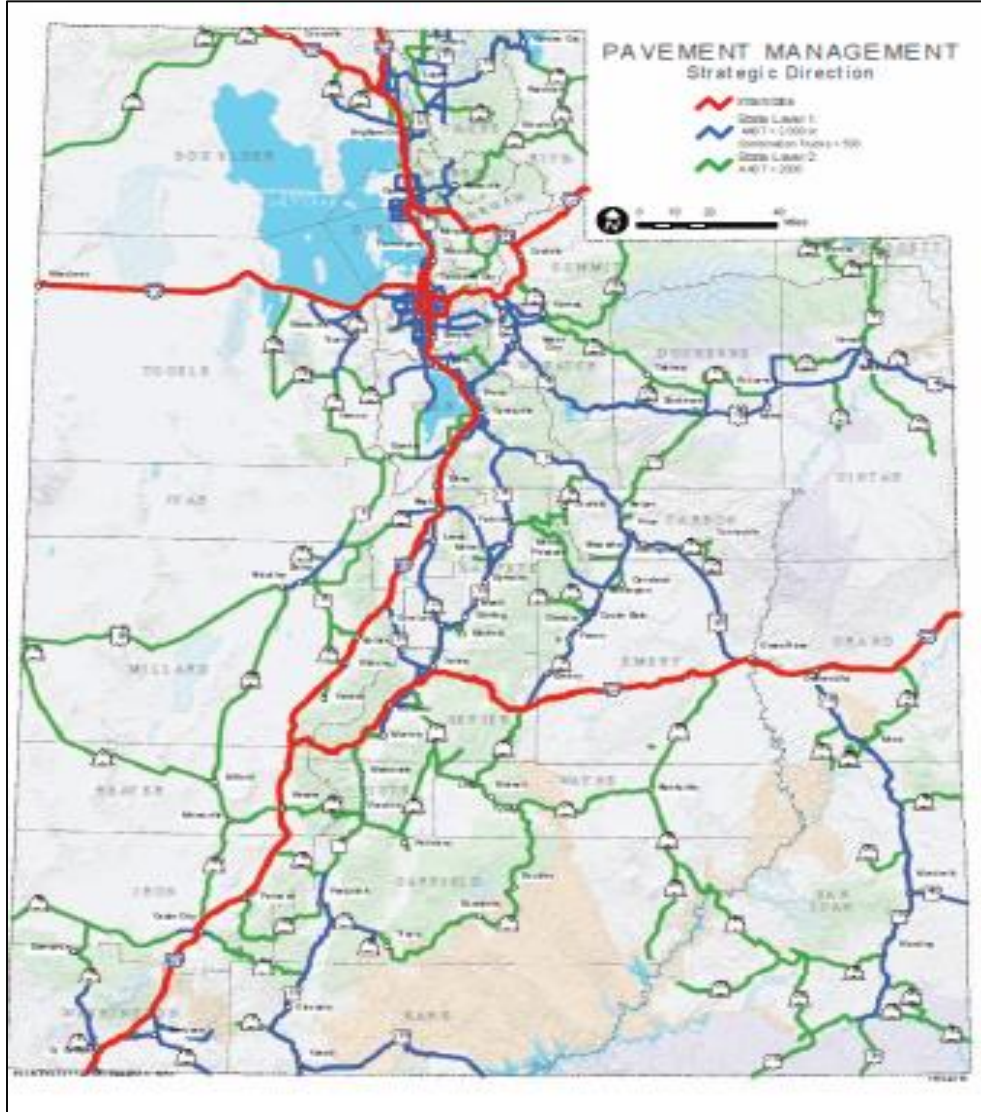
UT Basic Demographics

- State Highway System Description
 - 5860 Total Centerline Miles
 - 5820 Total Paved Miles (both asphalt and concrete)
- Number of State Highway Employees: 1750
- Total State Highway Budget: *Varies from year to year.*
For 2012, \$1.7 Billion (total administration, operations, and construction)
- Total Pavement Preservation Budget: \$50 Million
- Major Pavement Preservation Treatments
 - Chip Seal, Micro-surface, SMA, BWC, OGSC, PCCP
Diamond Grind

Program Implementation

- An opportunity that became a strength

2014 Maintenance Management Levels



Interstate

Regardless of AADT

Miles ~ 935, 16%

Lane Miles ~ 27%

VMT ~ 53%

Combo Truck VMT ~ 63%

Level 1

AADT > 1,000 and/or Truck

Volumes > 200

Miles ~ 2,960, 51%

Lane Miles ~ 51%

VMT ~ 45%

Combo Truck VMT ~ 35%

Level 2

AADT < 1,000

Miles ~ 1,960, 33%

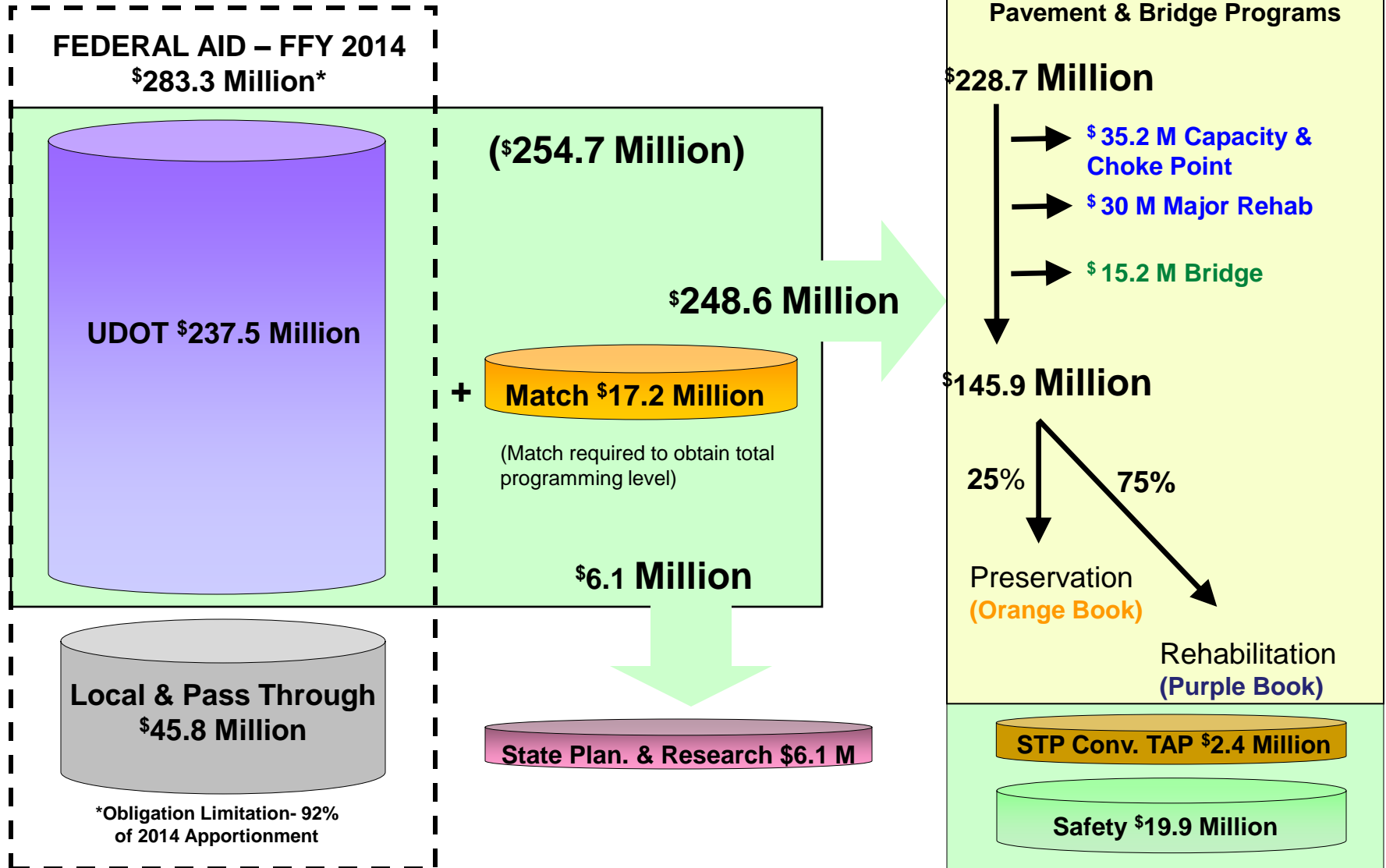
Lane Miles ~ 22%

VMT ~ 2%

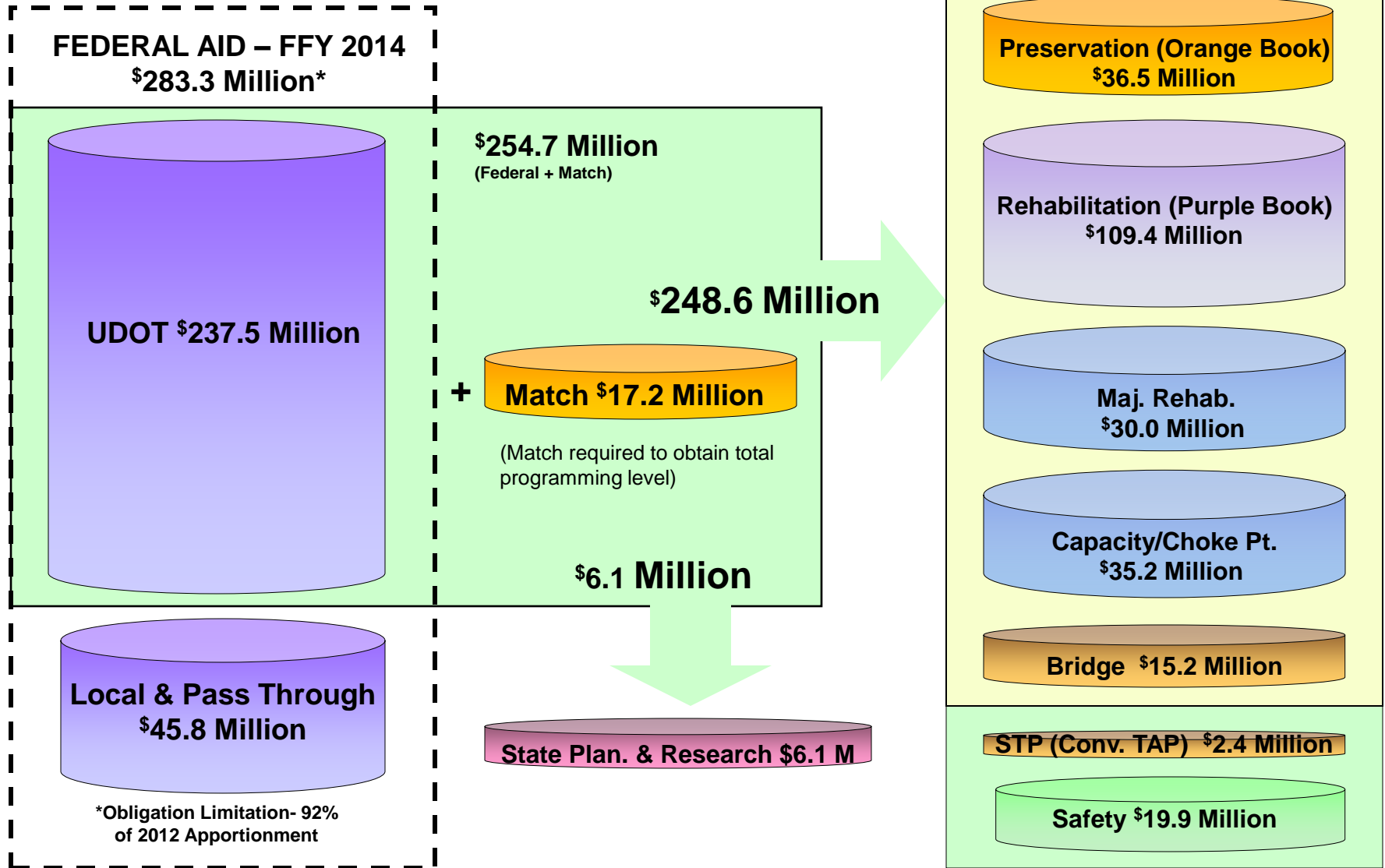
Combo Truck VMT ~ 2%



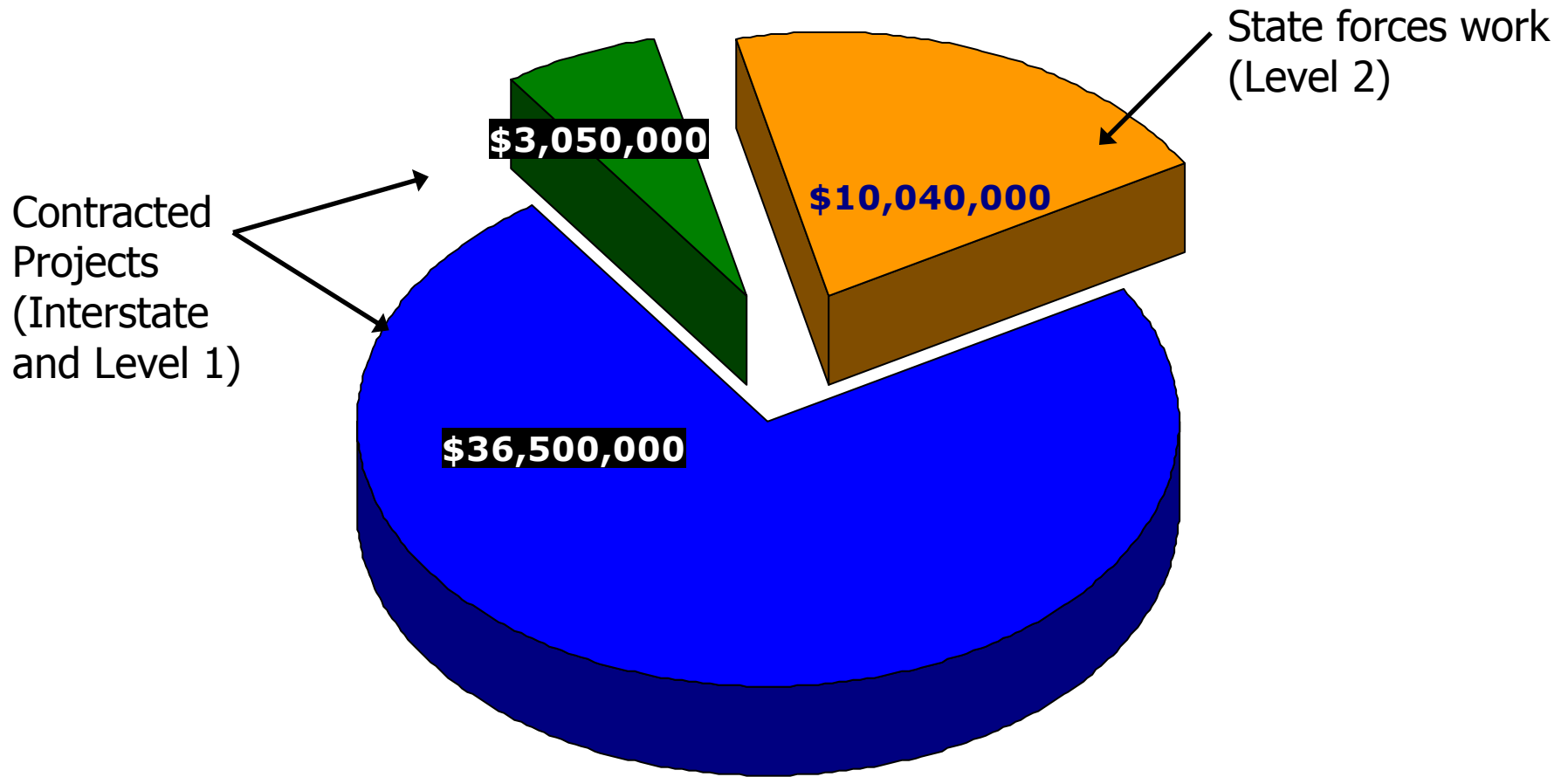
Available Transportation Program Funding



Available Transportation Program Funding



Total Preventive Maintenance Budget FY-2014



■ Federal Aid ■ State ■ In House

Total Budget:
~\$49.6M

Legislator Relations

- A Strength
- And a Threat

Explaining the Concept



SB 229

General Session 2011

- Reduced funding for Level 2 Roads had caused concern among rural legislators.
- SB 229 set up a mechanism to move money from general fund to apply to maintenance of certain capacity projects.
- Freed up money from Transportation Fund for preservation of Level 2 roads.

Legislature as a Threat

- Strong support for Capacity Improvement
 - Legislators from urban areas place higher value on relieving congestion

Business Process

- An Opportunity

UDOT Trans Tech Program

- Field Operations includes two core groups and a shared group
 - Construction inspection core
 - Resident Engineer
 - Field Engineers, and Level IV Inspectors
 - Maintenance core
 - Station Supervisor
 - Maintenance Leads (some cases)
 - Transportation Technicians (Levels I, II, and III) split time between maintenance and construction.

Transportation Technicians

- Winter Maintenance – “All hands on deck”
- Summers – construction inspection
 - Leaves most maintenance stations with only a skeleton crew, so summer maintenance is accomplished by combining station crews.
- Construction inspection by Trans Techs
 - Start on the less complicated pavement preservation projects.
 - Allows employees to gain technical experience
 - Enables quality in construction – Trans Techs have to maintain what they inspect.

Performance Monitoring

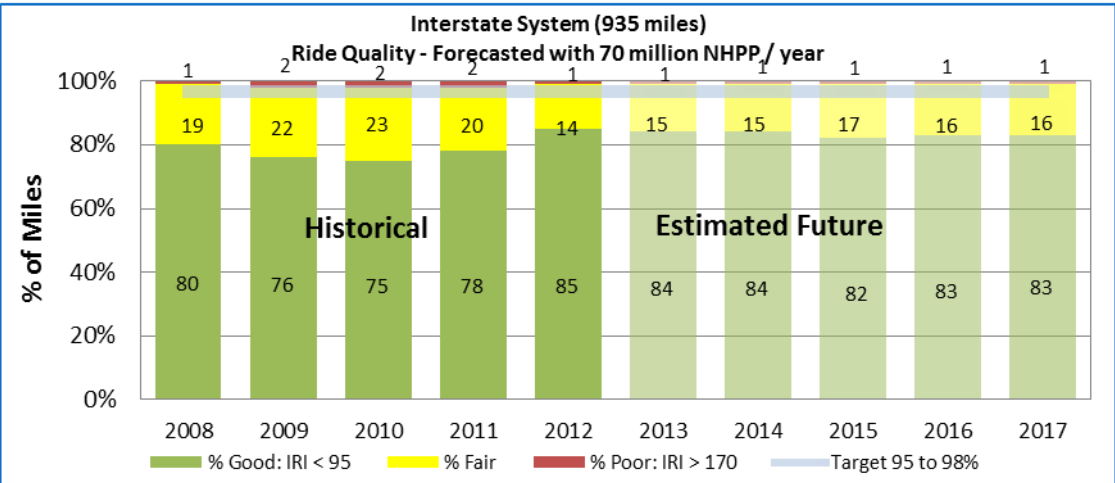
- A Strength

Pavement Condition Monitoring

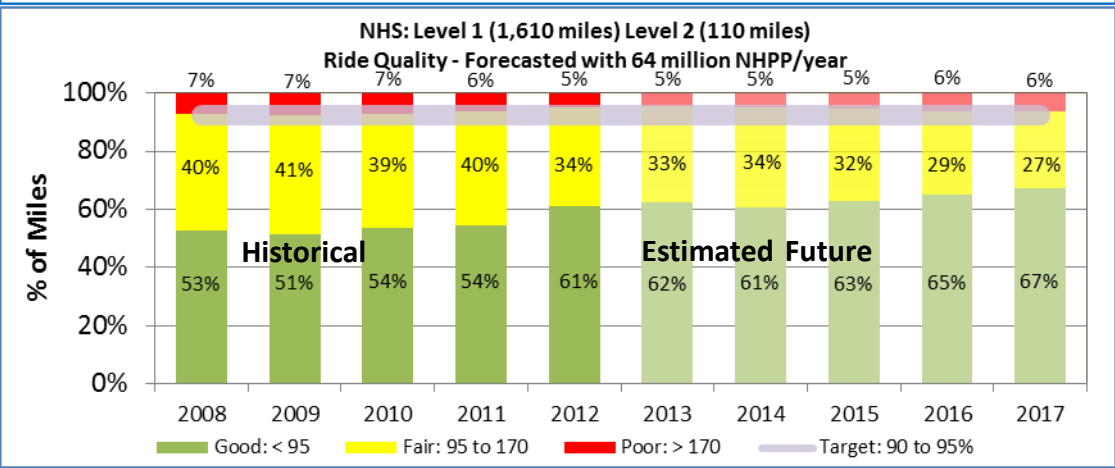
- Contracted Survey
 - Current contractor: Mandli
 - Biannual (annual prior to 2012)
- Items collected by contract
 - IRI
 - Environmental Cracking (asphalt)
 - Wheel Path Cracking (asphalt)
 - Rutting and Transverse Profile
 - Faulting (concrete)
 - Concrete cracking
- Items collected by State Forces
 - Skid resistance
 - FWD (not system-wide)
- Data used in Pavement Management System, and for system condition reporting.

Pavements

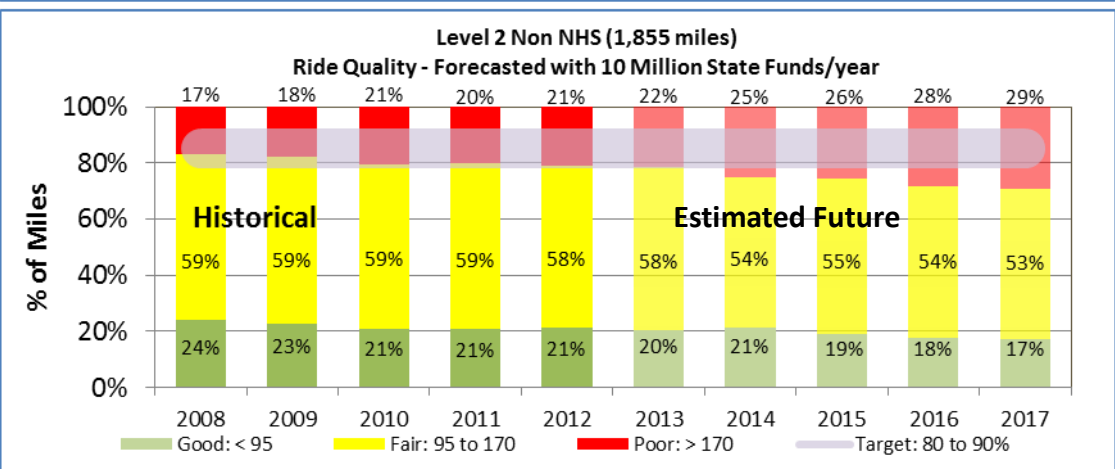
Interstate



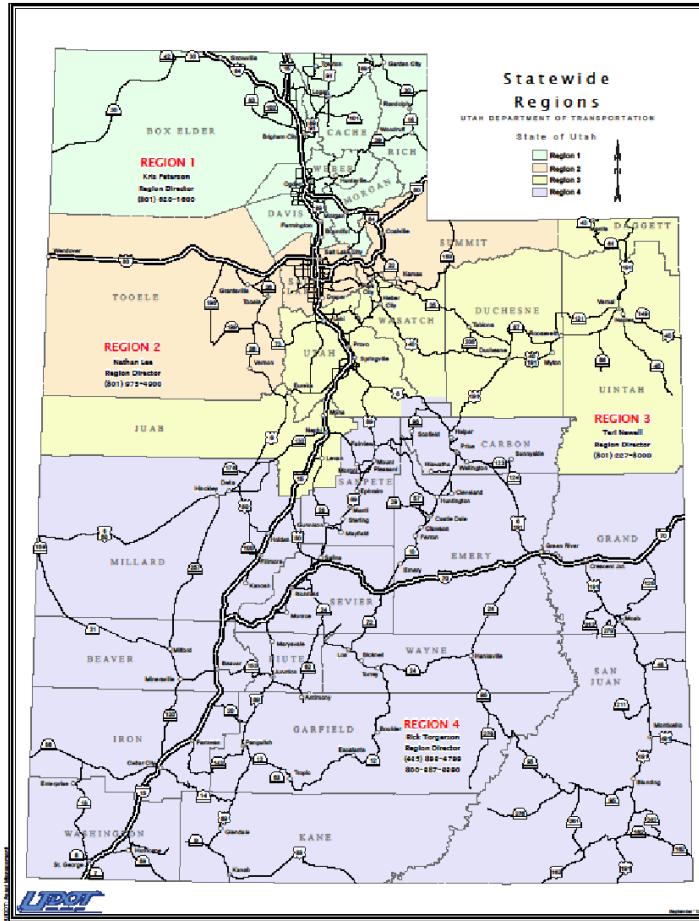
Level 1 National Highway System & Non NHS



Level 2 Roads



Project Selection



- Four Regions
 - Pavement Management Engineer (PME)
 - Pavement Team
 - PME, Maintenance Area Supervisors, District Engineers, Maintenance Engineer, Region Materials Engineer, Program Manager, Pre-construction Engineer, and Region Director

- Central Office
 - Receives Pavement condition data
 - Enters into model based on anticipated funding and condition data
- PME
 - Maintains database of road sections and anticipated treatments based on service life.
 - Receives recommendations from Central office
 - Combines these, and presents plan to Pavement Team.

Strengths

- Decisions about road sections made by those familiar with them

Weaknesses

- Based on anticipated funding.
- Limitations of model.

Opportunities

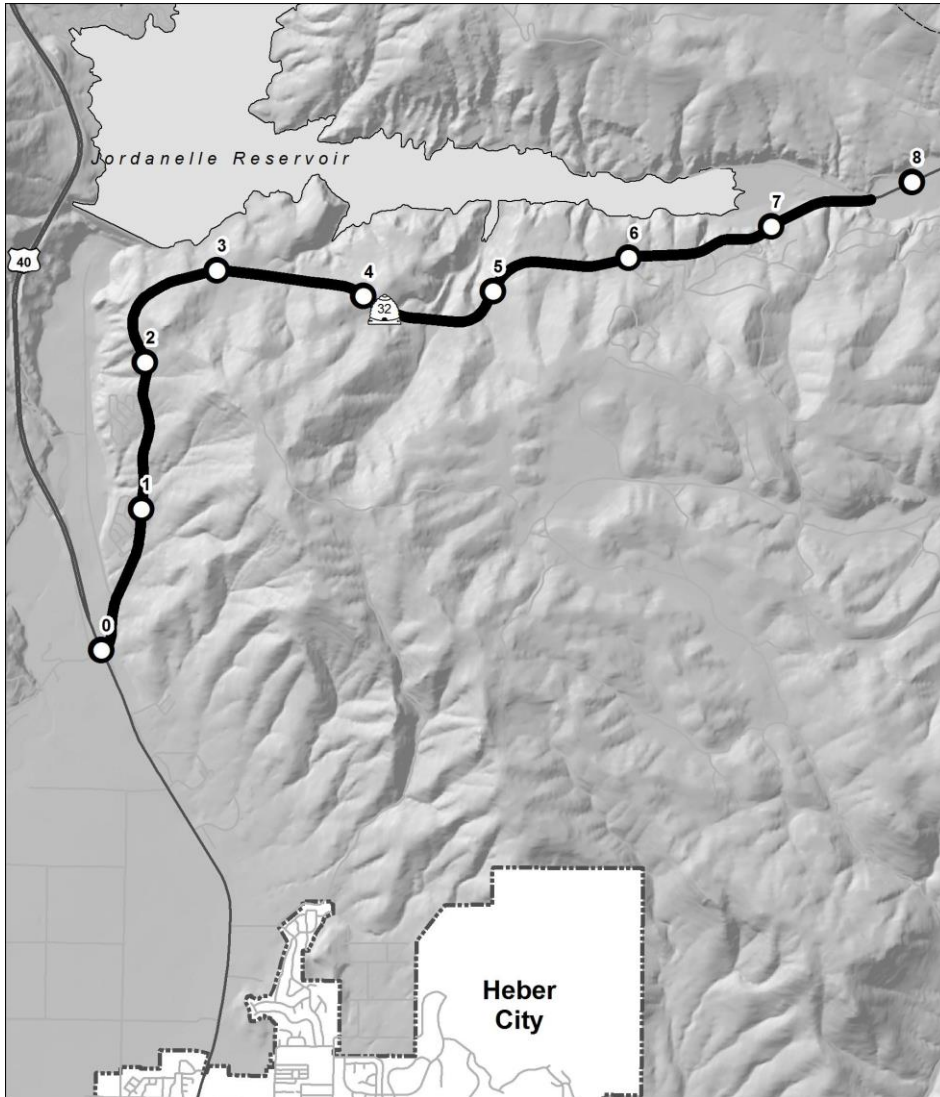
- Challenged by leadership to create a 5 year draft plan to present to cities allowing them to plan for utility improvements.

Threats

- Blue Book Program – Major rehabilitation.
 - Not a program with constant funding
 - When project programmed, takes money from Purple book program equivalent to the pavement rehab portion of the project.

- Many different treatments
 - Surface Seals
 - Chip Seal
 - Micro-surface
 - SMA
 - BWC
 - OGSC
 - PCCP Diamond Grind/Joint Seal
 - Rehabilitation Treatments
 - Mill and Fill
 - Overlay
 - Cold-In-Place Recycle (CIR)
 - PCCP: Dowel Bar Retrofit, Partial and Full depth repair/replacement

Cold-In-Place Recycle



2013 Project - SR 32
MP 0 to MP 7.7

Consisted of 3 inch
CIR with 1 ½
inches of HMA
followed by a chip
seal.



Strengths

- Recycle in place
- Cost

Weaknesses

- Requires sunlight/Narrow temperature band
- Keeping traffic off until cured

Opportunities

- Works well where base failure not the issue

Threats

- Proprietary specification
- Requires inspection skills not usually found in UDOT

Training

Transportation Education Program

Four year program to train Trans Techs

Two sections

Long courses

Math and English, taught at Salt
Lake Community College or by DVD

Short Courses

Inspection & Documentation I - IV

Plan Reading I & II

Survey I & II

Equipment Management

MMQA

OMS

Microsoft Word, Excel, and Power point I & II

Environmental

Structures

Materials I & II

Strengths

- Uniform method of training

Weaknesses

- Not all wish to participate

Opportunities

- TEP program tied to advancement for Trans Techs

Threats

- Some training outdated