

PREVENTATIVE MAINTENANCE
TREATMENTS OPTIONS
AND WHY IT'S HARD TO GO WRONG

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WEXFORD COUNTY ROAD COMMISSION

RATING 2

VERY POOR—

Reconstruction required

Roads are severely deteriorated and need reconstruction. Surface pulverization and additional base may be cost-effective. These roads have more than 25% alligator cracking, severe distortion or rutting, as well as potholes or extensive patches in poor condition.

▶ Extensive alligator cracking. Pulverize and rebuild.



▲ Patches in poor condition, wheelpath rutting. Pulverize, strengthen and reconstruct.



▲ Severe rutting. Strengthen base and reconstruct.

▶ Severe frost damage. Reconstruct.





RATING 3

POOR — (continued)
Structural improvement required

◀ Alligator cracking.
Edge needs repair
and drainage needs
improvement prior
to rehabilitation.

▼ Distortion with patches
in poor condition. Repair
and overlay.



Severe raveling with
▼ extreme loss of aggregate.



Load cracking and slight
▼ rutting in wheel path.



➤ Longitudinal cracking;
early load-related
distress in wheel path.
Strengthening needed.

▼ Slight rutting; patch
in good condition.



➤ Extensive block cracking.
Blocks tight and sound.
➤ Slight rutting in
wheel path.

RATING 4

FAIR — Structural improvement required

Roads show first signs of needing strengthening by overlay. They have very severe surface raveling which should no longer be sealed. First longitudinal cracking in wheel path. Many transverse cracks and some may be raveling slightly. Over 50% of the surface may have block cracking. Patches are in fair condition. They may have rutting less than 1/2" deep or slight distortion.

VENT COUNTY ROAD COMMISSION
RECORD OF BLACKTOP OPERATIONS

NAME OF ROAD 8 Mile Rd Alp. 200 PRIME PLACED June 19, 1958
LOCATION Fruit Ridge Ave., E. to Fresh Ridge Ave. TOWNSHIP Alpine
LENGTH 1.00 MILES. PRIMARY OR LOCAL ROAD Local MAINTENANCE CHARGE 3018
CONTRACTOR E. G. R. Co.
TYPE OF SURFACE S. T.
WIDTH OF SURFACE 20 feet 54 Yds 12,408 114,488 14.8

MAINTENANCE OPERATIONS DATES

SEA GRAVEL	SAND SEAL	RECAP		
1971 27.75 80-9				
1973 27.75				
1980 25.28 37				
1989 25.28 40				
2001 25.28 40				

BASE CONSTRUCTION: 4" COMP. GRAVEL — 4" GRAVEL RESURFACE — SAND BASE

Practical Selection Considerations

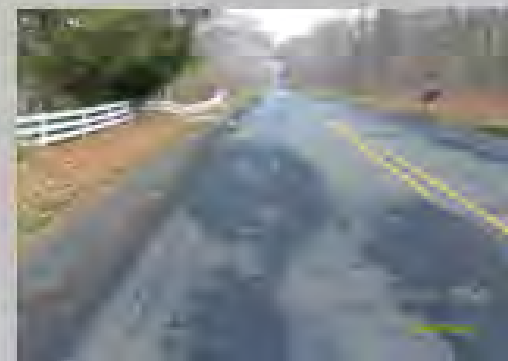
■ Right Fix, Right Road, Right Time

- ◆ Pavement Management Philosophy
- ◆ Preserve base & sub-base



■ Wrong Fix, Wrong Road, Wrong Time

- ◆ 50's, 60's and 70's construction
- ◆ Ditched, bankrun gravel, prime and double chipseal



Why is CPM Important?

- Stretch \$
- Preserve System
- Minimize impacts to traveling public
- Allows “good” surface most of the time
- Efficient use of public \$

KEEPS WATER OUT!!!

What CPM is not?

- A perfect fix
- Risk free
- Going fix anything below it.
- Cost effective if wrong projects are picked

CPM lasts longest if:

FIX THE WORST AREAS BIG



OR SMALL



EDGE REPAIR



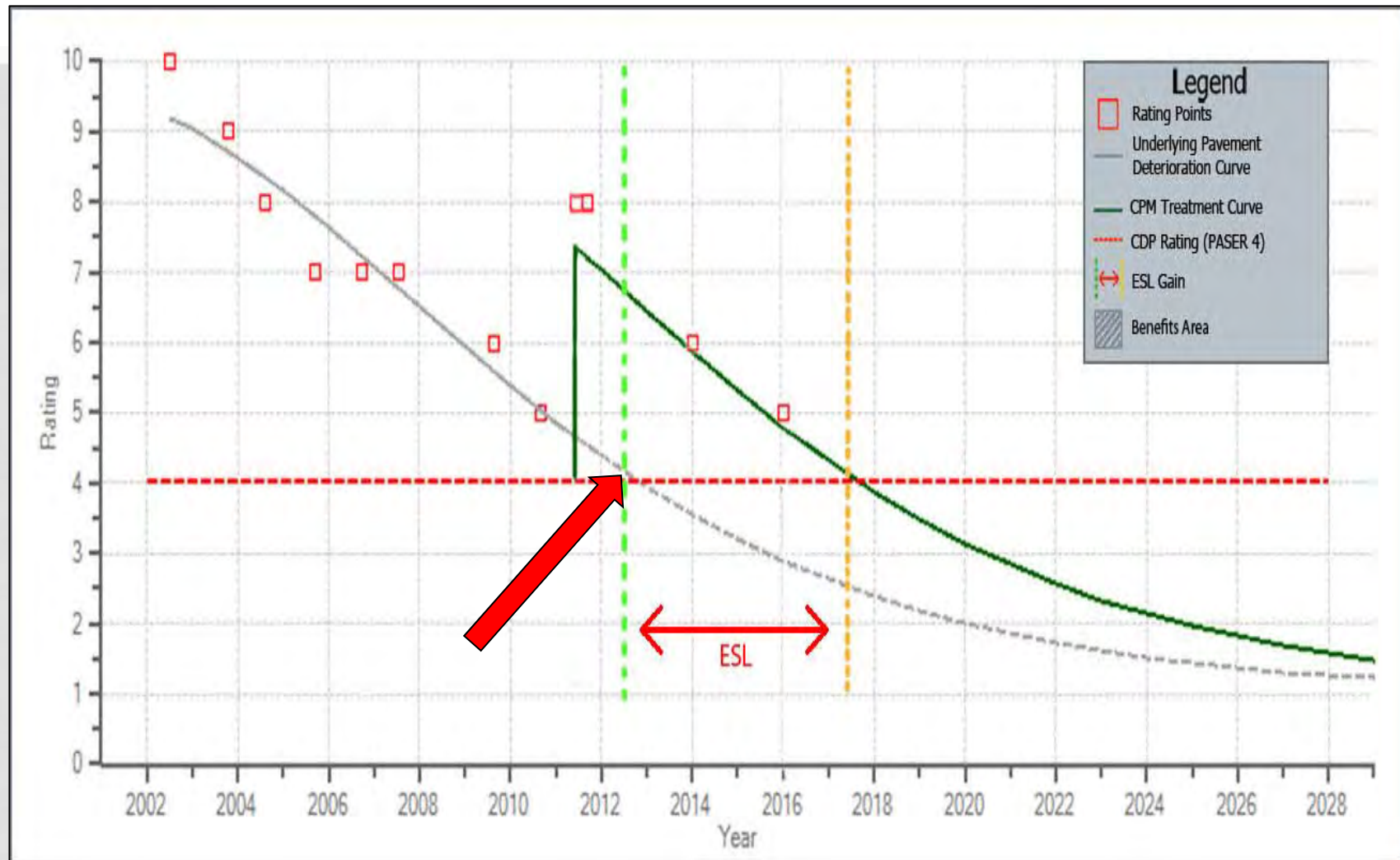




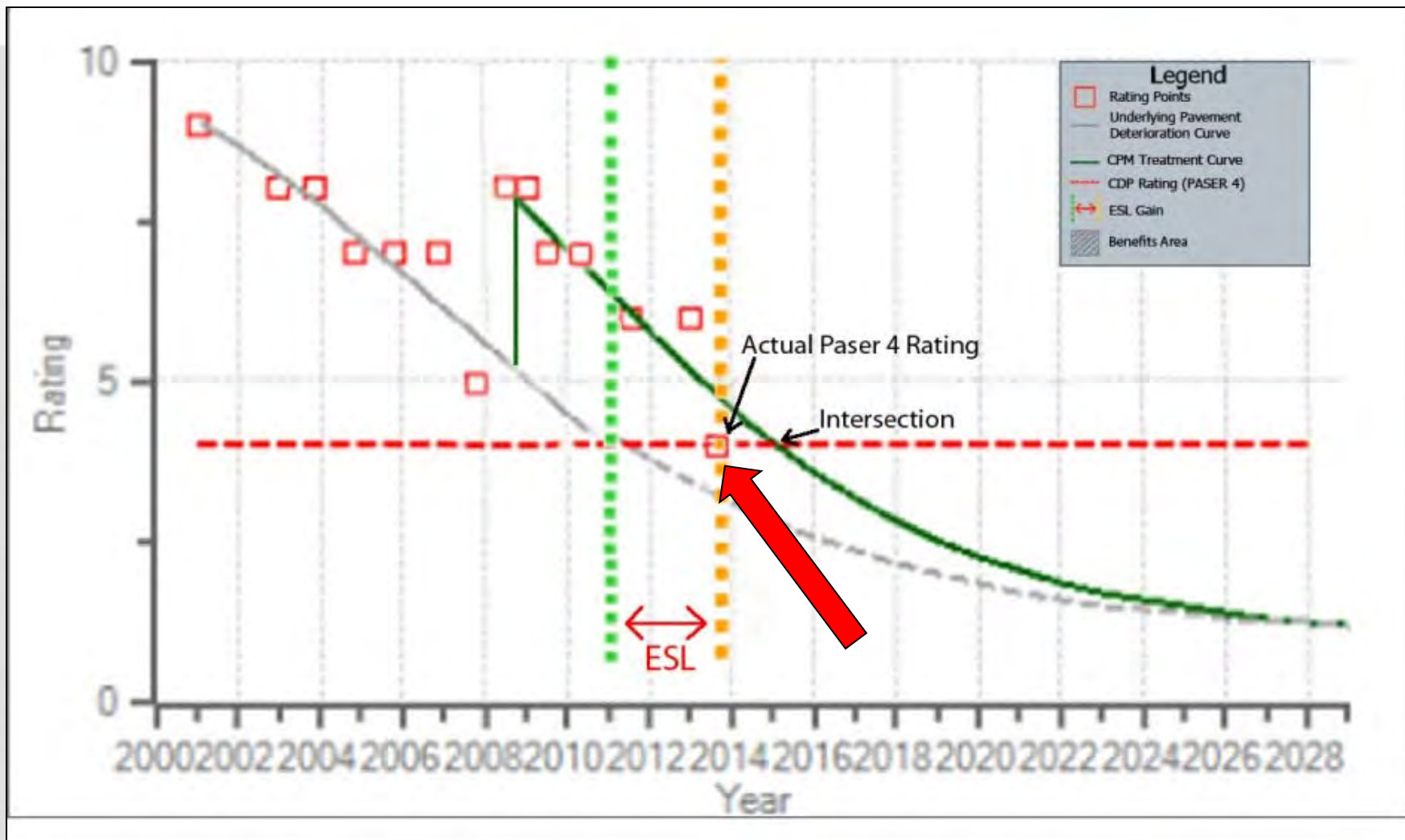
PM Life extension studies

- Asset Management Council
- MDOT PM study

MEASURING ESL: RESIDUAL VALUE



MEASURING ESL: ACTUAL VS. MODELED



CHIP SEAL REGIONAL RESULTS

Region	Segments	Miles	Average ESL
Northern	36	14.382	7.1
Southern	903	385.443	3.7
Population Belt	505	157.030	5.0
Total	1444	557.655	4.1

COMPARISON TO MDOT STUDY

Treatment	Pavement Type	Life Extension (Years) All
Single Chip Seal	Flexible	4.3
	Composite	
Double Chip Seal	Flexible	6.9
	Composite	
Double Microsurfacing	Flexible	3.5
	Composite	9.8
HMA Crack Seal	Flexible	2.8
	Composite	0.9
HMA Mill & Overlay	Flexible	7.9
	Composite	3.6
HMA Overlay	Flexible	3.6
	Composite	3.2

Table ES-2: Summary of Pavement Service Life Extensions from *Cost Effectiveness of the MDOT Preventative Maintenance Program Final Report* - Peshkin 2013

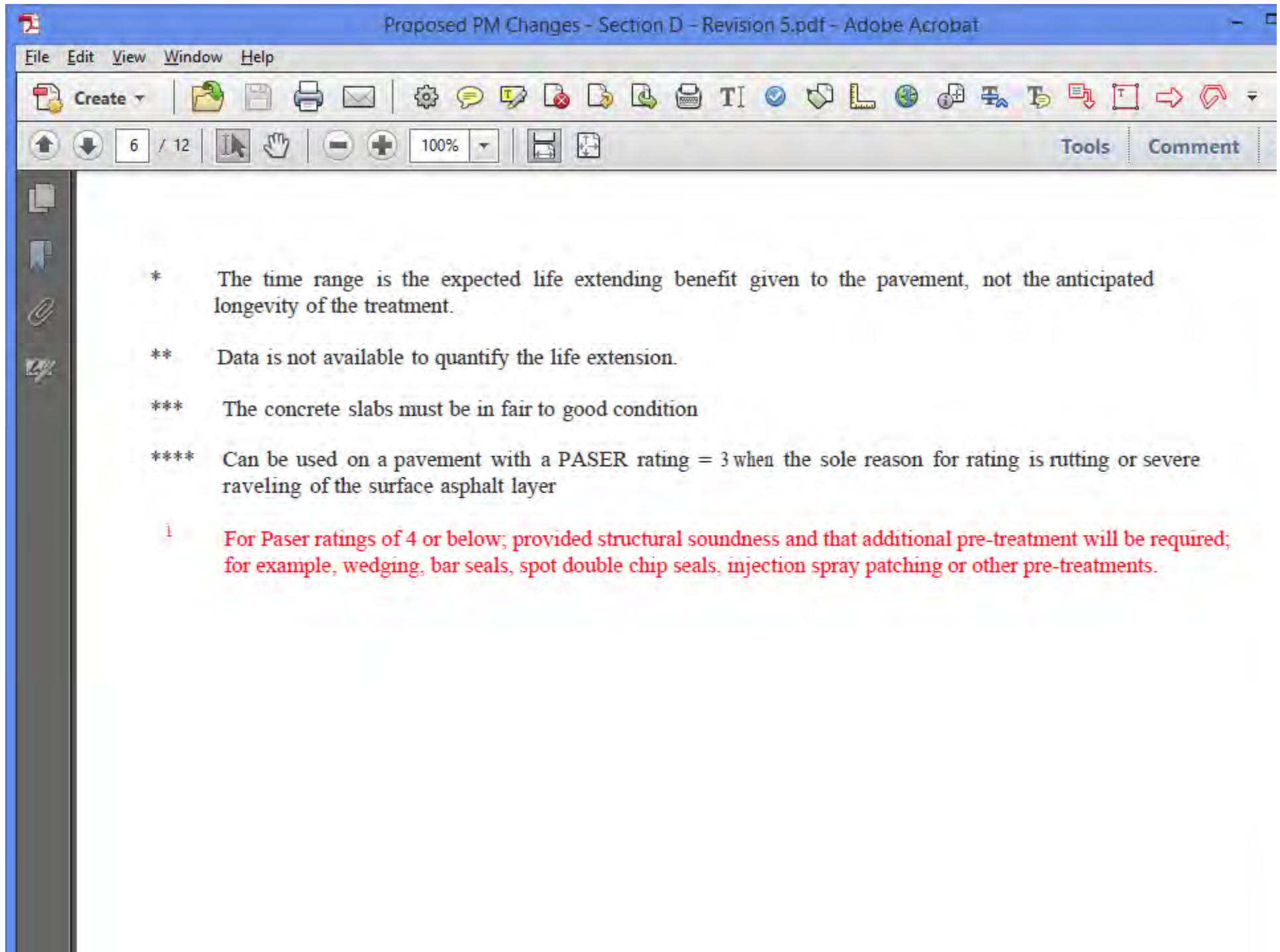
PM GUIDELINES

- Currently modifying guidelines to make more flexible add additional treatments.

Appendix D-1: Approved Preventative Maintenance Treatments

FIX TYPE	Life Extension (in years)*	Life Extension (in years)	Life Extension (in years)	PASER Rating	ADA Required (Yes/No)
	Flexible	Composite	Rigid		
HMA Crack Treatment	1-3	1-3	N/A	4-7	N
Overband Crack Filling	1-2	1-2	N/A	4-7	N
One Course Non-Structural HMA Overlay	5-7	4-7	N/A	4-5****	Y
Mill and One Course Non-Structural HMA Overlay	5-7	4-7	N/A	3-5	Y
Single Course Chip Seal	2-6	2-6	N/A	4-7 ¹	N
Double Chip Seal	4-7	3-6	N/A	4-7 ¹	Y
Single Course Micro-Surface	3-5	3-5	N/A	5-6	Y
Multiple Course Micro-Surface	4-6	4-6	N/A	4-6****	Y
Ultra-Thin HMA Overlay	3-6	3-6	N/A	4-6****	Y
Paver Placed Surface Seal	4-6	**	N/A	5-7	Y
Full Depth Concrete Repair	N/A	N/A	3-10	4-5***	N
Concrete Joint Resealing	N/A	N/A	1-3	5-8	N





CRACK SEALING WORKS



CRACK SEALING WORKS



CRACK SEAL VS NOTHING



CRACK SEALING VS SPRAY PATCHING



SPOT CHIP SEAL REPAIRS





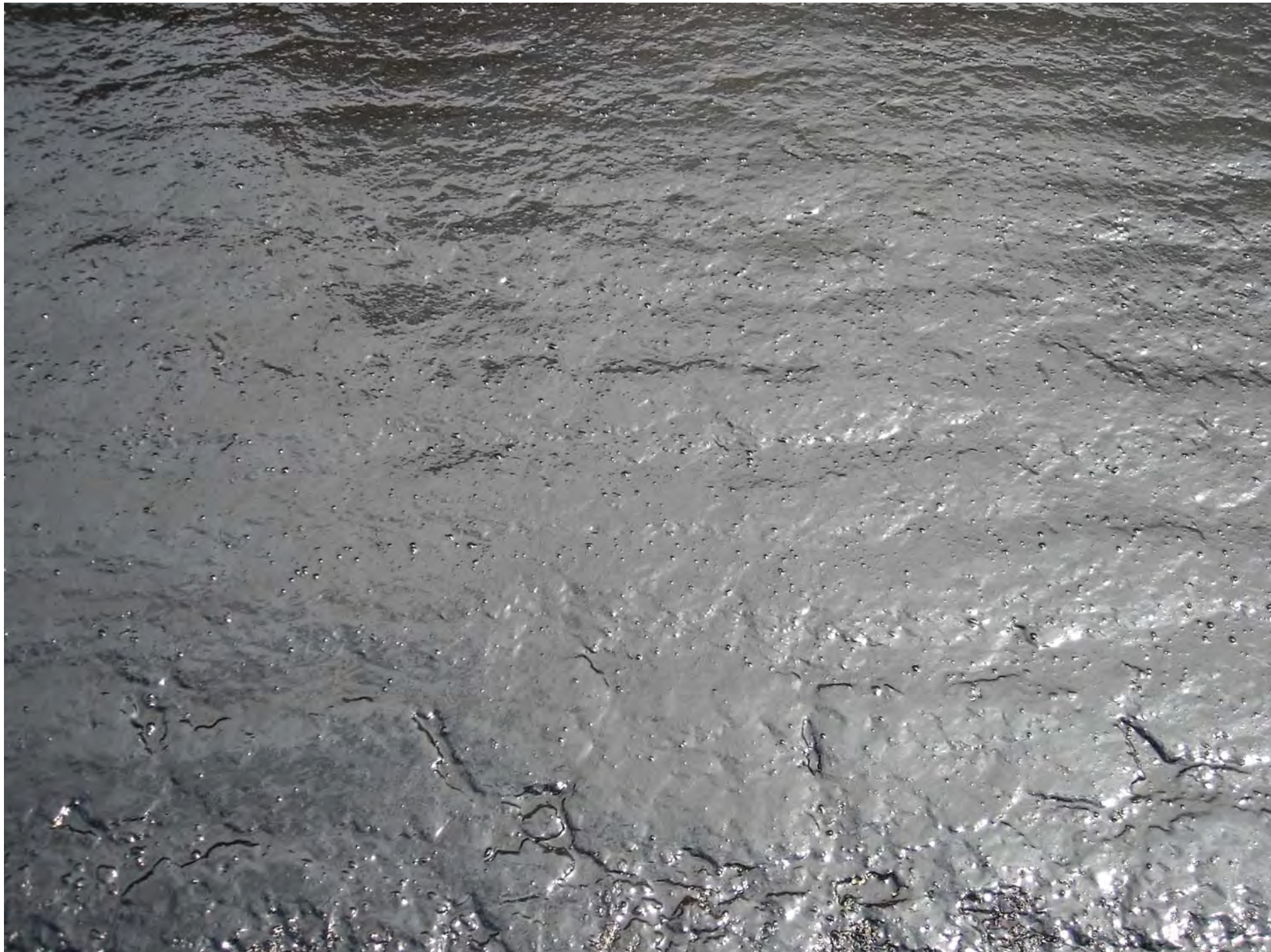












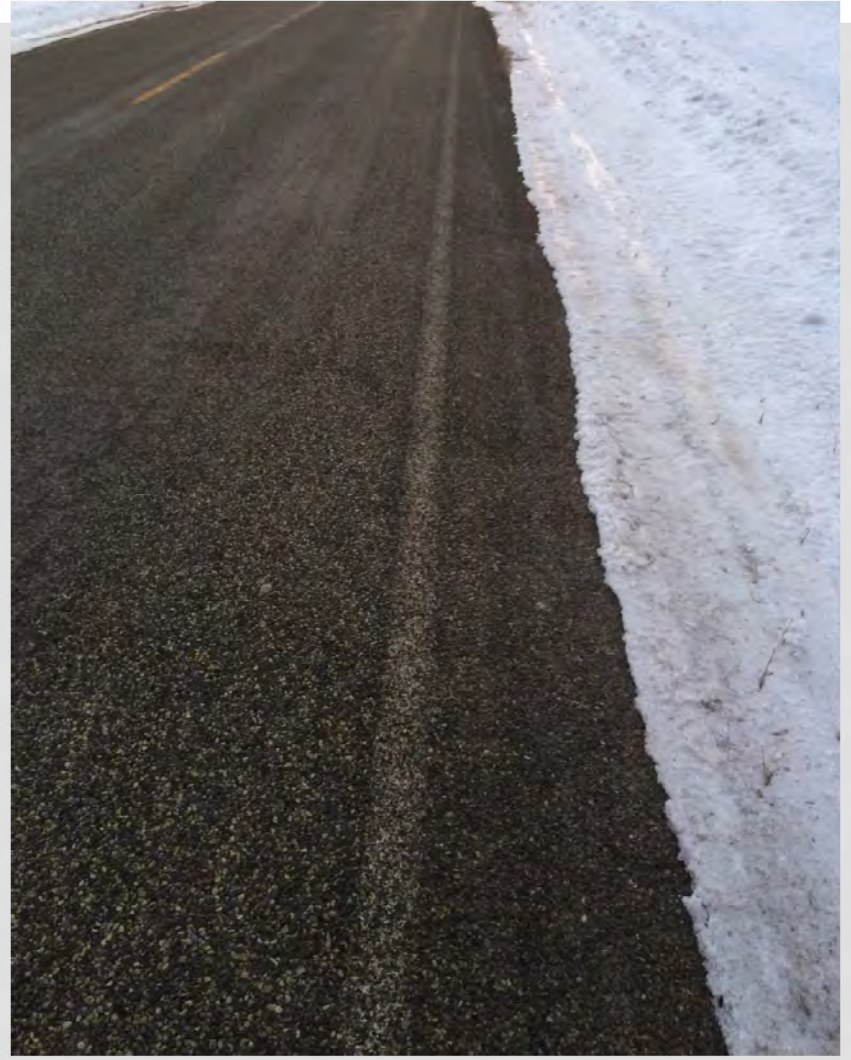












What Happened?



COMBINED WEDGE CHIP SEAL CRACK











IS CHIP SEALING WORTH IT?











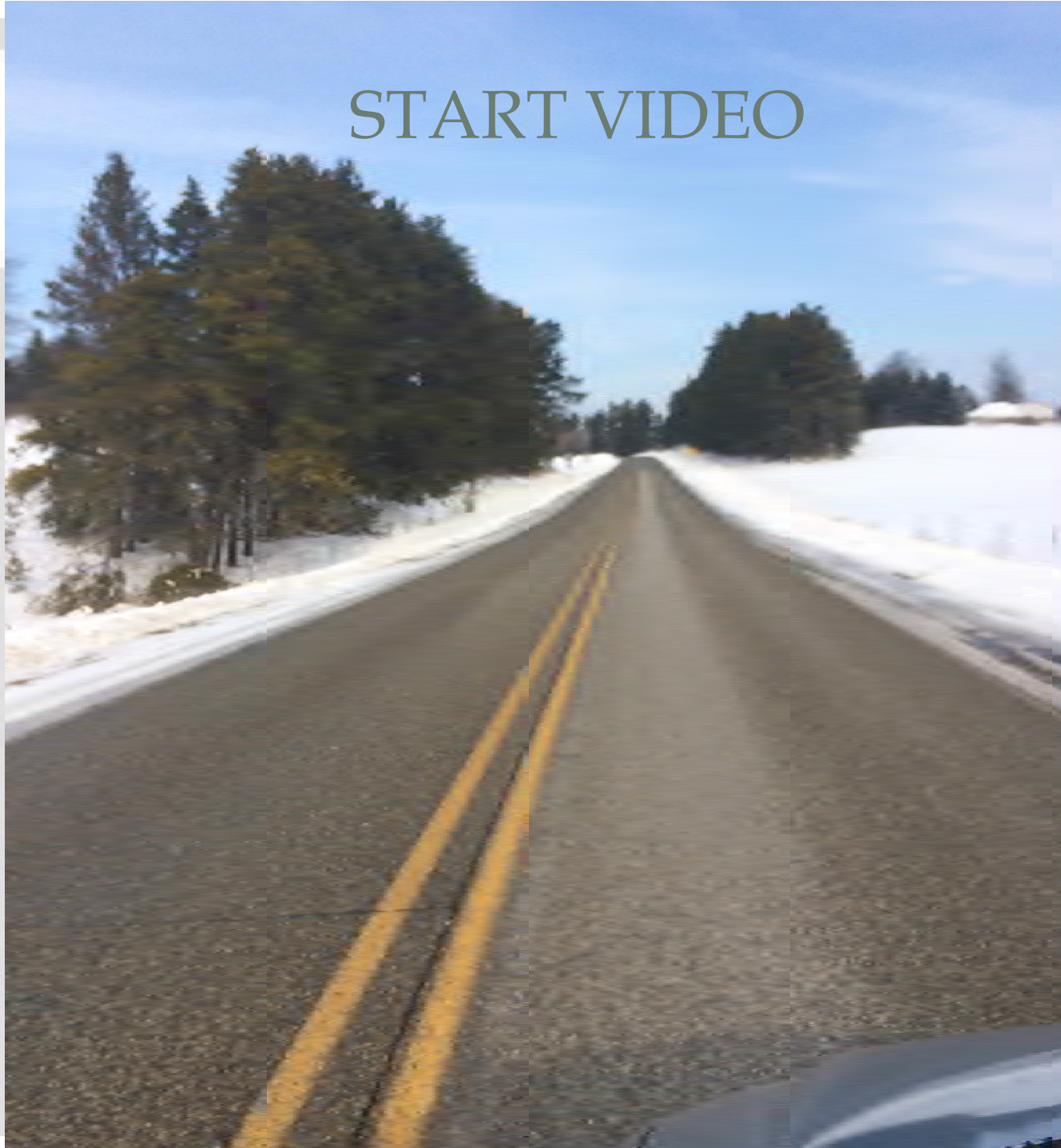








START VIDEO



TEXAS UNDERSEAL IN MI?





Start Video



SO YOUR BROKE BUT STILL HAVE TO
DO SOMETHING















RUT FILLING AND FATIGUE CRACKING









PREPARE FOR OVERLAY











ULTRATHIN OPTIONS









RETURN TO THE STONE AGE

