

Saskatchewan MHI Agency Report

MPPP 2015

Saskatchewan Agency Report

Chip Seals

Pavement Performance Models

Midwestern

Pavement Preservation Partnership

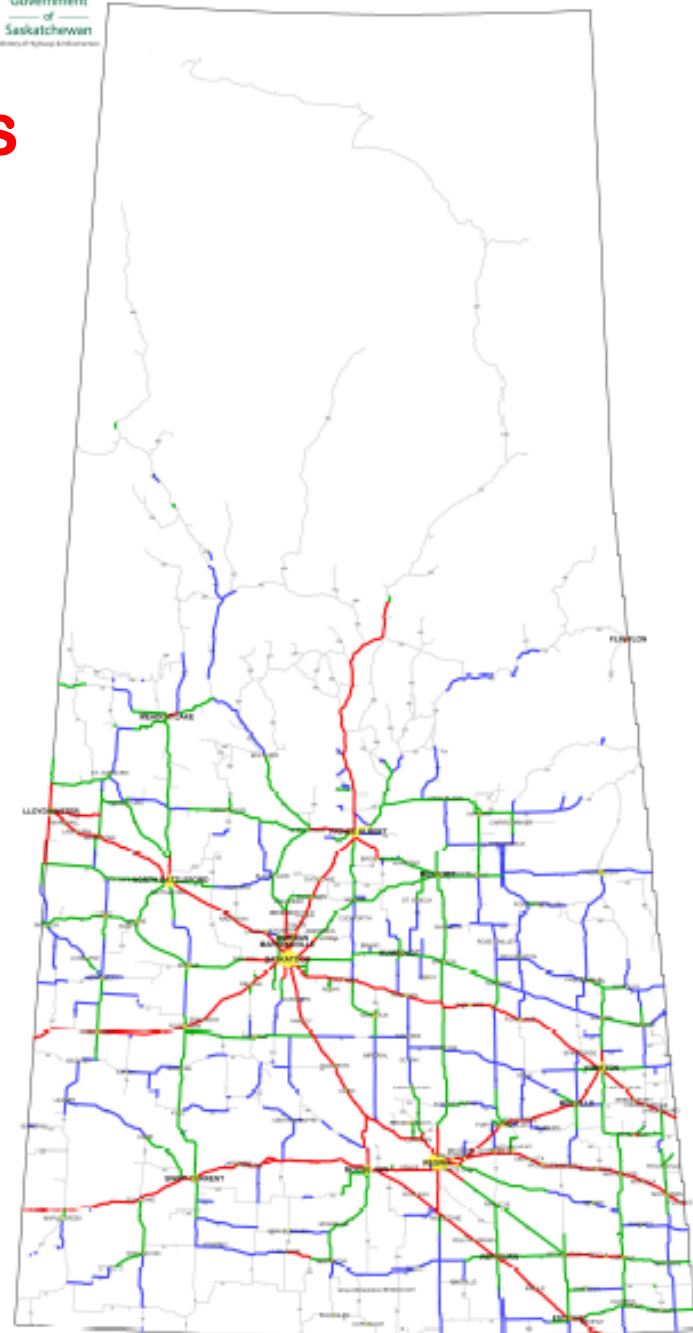


Pavement Networks

LOS 1 – AADT \geq 3,000 or TAADT \geq 500 or NHS

LOS 2 – AADT \geq 800 or TAADT \geq 200

LOS 3 – AADT $<$ 800



Pavement Inventory

LOS 1 4560 km (2833 miles)

LOS 2 5030 km (3125 miles)

LOS 3 5510 km (3424 miles)

AADT = Annual Average Daily Traffic
TAADT = Truck Annual Average Daily Traffic
NHS = National Highway System

Chip Seals

2010 pilot 40 km (25 miles)

2013 88 km (55 miles)

2014 0 km

2015 394 km (245 miles)



Chip Seals



2015 394 km (245 miles)

CAN\$4.80/m²

US\$4.32/y²

Preservation Treatments



- Seal Score
(sealcoat projects)



- Rutting
(TLO & micro projects)



- IRI
(repaving projects)

Pavement Performance Models

Condition		Seal		Treatment
State	Rut	IRI	Score	
1	Good	Good	Good	Routine Maintenance
2	Good	Good	Poor	Seal Coat
3	Good	Poor	Good	Repaving
4	Good	Poor	Poor	Repaving
5	Poor	Good	Good	Microsurfacing or TLO
6	Poor	Good	Poor	Rutfill Microsurfacing & Seal Coat
7	Poor	Poor	Good	Repaving
8	Poor	Poor	Poor	Repaving

LOS 1 Network Strategy

Network Size: 4560 kilometres

IRI : % of Network GOOD IRI ($IRI \leq 2.25$)

- **2015 Target : 94%**
- **2014 Actual : 94%**
- **2015 Forecast: 94%**

2020 Target : IRI 93% GOOD

Rutting : % of Network GOOD Rutting Depth ($Ruts \leq 10mm$)

- **2015 Target : 95%**
- **2014 Actual : 95%**
- **2015 Forecast: 95%**

2020 Target : Rut 93% GOOD

Seal Score : % of Network GOOD

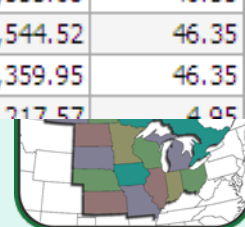
- **2015 Target : 47%**
- **2014 Actual : 43%**
- **2015 Forecast: 48%**

2020 Target : Seal Score 60% GOOD



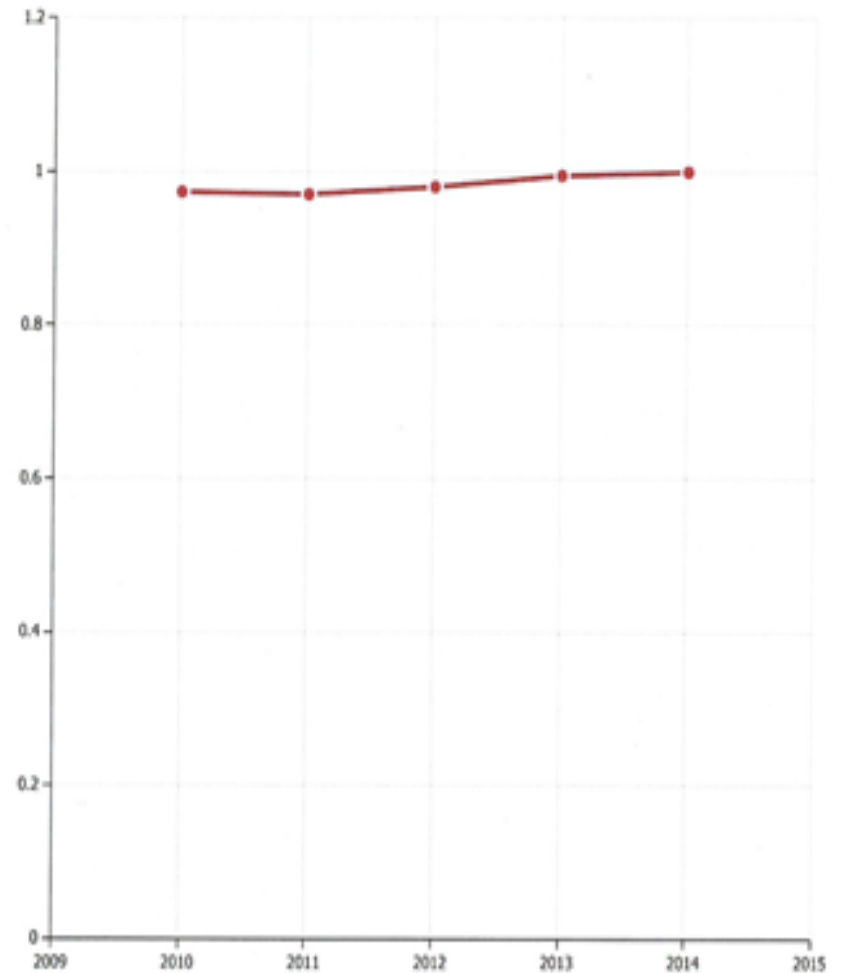
Modelled Treatment Priority

Road Name	From	To	Length	Area	Condition State	Treatment Name	Total Cost	Benefit-Cost	Trt Effectiveness	Unit Cost
0021900MDANN0101	0	1.6	1600	11,840.00	6	Micro	132,016.00	31.54	4,164,111.63	11.15
0041700MUANN0207	26.45	33.1	6650	49,210.00	8	Overlay	2,280,883.50	31.17	71,096,970.35	46.35
0021900MDANN0199	3.62	4.39	770	5,698.00	6	Micro	63,532.70	30.38	1,929,818.42	11.15
0041700MUANN0207	26.45	33.1	6650	49,210.00	8	Micro	548,691.50	29.25	16,051,183.30	11.15
0550900MUANN0197	27.05	32.4	5350	39,590.00	2	Full Seal	195,970.50	28.79	5,641,575.00	4.95
0022000MDANN0199	0.47	1.87	1400	10,360.00	2	Full Seal	51,282.00	28.79	1,476,300.00	4.95
0022000MDANN0101	1.87	6.92	5050	37,370.00	2	Full Seal	184,981.50	28.79	5,325,225.00	4.95
0550600MUANN0199	0	0.9	900	6,660.00	6	Micro	74,259.00	28.34	2,104,870.25	11.15
0022200MUANN0106	21.65	27	5350	40,660.00	4	Overlay	1,884,591.00	28.14	53,025,601.82	46.35
0041700MUANN0206	20.35	26.45	6100	45,140.00	4	Overlay	2,092,239.00	27.61	57,766,880.95	46.35
0410100MUANN0212	47.45	52.4	4950	36,630.00	8	Micro	408,424.50	27.46	11,215,741.60	11.15
0021900MDANN0199	3.62	4.39	770	5,698.00	6	Full Seal	28,205.10	27.30	770,099.82	4.95
0111300MDANN0159	48.4	48.97	570	2,394.00	4	Overlay	110,961.90	27.19	3,017,461.08	46.35
0021900MDANN0102	1.6	3.62	2020	14,948.00	2	Full Seal	73,992.60	27.18	2,011,425.88	4.95
0041700MUANN0214	66	73.49	7490	55,426.00	4	Overlay	2,568,995.10	26.96	69,250,955.73	46.35
0021900MDBNN0101	0	3.62	3620	26,788.00	6	Micro	298,686.20	26.90	8,033,861.31	11.15
0111300MDBNN0155	46.95	48.4	1450	10,730.00	5	Micro	119,639.50	26.89	3,217,415.63	11.15
0410100MUANN0211	39.45	47.45	8000	59,200.00	5	Micro	660,080.00	26.65	17,587,902.73	11.15
0041700MUANN0213	60	66	6000	44,400.00	8	Micro	495,060.00	26.45	13,096,426.37	11.15
0021900MDANN0101	0	1.6	1600	11,840.00	6	Overlay	548,784.00	25.96	14,245,163.89	46.35
0410100MUANN0212	47.45	52.4	4950	36,630.00	8	Overlay	1,697,800.50	25.63	43,512,533.68	46.35
0041700MUANN0208	33.1	39	5900	43,660.00	4	Overlay	2,023,641.00	25.60	51,799,544.52	46.35
0041700MUANN0213	60	66	6000	44,400.00	8	Overlay	2,057,940.00	25.41	52,297,359.95	46.35
0021900MDANN0101	0	1.6	1600	11,840.00	6	Full Seal	58,608.00	24.68	1,447,217.57	4.95



● Rut 98.4%

<u>Year 1</u>	<u>Year 2</u>	<u>% by TARA</u>
2009	2010	97.4 %
2010	2011	97.1 %
2011	2012	98.1 %
2012	2013	99.5 %
2013	2014	100.0 %



TREATMENT HISTORY

- Need: Expected Treatment condition deterioration over time based on actual measured conditions
- Remove subjectivity from pavement model development

