



State Construction Office Update 2019 ACAF Conference

Richard Hewitt, P.E.

State Construction Pavement Engineer

FDOT State Construction Office



Recent Changes

Straightedge Deficiencies

Leave in Place @ Full Pay – DCE Decision

- [DCE Memo 11-19](#)
- DCE Provides Final MAC Recommendation
 - For Straightedge Deficiencies Left in Place @ Full Pay
- Until MAC Programming Eliminates Director of Construction Recommendation Requirement
 - SCO Will Use DCE's Recommendation
- DCE Shall Use Same Decision Criteria
 - i.e. Ensure Situation Was Beyond Contractor's Control

FC-5 Binder Change Compensation

- [DCE Memo 16-19](#)
- If FC-5 Asphalt Cement Content (AC%) Raised After Bid
- Pay Difference Between:
 - New Mix Design AC% Target
 - Original Mix Design Target AC%



Pending Changes

Leave in Place @ No Pay – Eliminate “Added Length” from Pay Reduction

- July 2020 Workbook
- Eliminated Added Length from Pay Reduction Calculation
 - For Straightedge Deficiencies Left in Place at No Pay
- Use Deficiency Length for Pay Reduction Calculation
 - Deficiency Length 5ft Minimum

DCE Approval of Same Day Pave Back

- Add Special Provision 327
 - To Require Pave Back Before Opening to Traffic
 - Per Approval of DCE
 - No Longer Requires SCO Approval
- Criteria for Use Remains Same
 - After Milling, Insufficient Pavement to Support Traffic Without Damaging Remaining Pavement or Base

IRI-based Warranty Threshold

- July 2020 Workbook (Section 338)
- Added IRI Warranty Threshold for Ride
 - $IRI > 110$ inches/mile
 - Projects Using IRI for Construction Acceptance
- Check Project's Specs (RN or IRI)
 - 330 for Construction Acceptance (IRI or RN)
 - 338 for Warranty (IRI or RN)

IRI-based Warranty Threshold

IRI (in/mi)	All Systems	Primary Roads	Limited Access
>95	2.6%	3.8%	0.8%
>100	2.0%	2.9%	0.6%
>105	1.4%	2.1%	0.4%
>110	1.0%	1.5%	0.3%
>115	0.7%	1.1%	0.2%



Potential Changes



Pave Back Within 3 Days

Milled Surface Open to Traffic Longer

- Possible Addition to Standard Specifications
- Repave Day After Milling, Remain Standard
- Upon Engineer Approval, Extend Repave to 3 Days, if
 - Contractor Provides Continuous, Longitudinal Striations
 - No Drop Off or Safety Issues
 - Proper Drainage Maintained
- Goes Back to “Day After Milling” if Requirements Aren’t Met

Acceptable Milling Striations

- Continuous
- Longitudinal



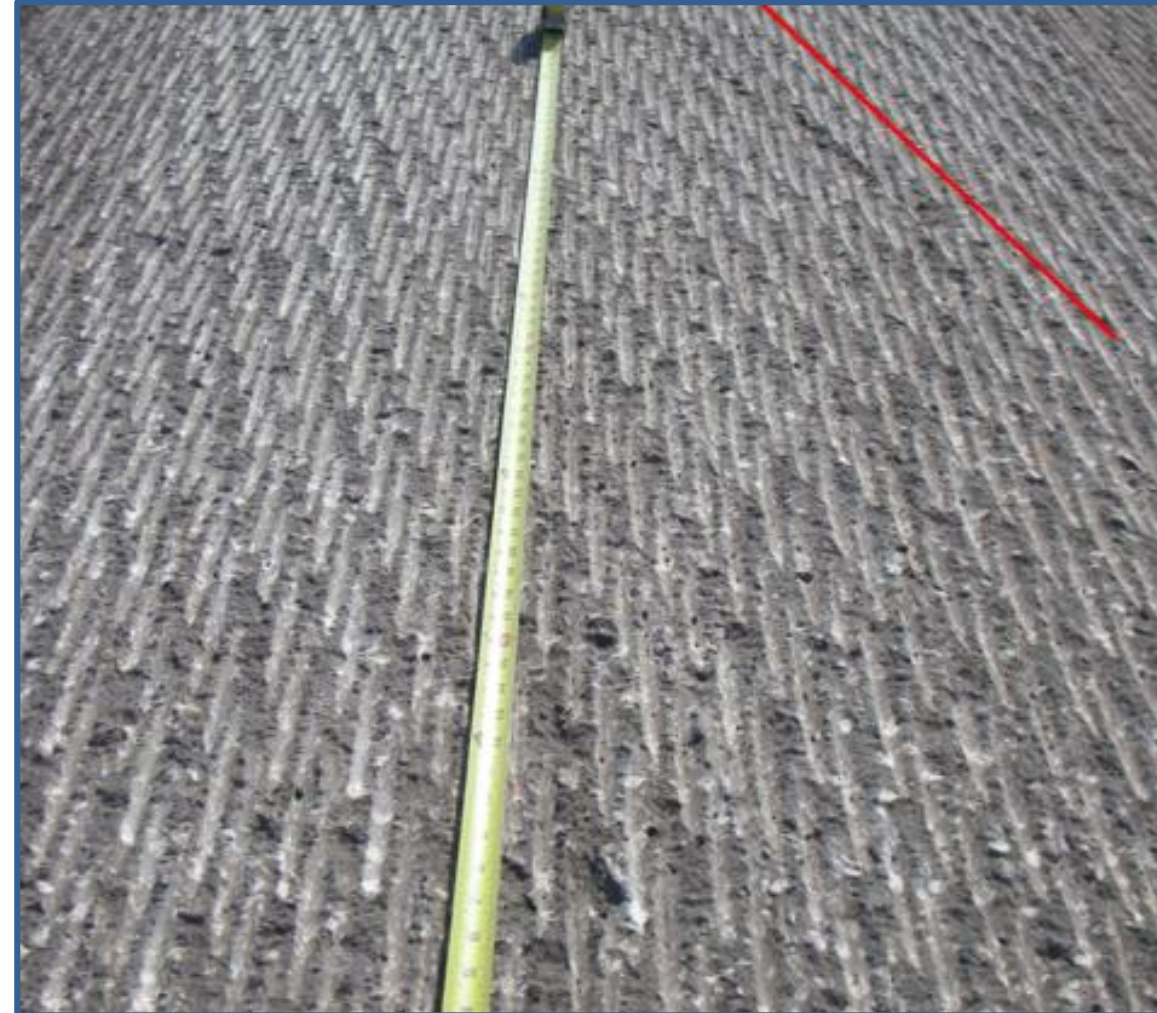
Unacceptable Milling Striations

- Not Continuous
- Not Longitudinal



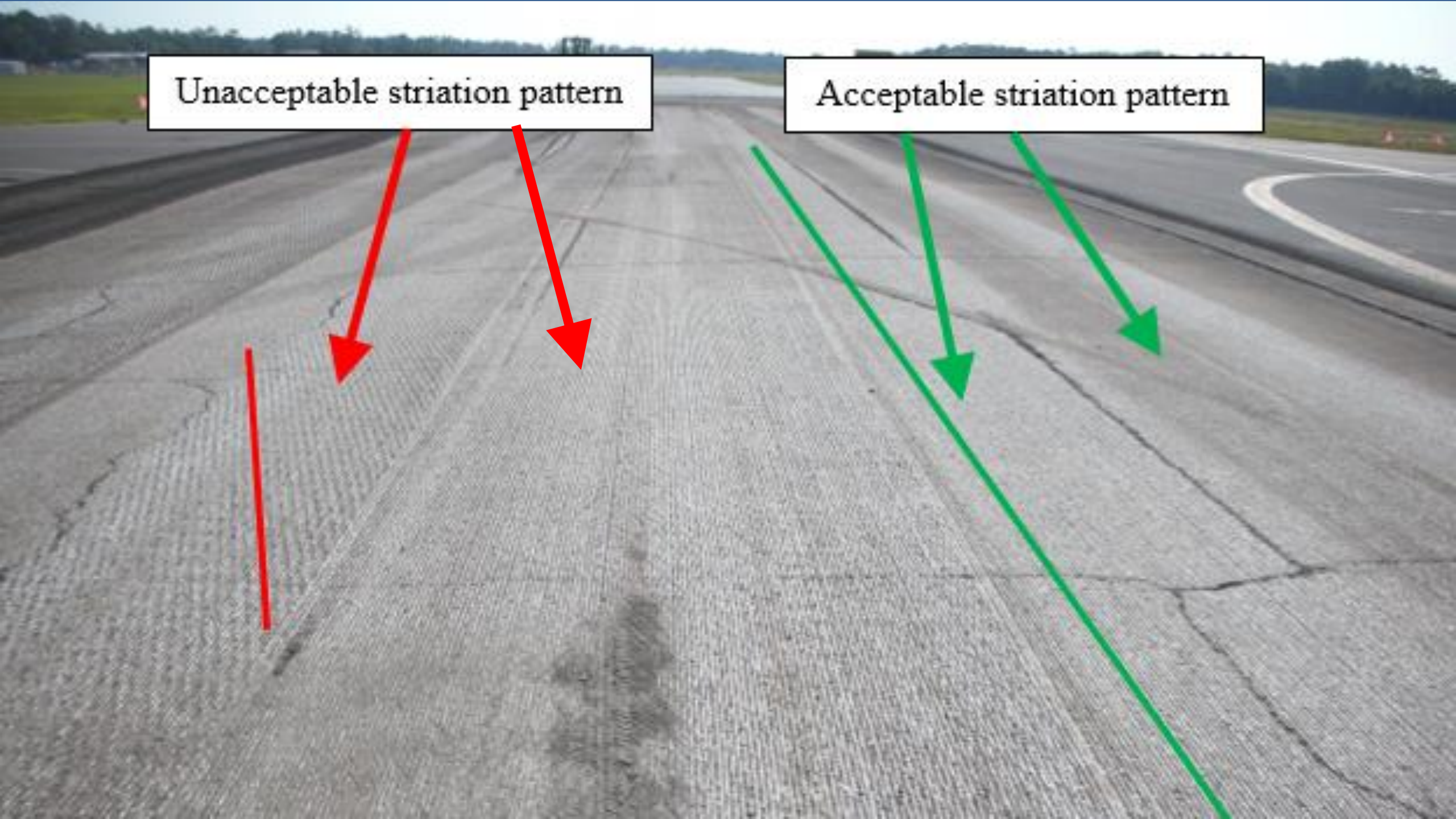
Unacceptable Milling Striations

- Not Continuous
- Not Longitudinal



Unacceptable striation pattern

Acceptable striation pattern





Non-Limited Access Smoothness

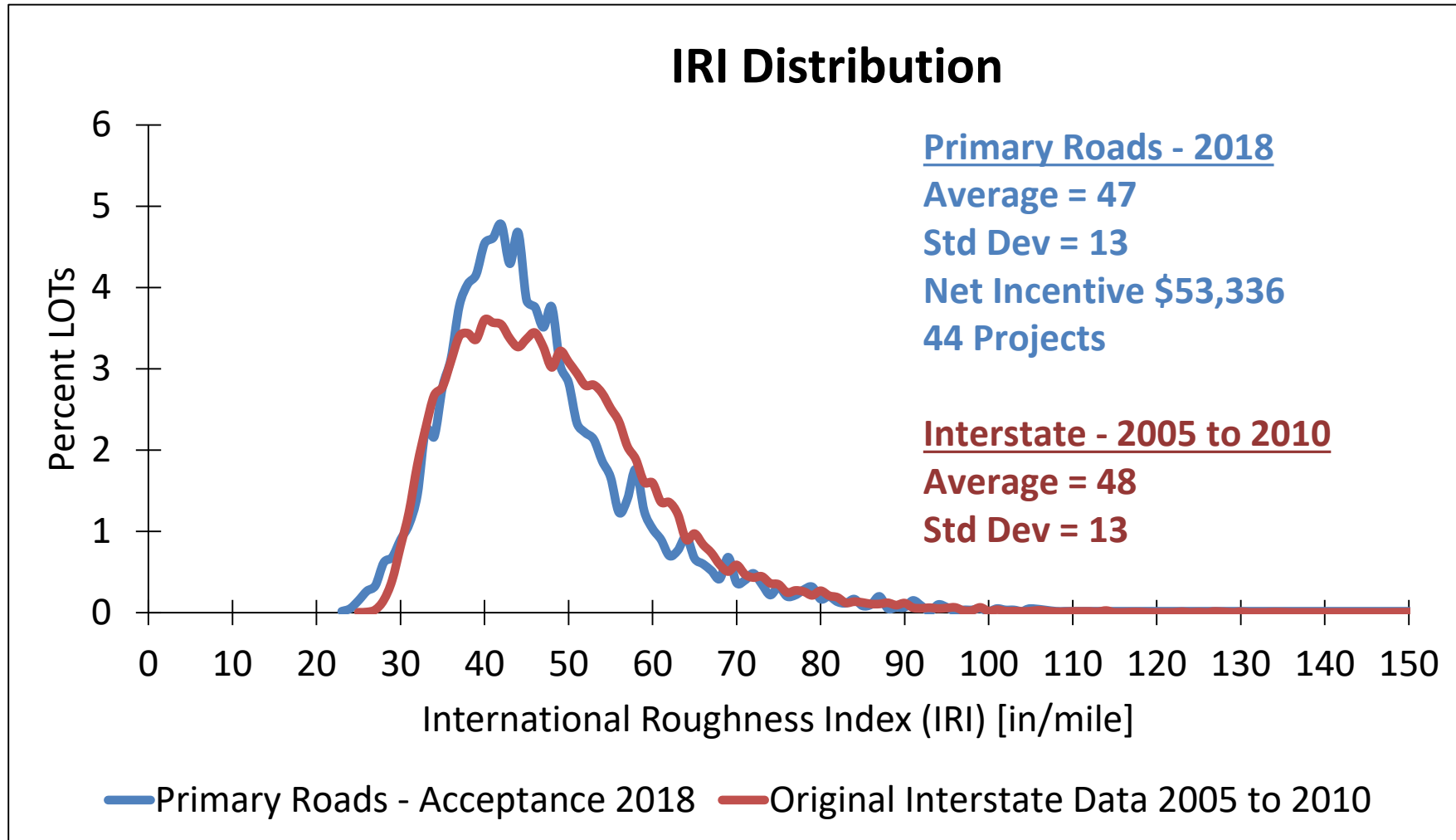
Smoothness IRI \$I/D Spec – Non-Limited Access Roads

- IRI Spec In Use on Limited Access Roads
- Need to Implement on Non-Limited Access Roads
- We'll Schedule Smoothness Committee Meetings with New ACAF President Mark Musselman

Smoothness IRI \$I/D Spec – Non-Limited Access Roads

- Smoothness Committee Will Look at Options
 - Same System as Limited Access Roads
 - Base IRI Pay Limits on Previous Construction Acceptance IRI Values
 - Others
- No Easy Answers
- Trying to Keep it Relatively Simple
- As With Limited Access, Keep Laser & Straightedge Separate

Primary Roads (2018) vs Interstate (2005 to 2010)





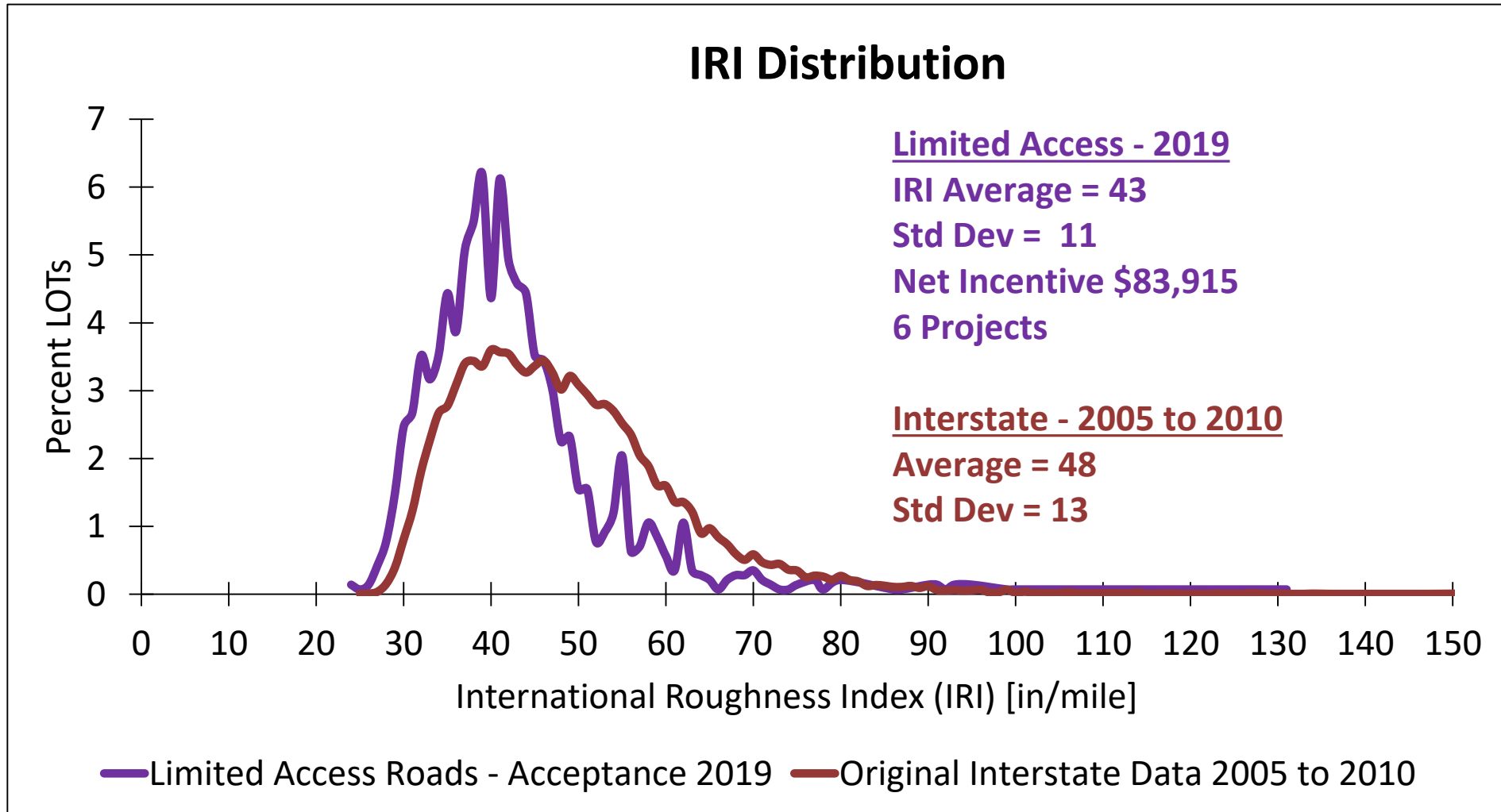
Smoothness Data

IRI Accepted Projects (Limited Access)

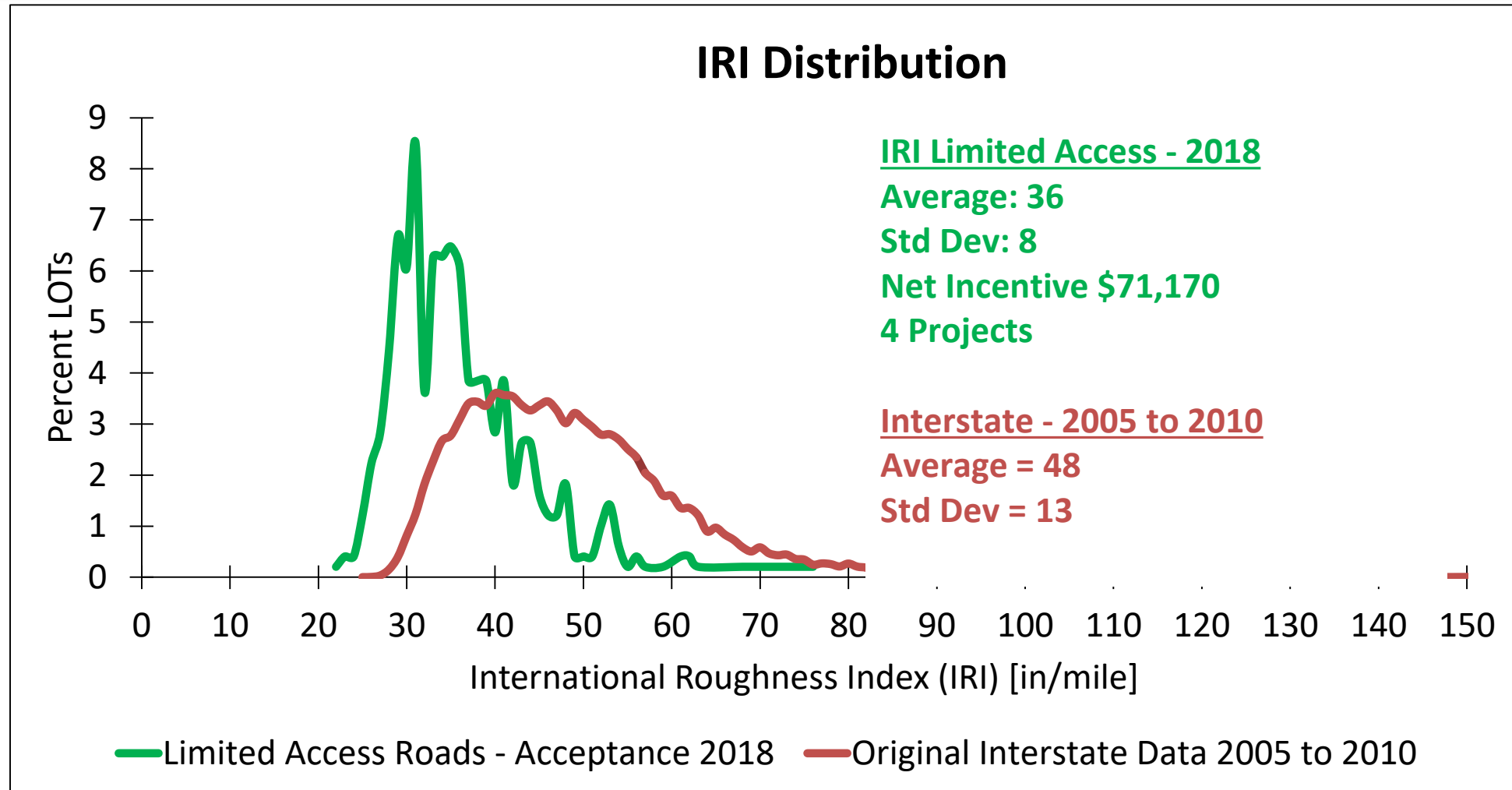
Tested 2018-2019

Year	District	County	FIN	SR	Miles	Inc	Inc/mile	Avg. IRI	Aggregate
2018	8	Okeechobee	435166-1	91	14.0	\$20,890	\$1,493	36	Limestone
	8	Indian River	435168-1	91	8.0	\$11,020	\$1,373	37	Limestone
	8	Okeechobee	435165-1	91	15.5	\$20,993	\$1,356	37	Limestone
	8	Indian River	435167-1	91	10.9	\$18,267	\$1,671	34	Limestone
2019	8	Osceola	44290-1	91	3.8	\$(4,554)	\$(1,186)	60	Granite
	4	Martin	434273-1	9	46.3	\$15,188	\$328	46	Limestone
	4	Palm Beach	434273-2	9	11.6	\$5,440	\$467	44	Limestone
	4	Palm Beach	436521-1	91	24.1	\$28,734	\$1,193	38	Limestone
	8	Lake	437988-1	91	18.4	\$6,557	\$356	43	Granite
	4	Palm Beach	427516-1	9	35.2	\$32,550	\$924	40	Limestone

IRI Limited Access (2019) vs Interstate (2005 to 2010)

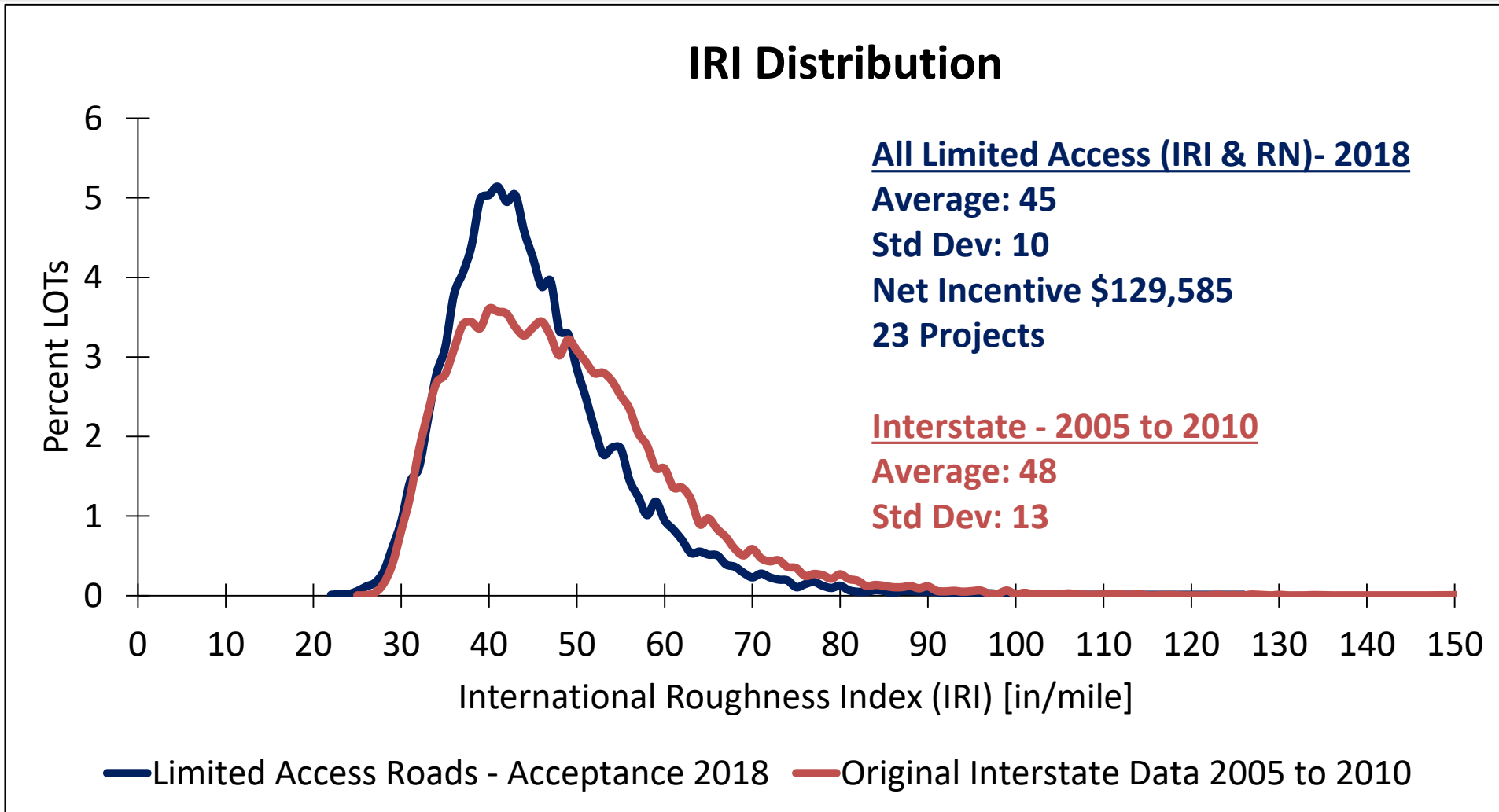


IRI Limited Access (2018) vs Interstate (2005 to 2010)



Limited Access (2018)

Accepted with IRI or RN spec





Tack Coverage

Tack Coverage

- Ensure Complete Tack Coverage
 - Paint it Black
 - Full Coverage on Many Projects, Poor Coverage on Some
- Complete Tack Coverage
 - Good Bond Between Lifts
 - Long-Lasting Pavement
 - Reduces/Eliminates
 - Tack-Related Warranty Issues
 - Issues That Make a Case for Another Pavement Type

- Complete
Tack
Coverage



- Complete
Tack
Coverage



Poor Tack Coverage



Poor
Tack
Coverage





QC Roadway Report

QCRR – Simplify Remove & Replace Tonnage Tracking

- Only Materials Failures
 - Back Out Tonnage from Original LOT & Pay for in Replacement Lot
- Workmanship Issues Handled Like Straightedge Corrections
 - Segregation, Slope Correction, etc.
 - Paid in Original LOT
 - Do NOT Back Tonnage Out of Original LOT
 - Replacement Asphalt Select a No Pay Type of Intended Use
 - [QCRR - R&R Guidance](#)

E-Ticketing – Pilot Projects

- [e-Ticketing Questionnaire Data](#)



e-Ticketing

How Many Asphalt Tickets?

- 4,200,000 Tons/Year
- 20 Tons/Ticket
- **210,000 Asphalt Tickets/Year**
- 250 Work Days/Year
- **840 Tickets/Workday**



210,000 Asphalt Tickets Per Year

- Paying People To:
 - Collect Tickets
 - Gather & File by Lot
 - Enter Data into Spreadsheets
 - Compare to Roadway Reports
 - Search for a Missing Ticket
 - Scan Tickets & Upload to Computer Files
 - Review & Audit
- Can e-ticketing Simplify, Automate, or Eliminate Some Tasks?

e-Ticketing Benefits - Safety

- Paving Work Can Be Dangerous
 - Need to Consider Anything to Decreases Time in Dangerous Areas
 - Even Better if Activity is Eliminated or Accomplished Elsewhere
- e-Ticketing Doesn't Require Inspection Personnel Near
 - Paving Construction Equipment
 - Traffic
 - Caveat: As Long As Paper Tickets Are Eliminated
 - On Two Pilot Projects, Contractor Printed Paper Tickets & Project Staff Collected Them
 - Still Need to Take Temperatures at Truck

e-Ticketing Benefits – Fleet Management

- Fleet Management
 - Real Time Truck Locations
 - Better Management of Truck Cycle Times
 - Who's Taking Too Long?
 - Who's Driving Too Fast?
 - Who's Parked?
 - Data for Trucking Payroll

e-Ticketing Benefits – Asphalt Delivery Information

- When Will the Asphalt Be Here?
 - Estimated Time of Arrival
 - Some Systems Provide Truck Locations on Map
- Allows Crew to Match Paver Speed to Asphalt Delivery
 - Smooth, Segregation-free, Better Quality Pavement
- QC & VT Inspectors Better Coordinate Activities
 - Inspection
 - Food, Water, & Resulting Outputs
- Real-Time Materials & Quantity Data
 - Allows Advanced Review of Tonnage, Mix Type, etc.

e-Ticketing Benefits – Efficiency

- Electronic Asphalt Data
 - Eliminates Lost Paper Tickets
 - Eliminates Paper Ticket Scanning
 - Electronic Data More Quickly & Easily Stored/Archived
 - Most Systems Provide Summary Reports
 - Project & Daily Quantity Reports
 - Export Data to Output File for Spreadsheet Use
 - Easily Create Other Summaries or Reports
 - Faster Asphalt Data Summary, Review, & Payment

e-Ticketing - Challenges

- Connectivity
 - Poor Cell Service or Software Issues Can Be Challenging
 - Inspectors Need Real-time Data to Determine Spreadrates
 - Missing Trucks, Infrequent Data Updates, are Problematic
- Buy-In
 - People Are Used to Dealing with Paper Tickets
 - Project Personnel Still Collected Paper Tickets on Pilot Project
 - Some Struggle with e-ticketing on Tablet/Phone

e-Ticketing - Challenges

- Different e-Ticketing Systems
 - Multiple Systems
 - Learning Curve for Each
 - Inspector Learns One System, Next Project Uses Different System
 - Two Contractors Paving Same Project with Two Different Systems
 - Not Common, but Does Occur

e-Ticketing - Challenges

- Policies, Processes, & Specifications
 - Need to Clearly Specify Contract Requirements
 - e-Ticketing Vendors & Contractors Know What We Want
 - Contractors Can Bid Appropriately
 - FDOT Receives Data for Construction Documentation & Contractor Payment
 - Incorporate e-Ticketing into Inspection, Documentation, & Payment Processes
 - Otherwise Project Personnel Will Maintain Current Workflow & Processes

e-Ticketing Goals

- Pilot Projects
 - Phase 1:
 - **Proof of Concept: Use electronic ticketing (Asphalt & Concrete)**
 - Phase 2:
 - Use e-Ticketing for Payment
 - Phase 3:
 - Use in Remote Locations – Connectivity Challenges
- Institutionalize Use

e-Ticketing - Pilot Projects

- Completed 2 Pilot Projects
- SR 82
 - Ajax Paving
 - Fleetwatcher by Earthwave
 - D1
- SR 50
 - Ranger Construction
 - Spot on Ticketing by Spot on Performance
 - D5

Asphalt e-Ticketing Pilot Project #1

- State Road 82 - Fort Myers
 - Add Lanes & Reconstruct
- Ajax Paving
- e-Ticketing: Fleetwatcher by Earthwave
- Contract Details
 - Let Apr 20, 2017
 - Added e-Ticketing Specifications by Supplemental Agreement

Fleetwatcher e-Ticketing

- GeoZones
Around Plant &
Paver



Fleetwatcher e-Ticketing

- Asphalt Truck e-Ticket

56° 73% 7:16 AM

← Scale Ticket: #00238717

Not Dumped

Ticket Date:	Jan 08 2019 07:09 AM
Scale Asset Name:	AJAX559
Asset Name:	AJAX559
FW Known:	Yes
Source:	Plant 4
Weighmaster:	BBRUNELL
Project Number:	230117
Project Name:	SR82 E1Q29
Phase Code:	10300
Material Name:	12.5mm C
Cumulative Tons:	-
Void:	0
Net Tons:	27.28
Waste Tons:	0.0
Free Form 1:	-
Temperature:	-

UPDATE WASTE TONS: 0.0

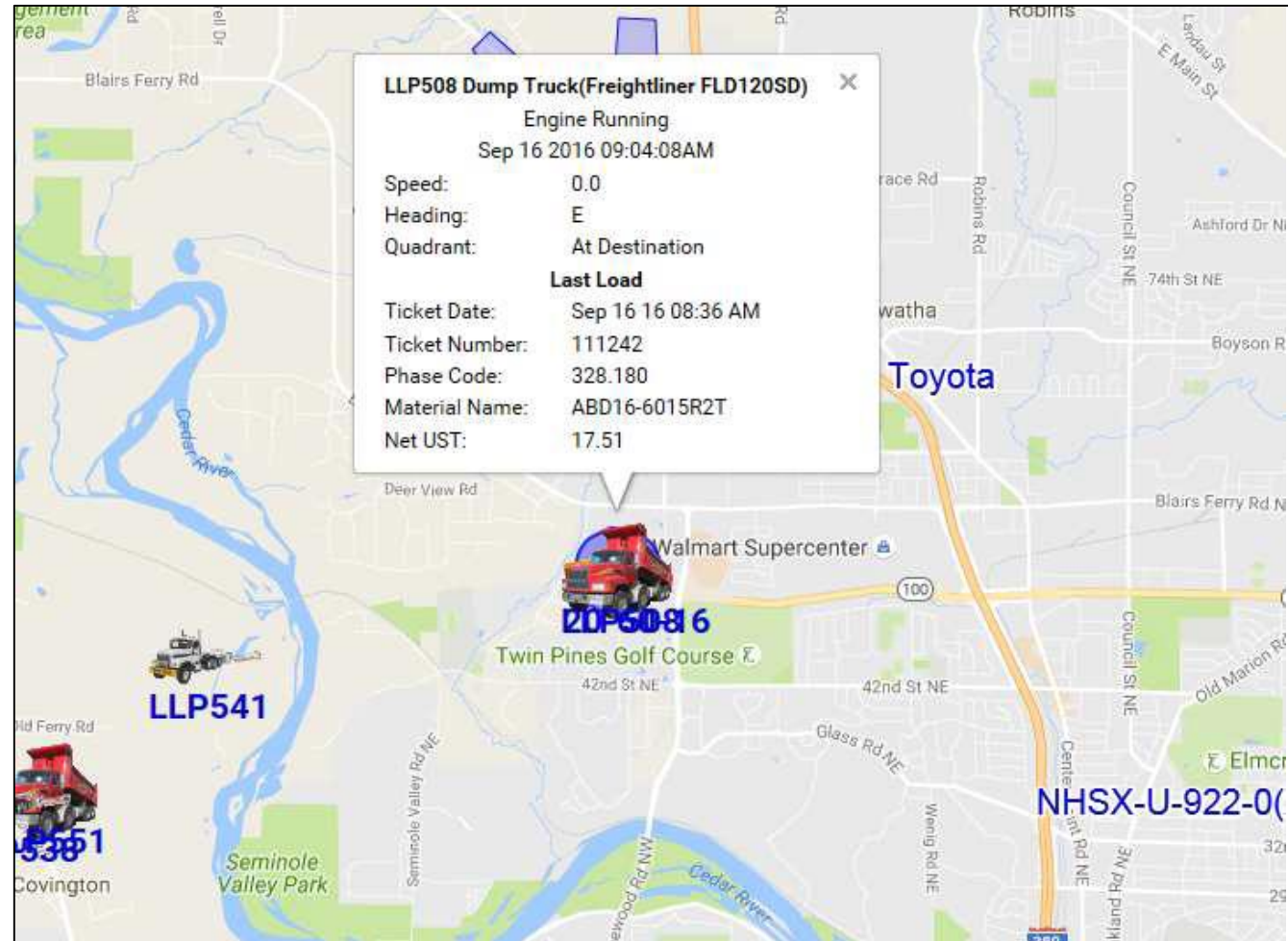
UPDATE MATERIAL TEMPERATURE: -

No notes. ADD NOTE

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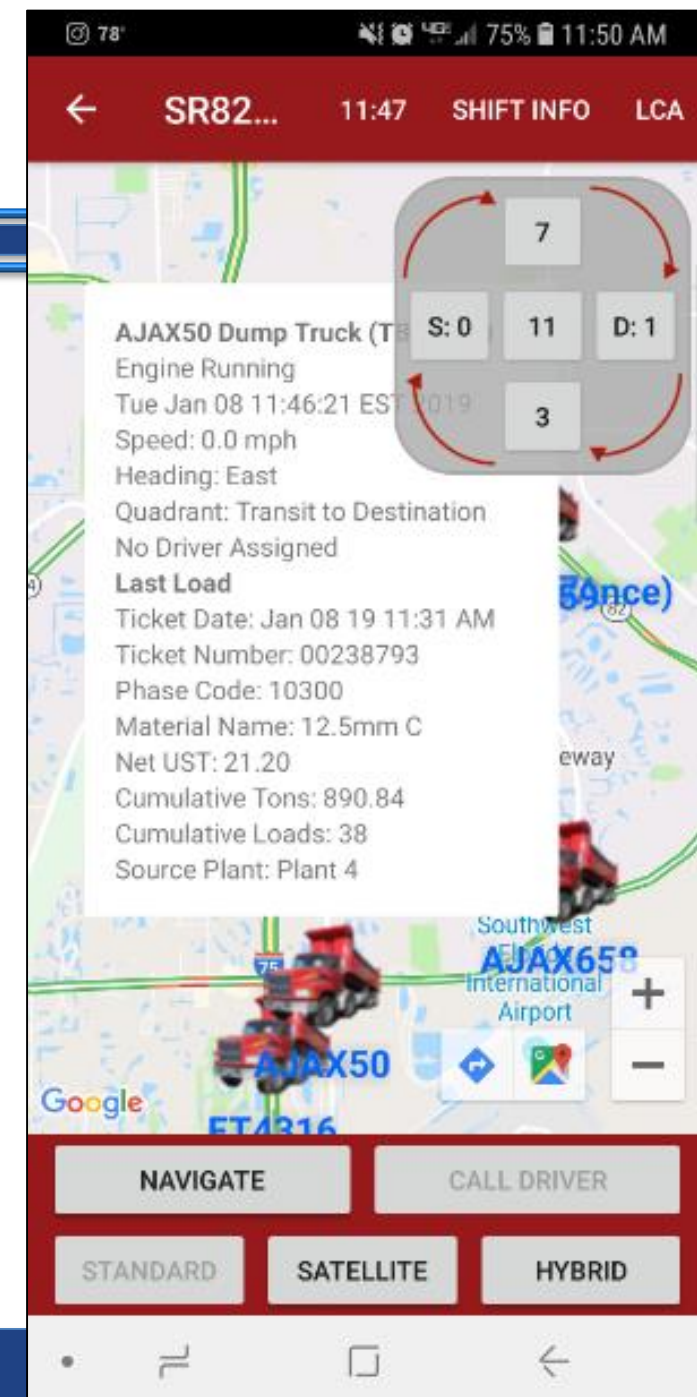
Fleetwatcher e-Ticketing

Real-Time Truck Information Map



Fleetwatcher e-Ticketing

- Trucking Map
- Trucking Summary
- Individual Truck Data



Fleetwatcher e-Ticketing

Scale Ticket Summary

FLEETWATCHER 8:45:41
Home Projects Equipment Reports Material Delivery My Company Help Logout


Scale Ticket Summary

From 06/14/2016 To 06/14/2016 Search Download as CSV

Ticket Number	Ticket Date	Asset Name	FW Known	Source	Weighmaster	Project Name	Phase Code	Material Name	Void	Net Tons	Waste Tons	Note Count
105611	Jun 14 2016 03:14 PM	LLP549	Yes	Plant #17	BILL	NHSX-100-1(51)--3H-57 Hwy 100	328.180	ABD16-6015R1		7.25	0.0	0
105610	Jun 14 2016 03:08 PM	LLP549	Yes	Plant #17	BILL	NHSX-100-1(51)--3H-57 Hwy 100	328.180	ABD16-6015R1		10.83	0.0	2
105609	Jun 14 2016 03:05 PM	LLP541	Yes	Plant #17	BILL	NHSX-100-1(51)--3H-57 Hwy 100	328.180	ABD16-6015R1		23.09	0.0	0
105608	Jun 14 2016 03:04 PM	LLP515	Yes	Plant #17	BILL	NHSX-100-1(51)--3H-57 Hwy 100	328.180	ABD16-6015R1		18.53	0.0	0
105607	Jun 14 2016 03:01 PM	LLP548	Yes	Plant #17	BILL	NHSX-100-1(51)--3H-57 Hwy 100	328.180	ABD16-6015R1		18.51	0.0	0
105606	Jun 14 2016 03:00 PM	LLP531	Yes	Plant #17	BILL	NHSX-100-1(51)--3H-57 Hwy 100	328.180	ABD16-6015R1		18.54	0.0	0
105605	Jun 14 2016 02:59 PM	LLP547	Yes	Plant #17	BILL	NHSX-100-1(51)--3H-57 Hwy 100	328.180	ABD16-6015R1		18.3	0.0	0
105604	Jun 14 2016 02:57 PM	LLP551	Yes	Plant #17	BILL	NHSX-100-1(51)--3H-57 Hwy 100	328.180	ABD16-6015R1		18.41	0.0	0

Fleetwatcher e-Ticketing

Materials Summary



Iowa Department of Transportation
Highway Division - Office of Construction and Materials
Daily HMA Summary Report

Report Prepared By: **Lee Shepard**

Project Name: **NHSX-100-1(51)--3H-57 Hwy 100** Contractor: **LL Pelling**

Start Date and Time: **2016-06-14 00:00:00** End Date and Time: **2016-06-14 23:59:59**

Ticket#: **105550** Ticket#: **105611**

Time: **06:34:16** Time: **15:14:16**

Material Name	Total Tons Batched	Total Tons Voided	Total Tons Wasted	Total Tons for Pay
ABD16-6015R1	575.54	0	0.0	575.54
ABD16-6004	557.10	18.9	8.0	530.20
ABD16-6005	18.47	18.47	0.0	0.00
None	0.0	0	0.0	0.0

Notes for Ticket#: 105610

Note#: 8 | Lee Shepard 2016-06-15 11:22:16

Wasted to surface patch Item #0040

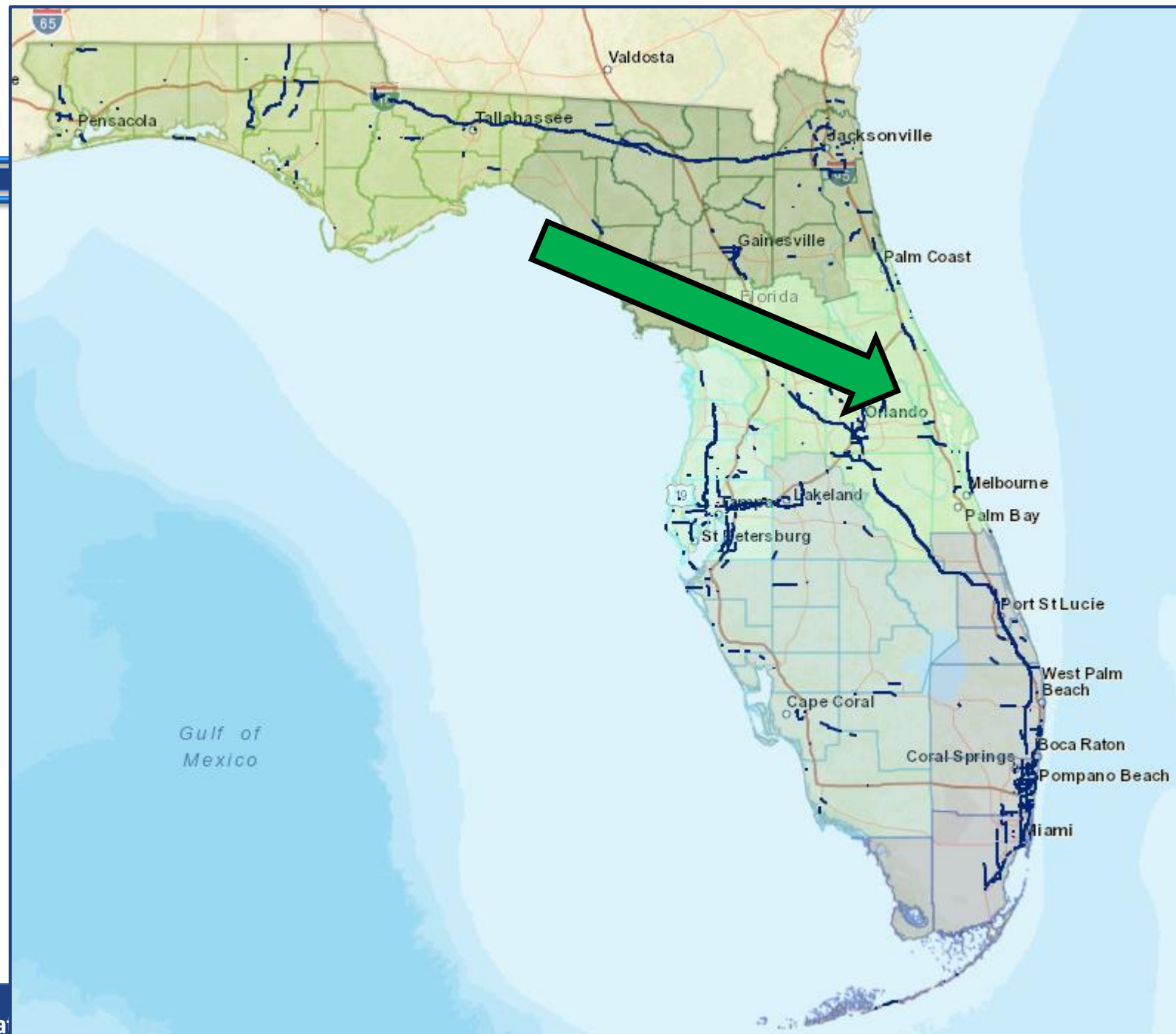
Note#: 9 | Lee Shepard 2016-06-15 11:23:01

Disregard not. Test

Pilot Project #2

- State Road 50 - Orange Co. Line to I-95
 - Mill & Resurface
- Ranger Construction
- e-Ticketing: Spot on Ticketing by Spot on Performance
- Contract Details
 - Let Dec 5, 2018
 - Added e-Ticketing Specifications by Supplemental Agreement

Asphalt e-Ticketing Pilot Project #2



Spot on Performance e-Ticketing

- Asphalt e-Ticket

RANGER CONSTRUCTION INDUSTRIES, INC.
101 Sansbury's Way
West Palm Beach, FL 33411

TICKET 420916	JOB 3505155	PHASE 50101	WEIGHT 20.40 tons
CUSTOMER 35	CUSTOMER JOB ID 437345-1-52-01	DESTINATION	TRUCK 2633

LOAD NUMBER 25	LOT NUMBER 1
LOADED 07/15/2019 12:06 PM	UNLOADED 07/15/2019 02:32 PM
LOAD LOCATION WINTER GARDEN 1200 ELBOC WAY WINTER GARDEN, FL 34787	UNLOAD LOCATION 28.54982794, -80.85435697

GROSS 34.79	MATERIAL 032
TARE 14.39	MIX DESIGN SP 18-16307B
NET 20.40	MIX / COMPACT TEMP 315.00 / 310.00
TODAY'S TOTAL 203.73	

QUALITY CONTROL GRID

	QC	VT
PLANT	305.00	
ROADWAY		

QUALITY CONTROL LIST

TIME	DETAILS	USER
12:17 pm	305.00 / QC / Plant	Robert Grantham

LOAD USE LIST

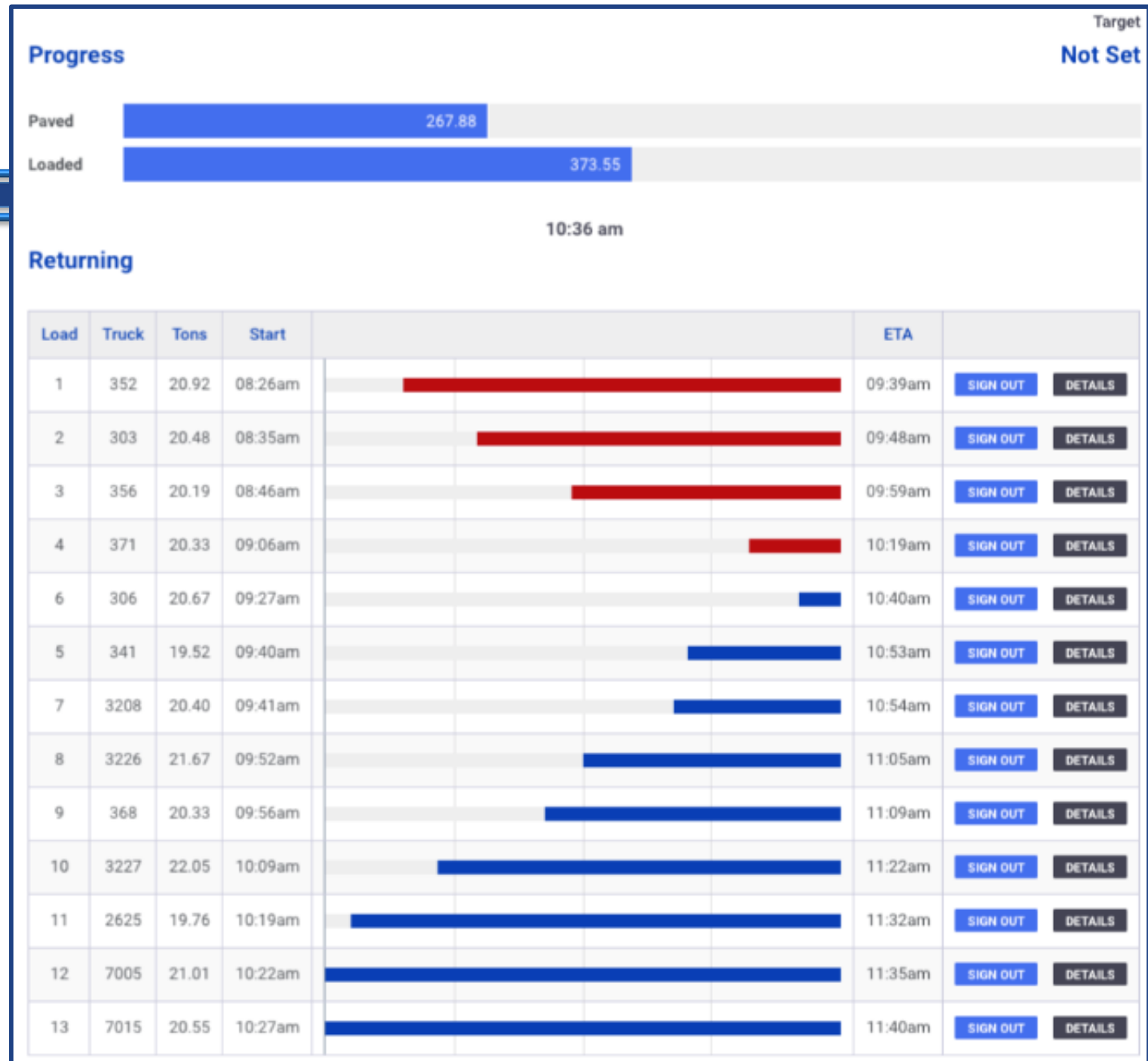
TONS	DESCRIPTION	PHASE
20.40	Main Line	50101

LOAD NOTES

NO NOTES ADDED.

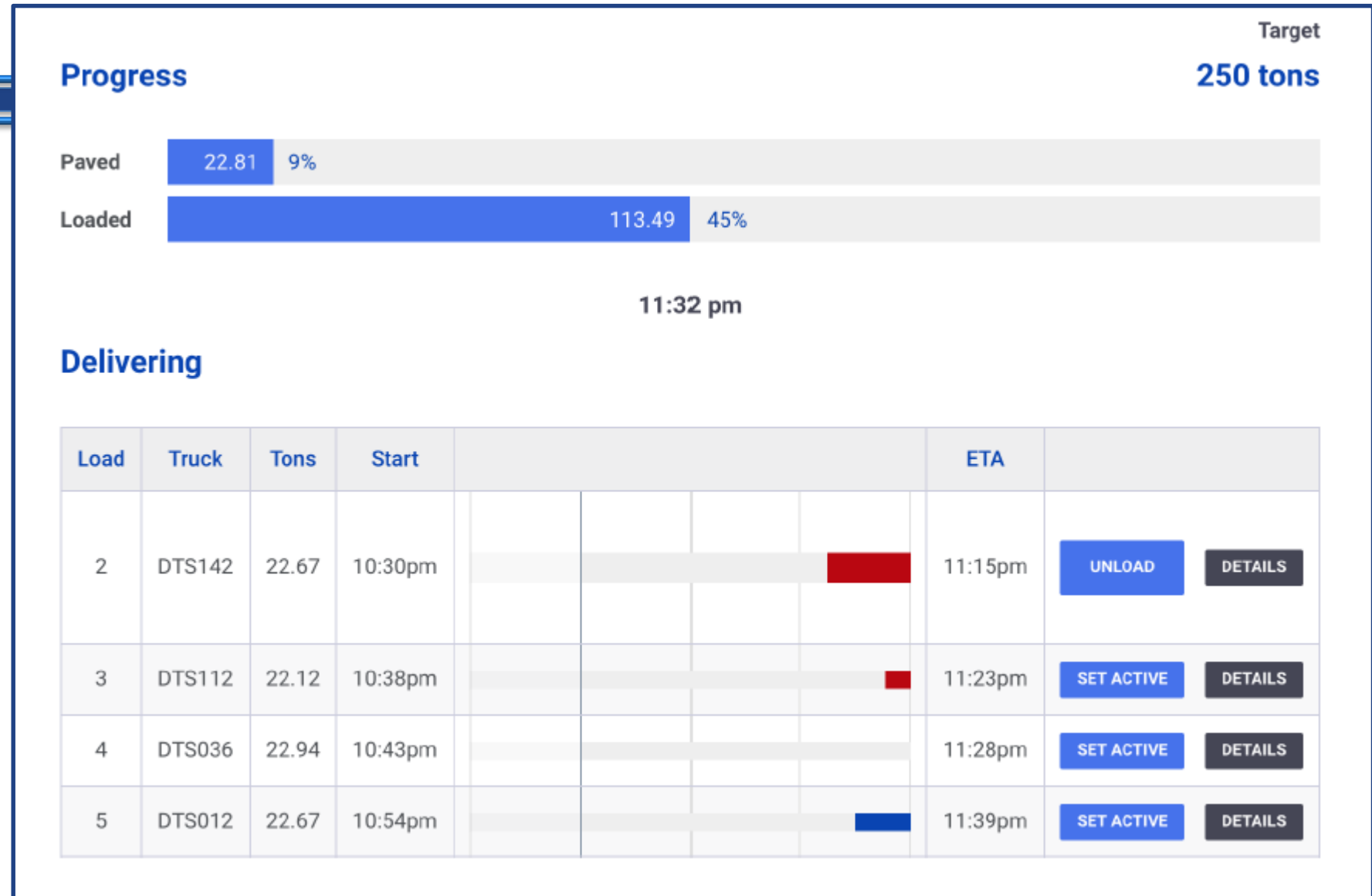


- Truck Status/ETA



Spot on Performance e-Ticketing

- Dashboard
- Progress Bars



Spot on Performance e-Ticketing

- Project Dashboard

All Jobs Back to Dashboard				
Job Identifier	Name	Customer	Started	
3505155	437345-1-52-01	35	07/08/2019	DETAILS EDIT
96919		96919	06/21/2019	DETAILS EDIT
59661		59661	06/06/2019	DETAILS EDIT
3506233		35	06/06/2019	DETAILS EDIT
3506032		35	06/06/2019	DETAILS EDIT
44878		44878	06/06/2019	DETAILS EDIT
3506087		35	06/06/2019	DETAILS EDIT
3505154		35	06/06/2019	DETAILS EDIT
47007		47007	06/05/2019	DETAILS EDIT

Spot on Performance e-Ticketing

- Ticket Search

Ticket Search

Job Number

3505155

Start Date

End Date

Mix Design

SP 18-16307B

Phase

Select

Lot

1

SEARCH

Tickets [Export CSV](#) [Download PDF](#)

Job Number	Ticket	Lot #	Plant	Phase	Mix	Tons	Loaded
3505155	420892	1	Winter Garden	50101	SP 18-16307B	20.2700	7/15/2019 06:35am
3505155	420893	1	Winter Garden	50101	SP 18-16307B	20.6800	7/15/2019 06:38am
3505155	420894	1	Winter Garden	50101	SP 18-16307B	19.9000	7/15/2019 06:41am
3505155	420895	1	Winter Garden	50101	SP 18-16307B	20.3100	7/15/2019 06:43am
3505155	420896	1	Winter Garden	50101	SP 18-16307B	19.6800	7/15/2019 06:46am
3505155	420897	1	Winter Garden	50101	SP 18-16307B	20.6800	7/15/2019 06:48am
3505155	420898	1	Winter Garden	50101	SP 18-16307B	20.3300	7/15/2019 06:51am
3505155	420899	1	Winter Garden	50101	SP 18-16307B	20.8800	7/15/2019 06:54am
3505155	420900	1	Winter Garden	50101	SP 18-16307B	20.5500	7/15/2019 07:52am

Pilot Project Outcomes

- It is Possible to Implement e-Ticketing
- Project Staff Learned to Use e-Ticketing Systems
- Truck Locations/ETA's
 - Helped Paving Crew Balance Paver Speed with Asphalt Delivery
 - Helped Inspectors Coordinate Their Work
- Scanning Paper Tickets Can Be Eliminated – Save e-Ticket Data
- Tying e-Ticketing Data to Roadway Report Will Be Giant Step Forward

Project Outcomes

- Some Connectivity/Obtaining Real-Time Ticket Data Challenges
 - Cell Service
 - e-Ticket Software
 - Operator Inexperience
- Old Habits Die Hard
 - Contractor Still Printed Paper Tickets
 - Project Staff Still Collected Paper Tickets

FDOT Moving Forward

- Today
 - e-Ticketing Vendors Here
 - e-Ticketing Panel Discussion
- Additional Pilot Projects?
 - Try Other e-Ticketing Systems
 - Gain More Contractor, FDOT, & Consultant Experience
- Coordinate e-Ticketing Showcase
 - e-Ticketing Vendors Present Systems
 - Contractors, FDOT, & CEI's Can See Various e-Ticketing Systems

Questions & Contact Information

- Richard Hewitt, P.E.
 - State Construction Pavement Engineer
 - State Construction Office
- (386) 943-5305 (office)
- richard.hewitt@dot.state.fl.us