

ENGINEERING LTD









Rating Criteria (Paved Roads)



Deformation



Edge Break



Flushing/Bleeding







Field Assessment Sheets(Paved Roads)

	Γ	Date:		Weather	Road Name:		Section:				
	A	ssessm	ent completed by:		Chainage:		Width:		Length	1:	
E		9	Sealed/Paved Roa	dway Cond	dition Assessment						
De	formation	Rut	tting	Bin	der Age	Ed	ge Break		Edge Dro	эр	
	0 As new		0 As new		0 As new		0 No edge break		0 No 6	edge drop	ρ
	1 Mild isolated deformation		1 Minor rutting less than 5mm	n 🗆	1 Very good		1 0-20mm		10-20	Նաա	
	2 Moderate Isolated deformation		2 Rutting 5-10mm (isolated)		2 Satisfactory		2 20-20mm		2 20-4	10mm	
	3 Mildly deformed extensive coverage		3 Rutting 5-10mm (extensive)		3 Fair		3 40-60mm		3 40-6	50mm	
	+4 Moderately rough treatable by patching		4 Some Rutting 15-20mm		4 Poor		4 60-80mm		4 60	-80mm	
	5 Moderately Rough extensive coverage treatable with resurfacing		5 Extensive Rutting 15-20mm		5 Very poor		+5 80-100mm		5 80-1	1000mm	
	6 Deformed approaching need for		6 Rutting 20mm-25mm		6 Dead – Minor surface ravelling/stripping		6 100-120mm		6 >10	0mm	
	reconstruction							Bru	shing L	% R	%
	7 Deformed needing reconstruction		+7 Rutting 25-30mm		+7 Dead – Moderate surface ravelling /stripping		7 120-140mm		0 No tress/s	shrubben	v
	8 Deformed bad level of service		8 Rutting 30-35mm		8 Dead – Isolated crumbling surface		8 140-160mm		1 Tress/Shn	ubberv	,
					Ū.				beyond 5m	,	
	9 Deformed very bad level of service		9 Rutting 35-40mm		9 Dead – moderately crumbling surface		9 160-180mm		2 Tress /Shr from 2m to	ubbery 5m	
	10 Deformed no service potential		10 Rutting greater than 40mm	· 🛛	10 Dead – Extensive crumbling surface		10 > 180mm		3 Tress/Shn to 2m from	ubbery up shoulder	p r

Flu	shing / Bleeding	Str	ipping	Cra	cking	Pa	tching
	0 Matte finish		0 As new		0 As new		0 As new
	1 Smooth finish		1 Nil		1 Mild isolated cracking		1 Negligible patching <1%
	2 Bleeding isolated defects		2 Isolated spalling (breaking off)		2 Moderate isolated cracking		2 Isolated infrequent patching (0-5%)
	3 Black moderate defects		3 Some spalling (breaking off)		3 Mild cracking extensive coverage		3 Slightly spaced infrequent patching (5-10%)
	4 Black extensive coverage		4 Isolated coverage stripping		+ 4 Moderate cracking extensive coverage		4 Moderately spaced patching (10-15%)
	5 Black extensive defects&/or poor skid resistance		+5 Moderate coverage stripping		5 Moderate cracking total coverage		5 Large areas isolated (15-20%)
	+6 Severe defects poor service		6 Extensive coverage stripping		6 Major cracking total surface		+ 6 Large areas extensive coverage (20-25%)
	7 Extensive defects bad level of service		7 Wide coverage stripping base exposed		7 Severe cracking total coverage		7 Wide coverage {25-30%}
	8 Severe defects very bad service		8 Extensive stripping, bad service		8 Severe, total coverage, poor service		8 Extensive patching moderate coverage (30-40%)
	9 Extensive defects no service potential		9 Severe defects, very bad service		9 Severe, total coverage, very poor service		9 Extensive patching wide coverage (40-50%)
			10 Extensive stripping no service potential		10 Extreme, total coverage, no service potential		10 Extensive patching coverage (>50%)





Field Assessment Sheets(Paved Roads)

Sealed/Paved Roadway Condition Assessme

	Ru	tting	Bin	ider Age
		0 As new		0 As new
		1 Minor rutting less than 5mm		1 Very good
		2 Rutting 5-10mm (isolated)		2 Satisfactory
e		3 Rutting 5-10mm (extensive)		3 Fair
tching		4Some Rutting 15-20mm		4 Poor
ge		5 Extensive Rutting 15-20mm		5 Very poor
		6 Rutting 20mm-25mm		6 Dead — Minorsurface







Rating Criteria (Gravel Roads)

Brushing



Presence of Water/Ponding

Surface Condition



Ditches Gravel Condition







Field Assessment Sheets(Gravel Roads)

	Date:		Weather:		Road Name:	Section:	Section:			
	Assessment o	ompleted	by:	Chainage:	Width:	Length:				
ENGINEERINGLTD	Gravel/Unsea	aled Road	dway Condition Asses	sment						
Surface Condition		Gravel Surf	ace Shape		Gravel Condition					
 1 Freshly Graded (Appears to follow and ditch lines) 	the standard shoulder	0 Exceller	nt Cross fall 3-4% (Defined cross-fall)		0 New Gravel					
2 Moderately worn (Some rounding	on shoulder)	1 Good C	ross fall 2-3%		1 Gravel good con	dition				
3 Significantly Worn (Cross-fall chan rounded and ditches becoming rest	ged, shoulders are 'icted)	2 Accept	able Cross fall 1-2%		2 Gravel moderate	ely worn				
4 Adversely Worn (Cross section char significantly)	nged from standards	3 Below S	Standard Cross fall 0-1%		+3 Gravel extensi	ively worn				
5 Dirt Road (No gravel and no signific established)	ant drainage				4 Subgrade breakt	hrough (needs Gravel resu	rfacing)			
	·		Cross Section							
			Cut Section	-						
Fill Section	Ditch Depth		Ditch Width	Ditch Slope)	Windrows (Lips)				
0 No Apparent deviation from Standards	0 Ditch depth more	than 0.8 m	0 Ditch width 3m and over	0 Back sl	ope flatter than 3:1	0 No Windrows				
1 Side Slopes appears to be between 3:1 and 2:1	1 Ditch depth betwee 0.5m	een 0.8 m to	1 Ditch width between 3m to 2m	+1 Back : 2:1	slope between 3:1 and	1 Windrows less than 100 m				
+2 Side Slopes appears to be between 2:1 and 1:1	+2 Ditch depth betw to 0.3m	ween 0.5 m	2 Ditch width between 2m and 1m	2 Back sl	ope between 2: and 1:1	2 Windrows between 100 m and 500 m				
3 Side Slopes steeper than 1:1	3 Ditch depth less t	than 0.3m +3 Ditch width between 1m and 0m			ope steeper than 1:1	3 Windrows between 500 m and 1000 m				
	4 No Ditch		4 2V Ditch		4 Windrows over 1000 m					
Rideability		Drainage	Performance		Brushing					
0 Easily drive upper limit of speed ca	tegory	0 Excel	ent drainage- Ditches well defined		0 No trees or shrubb	ery				
1 Can just drive at upper limit of spec	ed category	1 Isolat m pond	ed Ponding/Evidence by vegetation (ling/drainage change)	Less than 50	1 Presence of shrubbery/trees beyond 5 m from shoulder					
2 Moderate ride-ability (between up	per and lower limit)	2 Mode	erate Ponding (between 50 m to 100	m)	2 Presence of shrubbery/trees between 2 m to 5 m wide from shoulder.					
3 Easily drive at lower limit of speed	category	🗌 +3 Seve	ere Ponding (between 100 m to 250 i	m)	3 Presence of shrubbery/trees up to 2m wide from shoulder.					
4 Can just drive at lower limit of spee	ed category	4 Exten	sive Ponding (Over 250 m)							
5 Not able to drive at lower limit of s	peed category	5 Nodi	tches							
+ 6 Below standards		Wetlands			Left:					
7 Ride-ability well below standard		0 No W	fetlands		Right:					
8 Poor ride-ability		1 Wetla	ands < 100m							
9 Very poor ride-ability		2 Wetla	ands > 100<500m							
10 Extremely poor ride-ability		3 Wet	ands > 500m							





Field Assessment Sheets(Gravel Roads)

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	Surface Condition
	1 Freshly Graded (Appears to follow the standard shoulder and ditch lines)
	2 Moderately worn (Some rounding on shoulder)
	3 Significantly Worn (Cross-fall changed, shoulders are rounded and ditches becoming restricted)
	4 Adversiely Worn (Crossis ection changed from standards significantly)
	5 Dirt Road (Nogravel and nosignificant drainage established)





Field Assessment Sheets(Sketch Sheet and Intersections)







Field Assessment Sheets (Motorgrader/Patrol Operators)

						GRAVEL R	OADS ROA	DWAY CON	DITION ASS	SESSMEN	IT				
	MOTOR GRADER/PATROL OPERATOR INPUTS														
	Grader Bea	+ MG_1		—	Additiona	l Time Requ	uired for M	aintenance	5	•	Reasons	for Addit	ional Tin	ne	
				<u> </u>	<u> </u>	2					92				
Road Name	From	То	Length (miles)	No Additiona Time	0-10% Additional Time	10-25% Additional Time	25-50% Additional Time	50-100% Additional Time	More 100% Additional Time	Frost Boils	Washboardir	Rutting	Weather	Other	Remarks
Rge Rd 221	Twp Rd 450	Hwy 611	2.0												
Rge Rd 221	Hwy 611	S of Hwy 611	1.1												
Rge Rd 222	Twp Rd 450	Hwy 611	2.0												
Rge Rd 222	Hwy 611	Twp Rd 442	2.0												
Rge Rd 222	Twp Rd 442	S of Twp Rd 441	1.3												
Rge Rd 223	N. of Hwy 611	Hwy 611	0.5												
Rge Rd 223	Hwy 611	S of Hwy 611	1.2												
Rge Rd 223	N of Twp Rd 441.5	Twp Rd 440	1.7												
Rge Rd 224	Two Rd 462	Two Rd 460	2.0												
Rge Rd 224	Two Rd 460	Two Rd 454	2.0												
Rge Rd 224	Two Rd 454	Softwo Rd 454	0.5												
Rge Rd 224	N of Two Rd 450	Two Rd 450	0.5												
Rge Rd 224	Hwy 611	Twp Rd 442	2.0												
Rge Rd 224	Two Rd 442	S of Twp Rd 441	1.2												
Rge Rd 224A	Two Rd 454	Twp Rd 452	2.0												
Rge Rd 225	N of Twp Rd 452	Twp Rd 452	0.3												
Rge Rd 225	Two Rd 452	Two Rd 450	2.0												
Rge Rd 225	Two Rd 450	Hwy 611	2.0												
Ree Rd 230	Two Rd 460	S of Two Rd 460	12												
Rge Rd 230A	S of Twp Rd 460	Two Rd 454	1.0												
Rge Rd 230	Two Rd 454	Two Rd 452	2.0												
Rge Rd 230	Two Rd 452	Twp Rd 450	2.2		<u> </u>										
Ree Rd 230	Two Rd 450	Hwy 611	2.0												
Ree Rd 230	Hwy 611	Two Bd 442	2.0		1										
Rge Rd 231	Two Rd 460	Twp Rd 454	2.0												
Ree Rd 231	Two Rd 454	Two Rd 452	2.0		<u> </u>										
Rae Rd 231	Two Rd 452	Two Rd 450	2.0												
Ree Rd 231	Two Rd 450	S of Two Rd 450	0.9												
Rae Rd 231	Hway 611	Two Rd 442	20												
Rae Rd 231	Two Rd 442	Two Rd 441	1.0		-										
Page Rd 222	Two Pd 460	Two Pd 454	2.0		+			<u> </u>							
Date Del 222	Tup Pd 454	Tum Dd 452	2.0		+			<u> </u>							
nge nu 232	Two Dd 452	Tum Dd 450	2.0	 	+			<u> </u>							
nge Ka 232	1 WP K0 452	1 wp Ka 450	2.0				1	1	1						





Field Assessment Sheets (Motorgrader/Patrol Operators)

35		MOTO	R GRADER	PATROLO	PERATOR IN	PUTS	10			5
Ş	Additional	l Time Requ	uired for M	aintenance		F	leasons f	or Additi	onal Tin	1e
p	1	2	3	4	5	a e		0. 03		
Na Additianal Time	0-10% Additional Time	10-25% Additional Time	25-50% Additional Time	50-100% Additional Time	Mare 100% Additional Time	Frast Bails	Washboarding	Rutting	Weather	Other





Relative Importance of Assessment Criteria(Paved Roads)

Sealed/Paved Road	Weightings Factor (%)
Deformation	14
Rutting	10
Binder Age	14
Edge Break	10
Edge Drop	6
Flushing	10
Stripping	14
Cracking	12
Patching	10
TOTAL	100





Relative Importance of Assessment Criteria(Gravel Roads)

Unsealed/Gravel Road	Weightings Factor (%)
Surface Condition	10
Gravel Surface Shape	10
Gravel Condition	10
Fill Section	10
Ditch Depth	5
Ditch Width	3
Ditch Slope	2
Windrows (Lips)	5
Rideability	10
Drainage Performance - Ponding	7
Drainage Performance - Wetlands	3
Brushing	5
Motor Grader/ Patrol Operator Input	20
TOTAL	100





Influencing Factors

- Traffic Growth
- Capacity
- Safety
- Heavy Vehicle Percentage
- Future Mobility Needs as Identified in MDP/Planning Division
- Economic Development/Recreational Needs
- Connectivity to Provincial Highway System
- Future Roadway Classification
- Significance factor
- Any other factors





Influencing Factors

- Traffic Growth 1.5
- Capacity 1.6
- Safety 1.0 for now but increase when sufficient data available
- Heavy Vehicle Percentage **1.6**
- Future Mobility Needs as Identified in MDP/Planning Division 1.4
- Economic Development/Recreational Needs 1.6
- Connectivity to Provincial Highway System 1.4
- Future Roadway Classification 1.4
- Significance factor 0.5
- Any other factors as required





Classification

		Road Function Sub- Classification	Traffic Counts (Vehicles/Day)	Standard Width (m)	Surface Type
üAL		I	500 vpd & over	9.0 to 11.0 m	Hot mix Asphalt
ARTER CTOR		I	250-1000 vpd	8.0 to 9.0 m	Hot mix Asphalt or Cold mix
	DCAL	III	100-500 vpd	7.3 to 8.0 m	Gravel Dust Control
	ונס	IV	0-300 vpd	7.3 m	Gravel











Database

- In Access(Microsoft) Format for ROHI purposes
- Based on weighting criteria and influencing factors the correct roads seem to be coming to the top.
- Once migration to county database is complete more stability and functionality can be added





Next Steps

- Migrate to County GIS Data Base
- Integrate intersection data
- Develop data entry/revision functions to facilitate database up-keep
- County's Road Assets to be summarized





What gets measured gets managed.

— Peter Drucker —