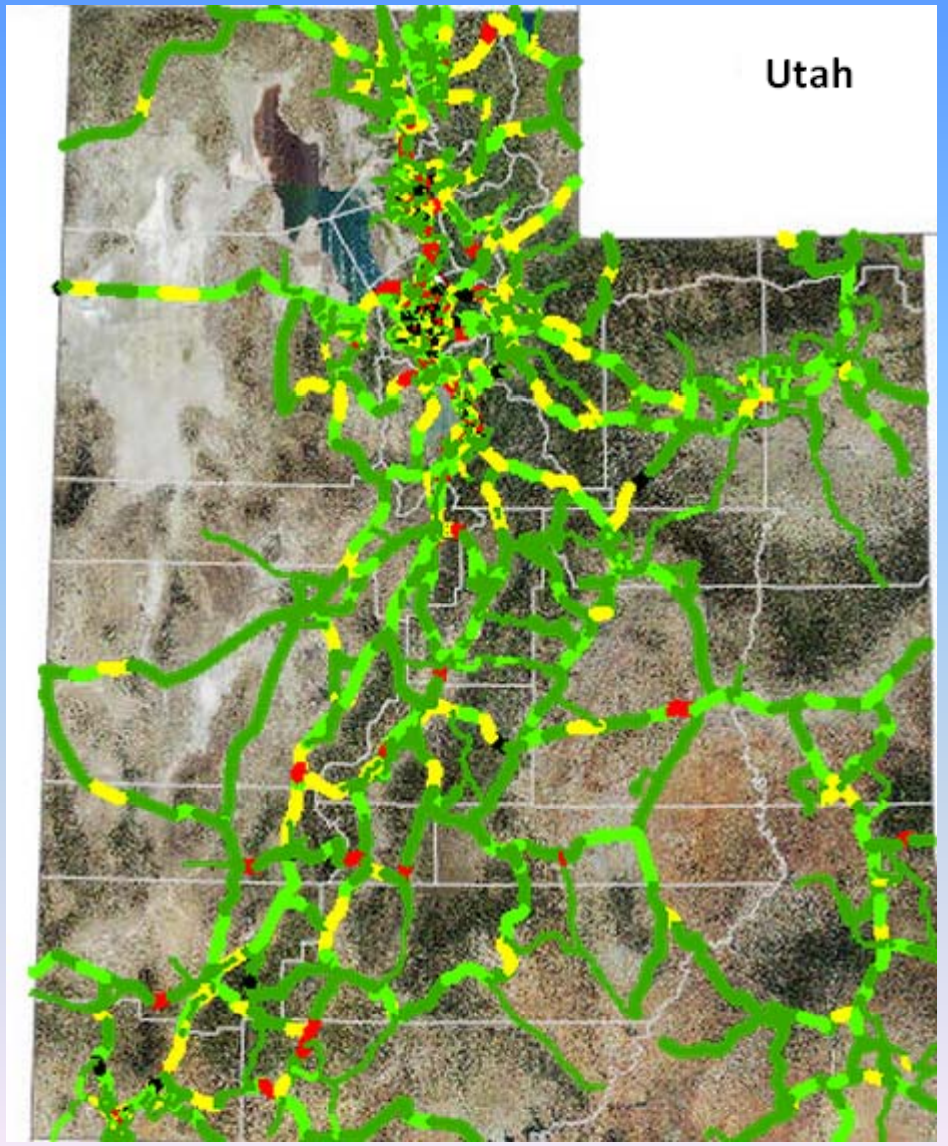
Data
Collect, Organize, Analyze

ITS America
Snowbird, Utah
August 11, 2015

Stan Burns
Director of Asset Management
Utah Department of Transportation

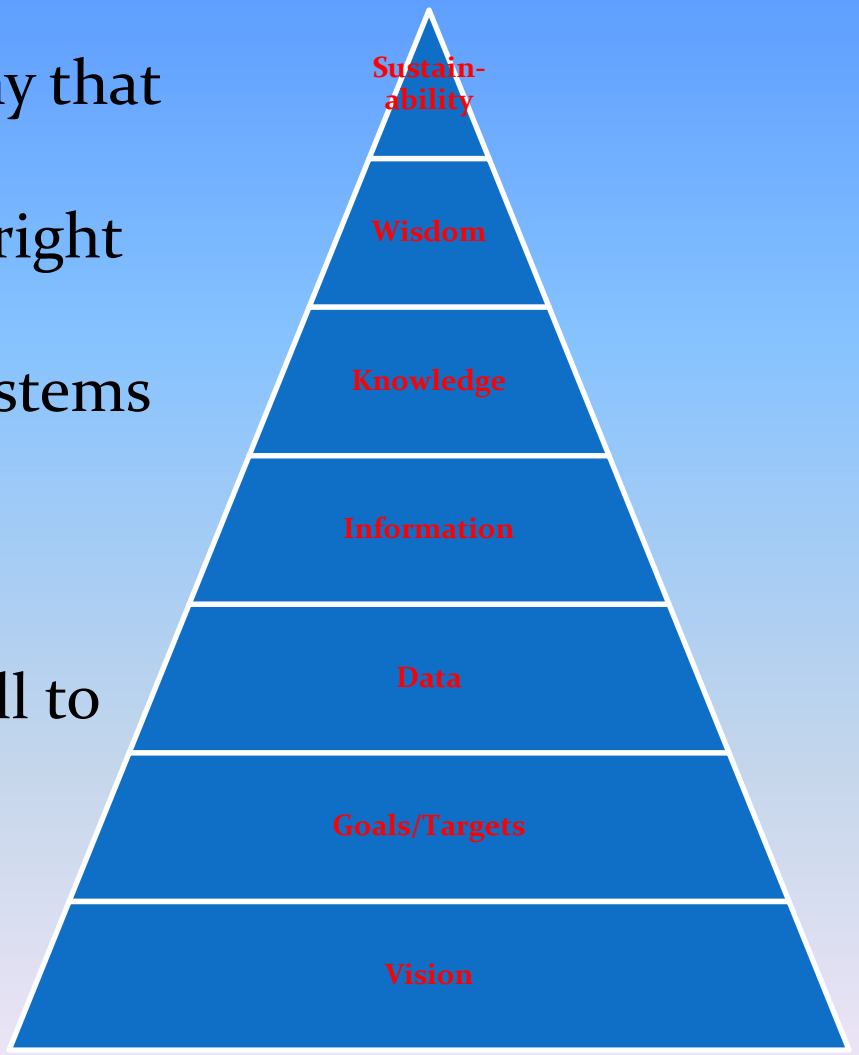
How Did You Drive to This Conference?

Was it the Safest Route?



Knowledge Management – UDOT'S Vision

- Sustainability – culture, philosophy that endures
- Wisdom – the right project at the right time
- Knowledge - Integrate business systems to work together seamlessly
- Information - Integrate data into business systems
- Organize Data - collect once, for all to have access
- Strategic Direction
- Data Driven Decisions



Where to Spend the Last $?

Yes …

"Engineer Judgment and Institutional Knowledge are Critical"

But…

"Data Provides Transparency"

2012/2014/2016 Roadway Data Collection

- Entire state highway system
- Both directions
- 5,869 centerline miles/ 14,000 driven mile

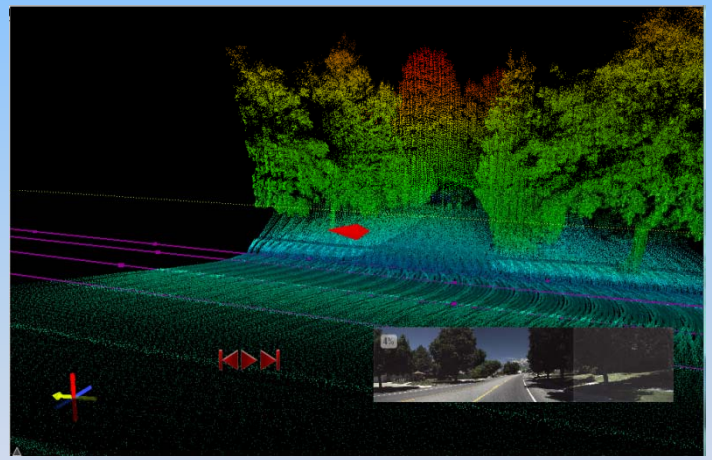
RFP

Contract w/Data Dictionary

- Maintenance
- Traffic & Safety
- Structures
- GIS
- IT
- Motor Carriers
- Preconstruction
- ROW
- Regions
- Programming

Data, Data, and More Data

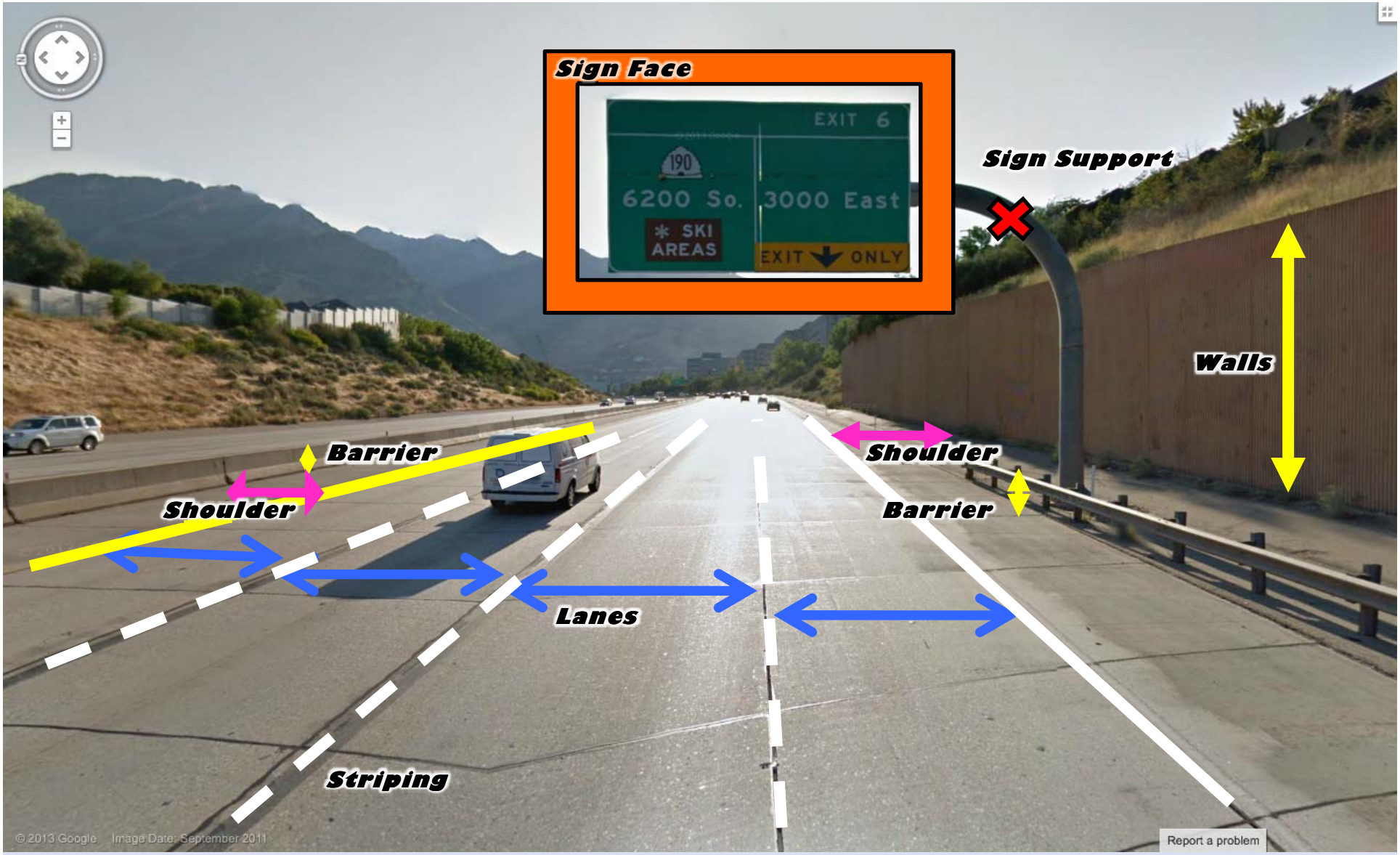
3 HD Images (2400 X 3200) every 26.2 ft.



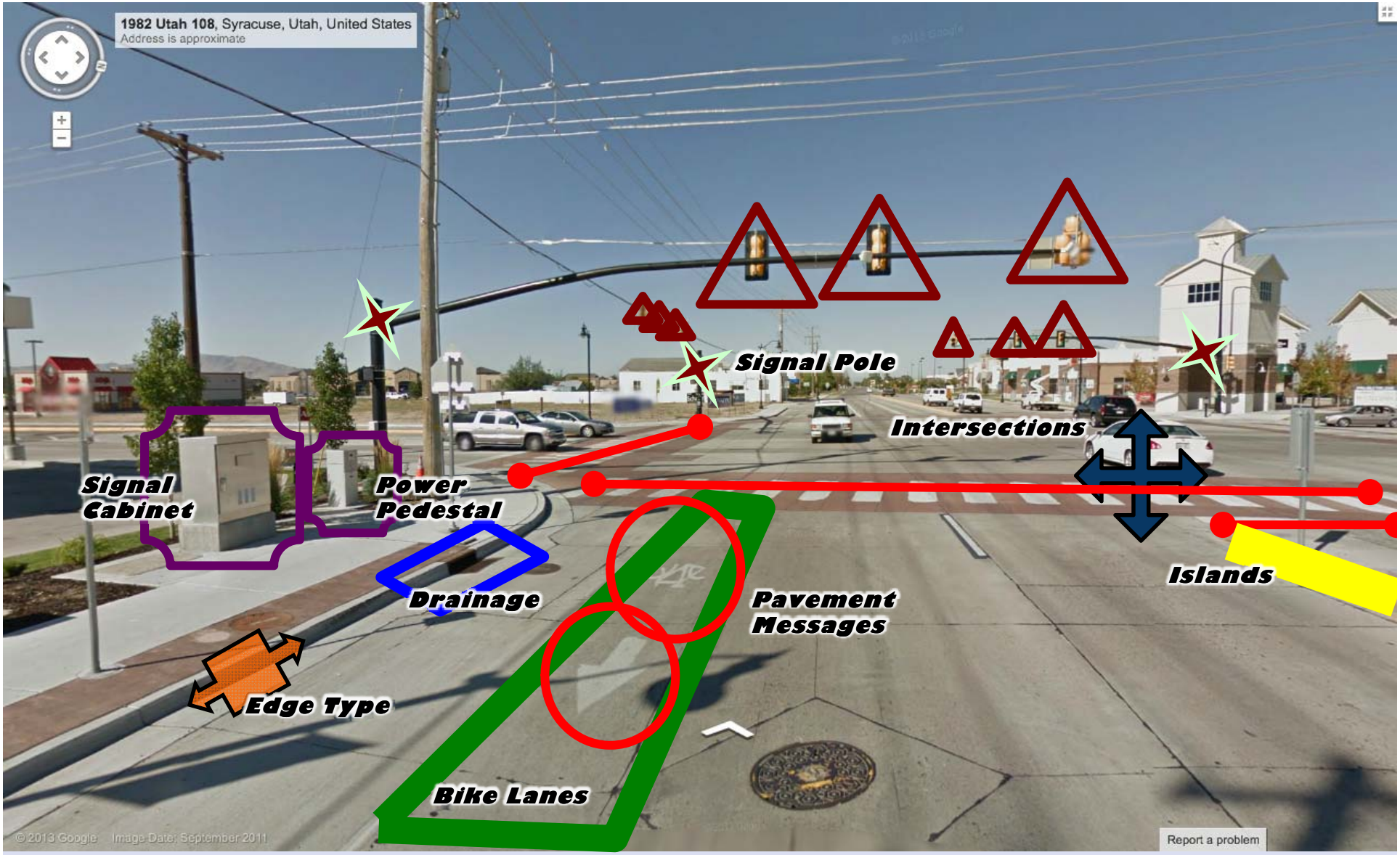
LiDAR – Geospatial
Location of Features

Scope:

- Pavement Condition
- Roadway Geometry
- All Visible Assets:
  - Guardrail,
  - Signs,
  - Barrier,
  - Signals,
  - Painted Lines, etc.

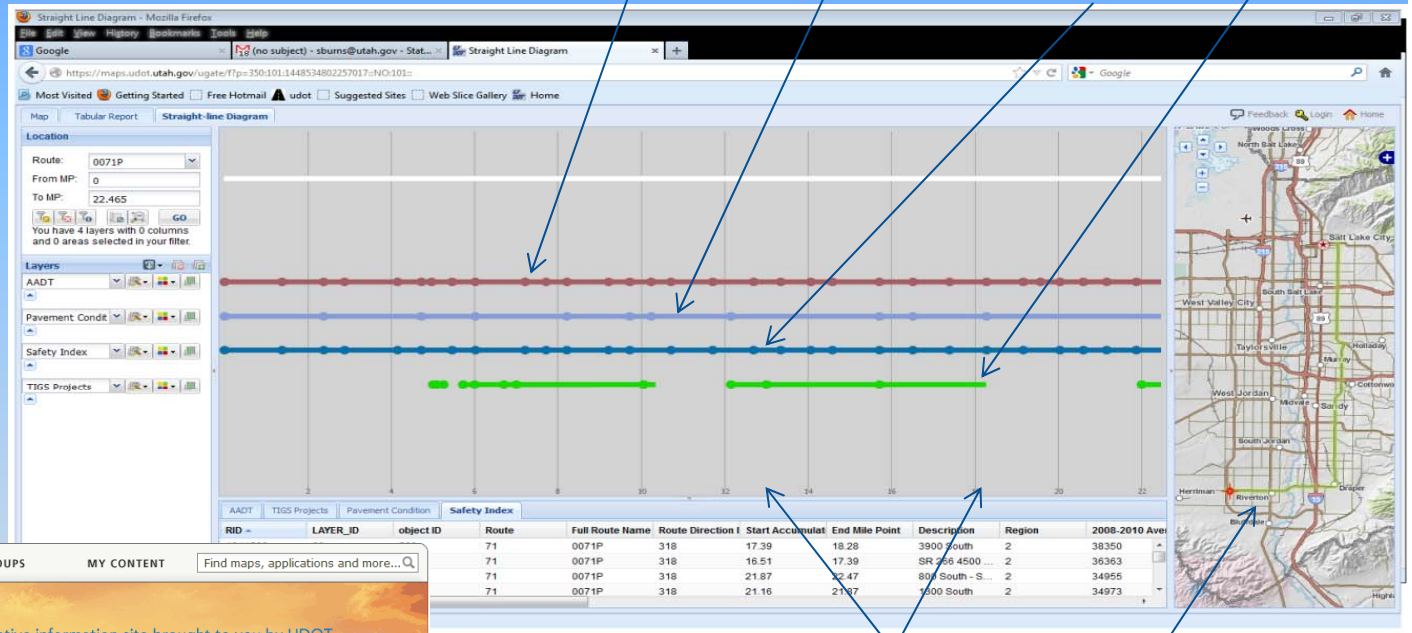

Sign Face
EXIT 6
190
6200 So.
3000 East
* SKI AREAS
EXIT ONLY
Sign Support
Walls
Barrier
Shoulder
Shoulder
Barrier
Lanes
Striping
© 2013 Google
Image Date: September 2011
Report a problem

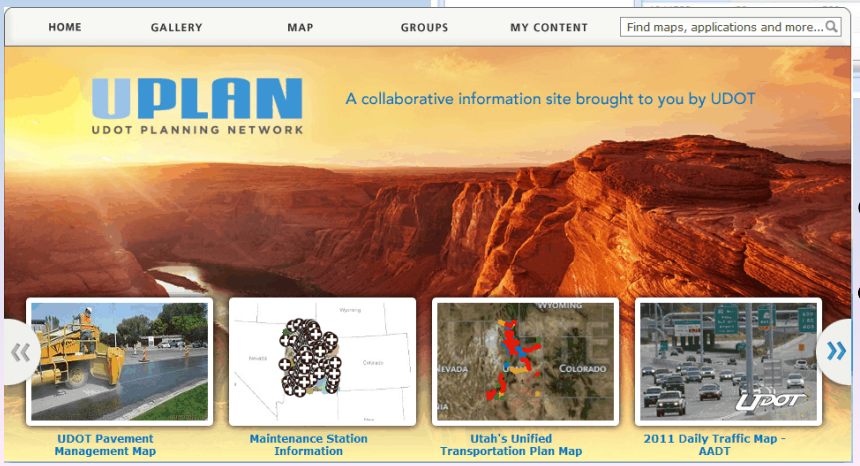

U.S. 191, Utah, United States
Address is approximate
Geometry
Median
Surface Condition & Type
Rumble Strip
Surface Area
Elevation
© 2013 Google
Image Date: September 2012
Report a problem


1982 Utah 108, Syracuse, Utah, United States
Address is approximate
Signal Pole
Intersections
Signal Cabinet
Power Pedestal
Drainage
Pavement Messages
Islands
Edge Type
Bike Lanes
© 2013 Google
Image Date: September 2011
Report a problem

"U" Google - Organized Information

Know Everything About a Section of Road





- Data Portal
- Web Page: data.udot.utah.gov

Safety Management System

- Crashes

- Roadway Geometry
- Safety Assets

- **Goal: Understand Where the last $ Should be Spent**

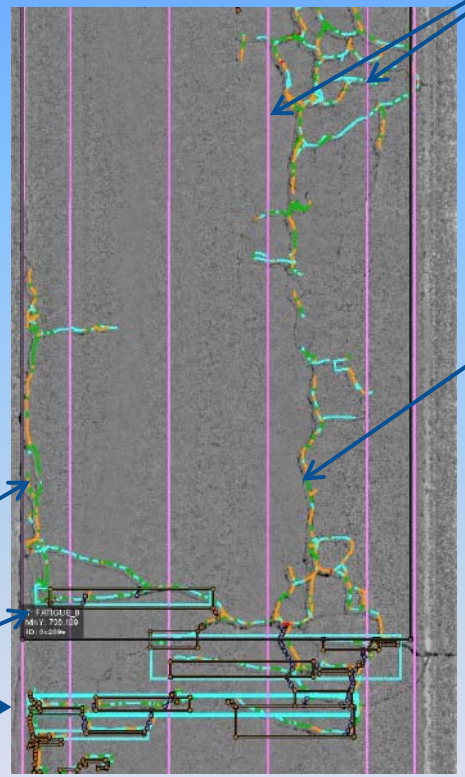
Texas Turndowns, Concrete Sloped

- Problem
  - Where are the Texas Turndowns
  - Where are the Concrete Sloped End Sections
  - Inside the Clear Zone

- Solution
  - Location
  - Speed Limits
  - Clear Zone

Automated Pavement Distress Data Extraction and Processing

- Highway Speeds
- Location – Outside Lane
- Cycle – Every other Year



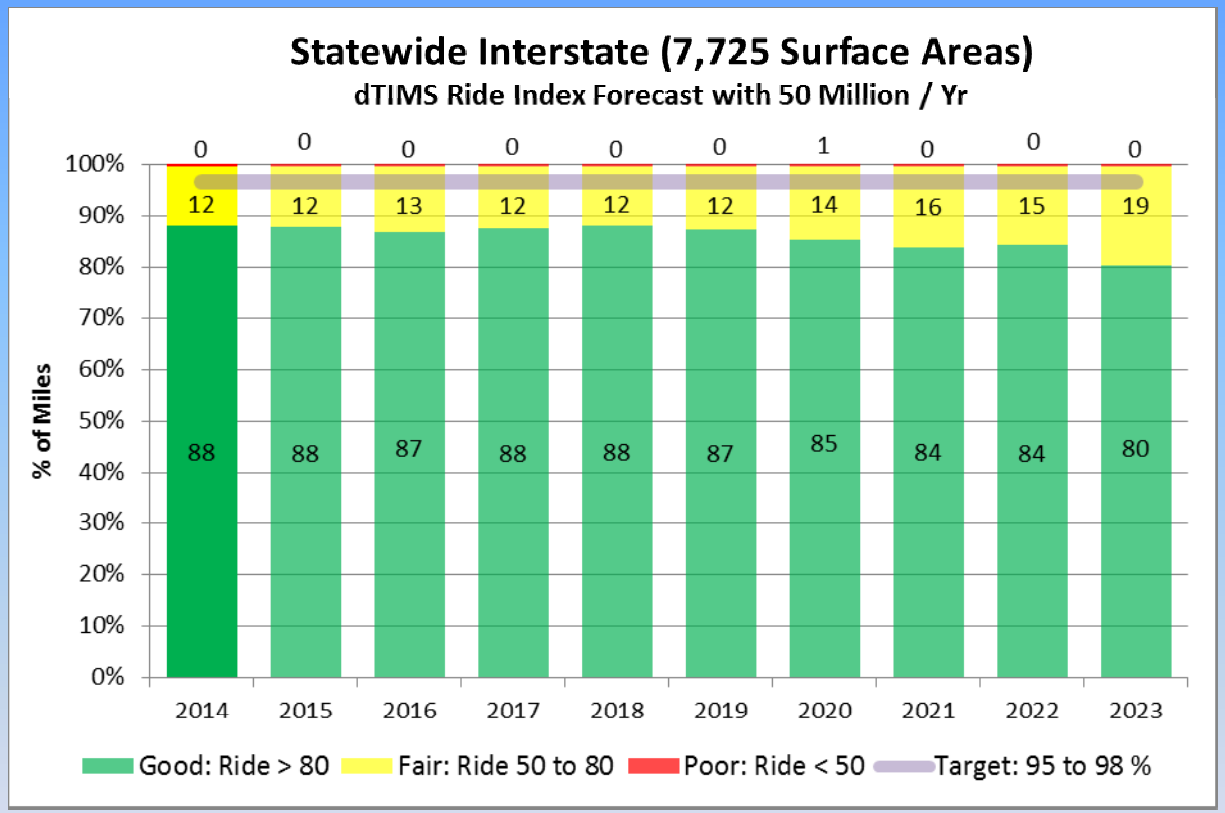
Development of Financial Plan

Pavement		
Feature	Count	Value
Interstate (yd^2)	**56,108,800**	**$9,257,952,000**
Level 1 (yd^2)	**84,360,320**	**$11,388,643,200**
Level 2 (yd^2)	**31,560,320**	**$4,102,841,600**

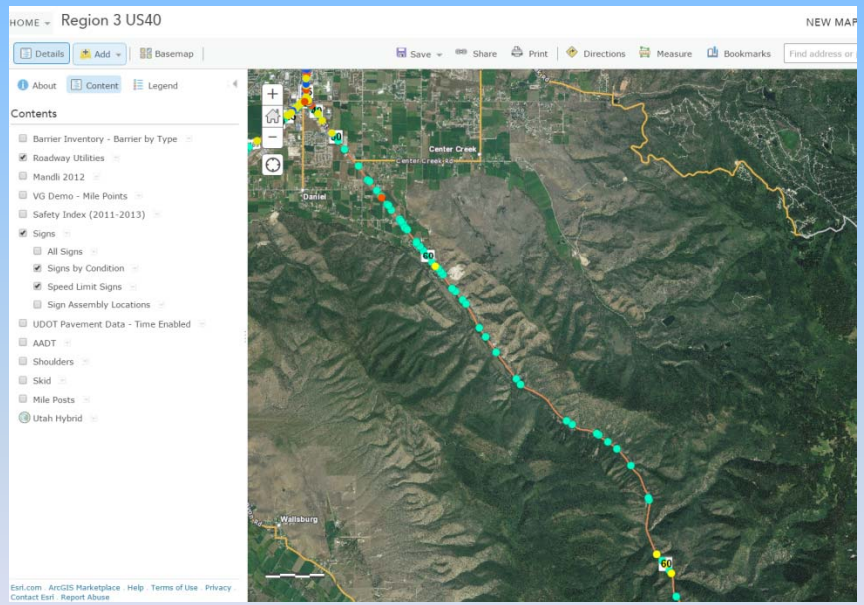
Development of Financial Plan

Feature	Count	Value
Pavement (yd^2)	172,045,914	$24,086,427,904
Bridge (ft^2)	19,515,339	$4,878,834,750
Walls (ft)	150,000	$3,455,500,000
Culverts (ea)	31,553	$1,009,733,000
Barrier (ft)	7,347,574	$448,202,019
Signs	96,160	$264,440,000

Pavement Conditions Interstate



Kickoff Meeting



- Typical Kickoff Meeting
  - Review Proposed Scope & Budget
  - Gathering of Disciplines
  - Silos, Incomplete Knowledge
- New Possibilities
  - Information Displayed
  - Access to All
  - Better Decisions

Questions