EVALUATION OF HEADLIGHT: AN E-CONSTRUCTION INSPECTION TECHNOLOGY

TTCC/NCC Fall Meeting
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Saratoga Springs, NY

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Outline

- Background
- Scope
- Observations
- Documentation
- Initial findings
- Discussion

Background

- Project delivery (Current)
  - Resource intensive
  - Valuable information
  - Heavily paper based
- Project delivery (future)
  - Leverage existing technologies
  - Accumulated project intelligence = asset intelligence

Why do the study?

- Move Louisiana forward in state-of-the-art inspection procedures
- Potential for more timeliness submission of daily working reports (DWRs)
- Possibly lower the number of claims through more thorough inspection
- All leading to potential savings for the Department

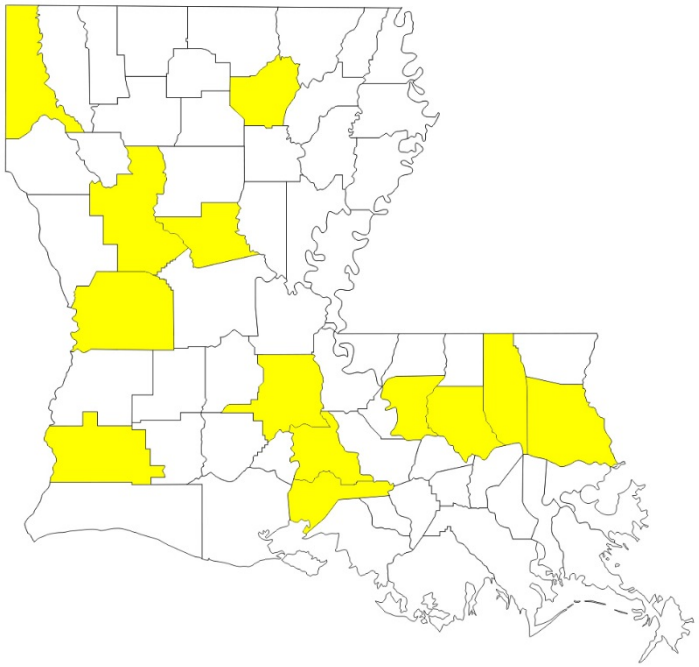
Why do the study?

- Reduced risk
- Accelerated delivery
- Increased accountability
- Increased efficiency

Scope

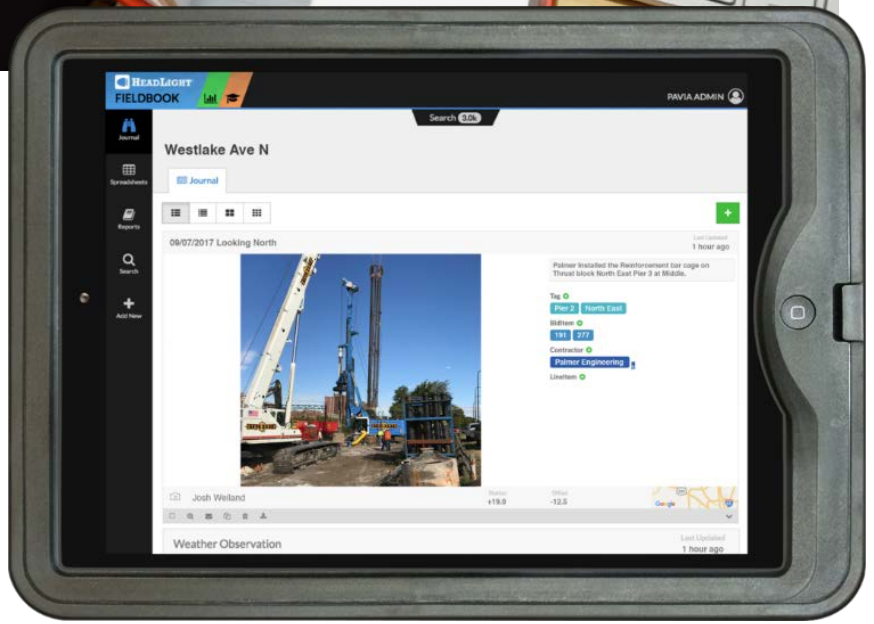
- Pilot HeadLight on 12-18 projects across the state
  - Location
  - Size
  - Complexity
- 200 field inspectors

Scope

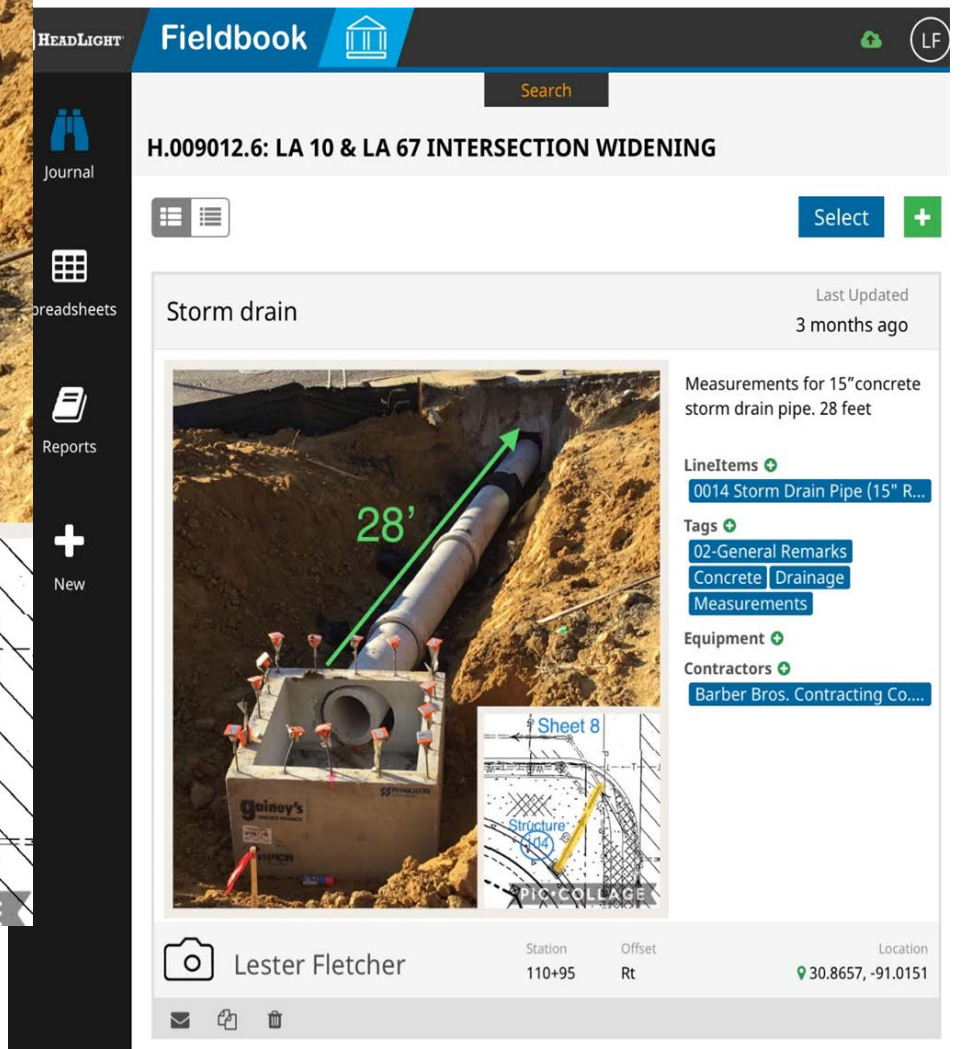


- 18 projects across the state
- Over 42 projects ongoing / completed currently

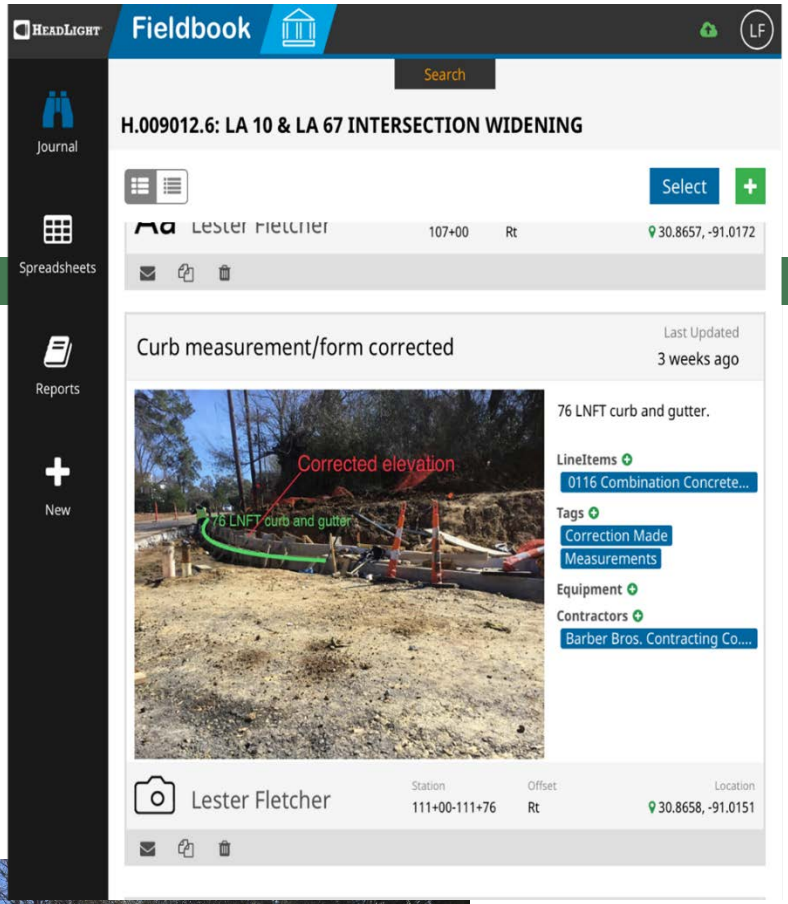
Equipment

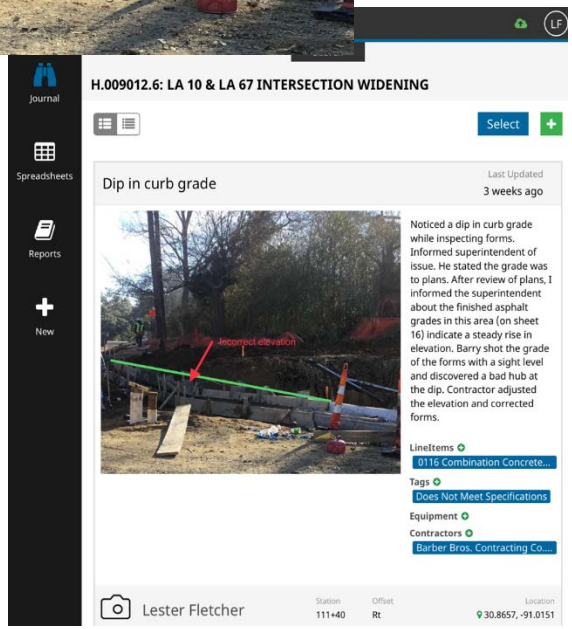

HEADLIGHT
FIELDBOOK
PAVIA ADMIN
Search
Westlake Ave N
Journal
09/07/2017 Looking North
1 hour ago
Pier 2
North East
191
277
Contractor
Palmer Engineering
Josh Weiland
Weather Observation
1 hour ago

Observations



Observations





LOUISIANA TRANSPORTATION RESEARCH CENTER
LTRC

Observations

PHOTOS

Set up

Merrick setting up truck. Plan is to po

Contractors

MERRICK, LLC

Tags

Concrete Site 1

Steel issue

Merrick working to inconsistencies. W forms, and the dirt the cage not sitting

Contractors

MERRICK, LLC

Tags

Does Not Meet Spe

First truck arrival

3:35 am

Contractors

MERRICK, LLC

2nd truck arrival

3:45 am

Contractors

MERRICK, LLC

Batch 1 slump

Batch one tested 3 gallons of water.

Contractors

MERRICK, LLC

Batch 1 temperatu

Contractors

MERRICK, LLC

Batch 3 arrival

3:52 am

Contractors

MERRICK, LLC

Batch 2 slump

Batch one tested 3 10 gallons of water

Contractors

MERRICK, LLC

Tags

Concrete Site 1

Span 5 finishing 6:10 am 06/22/2018

Span 5 after floating and burlap drag.

Contractors

MERRICK, LLC

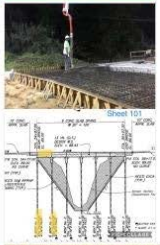
Tags

Concrete Site 1 Decks

Lots for 6/22/18 6:14 am 06/22/2018

Tags

Lot



Span 1 placement 6:33 am 06/22/2018

Crew completed concrete placement in span 1 at 6:28 am. 27 CUYD.

Contractors

MERRICK, LLC

Tags

Concrete Site 1 Decks

Span 5 finishing 6:45 am 06/22/2018

Tine work completed for span 5.

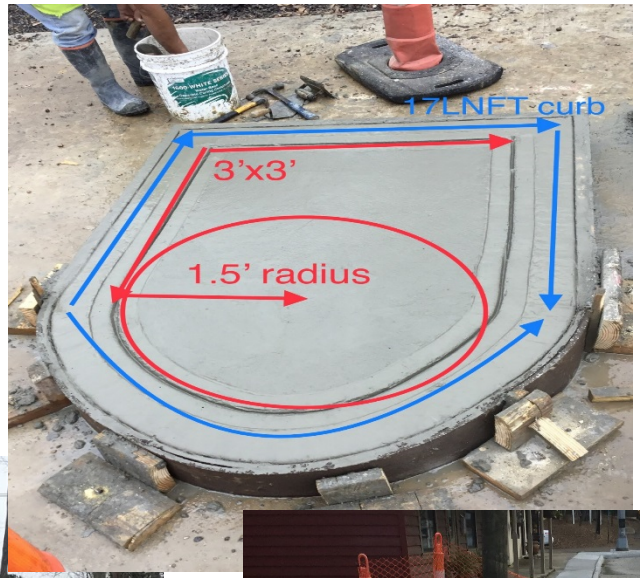
Contractors

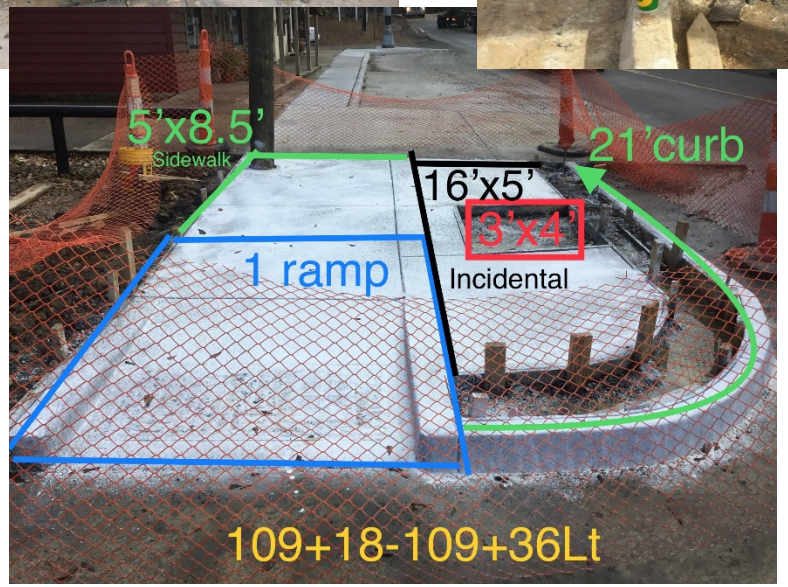
MERRICK, LLC

Tags

Concrete Site 1 Decks

Documentation

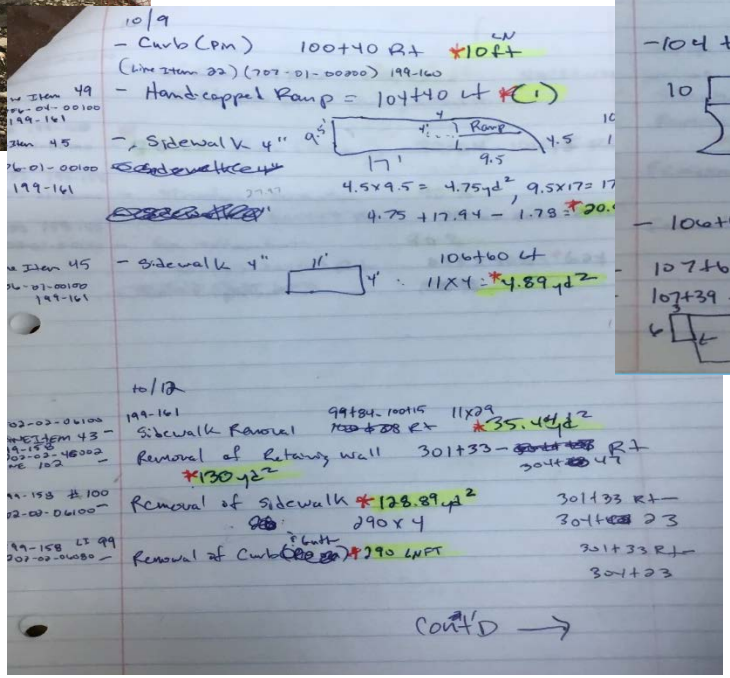


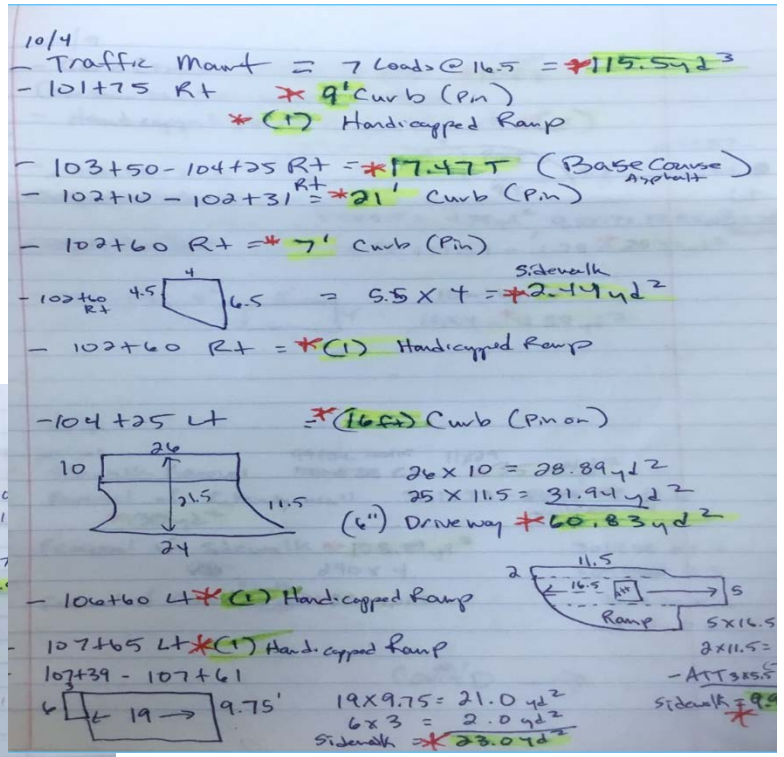


Documentation

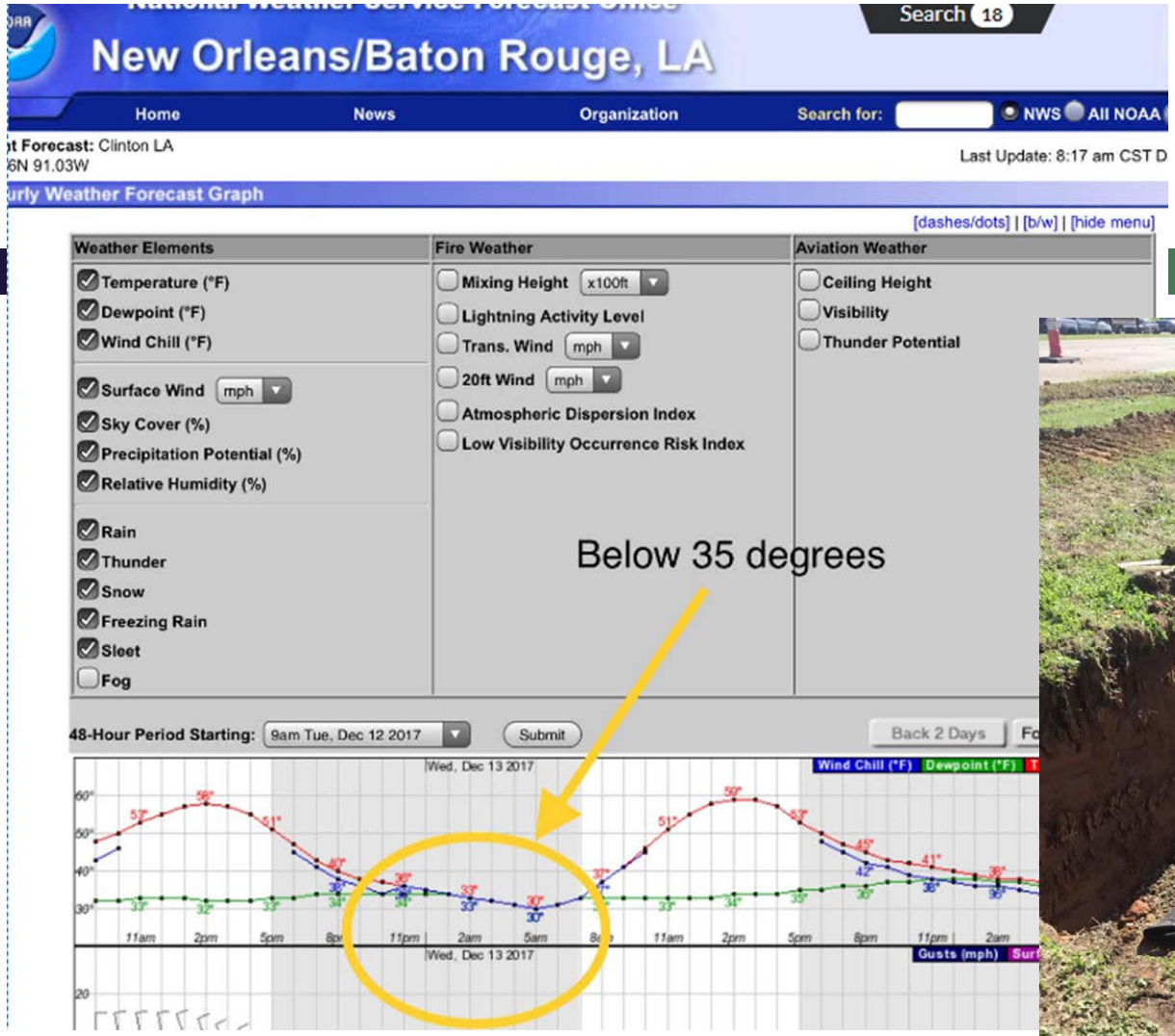
LTRC TRANSPORTATION RESEARCH CENTER

Documentation





The Contractor
When I pull out my IPAD


Search 18
New Orleans/Baton Rouge, LA
Home
News
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Search for:
NWS
All NOAA
t Forecast: Clinton LA
6N 91.03W
Last Update: 8:17 am CST D
urly Weather Forecast Graph
[dashes/dots] | [b/w] | [hide menu]
Weather Elements
Temperature (°F)
Dewpoint (°F)
Wind Chill (°F)
Surface Wind
mph
Sky Cover (%)
Precipitation Potential (%)
Relative Humidity (%)
Rain
Thunder
Snow
Freezing Rain
Sleet
Fog
Fire Weather
Mixing Height
x100ft
Lightning Activity Level
Trans. Wind
mph
20ft Wind
mph
Atmospheric Dispersion Index
Low Visibility Occurrence Risk Index
Aviation Weather
Ceiling Height
Visibility
Thunder Potential
Below 35 degrees
48-Hour Period Starting:
9am Tue, Dec 12 2017
Submit
Back 2 Days
Wed, Dec 13 2017
Wind Chill (°F)
Dewpoint (°F)
11am
2pm
5pm
8pm
11pm
2am
5am
Gusts (mph)

Initial Findings

- More "eyes" on the work
  - 1.25 hours extra time on the jobsite per employee
- More complete documentation
  - Pictures and video
- Efficiencies
  - Problems and solutions conveyed more quickly
- Accountability
  - Contractor **and** DOTD personnel

Initial Findings

- Reduced claims
- Future asset management
  - Geo-located
  - Time and date stamped
- Training opportunities
  - Use captured data (videos, pictures, etc.)

Initial Findings

- Savings
  - Personnel efficiencies ~$8M per year
  - Claims / litigation ~$10M per year
  - Total ~$20M per year
- Research cost
  - ~$1.5M
- Recommendation to adopt

Questions