

2025 Annual Conference - Innovations
in Pavement Preservation

Asphalt Rejuvenation

*Why Early Curve Maintenance is a Good
Answer for PA Superpave Mixes*

www.paama.org



Background

- 17 years in the pavement preservation industry
- Focus on educating DOT's & Municipalities on the various tools utilized to extend pavement life
- Started my career working for Strawser Construction (Barret Paving - Colas)
- Been with Pavement Technology since 2019
- PTI HQ in Westlake Ohio
- Plant is located in Mansfield Ohio
- Our flagship product is Reclamite

Right Treatment, Right Pavement, Right Time

Zack Helm

📍 24144 Detroit Rd,
Cleveland, OH 44145

📞 937-657-9527

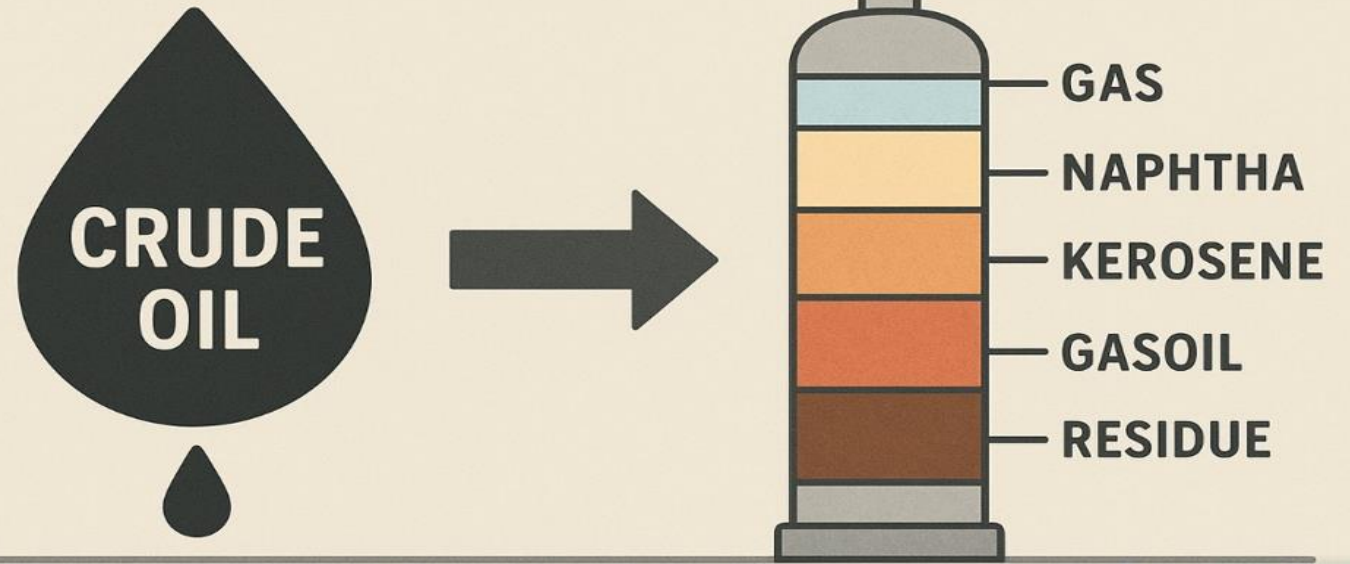
✉️ zhelm@pavetechinc.com



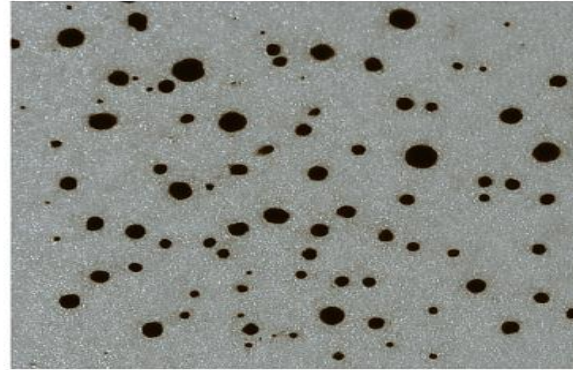




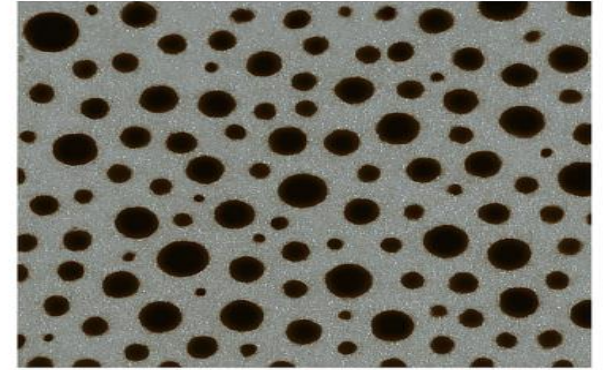




Rejuvenator restores maltene fractions in bitumen binder



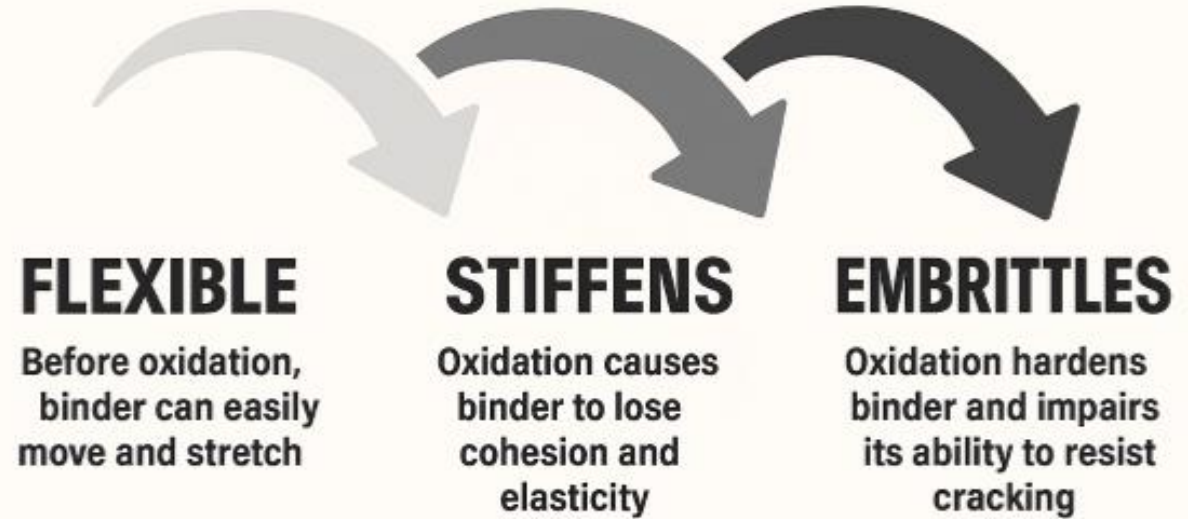
**BEFORE
REJUVENATION**



**AFTER
REJUVENATION**



HOW PAVEMENT AGES WHEN IT STARTS TO OXIDIZE



"Beginning immediately after placement, asphalt binder undergoes oxidation which increases the stiffness and brittleness of the binder."

— Joe Button, TTI Research Report 0-5113-1

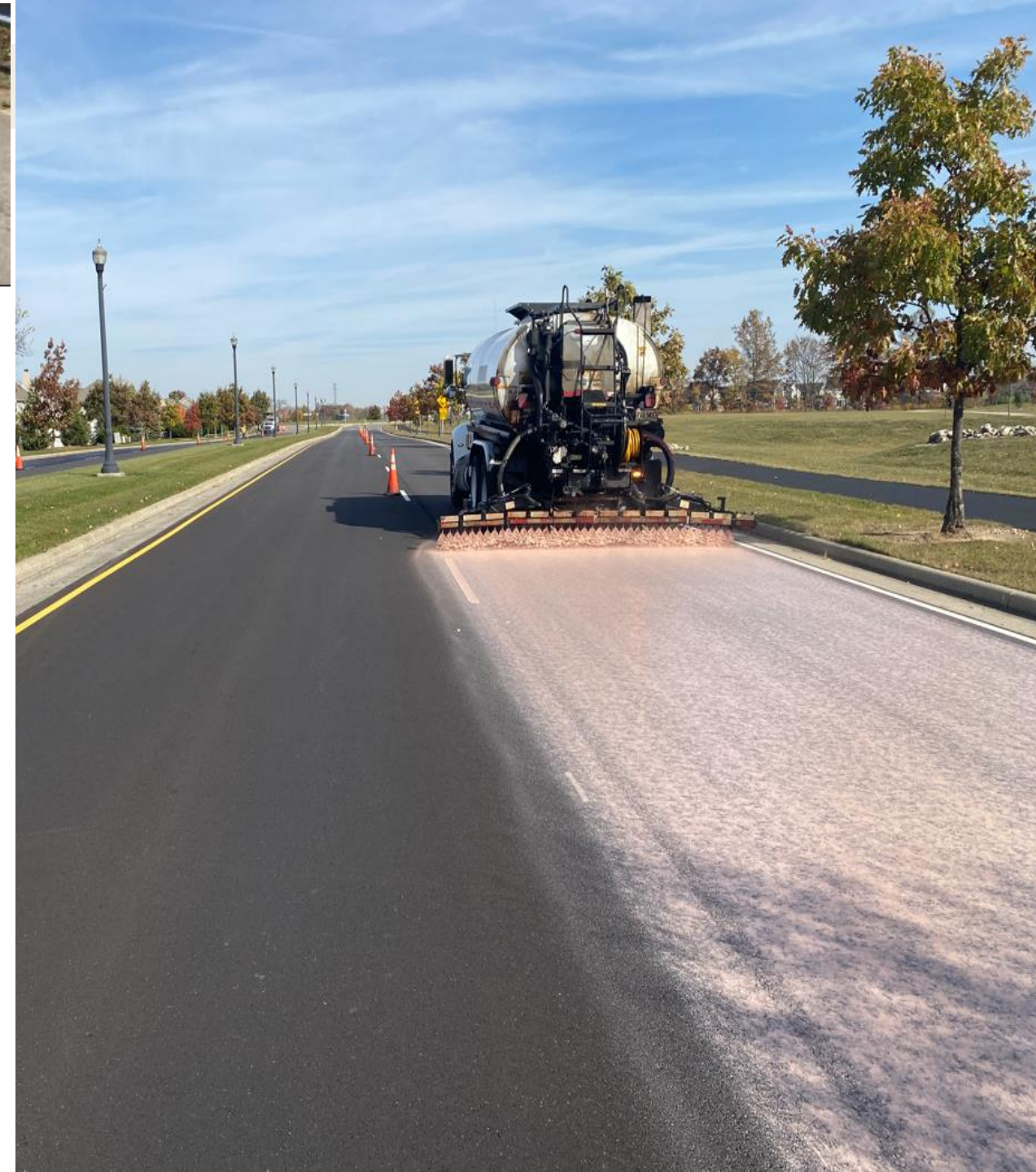


- Pavement preservation tool designed to slow the aging process by improving durability of the binder in hot mix
- Process is designed to put back in what is taken out of the asphalt
- Intended for Very Good to Excellent Pavements
for roadways recently re-constructed or resurfaced

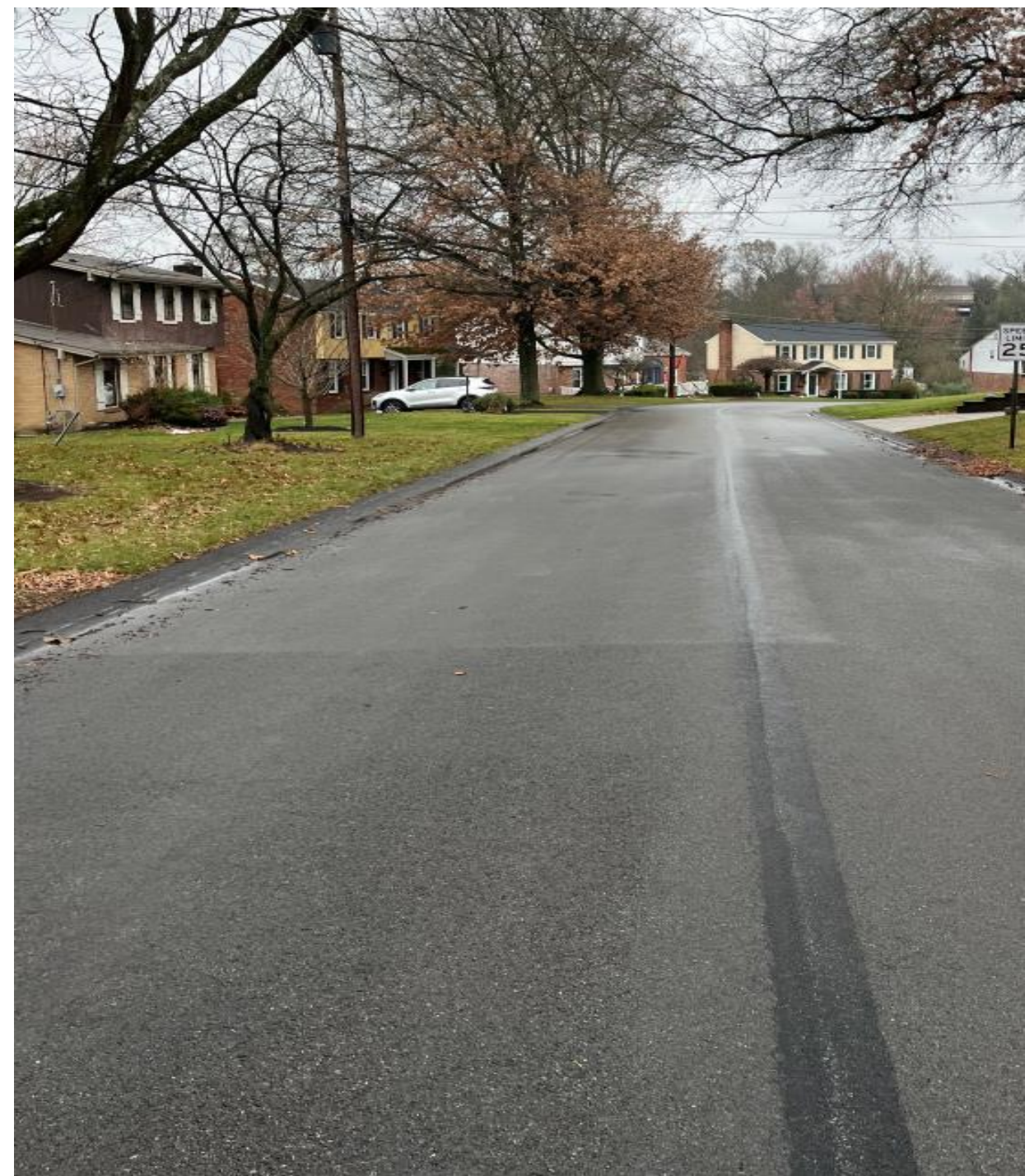




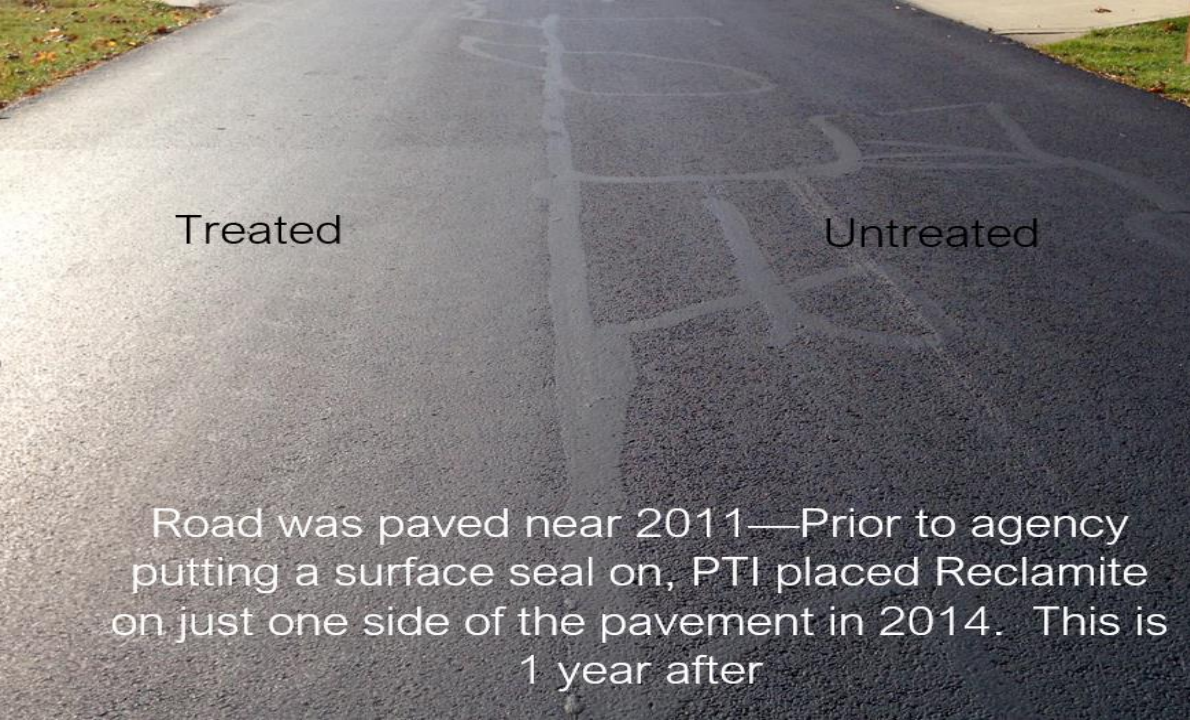
- First step in a pavement preservation program
- Asphalt Based
- Penetrate the asphalt & to strengthens the binder
- Delays and minimizes cracking and raveling
- Protects Pavement from Moisture, Salt, & UV
- Low Cost
- Low Impact on Residents
- Provides the best ROI treatment for your toolbox











Road was paved near 2011—Prior to agency putting a surface seal on, PTI placed Reclamite on just one side of the pavement in 2014. This is 1 year after



Picture taken in 2019



Spring of 2021
Photo from opposite direction

Agency put a second black seal on the road in 2020

Peters Township PA Case Study---Written By RoadBotics

- *Manage 116 miles of roadway*
- *Township of 21,000 residents*
- *Virtual 0% of roads are failing*

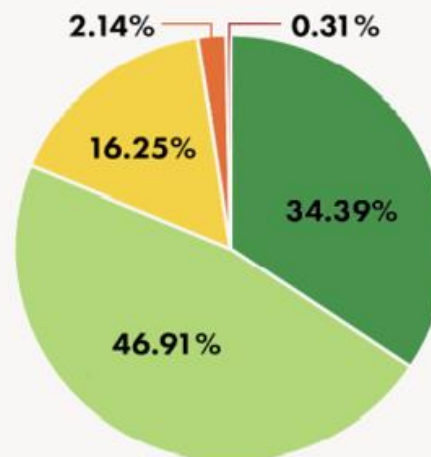
Additional Advantage:

RoadWay allowed Peters Township to objectively track other maintenance efforts, like their use of Reclaimite®, a Maltene Replacement Treatment. They have been utilizing this technology routinely for over 20 years.

Conclusion

Through the imagery on RoadWay, they were able to see the positive impact their maintenance efforts have had on their road network.

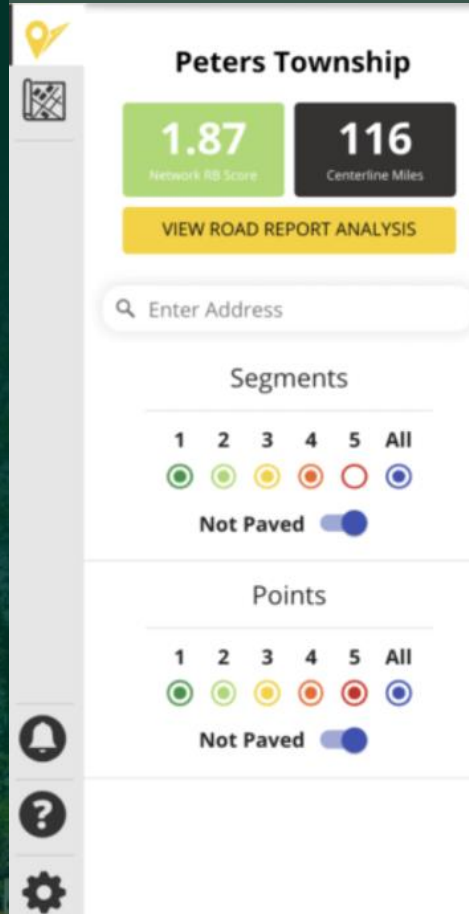
Network Ratings Breakdown



Empowering cities to assess roads
objectively using artificial intelligence

1.87 Road Cumulative Road Rating

1 through 5 ranking with 1 being the best and 5 being the worst



- RoadBotics report re-enforced to Peters the importance of their maintenance program with Reclamite and crack sealing
- Reclamite is applied after year 1 and again after year 4 of a roadway paved

Can I Re-Apply?

Not Treated

Treated



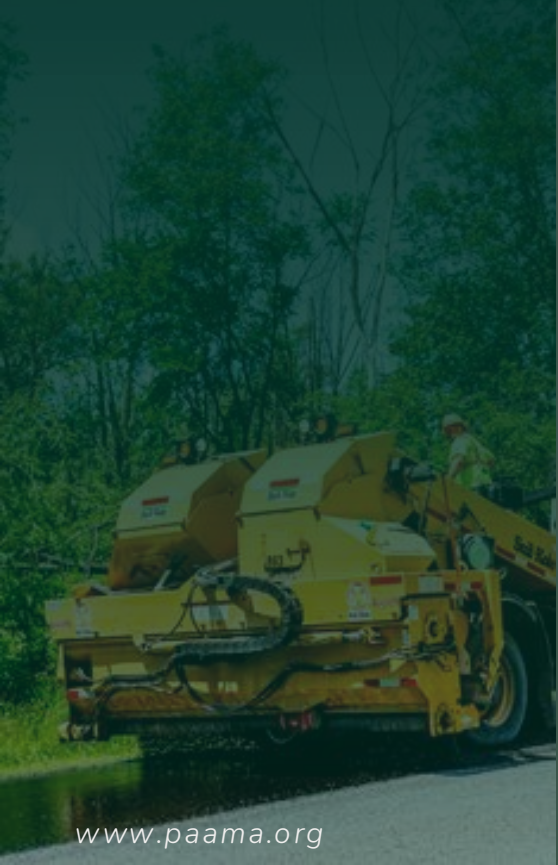
Side was not treated

Side was treated 3 years prior

*Rejuvenated side is receiving its second application and penetrating much slower

Re-applying is not only effective but validates prior rejuvenation





Reclamite was applied the same year this Superpave pavement was placed on the top section of photo. Bottom half of the photo was not treated

ASSESSMENT RESULTS SAWMILL PARKWAY, TREATED

The treated segment shows minimal, light severity longitudinal cracking along the paving joint, with light severity weathering present throughout just 50% of the surface.

After documenting these distresses within the PAVER® pavement management system, the PCI of the treated segment is 95.



Summary at time of inspection [Click here to minimize](#)
Branch Use: ROADWAY Surface Type: AC Rank: A Length: 350 Ft Width: 24 Ft True Area: 8,400 SqFt
Inspection [Click here to minimize](#)
9/24/2021 [List](#) [New](#) [Edit](#) [Del](#) PCI: 95 [Calc Conditions](#) [Exported Distresses](#) [Cmt](#) [Edit](#)
Sample [Click here to minimize](#)
TREATED 2,400 SqFt [List](#) [New](#) [Edit](#) [Del](#) PCI: 95 [No distresses found on sample](#) [Importing Distresses from old database](#) [Cmt](#) [Edit](#)
Distress selection

1	1	100	100
2	1	100	100
3	1	100	100
4	1	100	100
5	1	100	100
6	1	100	100
7	1	100	100
8	1	100	100
9	1	100	100
10	1	100	100
11	1	100	100
12	1	100	100
13	1	100	100
14	1	100	100
15	1	100	100
16	1	100	100
17	1	100	100
18	1	100	100
19	1	100	100
20	1	100	100

Quantity

1	2	3
4	5	6
7	8	9
C	0	-

Quantity Index: 1,200.00 SqFt

Distresses

Distress	Description	Severity	Quantity	Units	Density	Deduct
10	L & T CR	Low	10.00	ft	0.42	0.37
20	WEAR FRIEDING	Low	1,200.00	SqFt	50.00	4.46

☐ Tablet distress entry ☐ Key shortcuts

ASSESSMENT RESULTS SAWMILL PARKWAY, UNTREATED

The untreated segment shows noticeable light and medium severity longitudinal cracking along the paving joint with light severity weathering present throughout 100% of the surface.

After documenting these distresses within the PAVER® pavement management system, the PCI of the untreated segment is 85.



Branch Use: ROADWAY Surface Type: AC Rank: A Length: 350 Ft Width: 24 Ft True Area: 8,400 SqFt
Inspection [Click here to minimize](#)
9/24/2021 [List](#) [New](#) [Edit](#) [Del](#) PCI: 85 [Calc Conditions](#) [Exported Distresses](#) [Cmt](#) [Edit](#)
Sample [Click here to minimize](#)
UNTREATED 2,400 SqFt [List](#) [New](#) [Edit](#) [Del](#) PCI: 85 [No distresses found on sample](#) [Importing Distresses from old database](#) [Cmt](#) [Edit](#)
Distress selection

1	1	100	100
2	1	100	100
3	1	100	100
4	1	100	100
5	1	100	100
6	1	100	100
7	1	100	100
8	1	100	100
9	1	100	100
10	1	100	100
11	1	100	100
12	1	100	100
13	1	100	100
14	1	100	100
15	1	100	100
16	1	100	100
17	1	100	100
18	1	100	100
19	1	100	100
20	1	100	100

Quantity

1	2	3
4	5	6
7	8	9
C	0	-

Quantity Index: 2,400.00 SqFt

Distresses

Distress	Description	Severity	Quantity	Units	Density	Deduct
10	L & T CR	Low	60.00	ft	2.50	5.91
10	L & T CR	Medium	35.00	ft	1.46	11.10
20	WEAR FRIEDING	Low	2,400.00	SqFt	100.00	5.18

☐ Tablet distress entry ☐ Key shortcuts



Rejuvenation is not just for the Local Level

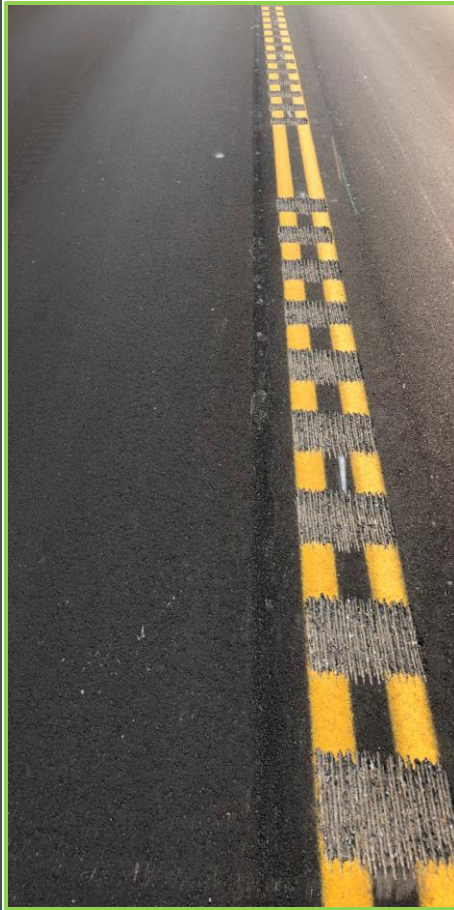


Ideal for centerline, rumble strips, & shoulders

A new way to extend pavement life.

JOINTBOND® Longitudinal Joint Treatment
Turnpike Application 2016

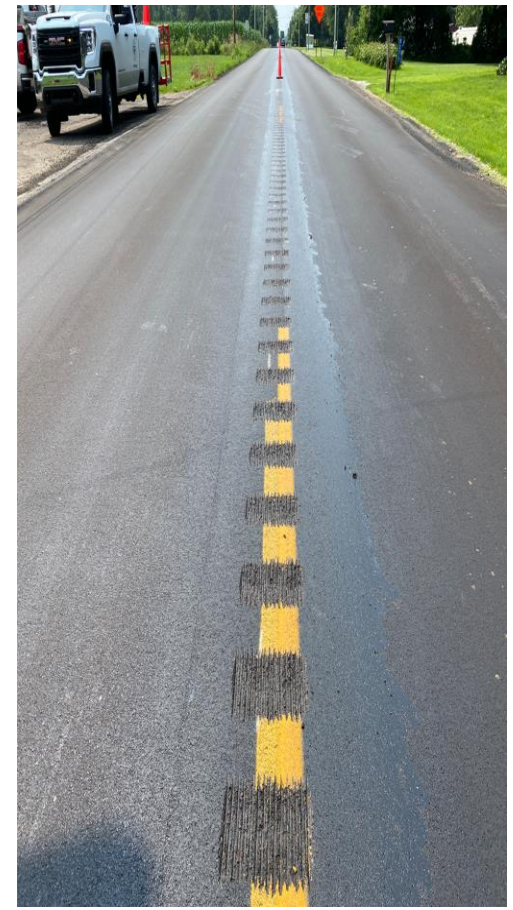




Before

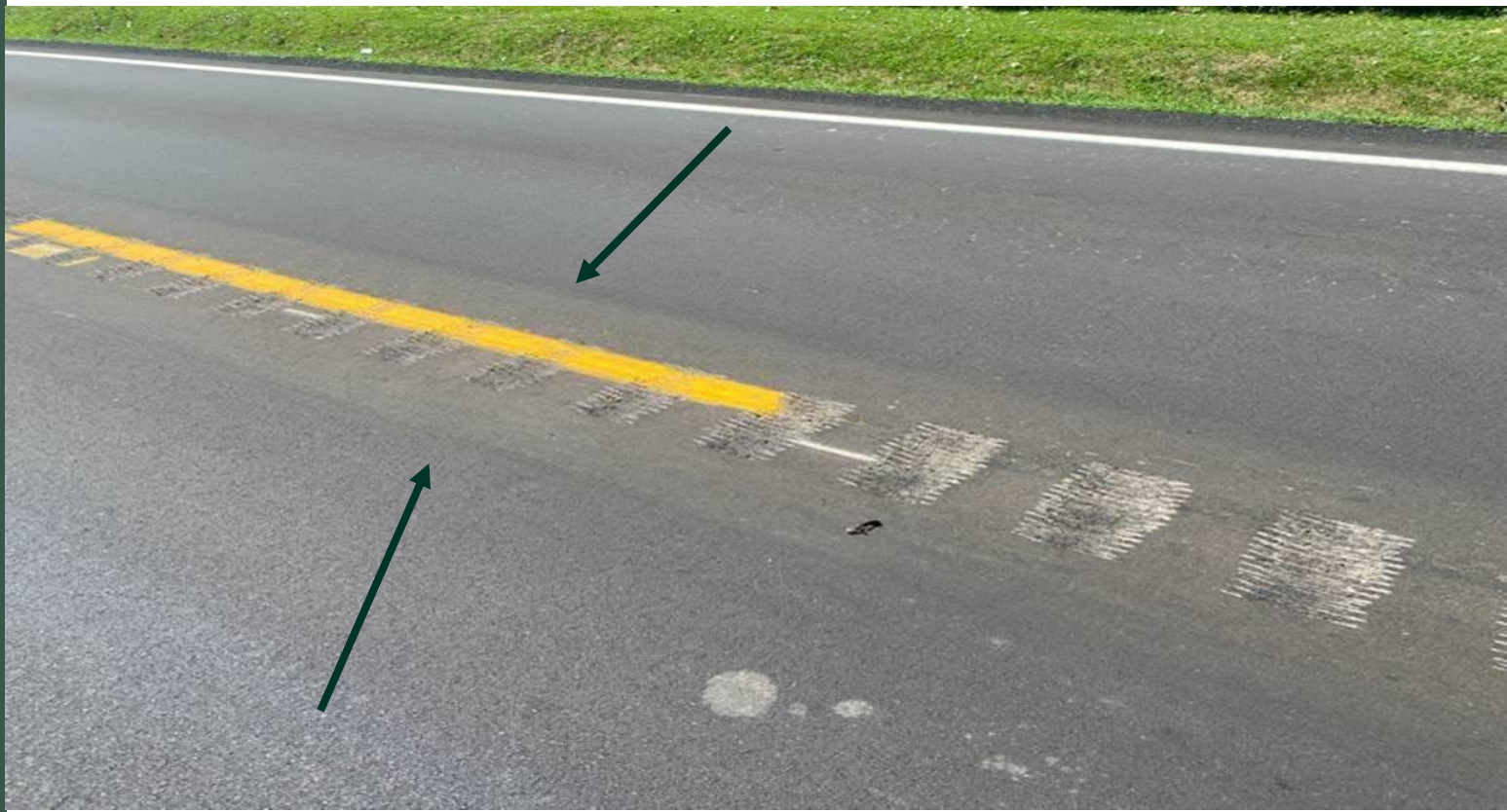


During



After

Line Striping Still Visible



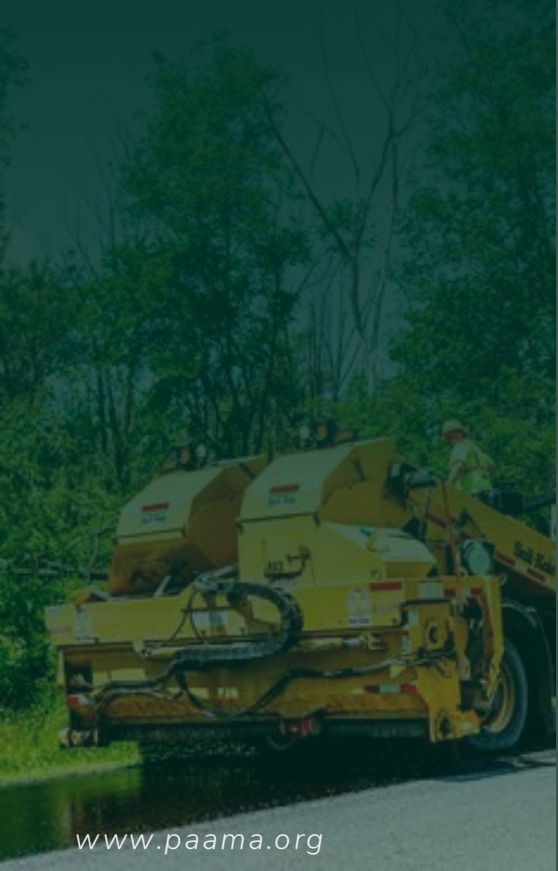
4 months after application and the 2 ft wide centerline of the pavement illustrates a tighter surface.

KYTC

Reclamite
Treated
2013

Untreated
Photo 2019





Final Thoughts

- Rejuvenation is more than just viscosity change
- SDS Sheet Transparency – know the chemistry
- Performance spec important for this category-Field Results Matter



Carbon Avoidance

**HELLO
I AM A...
PROBLEM
SOLVER**

**Molecular
Rejuvenation
Pioneers**

Figure 5 – Maltene Rejuvenator (Reclamite) Study:
Eight Year Oxidation Rate Curves Charleston County (SC)³⁸ (in poises)³⁹



Source: Pavement Technology, Inc.; APART

**Doubling
Pavement
Life**