Fog Seals and Pavement Preservation Harrison County, Indiana

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Highway Director / County Engineer

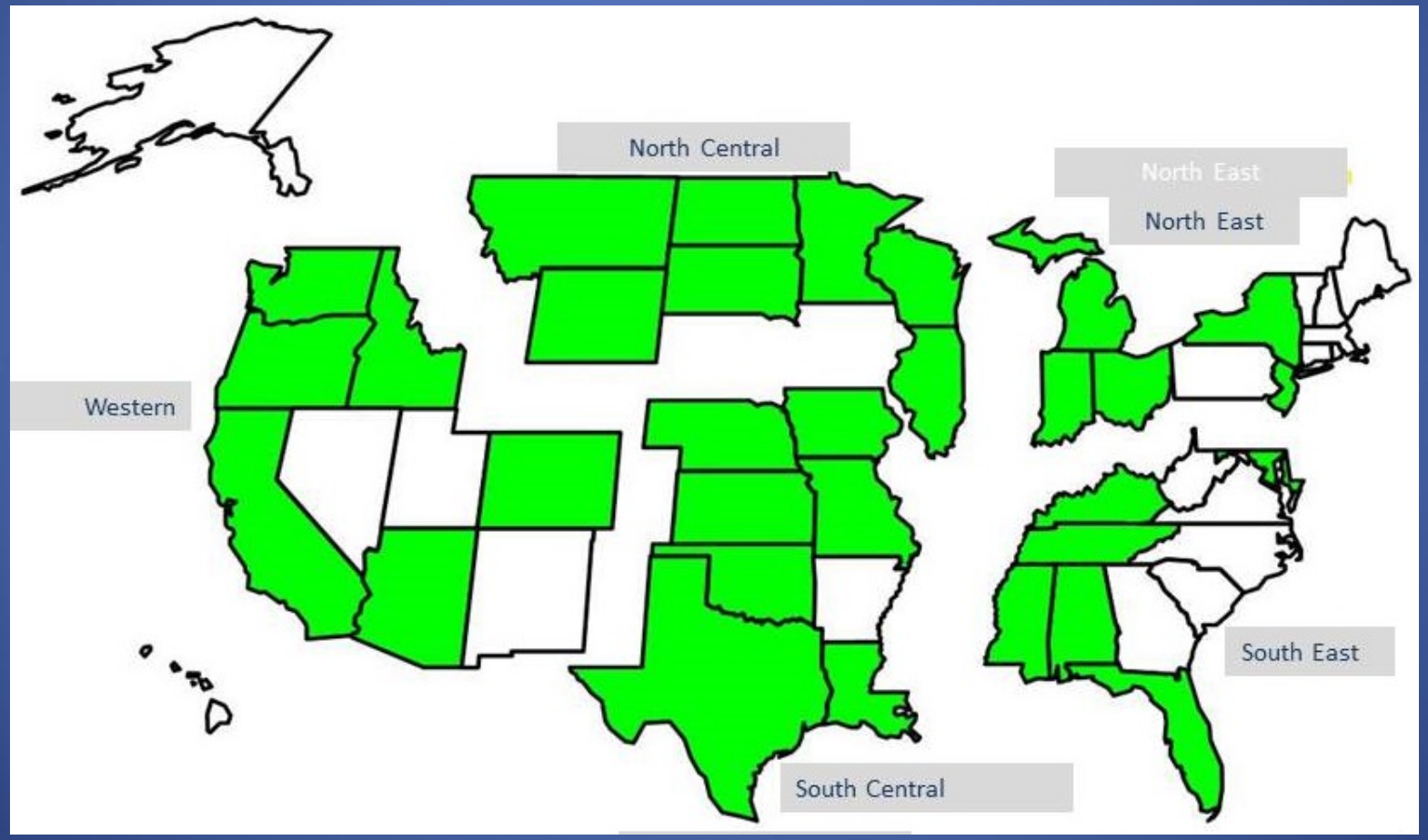
Harrison County Highway Department

National Association of County Engineers

"The Voice of County Road Officials"

Regions & State Affiliates

(31 State Affiliates Shown in Green)



What is NACE?

- Nonprofit, non-partisan professional association
- Representing over 2,500 members since 1956.
- Roads - about 1.74 million miles by counties.
- Bridges - counties also own 231,000 bridges and operate 1/3 of the nation’s transit systems.

NACE – More Than Engineers, County Road Professionals Titles:

* County Engineer * Highway Superintendent

* Road & Bridge Superintendent

* Parish Engineer * Road Supervisor

* Commissioner of Public Works

* Highway Administrator * Transportation Director

* Road Operations Manager

* Public Works Director * Highway Commissioner

* Engineer-Manager *Road Commissioner

* Road Master * Road Administrator

What we do

- Networking
- Advocacy
- Professional Development

Technical Committees

- Pavement Preservation
- Safety and Technology
- Structures and Environment
- Emergency Preparedness
- Legislative

April 14– 18, 2019

NACE 2019

INNOVATION • COLLABORATION

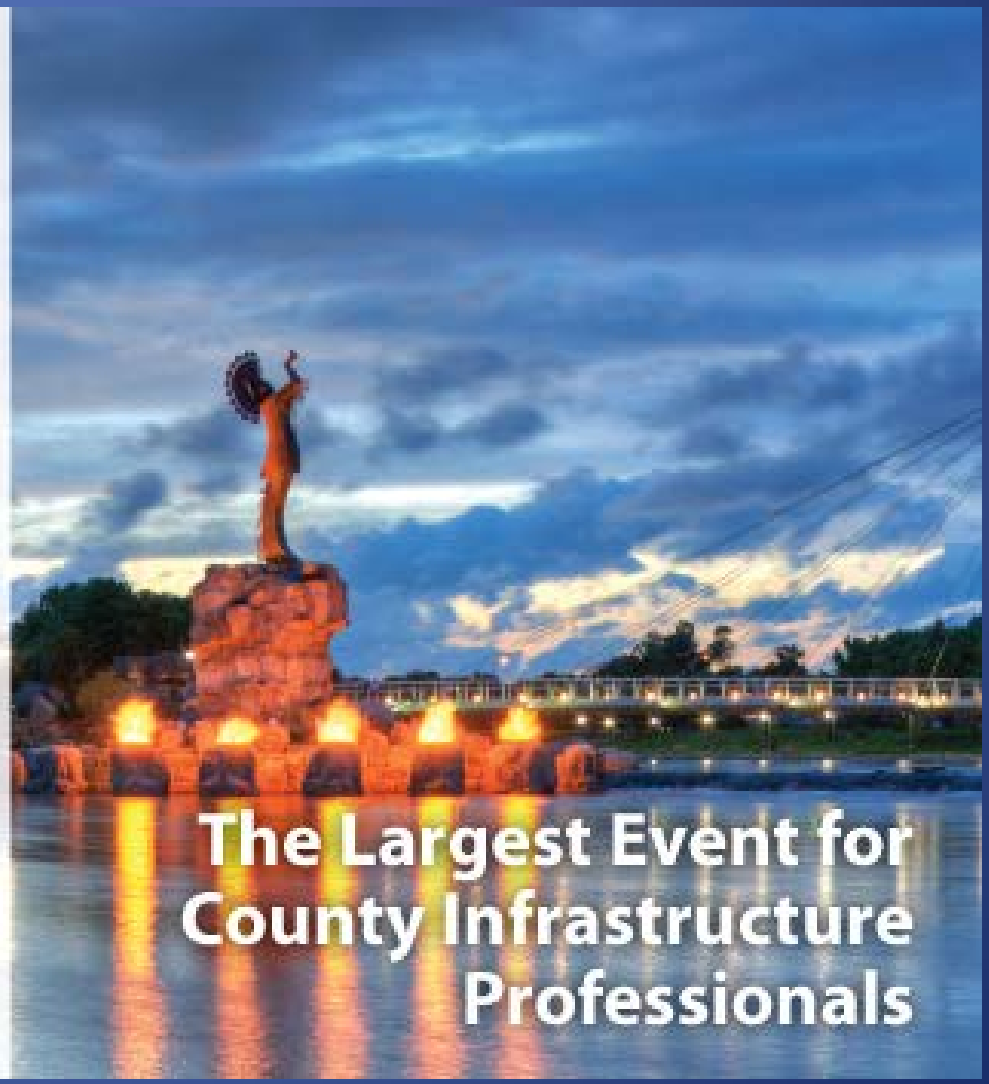
BRIDGING THE GAP

WICHITA, KANSAS

Annual Meeting / Management & Technical Conference

April 14-18

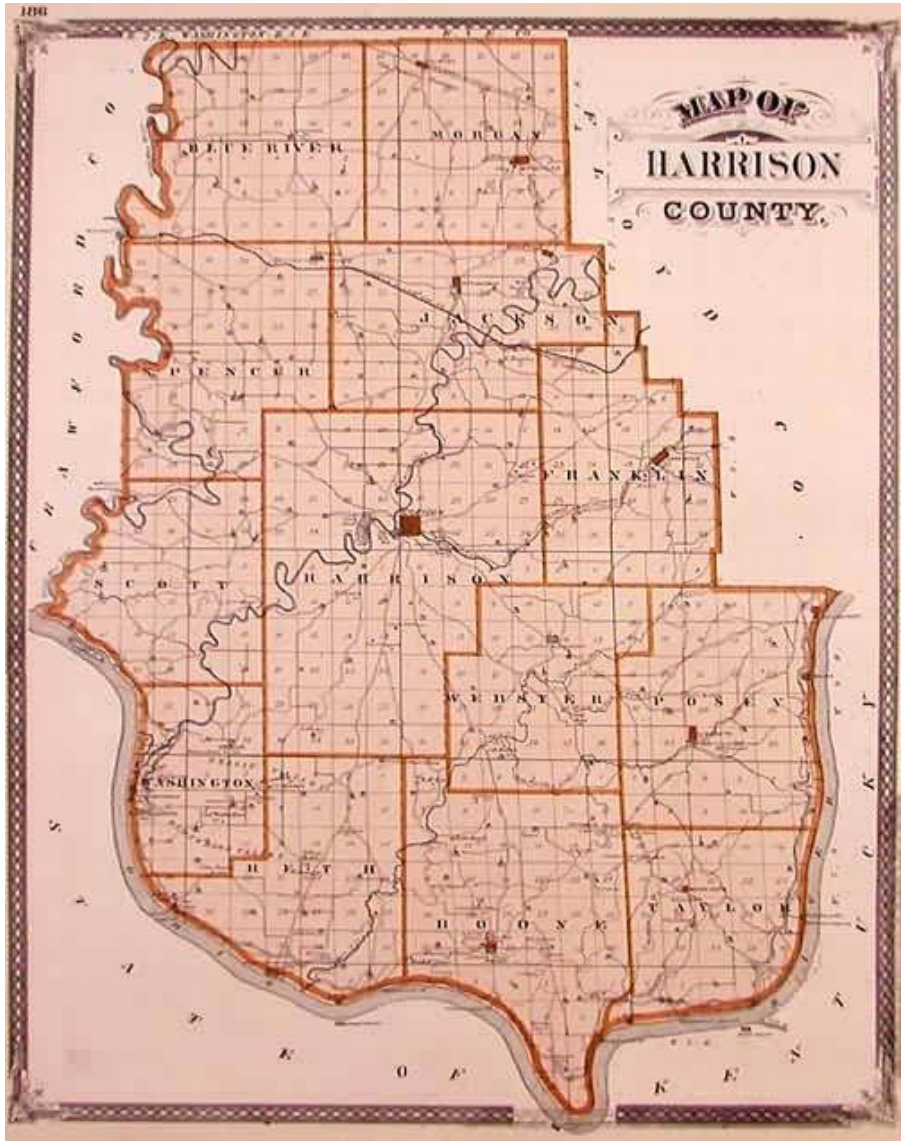
Hyatt Regency Wichita / Century II Center



Harrison County, Indiana

Harrison County, Indiana

- 2010 Census Population: 39,364
- 485 square miles
- 823 centerline miles of county roads
  - 788 miles paved
  - 35 miles gravel
- 78 bridges
  - 84.95 average sufficiency rating
- 42 full time employees
- 1 part-time employee
- 21 Salt Trucks
- Average Budget: $10,193,186.88
  - Cumulative Bridge: $562,495.16
  - LRS: $456,152.15
  - MVH: $2,760,228.40
  - Riverboat: $6,414,311.17



Some Back-Story

- Changes came to our County from the development of a riverboat casino in 1998.
- At that time we had approximately 810 centerline miles of roads and over 350 miles of those roads were gravel.
- Asphalt was $20/ton laid and our Commissioners began an aggressive paving program.
- Approximately $3 million was spent on resurfacing annually.
- We went about 13 years without chip sealing a road
  - Public was conditioned that the only way to maintain a road was with HMA overlays
  - Asphalt that was $20/ton laid is now over $60/ton laid
  - Over 300 miles of those gravel roads were converted to paved roads
    - Much more expensive to maintain paved roads than gravel roads
- It started to become clear that we weren't keeping up using the "worst first" resurfacing approach

Falling Behind

- Inflation chipped away at our purchasing power
- The conversion of the majority of our gravel roads to paved roads increased our preservation needs.
- We adopted the PASER Rating system to measure the condition of our county roads.
- We proposed decreasing the HMA Resurfacing budget and creating a budget for chip sealing and crack sealing in addition to HMA overlays.
- We failed to convince our Commissioners to adopt this approach….until we ended up with two new commissioners after an election.

Something Different

- Our existing budget was $3,000,000 split evenly between the 3 commissioner districts, all for resurfacing. ($1,000,000 / district)
- We successfully proposed to change that to:
  - $750,000 – HMA overlays
  - $250,000 – Chip seals with a fog seal
  - $100,000 – Crack Sealing
- We chip sealed some roads for the first time in 13 years.
- It was PASSIONATELY rejected by the public
  - We’re talking pitchforks and torches rejected
  - Why are we turning our paved roads back into gravel roads
- Enter rejuvenating fog seals.

Our Current Pavement Preservation Program

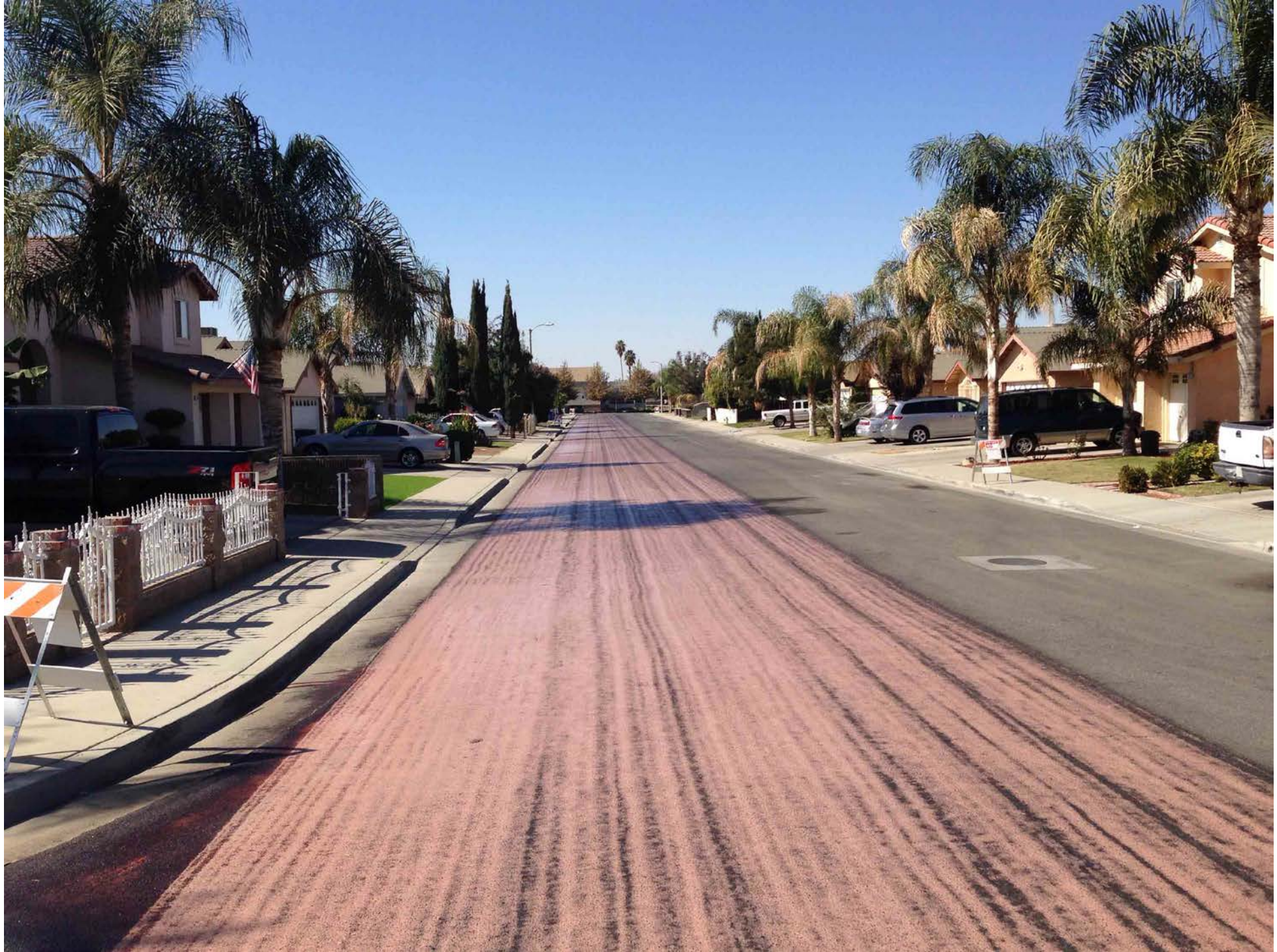
- Based on PASER Ratings updated every two years
- Approximately $650,000 / District for resurfacing
- Approximately $200,000 / District for fog sealing
- Approximatley $75,000 / District for crack sealing

Products

- We did not have anyone else to look to for examples, so we tried to test out different products ourselves to see how each worked.
- Products we've used:
  - Reclamite
  - WD 2000
  - PASS QB
  - TRMSS
  - BioRestore
  - Ravel Check
  - Liquid Road

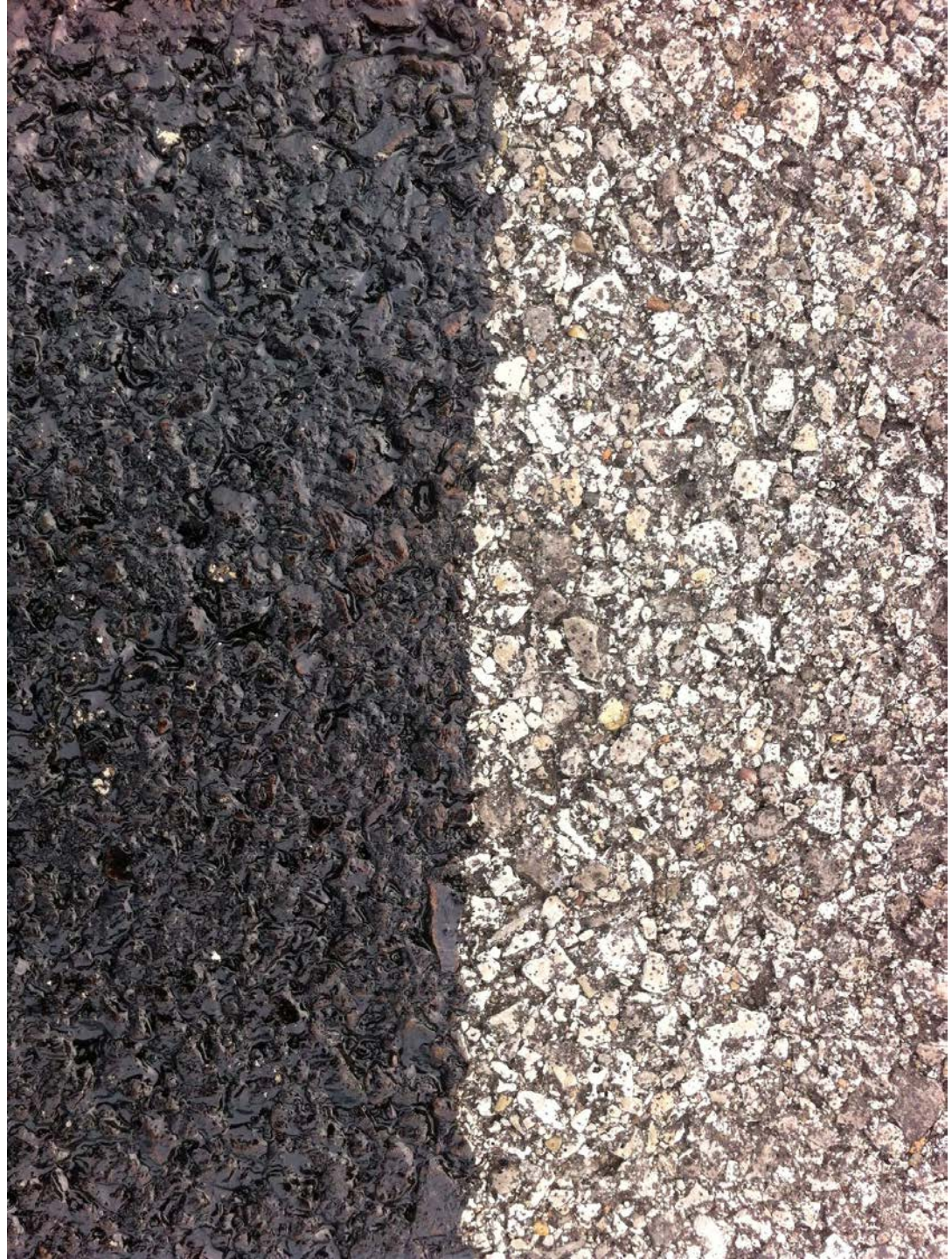
Reclamite

- Manufactured by Tricor Refining.
- Worked with a company/distributor named Rejuvtech out of Indianapolis.
- Product goes down pink and then clears leaving the road just looking wet.
- Some good results in other areas/cities in Indiana.
- Use a ring test to determine application rates.
- https://www.youtube.com/watch?v=QcfUOpJA7EM



WD 2000

- Manufactured by Lonestar Specialties
- Worked with a local contractor/distributor MAC Construction
- Product is coal tar based
- Product is black and turns the road black when applied
- https://www.youtube.com/watch?v=-W3xUnxI9vk



PASS QB

- Manufactured by Western Emulsions
- Marketed by Asphalt Materials
- Product is brown but breaks and turns black.
- https://www.youtube.com/watch?v=oVqWZU4PpvA
- https://www.youtube.com/watch?v=m3EEuTOWri4

TRMSS

- Manufactured by Wright Asphalt
- Tire Rubber Modified Surface Sealer
- Product is black and turns the road black
- https://www.youtube.com/watch?v=tdEVyOSXRyw

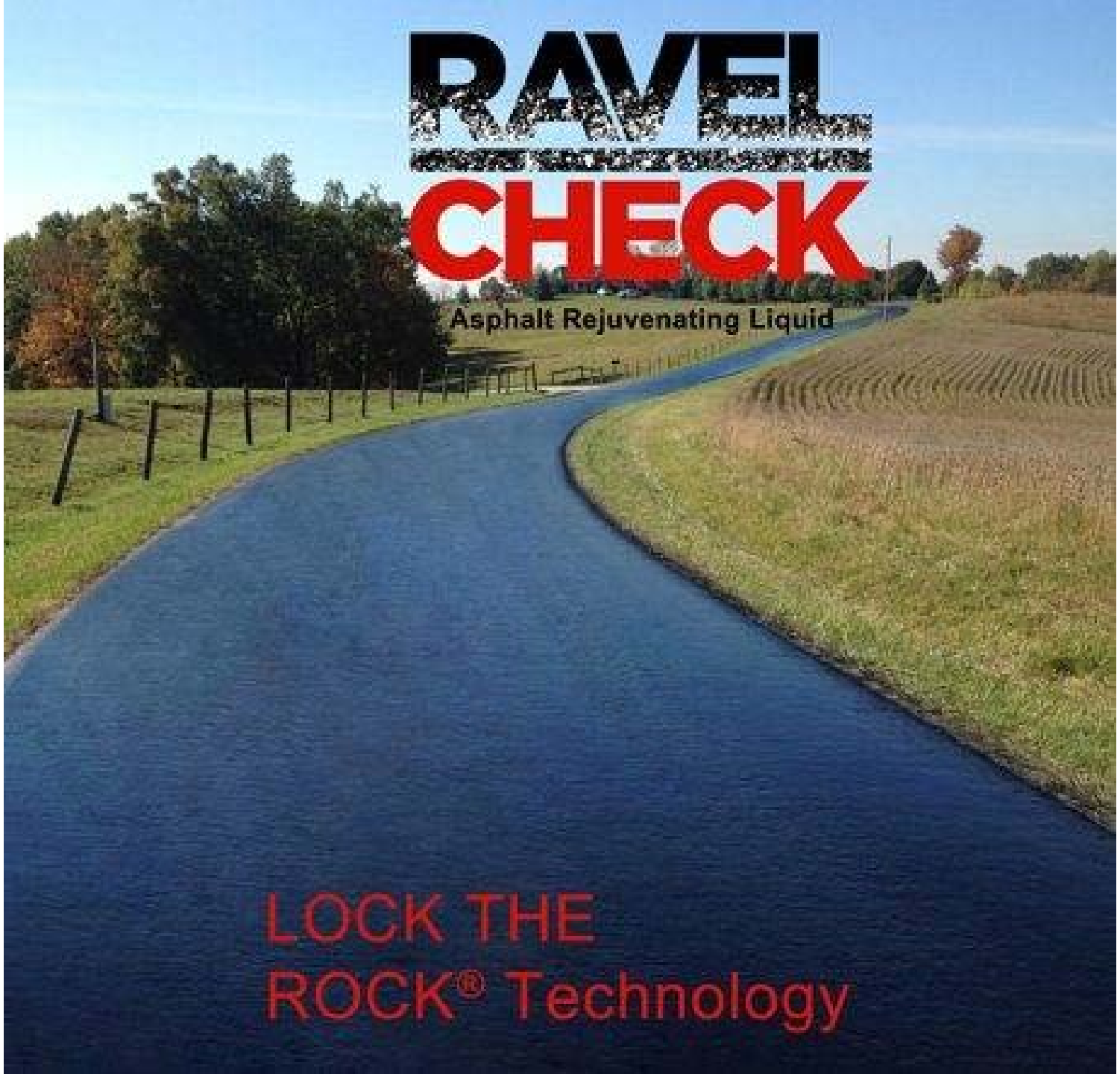
BioRestore

- Manufactured by Asphalt Systems Ohio, Inc.
- Agricultural (soybean) oil based
- Product is clear and does not change the color of the road
- https://www.youtube.com/watch?v=q7gMkh_9PXo


MIAMI COUNTY PARK DISTRICT
Welcome
Great Miami River Recreational Trail
Trail open from 8 a.m. to sunset
No motorized vehicles
Motorized wheel chairs are permitted
Dogs must be leashed by a 6' (six foot) lead or less
Bicyclists announce presence when approaching pedestrians
Bicyclists yield to all other users
Keep right except to pass
Move off paved trail when stopped
Fishing from any bridge is prohibited
Thank you!

RavelCheck

- Manufactured by Unique Paving Materials
- Product is black and turns road black
- https://www.youtube.com/watch?v=-2oq2boSG2Q


RAVEL
CHECK
Asphalt Rejuvenating Liquid
LOCK THE
ROCK® Technology

Liquid Road

- Manufactured by Seal Master
- Product is black and turns road black
- Product includes some very fine aggregate
- Almost more of a micro-surface rather than a fog seal.
- https://www.youtube.com/watch?v=vr_XzIZYgBw


5613
KYU 600539
OT 1736151
2445776
STOP


20


SETTLERS TRACE

Cost Discussion

Item # 6 - FOG SEALING	
Item Description	**Unit Price per Square Yard**
C & R Construction (TRMSS)	$3.30
C & R Construction (Liquid Road)	$4.95
MAC Construction (WD 2000)	$0.88
MAC Construction (RavelCheck)	$0.88
MAC Construction (TRMSS)	$1.05
MAC Construction (Liquid Road)	$3.75

County-Wide
Pavement Condition
Progress Report

Condition			2010			2013			2015			2017		
			Length		%	Length		%	Length		%	Length		%
	1	Failed	0.79	miles	0.1%	0.43	miles	0.1%	0.00	miles	0.0%	0.00	miles	0.0%
	2	Very Poor	0.64	miles	0.1%	0.46	miles	0.1%	0.36	miles	0.0%	0.00	miles	0.0%
	3	Poor	11.32	miles	1.4%	14.30	miles	1.7%	9.84	miles	1.2%	1.90	miles	0.2%
	4	Fair	44.70	miles	5.5%	63.77	miles	7.8%	45.01	miles	5.5%	32.73	miles	4.0%
	5	Fair	98.45	miles	12.0%	161.12	miles	19.6%	124.04	miles	15.1%	113.30	miles	13.8%
	6	Good	124.05	miles	15.2%	212.49	miles	25.9%	140.15	miles	17.0%	151.85	miles	18.5%
	7	Good	202.31	miles	24.7%	160.34	miles	19.5%	138.75	miles	16.9%	249.79	miles	30.4%
	8	Very Good	139.92	miles	17.1%	84.75	miles	10.3%	252.08	miles	30.6%	149.80	miles	18.2%
	9	Excellent	80.73	miles	9.9%	39.59	miles	4.8%	34.60	miles	4.2%	55.96	miles	6.8%
	10	Excellent	67.32	miles	8.2%	46.50	miles	5.7%	40.66	miles	4.9%	32.91	miles	4.0%
	11	Gravel	47.82	miles	5.8%	37.54	miles	4.6%	35.35	miles	4.3%	34.64	miles	4.2%
		Totals:	**818.05**	**miles**	**100.0%**	**821.29**	**miles**	**100.0%**	**820.84**	**miles**	**99.8%**	**822.88**	**miles**	**100.0%**
		Avg Condition:			**6.99**			**6.38**			**6.85**			**6.84**

Condition 1 - 4:	**57.45**	**miles**	**78.96**	**miles**	**55.21**	**miles**	**34.63**	**miles**
Condition 5 - 7:	**424.81**	**miles**	**533.95**	**miles**	**402.94**	**miles**	**514.94**	**miles**
Condition 8 - 10:	**287.97**	**miles**	**170.84**	**miles**	**327.34**	**miles**	**238.67**	**miles**

2018
Average Age of County Roads

Average Pavement Age of All Paved County Roads: 10.75

Average Age by PASER Rating

PASER Rating	Entire County	District 1	District 2	District 3	Major Collector	Minor Collector	Local Road
1							
2							
3							
4	17.21	17.77	16.19	17.44		15.11	17.39
5	16.21	16.80	15.55	16.54	16.79	17.14	16.04
6	14.40	15.19	13.09	15.40	15.30	14.46	14.32
7	11.99	12.55	11.53	11.84	11.05	11.12	12.19
8	6.73	6.57	6.85	6.80	6.91	7.63	6.51
9	2.77	2.69	2.67	2.88	3.11	3.04	2.65
10	1.00	1.00	1.00	1.00		1.00	1.00

Statistics based on 692 of 788 miles of paved County Roads

Questions???