



Built for Ride: A Case Study in Improving Ride Quality on SH 130

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9/25/26

Family Road trips & Ride quality



Milestones & Greatness

- *TxAPA 50TH (now 51st) Annual Meeting*
- *100th Annual Transportation Short Course*
- *Texas A&M's 150th anniversary*
- *AMERICA 250*
- *SH 130??*

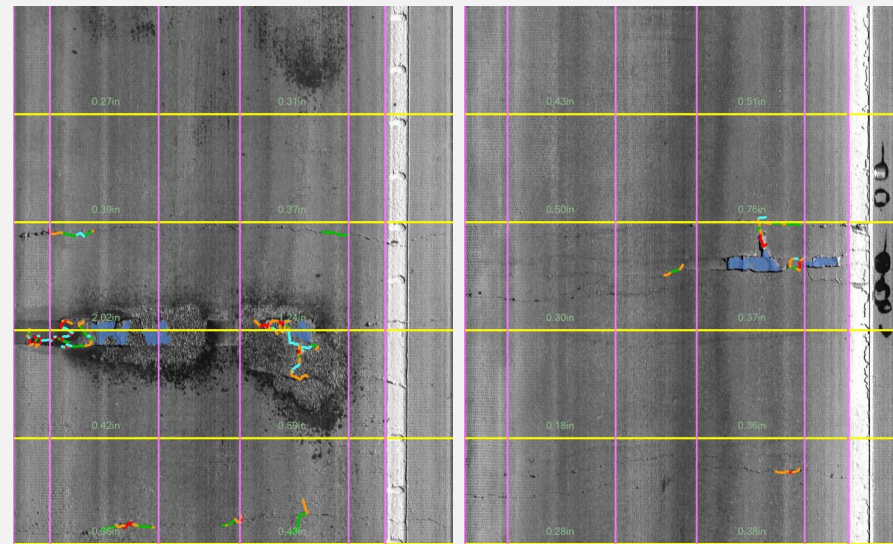
The 20-Year Mark SH 130

*Celebrating with a
Rough Ride*

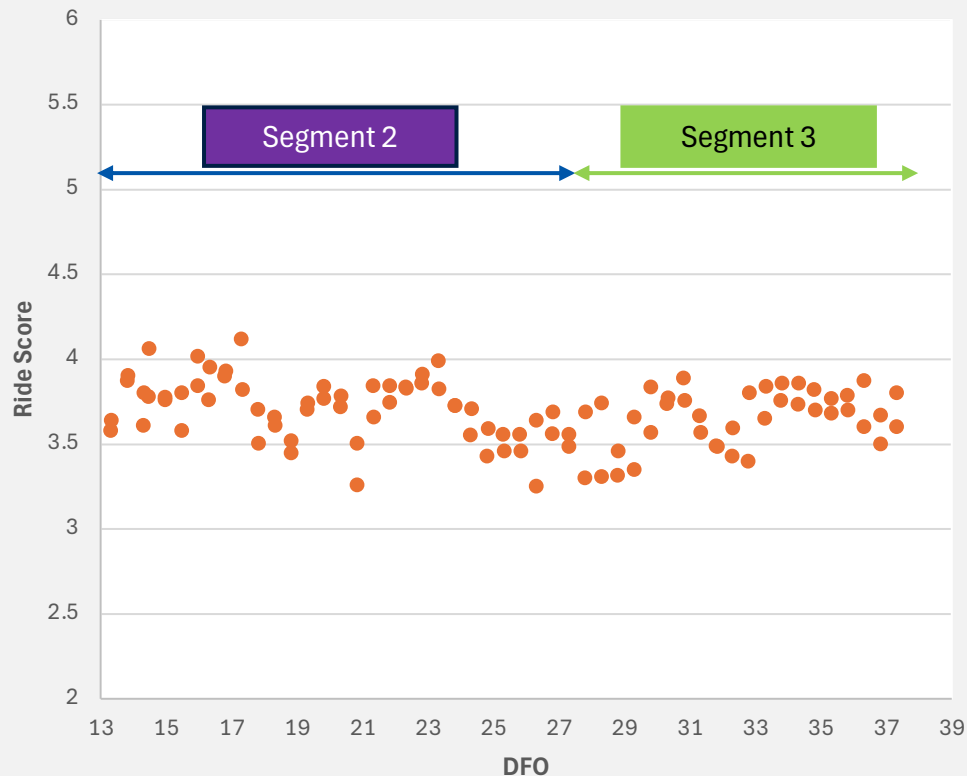


Key issues on the Corridor

- **Increasing development & ADT on corridor**
- **Construction on IH 35 had commenced**
- **Speed Limit 80 MPH**
- **Many distress types**
 - Spalling from previous repairs
 - Cracking
 - Failures
- **Many complaints/concerns regarding safety**
- **All on the "2nd" Interstate in the Austin District**

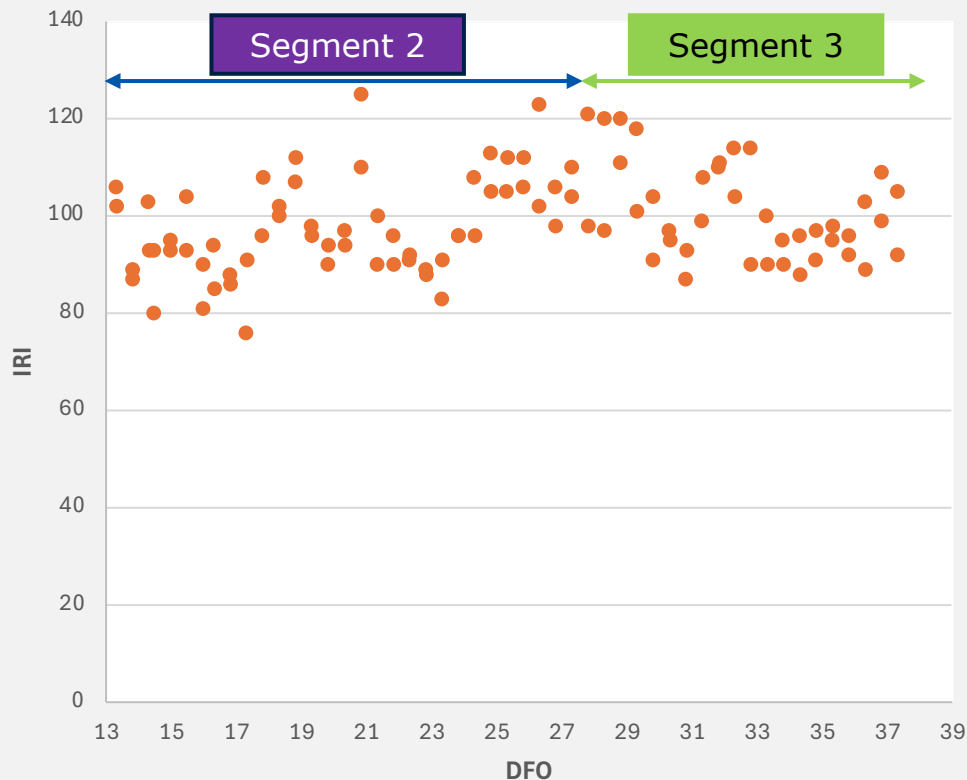


Ride Score Data



- Existing ride and distress was so bad it impacted our ride
- Ride score prior to project ranged between 3.3-4.1
- 5.0 is a perfect ride

IRI Data



- IRI prior to project ranged between 76-125
- The smaller the number the better
- In the “Danger Zone” of ride

Diagnosis Before Treatment

*Understanding what was really happening
beneath the surface*

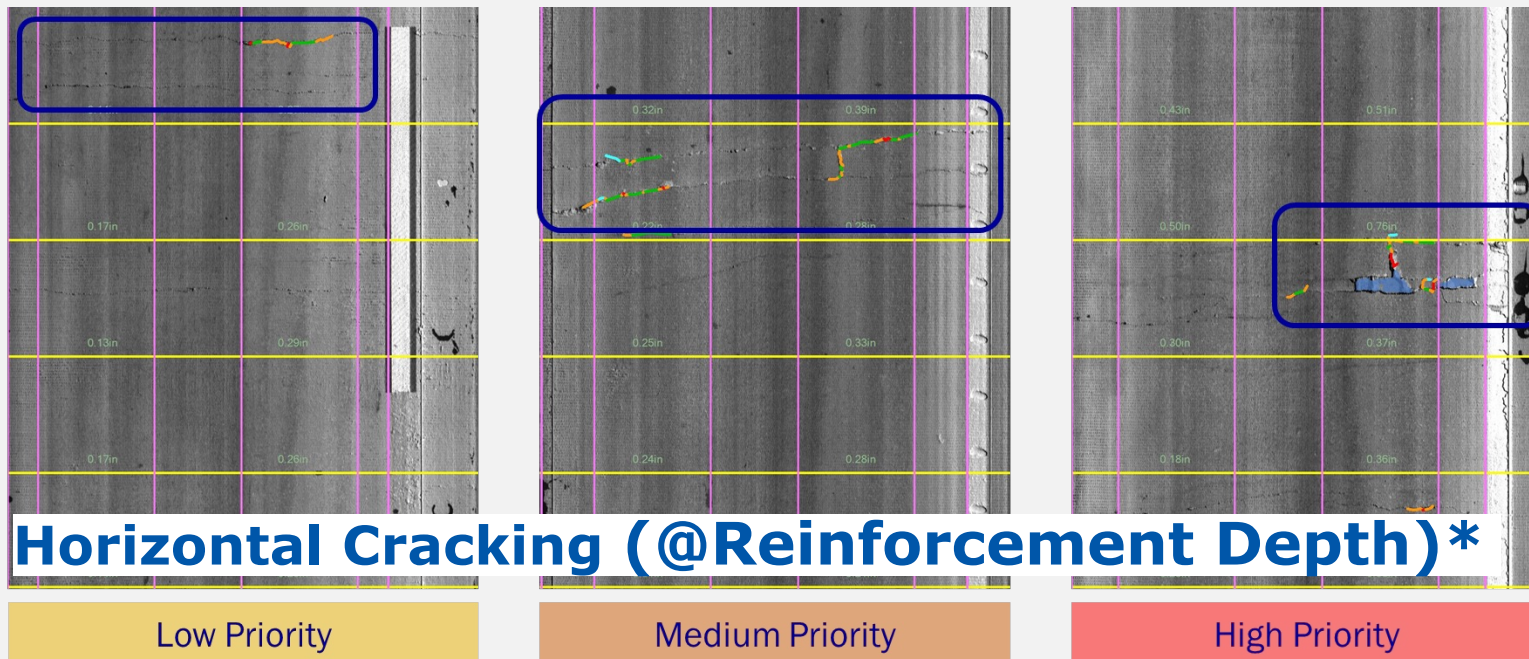


Project-level Data Collection

- MNT Division
- The Transtec Group (Terracon)
- Visual Distress Survey
- Continuous Deflection
- Automated Cracking and Surface Distress
- Roughness (IRI)



Automated Cracking and Surface Distress



*Distress due to horizontal cracking at reinforcement depth is not included in the Rater's Manual, high priority is based on rated spalled crack and punchout.

Roughness – Profile Analysis (ProVAL)

Roughness-Distress Correlation

Approx. Sta Start	Approx. Sta. End	MRI (in/mi)	Distress Count	Approx. Location
Toll Plaza				
1169+10	1174+38	73.0	0	
1174+38	1179+66	107.0	3	
1179+66	1184+94	100.5	6	
1184+94	1190+22	128.4	4	
1190+22	1195+50	132.6	8	
1195+50	1199+66	128.1	1	
Cameron Rd				
1205+40	1210+68	97.6	0	
1210+68	1215+96	80.1	1	
1215+96	1221+24	91.0	3	
1221+24	1226+52	78.1	0	
1226+52	1231+80	103.3	3	

Lane 1

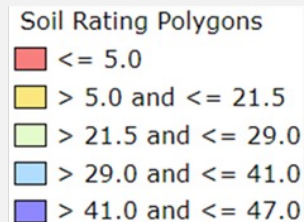
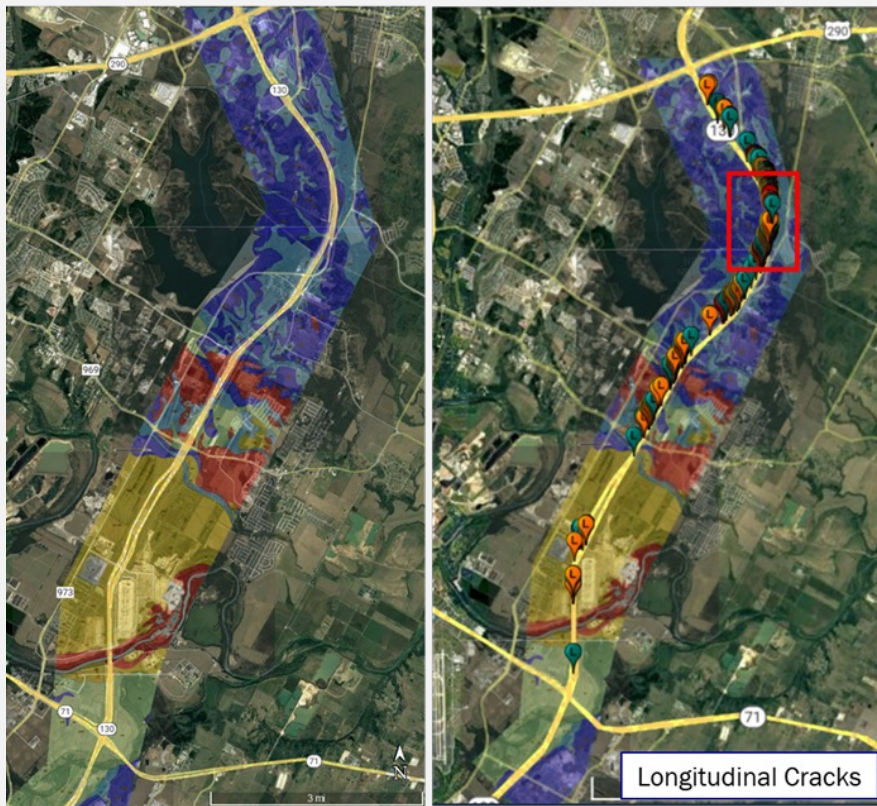
Approx. Sta Start	Approx. Sta. End	MRI (in/mi)	Distress Count	Approx. Location
Toll Plaza				
1169+10	1174+38	73.5	1	
1174+38	1179+66	84.6	0	
1179+66	1184+94	96.6	0	
1184+94	1190+22	105.6	0	
1190+22	1195+50	110.6	0	
1195+50	1199+67	175.6	0	
Cameron Rd				
1205+40	1210+68	126.0	0	
1210+68	1215+96	79.9	0	
1215+96	1221+24	105.7	0	
1221+24	1226+52	135.6	0	
1226+52	1231+80	139.2	0	

Lane 2

SB Lanes - Toll Plaza to US 290

Web Soil Survey

Plasticity Index –
Longitudinal
Cracking Correlation



The Master Plan

*Turning data into rehabilitation
strategies*

Pavement Life Extension Strategy

•Diamond Grinding

Reduce roughness and
dynamic loading

•Pre-overlay Repairs

•Underseal Course

•Overlay: Intermediate Layer

•Overlay: Surface Course

SH130 Profile Data Analysis (Segment 2) - NB Lanes

Lane 1	Section	Length	No. Full Segment	Current	After Grinding					No. ALR (LWP)	No. ALR (RWP)
				Overall MId	Overall MId	No. Segments < 75 In/ml	Pct.	No. Segments > 95 In/ml	Pct.		
	1 US 290 to Parmer Ln.	4195	7	107.5	68.3	5	71	0	0	4	1
	2 Parmer Ln. to Gilleland Creek	2145	4	95.8	63.1	4	100	0	0	0	3
	3 Gilleland Creek to Howard Ln.	2688	5	91.2	56.9	4	80	0	0	1	1
	4 Howard Ln. to Cameron Rd.	13087	24	89.3	57.5	22	92	0	0	8	7
	5 Cameron Rd. to Toll Plaza	2854	5	102.6	64.3	4	80	0	0	0	3
	6 Toll Plaza to Wilbarger Creek	5240	9	95.8	58.6	9	100	0	0	2	1
	7 Wilbarger Creek to Pflugerville Pkwy	7855	14	109.8	65.3	12	86	1	7	9	8
	8 Pflugerville Pkwy to SH 45	7225	13	83.1	53	13	100	0	0	5	5
	9 SH 45 to Star Ranch Rd.	15606	29	89.6	55.8	29	100	0	0	6	11
	10 Star Ranch Rd. to Brushy Creek	3252	6	83.9	53.9	6	100	0	0	1	2
	11 Brushy Creek to US 79	2310	4	98.6	67.8	2	50	0	0	8	1

Analysis predicted a potential reduction of the overall IRI

Pavement Life Extension Strategy

- Diamond Grinding
- Pre-overlay Repairs

Repair existing distress to extend life of pavement

- Underseal Course
- Overlay: Intermediate Layer
- Overlay: Surface Course

SH 130 - Segment 2 - Pre-Overlay Repairs

SB - Half Depth Repair

Roadway Layout Sheet No.	Approx. Station	Distress Type	Repair Type	Priority	Latitude	Longitude
1	711+71	Asphalt Patches	Half Depth Repair	High	30.53583081	-97.57654902
2	721+90	Asphalt Patches	Half Depth Repair	High	30.53303118	-97.57645104
2	725+19	Asphalt Patches	Half Depth Repair	High	30.53212831	-97.57641977
2	726+80	Horizontal Cracks	Half Depth Repair	Medium	30.53168594	-97.57635887
2	729+42	Horizontal Cracks	Half Depth Repair	Medium	30.53096378	-97.57633549
2	729+59	Horizontal Cracks	Half Depth Repair	Medium	30.53091866	-97.57633396
3	765+59	Asphalt Patches	Half Depth Repair	High	30.53185735	-97.57641034
4	784+30	Horizontal Cracks	Half Depth Repair	Medium	30.52901400	-97.57630997
5	797+11	Asphalt Patches	Half Depth Repair	High	30.51823193	-97.57593640
5	799+08	Asphalt Patches	Half Depth Repair	High	30.51101624	-97.57583291
5	800+24	Asphalt Patches	Half Depth Repair	High	30.51056897	-97.57590848
5	801+55	Asphalt Patches	Half Depth Repair	High	30.51047990	-97.57592651
5	801+72	Horizontal Cracks	Half Depth Repair	High	30.50873718	-97.57647831
5	802+95	Horizontal Cracks	Half Depth Repair	High	30.50342639	-97.57960300

SH 130 - Segment 2 - Pre-Overlay Repairs

SB - Full Depth Repair

Roadway Layout Sheet No.	Approx. Station	Distress Type	Repair Type	Priority	Latitude	Longitude
2	726+17	Concrete Patches	Full Depth Repair	High	30.53185735	-97.57641034
2	736+52	Concrete Patches	Full Depth Repair	High	30.52901400	-97.57630997
4	775+77	Concrete Patches	Full Depth Repair	High	30.51823193	-97.57593640
5	802+05	Concrete Patches	Full Depth Repair	High	30.51101624	-97.57583291
5	803+69	Concrete Patches	Full Depth Repair	High	30.51056897	-97.57590848
5	804+02	Concrete Patches	Full Depth Repair	High	30.51047990	-97.57592651
5	810+59	Concrete Patches	Full Depth Repair	High	30.50873718	-97.57647831
6	832+24	Concrete Patches	Full Depth Repair	High	30.50342639	-97.57960300
6	838+15	Concrete Patches	Full Depth Repair	High	30.50198783	-97.58047673
7	847+66	Concrete Patches	Full Depth Repair	High	30.49963547	-97.58179307
9	904+16	Concrete Patches	Full Depth Repair	High	30.48447640	-97.58550032

Pavement Life Extension Strategy

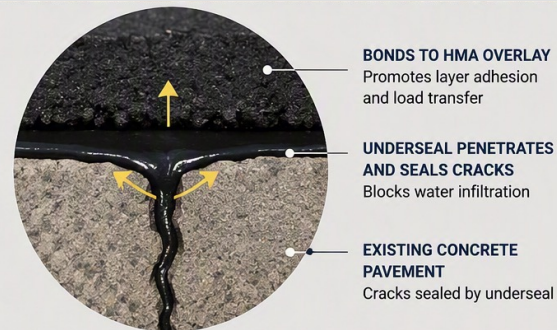
- Diamond Grinding
- Pre-overlay Repairs
- Underseal Course**

Seals cracks and bonds layers

- Overlay: Intermediate Layer
- Overlay: Surface Course

BENEFITS

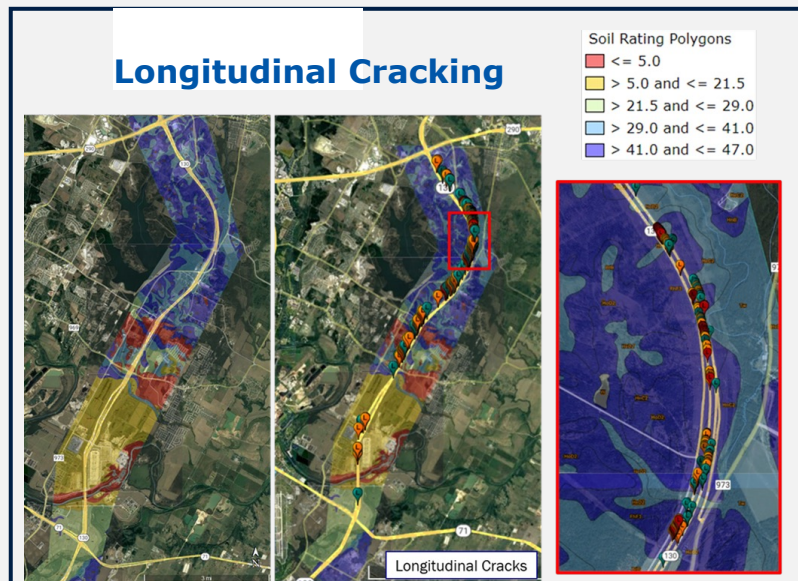
- ✓ Seals existing cracks and joints to prevent water infiltration
- ✓ Reduces reflective cracking in the overlay
- ✓ Promotes bond between existing concrete and new HMA
- ✓ Extends pavement life



The Austin District Pavement SOP requires an A-R Ty II or AC 20-5TR Seal Coat (Item 316) as the underseal when overlaying a rigid pavement

Pavement Life Extension Strategy

- Diamond Grinding
- Pre-overlay Repairs
- Underseal
- Overlay: Intermediate Layer**
Reduce reflective cracking adding moisture protection
Opportunity to improve ride
- Overlay: Surface Course



As a general rule, the IRI value can be reduced approximately 50% with each lift of hot-mix.

TxDOT's Pavement Manual

Pavement Life Extension Strategy

- Diamond Grinding
- Pre-overlay Repairs
- Thicker Overlay (+1")
- Overlay: Intermediate Layer
- Overlay: Surface Course

Durable HPG surface with friction and drainage.

Opportunity to improve ride

HMA Overlays	1.5" PFC-C, SAC A, HPG	Surface
	1" TOM-C, PG 76-22	Intermediate

TxDOT Item 316 when overlaying CRCP
Use Bonding Course, SS3084 between TOM and PFC layers

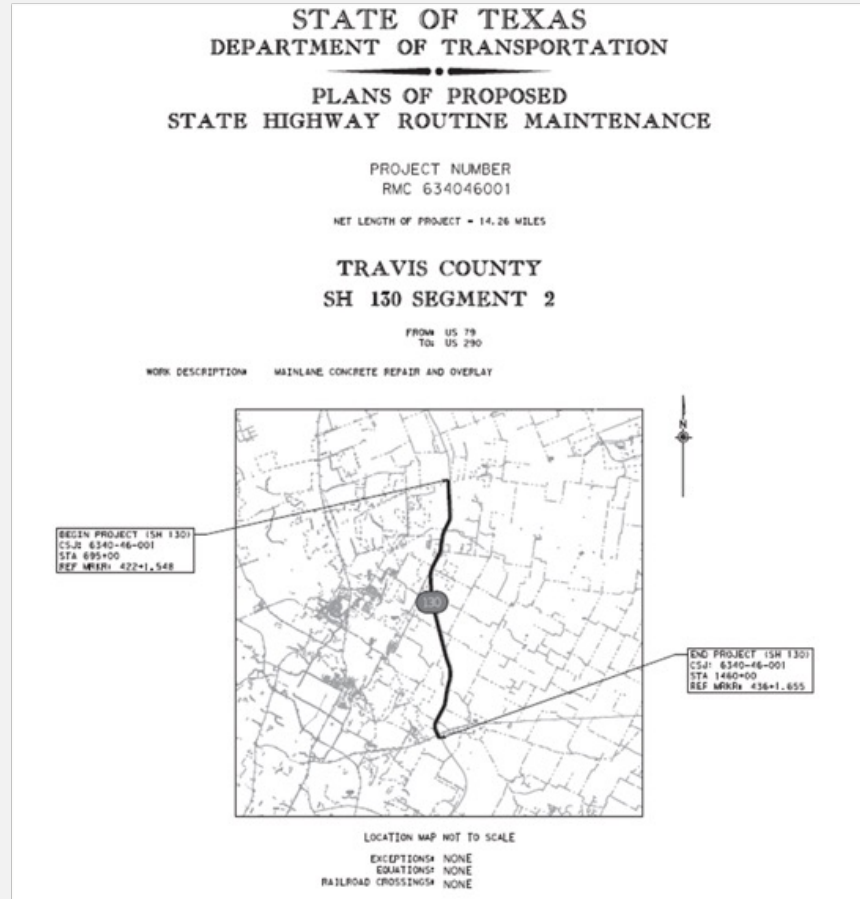
HMA Overlays - Ride Preservation Strategies

- Maintaining low IRI and high PMIS Condition Scores over time by reducing cracking and rutting
- TOM-C PG 76-22
 - Overlay tester requirement increased to 800 cycles
- PFC HPG SAC A
 - Hight polymer binder



The Transformation

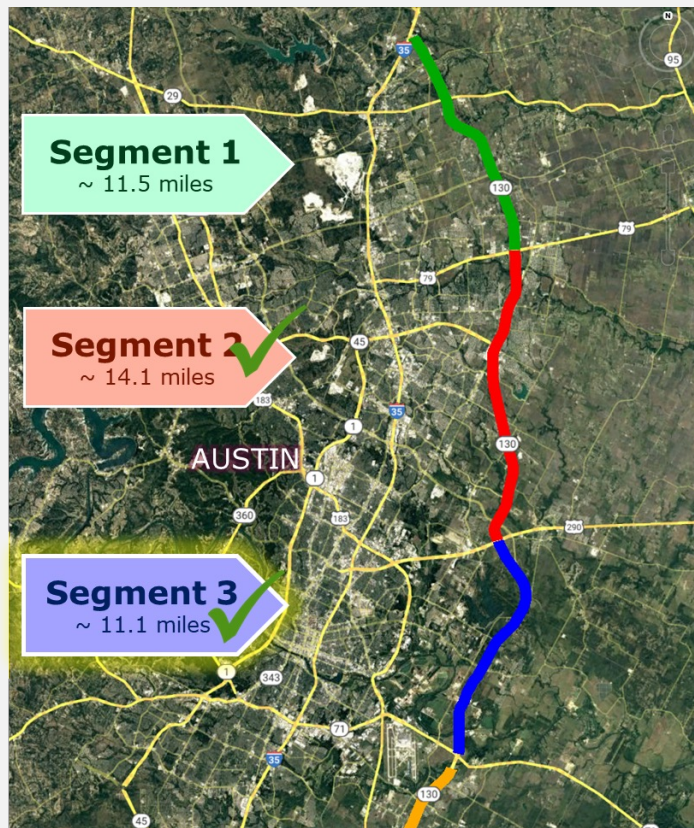
Executing the vision



SH 130 Corridor & Project Overview

- **Project Name:** SH 130, Mainlanes Overlay and Concrete Repair
- **Project Type:** Routine Maintenance Contract

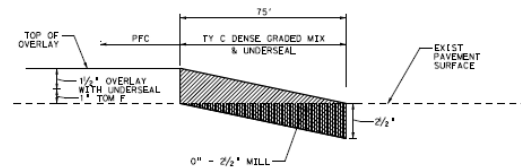
	Segment 2	Segment 3
Limit	US 79 to US 290	US 290 to SH 71
AADT	62-65k	
CSJ	6340-46-001	6340-47-001
Let	04/05/2023	12/05/2023
Let Amount	\$34,906,067.35	\$40,923,831.42
Final Contract Amount	\$41,326,248.95	\$59,773,848.51



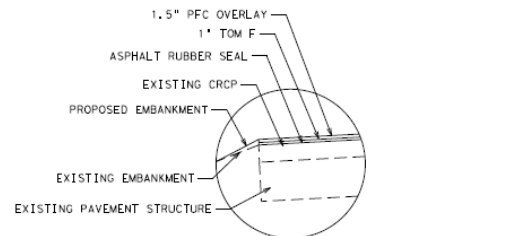
Segment 2&3 Project Details

- Award Winning Mindset: **ALL IN from design to construction**
- Needed as many repair options as possible in the plan set

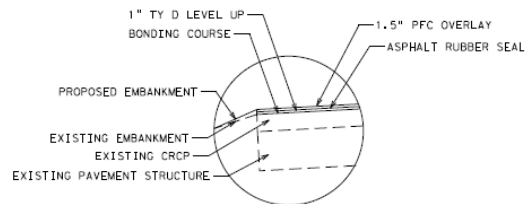
	Segment 2	Segment 3
Full Depth Repair CRCP (13")	400 SY	18,318 SY
Half Depth Repair CRCP (13")	1,200 SY	-
Continuous Diamond Grinding	500,000 SY	400,000 SY
Underseal Coat (AC-20-5TR & TY-PD GR4)	346,712 GALS/8,255 CY	480,633 GALS/7,282 CY
1" TOM-F PG 76-22	54,484 TONS	50,685 TONS
1.5" PFC-C HPG SAC A	66,860 TONS	58,989 TONS



OVERLAY SURFACE TAPER DETAIL (BEG & END)

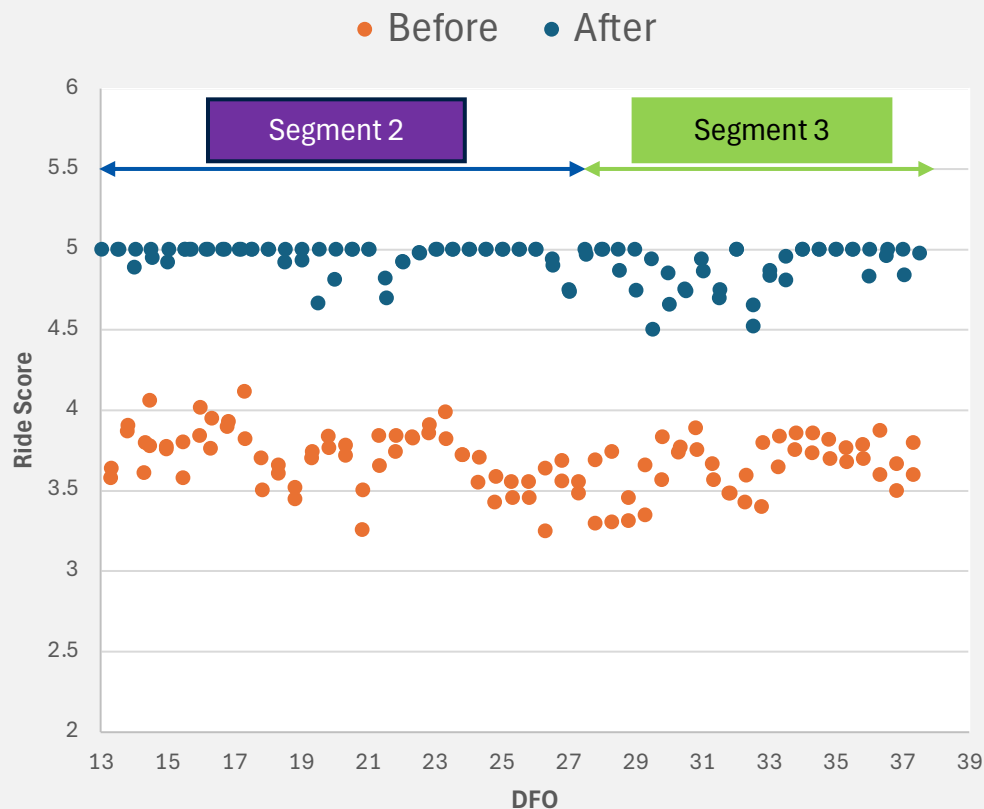


PAVEMENT SECTION WITHOUT LEVEL UP



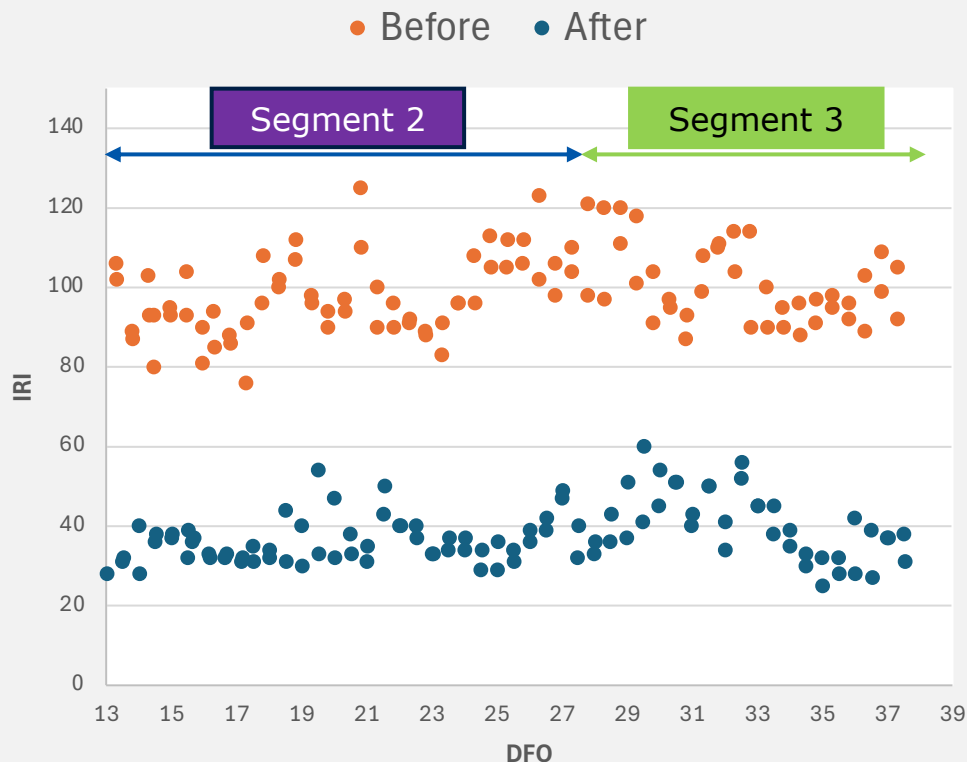
PAVEMENT SECTION WITH LEVEL UP

Ride Score after overlays



- Prior to project ranged between 3.3-4.1
- After project 4.5-5.0

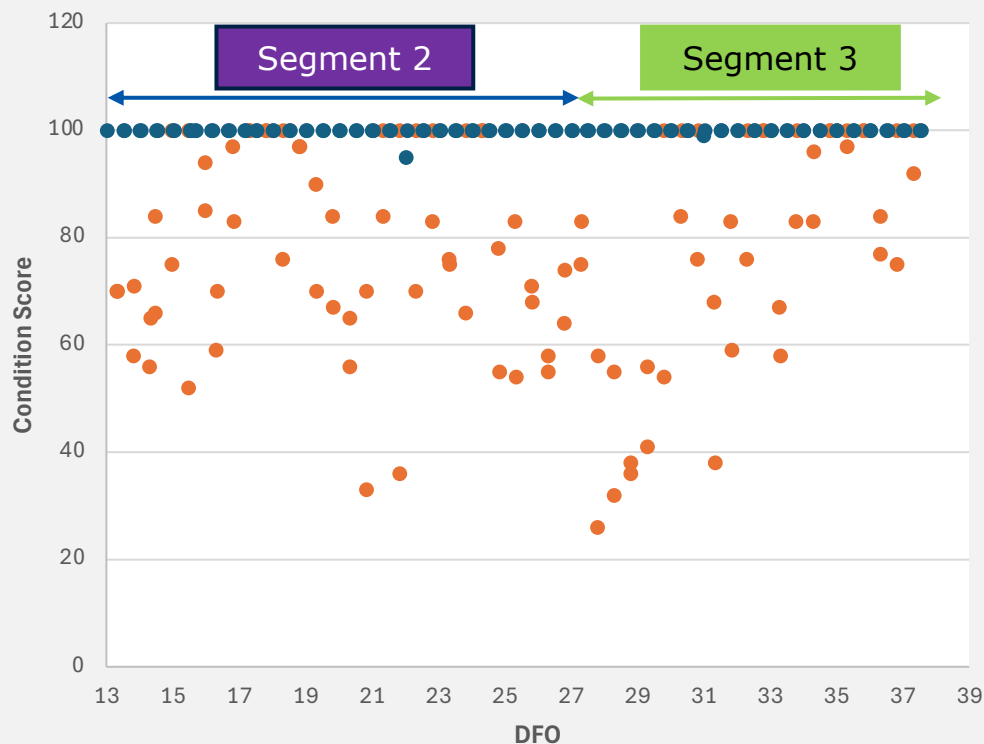
IRI after overlays



- IRI prior to project ranged between 76-125
- After project 25-60

Roadway Condition Score Data

● Before ● After



- Prior to project ranged between 28 and 100
- After project was 100

SH 130 Today!!



Source: Google Earth®

Example: Improvements in Distress and Ride Scores

TRM	Distress Score		Ride Score	
	2024	2025	2024	2025
423.0	78	92	5.0	5.0
423.5	85	100	3.5	5.0
424.0	66	100	3.7	5.0
424.5	60	100	3.8	5.0
425.0	70	100	3.6	5.0
425.5	71	100	3.9	5.0
426.0	65	100	3.8	5.0

Monitor performance...

A Ride Worth Recognizing

The Award-Winning Ride

BACK-TO-BACK WINNER!

2025 TXAPA Award Winner
Specialty Mixes
Large Overlay Category
SH 130 Segment 2 Overlay

2026 TXAPA Award Winner
Specialty Mixes
Large Overlay Category
SH 130 Segment 3 Overlay



We did this TOGETHER - The Power of Partnership

- The partnership that EXECUTED the Vision
 - Contractor (Lone Star Paving)
 - Austin District
 - Divisions (PFD, MNT, and MTD)
 - Consultant (The Transtec Group)
 - CE&I (Atlas)



HELP MAKE TEXAS SAFER FOR EVERYONE

DRIVE *like a* TEXAN™

Kind. Courteous. Safe.

QUESTIONS?

