



CITY OF TROTWOOD

PAVEMENT PRESERVATION AND MAINTENANCE



TROTWOOD
◆ GROWING TOGETHER ◆

PAVEMENT CONDITION RATING (PCR)

ODOT's PCR for local streets



Evaluates Pavement Distress

Raveling	Bleeding	Patching	Surface Disintegration	Rutting	Base Failure	Settlement	Wheel Track Cracking	Longitudinal Cracking	Edge Cracking	Pressure Damage	Crack Sealing Deficiency
----------	----------	----------	---------------------------	---------	--------------	------------	-------------------------	--------------------------	---------------	--------------------	-----------------------------

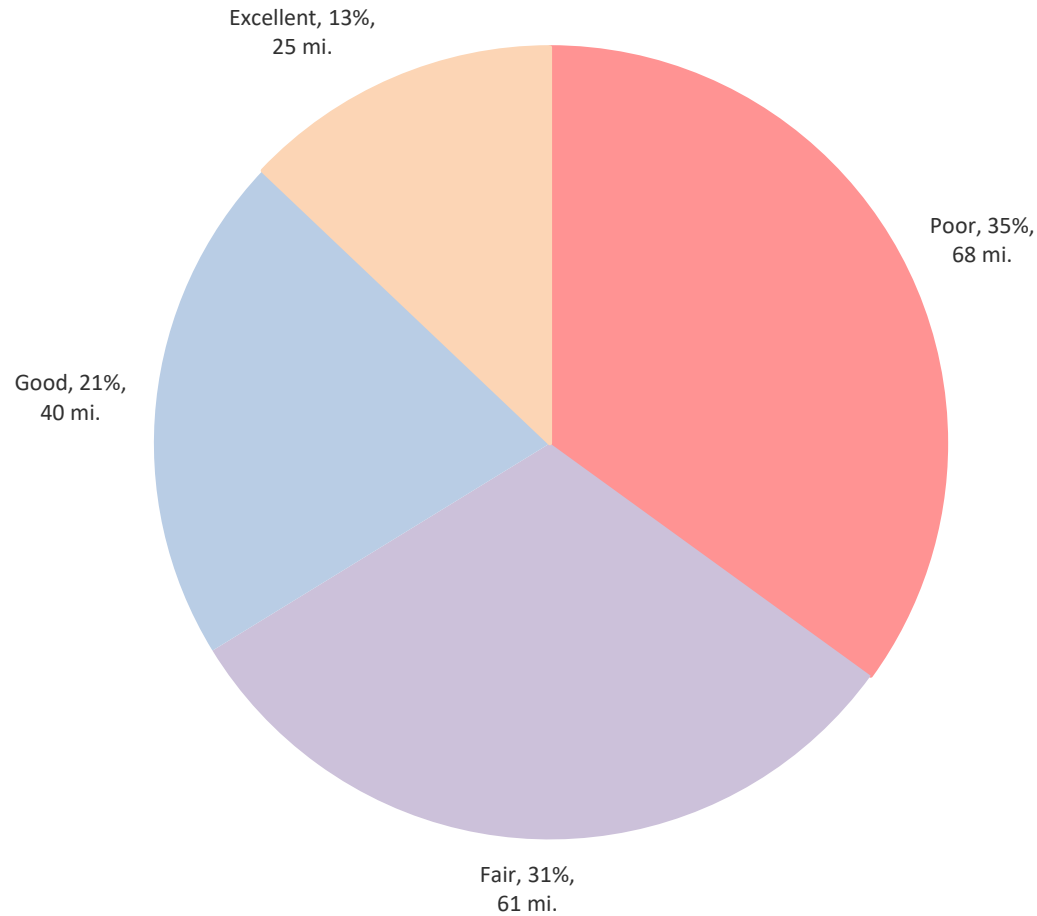
PAVEMENT CONDITION RATING (PCR)



NO.	PVMNT ID	NAME	START STREET	END STREET	LENGTH	CLID	PCR	STRUCTURAL DEDUCT	RATING	RATING DATE
1	1198	SNYDER ROAD	LITTLE RICHMOND ROAD	POST TOWN ROAD	5085	156	18.00	50.60	Poor	4/19/2017
2	781	MIDWAY AVENUE	MIDWAY AVENUE	NORFOLK AVENUE	834	1053	18.60	55.00	Poor	4/20/2017
3	1423	VICTORY DRIVE	VICTORY DRIVE	THIRD STREET	553	1569	24.80	50.60	Poor	4/20/2017
4	779	MIDWAY AVENUE	OLIVE ROAD	MIDWAY AVENUE	622	539	29.25	47.35	Poor	4/20/2017
5	738	MALDEN AVENUE	MALDEN AVENUE	MALDEN AVENUE	439	223	30.10	40.70	Poor	4/20/2017
6	1121	SECOND STREET	CROWN AVENUE	HOLLENCAMP AVENUE	327	280	30.10	40.70	Poor	4/20/2017
7	778	MIDWAY AVENUE	CROWN AVENUE	MIDWAY AVENUE	172	331	30.10	40.70	Poor	4/20/2017
8	519	HOLLENCAMP AVENUE	HOLLENCAMP AVENUE	SECOND STREET	81	356	30.10	40.70	Poor	4/20/2017
9	661	LOME AVENUE	CROWN AVENUE	LOME AVENUE	603	543	30.10	40.70	Poor	4/20/2017
10	780	MIDWAY AVENUE	CROWN AVENUE	PATTON AVENUE	317	567	30.10	40.70	Poor	4/20/2017
11	1422	VICTORY DRIVE	MIDWAY AVENUE	VICTORY DRIVE	776	604	30.10	40.70	Poor	4/20/2017
12	1122	SECOND STREET	CROWN AVENUE	SECOND STREET	607	684	30.10	40.70	Poor	4/20/2017
13	522	HOLLENCAMP AVENUE	HOLLENCAMP AVENUE	HOLLENCAMP AVENUE	527	814	30.10	40.70	Poor	4/20/2017
14	782	MIDWAY AVENUE	PATTON AVENUE	VICTORY DRIVE	315	1445	30.10	40.70	Poor	4/20/2017
15	1143	SHASTA AVENUE	CROWN AVENUE	SHASTA AVENUE	616	1601	30.10	40.70	Poor	4/20/2017
16	521	HOLLENCAMP AVENUE	HOLLENCAMP AVENUE	SECOND STREET	125	603	30.20	45.00	Poor	4/20/2017
17	520	HOLLENCAMP AVENUE	HOLLENCAMP AVENUE	HOLLENCAMP AVENUE	395	436	32.20	44.00	Poor	4/20/2017
18	1128	SEYBOLD ROAD	SHILOH SPRINGS ROAD	WESTBROOK ROAD	5121	1475	33.50	41.10	Poor	4/24/2017
19	682	LUTHERAN CHURCH ROAD	THIRD STREET	OLD DAYTON ROAD	5388	651	34.25	37.15	Poor	4/19/2017
20	786	MILLARD ROAD	DIAMOND MILL ROAD	LUTHERAN CHURCH ROAD	4825	736	34.80	37.50	Poor	4/19/2017

PCR RESULTS

City of Trotwood, Ohio
Pavement Condition Rating Distribution



2018 PAVING PROGRAM

- Base Bid
 - PCR 32.15 North Union (Shiloh Springs to Westbrook)
 - PCR 27.70 Olive (West Third to Corp. Line)
 - PCR 33.30 Wolf Creek Pike (Diamond Mill to Nolan)
- Alternates 2, 3A and 4
 - PCR 50.60 Snyder and Lutheran Church (Little Richmond to Wolf Creek Pike)
 - PCR 18.70 Snyder (Wolf Creek Pike to Snake)
 - PCR 12.90 Olive (Salem to Salem Bend)

2018 PAVING PROGRAM

- Base Bid (~ 3 miles, \$500,000, 65% Budget)
 - North Union (Shiloh Springs to Westbrook)
 - Olive (West Third to Corp. Line)
 - Wolf Creek Pike (Diamond Mill to Nolan)
- Alternates 2, 3A and 4 (~ 4 miles, \$275,000, 35% Budget)
 - Snyder and Lutheran Church (Little Richmond to Wolf Creek Pike)
 - Snyder (Wolf Creek Pike to Snake)
 - Olive (Salem to Salem Bend)

PAVEMENT PRESERVATION & MAINTENANCE

Maintenance Concepts

- Visual distress
- Ratings and testing
- Selecting appropriate, timely and economical treatments

Outcomes

- Preventative maintenance treatments
- Corrective maintenance (repair) treatments
- Rehabilitation, re-construction and replacement treatments



PREVENTATIVE MAINTENANCE

Slows the rate of deterioration of pavement due to traffic wear and environmental degradation

Not primarily related to correcting structural problems or restoring serviceability

Minimize the life cycle cost of the pavement – probably the most difficult selection

Select PM treatments

- Crack filling
- Surface treatments
 - Chip seals
 - Slurry seals
 - Thinlays

REPAIR TREATMENTS



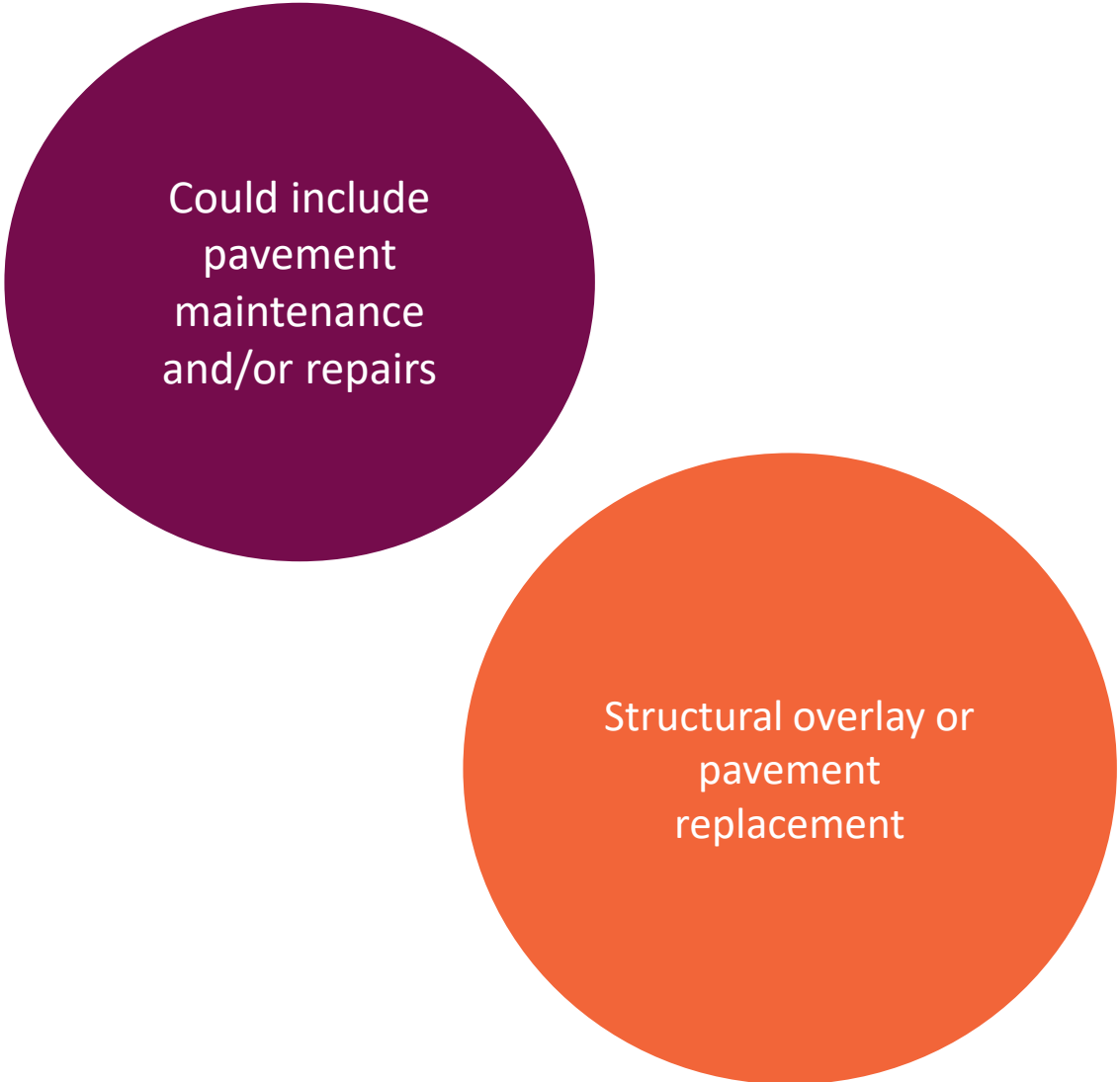
**Correct Pavement
Failures**

**Drainage repair
or retrofit**

**Restoring friction
and smoothness
with overlays**

Patching

RECONSTRUCTION & REPLACEMENT



Could include
pavement
maintenance
and/or repairs

Structural overlay or
pavement
replacement

VALUE COMPARISON OF ALTERNATIVES

- Serviceability – benefit to road user
- Economic analysis
- Cost/benefit
- Cost effectiveness
- Life cycle cost analysis
- Life cycle assessment of environmental impacts

FHWA PM MAINTENANCE TREATMENTS

Structural Deterioration	Environmental Cracking Extent	Surface Wear Severity	Recommended Treatment
No	Low	Low	Crack Seal
		Moderate	Surface Treatment (Single Chip Seal)
		High	Crack Seal and 40 mm Overlay
	Moderate	Low	Crack Seal
		Moderate	Crack Seal plus 40 mm Overlay
		High	Mill and Fill 50 mm
	High	Low	Mill and Fill 40 mm
		Moderate	Mill and Fill 50 mm
		High	Mill and Fill 50 mm

PM MAINTENANCE TREATMENTS

- Surface treatments fill/bridge over small cracks and seal the pavement surface against the weather while providing a satisfactory wearing surface.
- Surface Treatments
 - Chip seal (Item 422)
 - Microsurfacing (Item 421)
 - Thin overlays (424, 441, 404LVT, Thinlay)
 - Fog seals, cape seals, slurry seals

REPAIR MAINTENANCE TREATMENTS

- Patching
- Milling
 - On varying surfaces use profile milling or a leveling course
 - A leveling course can be used where depth is not a constraint or where additional thickness is needed
- Thin overlays
- Correcting deformation

CHIP SEAL

“Chip Sealing” is a common pavement maintenance practice that extends pavement life and provides a good driving surface.

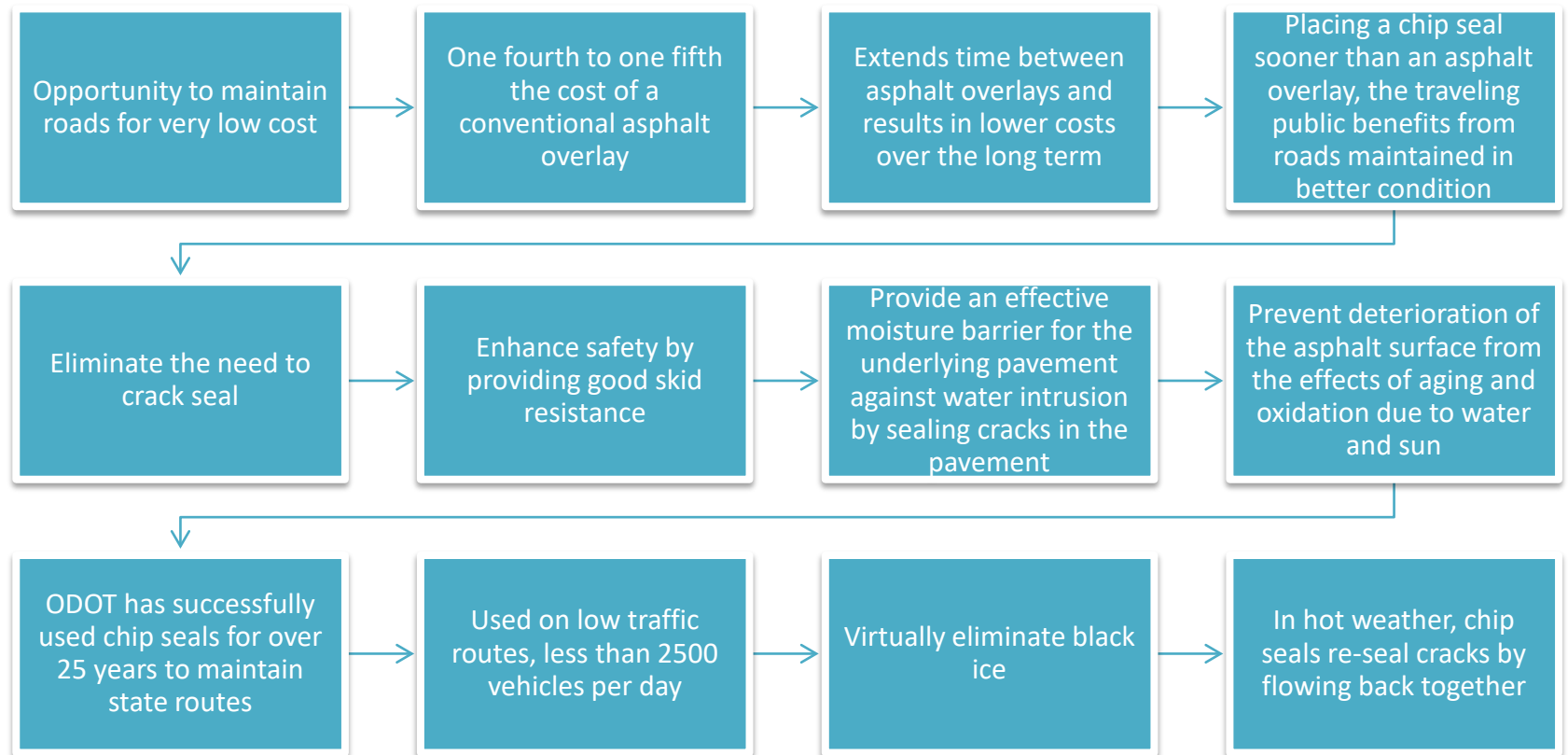
CHIP SEAL



CHIP SEALS VS. ASPHALT OVERLAYS

- The difference is in the construction method. Hot Mix Asphalt pavement is produced by heating liquid asphalt and mixing it with aggregate, with the mix then spread and compacted to form a durable road structure and riding surface. Chip Sealing uses the same ingredients as asphalt concrete paving, but the construction method is different. With chip seals, a thin film of heated asphalt liquid is sprayed on the road surface, followed by the placement of small aggregates ("chips"). The chips are then compacted to orient the chips for maximum adherence to the asphalt, and excess stone is swept from the surface. The ingredients of hot mix asphalt and chip seals are the same; only the construction methods are different.

WHY USE CHIP SEALS



COMMUNITIES THAT USE CHIP SEAL



Spring Valley Township



ENGLEWOOD
OHIO

Broadview Heights
Highest of the Heights

REFERENCES

- Pavement Design Manual, ODOT, 2015
- Guide for the Design of Pavement Structures, AASHTO, 1993
- Asphalt Overlays for Highway and Street Rehabilitation, MS-17, Asphalt Institute
- Asphalt in Pavement Maintenance, MS-16, Asphalt Institute
- Asphalt Pavement Repair, Manuals of Practice, SHRP-H-348, Strategic Highway Research Program, 1993
- Selecting a pavement maintenance treatment for flexible pavement, FHWA-IF-00-027, FHWA
- ODOT, Preventive Maintenance Program Guidelines, 2001