

KUPSKAY CONSULTING INC.

80 Malcana Street
Winnipeg, Manitoba
R2G 2S9

December 9, 2010

Public Works
Streets Maintenance Division
104-1155 Pacific Avenue
Winnipeg, Manitoba
R3E 3P1

Attention: Mr. Ken Boyd, P.Eng.
Manager of Streets Maintenance

RE: 2010 IRI Measurements

The following summarises International Roughness Index (IRI) smoothness measurements completed on various concrete streets.

The streets completed included;

Future Pavements to be Diamond Ground

- WB Bishop Grandin Blvd - Lagimodiere to Lakewood
- WB Bishop Grandin Blvd - Lakewood to St. Anne's
- EB and WB Kenaston Blvd - McGillivray to Asphalt
- EB and WB Portage Ave - Rita to Aldine
- EB and WB Nairn Ave - Panet to Grey
- EB and WB Regent Ave - Plessis to Rougeau
- NB and SB Clement Parkway - Grant to Roblin

Re profiling of the 2008 Diamond Ground Pavements

- NB and SB Brookside Boulevard - Inkster to City Limits
- NB and SB Kenaston Boulevard - McGillivray to Taylor

The IRI measurements were completed on September 25th and 26th, 2010 utilizing an Ames Engineering, certified inertial profiler, supplied by Diamond Surface Inc. of Maple Grove, Minnesota.

A summary of the IRI measurements is attached including approximate areas of main lane grinding, estimated construction costs and individual reports for each street recording the IRI at 100 metre intervals.

KUPSKAY CONSULTING INC.

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R2G 2S9

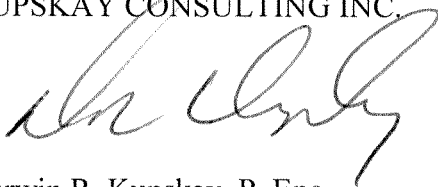
It is recommended that The City of Winnipeg proceed with this work as soon as possible. To maximize the benefit of this treatment, full-depth and partial-depth repairs should be completed prior to diamond grinding. The estimated cost of Diamond Grinding Treatment is \$7.50 per square metre based on the 2010 unit price plus 5%. The estimated costs also assume the City will provide the dump sites for all slurry hauled.

Should the City of Winnipeg proceed with this work, KupsKay Consulting Inc. would be pleased to assist in finalizing the future streets to be Diamond Ground.

If you have any questions or if clarification is required, please contact me at your convenience.

Yours truly,

KUPSKAY CONSULTING INC.

A handwritten signature in black ink, appearing to read 'Darwin R. KupsKay', written over the printed name below.

Darwin R. KupsKay, P. Eng.
President

DRK/

Summary of 2010 IRI Measurements

Future Pavements to be Diamond Ground

Location Street	Limits	Direction	Year	Surface Type	IRI (m/km)	Width (m)	Length (m)	Area ** (sq. m)	Estimated Const. Cost ***
Bishop Grandin Blvd	Lagimodiere to Lakewood	WB		Concrete	2.65*	7.6	1571	14000	\$105,000
Bishop Grandin Blvd	Lakewood to St. Anne's	WB		Concrete	3.32	7.6	1377	11900	\$89,250
Kenaston Blvd	McGillivray to Asphalt	EB		Concrete	3.04	7.6	1382	11900	\$89,250
Kenaston Blvd	Asphalt to McGillivray	WB		Concrete	2.71	7.6	1207	10800	\$81,000
Portage Ave	Rita to Aldine	WB		Concrete	3.42	14.0	340	5500	\$41,250
Portage Ave	Aldine to Rita	EB		Concrete	3.60	14.0	389	6100	\$45,750
Nairn Ave	Panet to Grey	WB		Concrete	2.36	7.5	1717	14300	\$107,250
Nairn Ave	Grey to Panet	EB		Concrete	2.70	7.5	1728	14300	\$107,250
Regent Ave	Plessis to Rougeau	WB		Concrete	3.63	7.5	2312	18800	\$141,000
Regent Ave	Rougeau to Plessis	EB		Concrete	3.34	7.5	2312	18800	\$141,000
Clement Parkway	Grant to Roblin	NB	2002	Concrete	2.39	8.3	938	8000	\$60,000
Clement Parkway	Roblin to Grant	SB	2002	Concrete	2.55	8.3	937	8000	\$60,000

* 2009 IRI measurement = 2.81

** Area including feathering

*** Unit price based on 2010 Bid Opportunity plus 5% = \$7.50/sq.m.

Diamond Ground Pavements

Location Street	Limits	Direction	Year	Surface Type	Length (Metres)	IRI (m/km)	
						2008	2010
Brookside Blvd	Inkster to City Limit	NB	1997	Concrete	3222	0.73	0.80
Brookside Blvd	City Limit to Inkster	SB	1998	Concrete	3191	0.75	0.85
Kenaston Blvd	McGillivray to Taylor	NB	1995	Concrete	3407	1.02-1.21	1.14
Kenaston Blvd	Taylor to McGillivray	SB	1995	Concrete	3412	1.05-1.16	1.08

Summary of 2010 IRI Measurements

Possible Pavements to be Diamond Ground

Location	Limits	Direction	Year	Surface Type	Length (Metres)	IRI (m/km)
Bishop Grandin Blvd	Lagimodiere to Lakewood	WB		Concrete	1571	2.65*
Bishop Grandin Blvd	Lakewood to St. Anne's	WB		Concrete	1377	3.32
Kenaston Blvd	McGillivray to Asphalt	EB		Concrete	1382	3.04
Kenaston Blvd	Asphalt to McGillivray	WB		Concrete	1207	2.71
Portage Ave	Rita to Aldine	WB		Concrete	340	3.42
Portage Ave	Aldine to Rita	EB		Concrete	389	3.60
Nairn Ave	Panet to Grey	WB	1998	Concrete	1717	2.36
Nairn Ave	Grey to Panet	EB	1998	Concrete	1728	2.70
Regent Ave	Plessis to Rougeau	WB		Concrete	2312	3.63
Regent Ave	Rougeau to Plessis	EB		Concrete	2312	3.34
Clement Parkway	Grant to Roblin	NB	2002	Concrete	938	2.40
Clement Parkway	Roblin to Grant	SB	2002	Concrete	937	2.55

* 2009 IRI measurement = 2.81

Diamond Ground Pavements

Location	Limits	Direction	Year	Surface Type	Length (Metres)	IRI (m/km)	
						2008	2010
Brookside Blvd	Inkster to City Limit	NB	1997	Concrete	3222	0.73	0.80
Brookside Blvd	City Limit to Inkster	SB	1998	Concrete	3191	0.75	0.85
Kenaston Blvd	McGillivray to Taylor	NB	1995	Concrete	3407	1.02-1.21	1.14
Kenaston Blvd	Taylor to McGillivray	SB	1995	Concrete	3412	1.05-1.16	1.08

Responsible
Andrew
to Thomas
Roblin

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Brookside Blvd NB
Inskster Blvd to City Limits

File 32

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	1.05	1.18
100 to 200	0.45	0.69
200 to 300	0.55	0.66
300 to 400	0.73	0.82
400 to 500	0.82	0.80
500 to 600	0.75	0.69
600 to 700	1.20	1.47
700 to 800	0.61	0.75
800 to 900	0.70	0.70
900 to 1,000	0.52	0.65
1,000 to 1,100	0.78	0.92
1,100 to 1,200	0.69	0.58
1,200 to 1,300	0.55	0.54
1,300 to 1,400	0.63	0.84
1,400 to 1,500	0.62	0.62
1,500 to 1,600	1.27	1.40
1,600 to 1,700	0.63	0.80
1,700 to 1,800	0.63	0.88
1,800 to 1,900	0.82	0.94
1,900 to 2,000	0.95	1.03
2,000 to 2,100	1.30	1.43
2,100 to 2,200	0.71	0.88
2,200 to 2,300	0.66	0.89
2,300 to 2,400	0.58	0.70
2,400 to 2,500	0.59	0.79
2,500 to 2,600	0.51	0.73
2,600 to 2,700	0.49	0.82
2,700 to 2,800	0.48	0.66
2,800 to 2,900	0.59	0.85
2,900 to 3,000	0.83	0.92
3,000 to 3,100	0.84	0.83
3,100 to 3,200	0.72	0.62
3,200 to 3,222	2.07	2.13
Average	0.74	0.86

Average 0.80

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Brookside Blvd SB
City Limits to Inkster Blvd

File 33

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	1.12	0.77
100 to 200	0.71	0.65
200 to 300	0.51	0.60
300 to 400	0.85	0.76
400 to 500	0.69	0.67
500 to 600	0.72	0.73
600 to 700	0.70	0.85
700 to 800	0.41	0.61
800 to 900	0.60	0.67
900 to 1,000	0.49	0.62
1,000 to 1,100	0.73	0.70
1,100 to 1,200	0.70	0.78
1,200 to 1,300	0.85	0.81
1,300 to 1,400	0.89	0.85
1,400 to 1,500	0.88	0.93
1,500 to 1,600	0.81	0.83
1,600 to 1,700	0.93	1.01
1,700 to 1,800	0.66	0.73
1,800 to 1,900	0.67	0.72
1,900 to 2,000	0.70	0.73
2,000 to 2,100	0.82	0.89
2,100 to 2,200	0.64	0.85
2,200 to 2,300	0.86	1.02
2,300 to 2,400	0.86	1.00
2,400 to 2,500	1.22	1.30
2,500 to 2,600	0.82	0.83
2,600 to 2,700	0.74	0.88
2,700 to 2,800	0.80	0.86
2,800 to 2,900	1.07	0.73
2,900 to 3,000	1.22	1.34
3,000 to 3,100	1.02	0.90
3,100 to 3,191	2.14	2.44
Average	0.83	0.87

Average 0.85

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Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Kenaston Blvd NB
McGillivray Blvd to Taylor Ave

File 29

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	1.44	0.86
100 to 200	0.75	0.68
200 to 300	0.48	0.47
300 to 400	0.70	0.63
400 to 500	1.06	0.94
500 to 600	0.85	1.07
600 to 700	0.80	0.92
700 to 800	5.60	6.06
800 to 900	1.21	1.25
900 to 1,000	0.72	0.66
1,000 to 1,100	0.86	0.68
1,100 to 1,200	0.62	0.55
1,200 to 1,300	0.51	0.54
1,300 to 1,400	1.09	0.86
1,400 to 1,500	0.61	0.51
1,500 to 1,600	0.58	0.42
1,600 to 1,700	0.59	0.39
1,700 to 1,800	1.04	0.92
1,800 to 1,900	0.62	0.41
1,900 to 2,000	1.36	1.10
2,000 to 2,100	2.48	2.04
2,100 to 2,200	0.94	0.95
2,200 to 2,300	0.92	1.29
2,300 to 2,400	1.60	1.51
2,400 to 2,500	0.77	1.07
2,500 to 2,600	1.02	1.07
2,600 to 2,700	1.29	1.29
2,700 to 2,800	1.19	0.97
2,800 to 2,900	0.98	1.05
2,900 to 3,000	0.70	0.77
3,000 to 3,100	1.42	1.58
3,100 to 3,200	1.12	1.20
3,200 to 3,300	1.52	1.86
3,300 to 3,400	1.91	1.83
3,400 to 3,407	1.06	1.61
Average	1.16	1.13

Average 1.14

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Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Kenaston Blvd SB
Taylor Ave to McGillivray Blvd

File 16

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	3.10	3.10
100 to 200	1.12	1.21
200 to 300	1.35	1.59
300 to 400	1.19	1.41
400 to 500	0.97	1.07
500 to 600	1.19	1.12
600 to 700	1.13	0.92
700 to 800	1.09	0.93
800 to 900	1.23	1.04
900 to 1,000	1.13	0.80
1,000 to 1,100	0.90	0.70
1,100 to 1,200	1.08	1.04
1,200 to 1,300	1.43	1.20
1,300 to 1,400	2.42	2.13
1,400 to 1,500	1.71	1.50
1,500 to 1,600	0.56	0.47
1,600 to 1,700	1.01	0.89
1,700 to 1,800	0.50	0.56
1,800 to 1,900	0.49	0.49
1,900 to 2,000	0.43	0.50
2,000 to 2,100	0.63	0.53
2,100 to 2,200	0.71	0.71
2,200 to 2,300	0.82	0.60
2,300 to 2,400	1.49	1.24
2,400 to 2,500	0.92	0.89
2,500 to 2,600	0.65	0.65
2,600 to 2,700	3.90	4.58
2,700 to 2,800	0.67	0.65
2,800 to 2,900	0.56	0.54
2,900 to 3,000	0.58	0.68
3,000 to 3,100	0.63	0.60
3,100 to 3,200	0.52	0.59
3,200 to 3,300	0.51	0.44
3,300 to 3,400	0.63	0.52
3,400 to 3,412	2.03	2.18
Average	1.10	1.06

Average 1.08

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Bishop Grandin WB
Lagimodiere Blvd to Lakewood Blvd

File 0

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)	
	IRI (m/km)	IRI (m/km)	
0 to 100	4.22	4.43	
100 to 200	1.85	2.15	
200 to 300	1.83	1.94	
300 to 400	2.57	2.08	
400 to 500	2.16	1.62	
500 to 600	3.03	2.59	
600 to 700	2.30	2.43	
700 to 800	1.93	2.15	
800 to 900	2.34	2.77	
900 to 1,000	2.76	2.33	
1,000 to 1,100	2.49	2.36	
1,100 to 1,200	3.60	3.10	
1,200 to 1,300	2.11	2.60	
1,300 to 1,400	2.06	2.78	
1,400 to 1,500	3.08	3.21	
1,500 to 1,571	4.57	4.52	
Average	2.64	2.65	

Average 2.65

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Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Bishop Grandin Blvd WB
Lakewood Blvd to St Anne's Rd

File 27

Interval (m)	ODS 1 (RoLine3K)		ODS 2 (RoLine3K)	
	IRI (m/km)		IRI (m/km)	
0 to 100	4.31		3.73	
100 to 200	2.73		2.54	
200 to 300	3.73		4.03	
300 to 400	4.58		4.54	
400 to 500	2.10		1.86	
500 to 600	4.14		3.76	
600 to 700	3.71		3.35	
700 to 800	1.99		1.90	
800 to 900	2.44		2.06	
900 to 1,000	2.89		2.81	
1,000 to 1,100	3.93		3.77	
1,100 to 1,200	3.06		2.97	
1,200 to 1,300	4.15		4.03	
1,300 to 1,377	4.06		3.99	
Average	3.41		3.23	

Average 3.32

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Kenaston Blvd EB
McGillivray Blvd to Asphalt

File 28

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	3.96	3.98
100 to 200	2.86	2.59
200 to 300	2.78	2.55
300 to 400	3.16	2.86
400 to 500	3.41	3.15
500 to 600	3.05	2.54
600 to 700	3.98	3.68
700 to 800	6.29	6.80
800 to 900	1.86	1.82
900 to 1,000	2.01	1.81
1,000 to 1,100	2.10	1.99
1,100 to 1,200	2.52	2.44
1,200 to 1,300	2.51	2.67
1,300 to 1,382	3.02	2.58
Average	3.11	2.97

Average 3.04

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Kenaston Blvd WB
Asphalt to McGillinray Blvd

File 3

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	2.26	2.42
100 to 200	1.85	1.96
200 to 300	1.82	1.96
300 to 400	2.20	2.64
400 to 500	5.18	5.40
500 to 600	3.27	2.76
600 to 700	2.32	2.29
700 to 800	2.11	2.01
800 to 900	2.39	2.25
900 to 1,000	2.61	2.50
1,000 to 1,100	2.76	2.81
1,100 to 1,200	3.42	3.36
1,200 to 1,207	5.50	7.24
Average	2.70	2.72

Average 2.71

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Portage Ave WB
Rita St to Aldine St

File 11

Interval (m)	ODS 1 (RoLine3K)		ODS 2 (RoLine3K)	
	IRI (m/km)		IRI (m/km)	
0 to 100	3.81		3.30	
100 to 200	3.61		3.09	
200 to 300	3.57		3.61	
300 to 340	2.85		2.81	
Average	3.57		3.27	

Average 3.42

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Portage Ave EB
Aldine St to Rita St

File 30

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)	
	IRI (m/km)	IRI (m/km)	
0 to 100	2.99	2.94	
100 to 200	4.20	3.90	
200 to 300	3.21	3.35	
300 to 389	4.00	4.35	
Average	3.59	3.62	

Average 3.60

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Nairn Ave WB
Panet Rd to Grey St

File 18

Interval (m)	ODS 1 (RoLine3K)		ODS 2 (RoLine3K)	
	IRI (m/km)		IRI (m/km)	
0 to 100	3.35		3.45	
100 to 200	2.28		2.30	
200 to 300	2.99		2.44	
300 to 400	2.15		2.10	
400 to 500	2.14		2.09	
500 to 600	2.66		3.07	
600 to 700	2.11		2.19	
700 to 800	2.01		2.11	
800 to 900	2.79		2.18	
900 to 1,000	2.48		2.38	
1,000 to 1,100	1.88		1.81	
1,100 to 1,200	2.14		2.11	
1,200 to 1,300	2.73		2.46	
1,300 to 1,400	2.09		2.08	
1,400 to 1,500	2.00		2.14	
1,500 to 1,600	2.20		2.19	
1,600 to 1,700	1.98		2.06	
1,700 to 1,717	4.43		5.83	
Average	2.37		2.34	

Average 2.36

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Nairn Ave EB
Grey St to Panet Rd

File 25

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	2.91	2.83
100 to 200	2.51	2.55
200 to 300	3.10	2.68
300 to 400	3.54	3.56
400 to 500	3.32	2.77
500 to 600	2.80	2.47
600 to 700	2.55	2.39
700 to 800	3.14	2.65
800 to 900	2.46	2.47
900 to 1,000	2.77	2.65
1,000 to 1,100	2.47	2.64
1,100 to 1,200	2.25	2.26
1,200 to 1,300	2.65	2.40
1,300 to 1,400	2.17	1.97
1,400 to 1,500	2.99	2.56
1,500 to 1,600	3.27	3.11
1,600 to 1,700	2.22	1.94
1,700 to 1,728	4.20	4.24
Average	2.79	2.61

Average 2.70

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Regent Ave WB
Plessis Rd to Rougeau Ave

File 26

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	3.90	3.57
100 to 200	4.24	3.82
200 to 300	3.58	3.24
300 to 400	2.68	2.57
400 to 500	3.64	3.67
500 to 600	3.92	3.65
600 to 700	3.18	3.24
700 to 800	3.86	3.33
800 to 900	2.46	2.38
900 to 1,000	3.59	3.25
1,000 to 1,100	3.74	3.36
1,100 to 1,200	3.08	2.99
1,200 to 1,300	4.36	4.48
1,300 to 1,400	3.55	3.35
1,400 to 1,500	4.34	4.21
1,500 to 1,600	4.46	4.13
1,600 to 1,700	3.47	3.59
1,700 to 1,800	3.73	4.65
1,800 to 1,900	3.71	3.47
1,900 to 2,000	5.39	4.62
2,000 to 2,100	3.85	3.70
2,100 to 2,200	3.13	3.85
2,200 to 2,300	2.98	3.18
2,300 to 2,312	3.31	2.76
Average	3.69	3.57

Average 3.63

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

Regent Ave EB
Rougeau Ave to Plessis Rd

File 20

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	3.51	3.05
100 to 200	3.29	2.91
200 to 300	3.85	3.70
300 to 400	5.33	4.84
400 to 500	4.15	3.76
500 to 600	3.59	3.54
600 to 700	3.88	3.78
700 to 800	3.32	3.17
800 to 900	2.91	2.69
900 to 1,000	2.96	2.81
1,000 to 1,100	3.44	3.07
1,100 to 1,200	2.82	2.91
1,200 to 1,300	3.39	3.37
1,300 to 1,400	3.29	3.78
1,400 to 1,500	2.90	3.00
1,500 to 1,600	2.62	2.70
1,600 to 1,700	2.24	2.42
1,700 to 1,800	3.04	3.35
1,800 to 1,900	3.78	4.01
1,900 to 2,000	3.18	3.56
2,000 to 2,100	3.57	3.80
2,100 to 2,200	2.74	2.90
2,200 to 2,300	3.10	3.38
2,300 to 2,312	4.17	3.03
Average	3.35	3.32

Average 3.34

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

William R Clement Parkway NB
Grant Ave to Roblin Blvd

File 6

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	2.41	2.79
100 to 200	2.17	1.82
200 to 300	2.41	2.19
300 to 400	1.84	1.63
400 to 500	2.78	2.70
500 to 600	1.77	1.80
600 to 700	2.32	2.63
700 to 800	1.81	2.05
800 to 900	2.59	2.68
900 to 938	5.86	5.80
Average	2.38	2.40

Average 2.39



August 30, 2015

MAPLE LEAF CONSTRUCTION LTD.

Profile Testing

Bid Opportunity:	N/A
Street:	Bishop Grandin
From:	Fort Garry Bridge
To:	Pembina Overpass
Direction:	Westbound
Profile Run:	2015 Profile Testing
Date and Time Tested:	August 20, 2015 - 11:26
Equipment Type:	High Speed
Lane Width:	4.0 Metres
Start Station:	0+000.0
End Station:	0+470.9

IRI Summary

Run 1 - Driving Lane - Lane 1

Station Metres			IRI Measurements M/km			
From	To	Distance Metres	Track 1 Left - IRI	Track 2 Right - IRI	Average	IRI
0	100	100	4.19	4.19		4.19
100	200	100	4.07	4.16		4.11
200	300	100	3.81	3.92		3.86
300	400	100	1.96	2.09		2.02
400	470.9	71	2.71	2.52		2.62
Average			3.39	3.43		3.41

Bump / Dip Summary

Track 1

Segment	Defect	From Metres (M)	Peak Metres (M)	To Millimetres (mm)	Height Millimetres (mm)
1	Bump	0	2	6	43.68

Track 2

Segment	Defect	From Metres (M)	Peak Metres (M)	To Millimetres (mm)	Height Millimetres (mm)
1	Bump	0	2	5	37.26



August 30, 2015

MAPLE LEAF CONSTRUCTION LTD.

Profile Testing

Bid Opportunity:	N/A
Street:	Bishop Grandin (Off Ramp)
From:	Fort Garry Bridge
To:	Pembina
Direction:	Westbound
Profile Run:	2015 Profile Testing
Date and Time Tested:	August 20, 2015 - 15:52
Equipment Type:	High Speed
Lane Width:	4.0 Metres
Start Station:	0+000.0
End Station:	0+195.1

IRI Summary

Run 1 - Lane 2

Station Metres			IRI Measurements M/km			
From	To	Distance Metres	Track 1 Left - IRI	Track 2 Right - IRI	Average	IRI
0	100	100	2.09	2.61		2.35
100	195.1	95	1.95	2.58		2.27
Average			2.02	2.59		2.31

Bump / Dip Summary

Track 1

Segment	Defect	From Metres (M)	Peak Metres (M)	To Millimetres (mm)	Height Millimetres (mm)
1	Bump	0	2	6	43.68

Track 2

Segment	Defect	From Metres (M)	Peak Metres (M)	To Millimetres (mm)	Height Millimetres (mm)
1	Bump	0	2	5	37.26



August 30, 2015

MAPLE LEAF CONSTRUCTION LTD.

Profile Testing

Bid Opportunity:	N/A
Street:	Bishop Grandin (Off Ramp)
From:	Fort Garry Bridge
To:	Pembina
Direction:	Westbound
Profile Run:	2015 Profile Testing
Date and Time Tested:	August 20, 2015 - 15:44
Equipment Type:	High Speed
Lane Width:	4.0 Metres
Start Station:	0+000.0
End Station:	0+195.9

IRI Summary

Run 1 - Lane 1

Station Metres			IRI Measurements M/km			
From	To	Distance Metres	Track 1 Left - IRI	Track 2 Right - IRI	Average	IRI
0	100	100	2.327	2.395		2.361
100	195.9	96	2.623	2.821		2.722
Average			2.48	2.60		2.54

Bump / Dip Summary

Track 1

Segment	Defect	From Metres (M)	Peak Metres (M)	To Millimetres (mm)	Height Millimetres (mm)
1	Bump	0	2	6	43.68

Track 2

Segment	Defect	From Metres (M)	Peak Metres (M)	To Millimetres (mm)	Height Millimetres (mm)
1	Bump	0	2	5	37.26



August 30, 2015

MAPLE LEAF CONSTRUCTION LTD.

Profile Testing

Bid Opportunity:	N/A
Street:	Bishop Grandin
From:	Fort Garry Bridge
To:	Pembina Overpass
Direction:	Westbound
Profile Run:	2015 Profile Testing
Date and Time Tested:	August 20, 2015 - 11:53
Equipment Type:	High Speed
Lane Width:	4.0 Metres
Start Station:	0+000.0
End Station:	0+472.8

IRI Summary

Run 1 - Passing Lane - Lane 2

Station Metres			IRI Measurements M/km		
From	To	Distance Metres	Track 1 Left - IRI	Track 2 Right - IRI	Average IRI
0	100	100	4.55	4.42	4.48
100	200	100	4.17	4.40	4.28
200	300	100	3.76	4.11	3.94
300	400	100	1.96	2.05	2.00
400	472.8	73	3.21	3.10	3.15
Average			3.55	3.64	3.60

Bump / Dip Summary

Track 1

Segment	Defect	From Metres (M)	Peak Metres (M)	To Millimetres (mm)	Height Millimetres (mm)
1	Bump	0	2	6	43.68

Track 2

Segment	Defect	From Metres (M)	Peak Metres (M)	To Millimetres (mm)	Height Millimetres (mm)
1	Bump	0	2	5	37.26

ProVAL Report - 2.73.0033

Analysis - Ride Statistics at Intervals

Input	Value	Unit
Use Point Reset	Yes	
Segment Length	100 m	
Apply 250mm Filter	Yes	

William R Clement Parkway
Roblin Blvd to Grant Ave

File 8

Interval (m)	ODS 1 (RoLine3K)	ODS 2 (RoLine3K)
	IRI (m/km)	IRI (m/km)
0 to 100	3.42	3.56
100 to 200	2.39	2.60
200 to 300	2.73	3.26
300 to 400	1.79	2.29
400 to 500	2.32	2.53
500 to 600	2.66	2.84
600 to 700	2.13	2.03
700 to 800	2.19	2.16
800 to 900	1.99	2.12
900 to 937	3.24	3.46
Average	2.45	2.64

Average 2.55