



Weston Road Paving Project Document for Discussion

Presented to the Board of Finance 2/8/24

Summary

- Road Surface Rating (RSR) is a numerical rating index (0-100) which is used to describe the general condition of a roadway segment. This analysis was done for the Town of Weston by the Beta Group (October 2023). This rating system serves to prioritize road paving initiatives for municipalities.
- Analysis of approximately 82 miles of town roads revealed that the weighted average (by road mileage) RSR for Weston is 66 with 37% of the roads requiring either major or minor rehabilitation at a cost estimate of \$12.45m to address all current road conditions.
- A multi-year approach is required to address the outstanding road issues. Road conditions were organized into RSR bands to develop a prioritization of the paving work to be done and a multi-year plan is proposed (draft for discussion) to address the outstanding road issues.
- By prioritizing the roads requiring major and minor rehabilitation in the next four years, we can achieve an RSR rating or >80 which puts the town in a position where a disciplined road maintenance plan going forward will require modest funds to keep our roads in good to excellent condition.

Rating the Conditions of the Weston Roads

- **Road Surface Rating (RSR)** is a numerical rating index (0-100) which is used to describe the general condition of a roadway segment. This analysis was done for the Town of Weston by the Beta Group. Rating system serves to prioritize road paving initiatives for municipalities.
 - **RSR 0-50:** Road surface in poor to fair condition (potholes, loose pavement, multiple repairs, alligating of pavement, cracks throughout) requiring major rehabilitation.
 - **RSR 50-65:** Road surface in fair condition (pothole repairs, cracks, alligating of pavement) requiring minor rehabilitation.
 - **RSR 65-80:** Road surface in good condition where preventative maintenance is recommended.
 - **RSR 80-90:** Road surface in good to excellent condition where routine maintenance is recommended
 - **RSR 90-100:** Road surface is in excellent condition where no maintenance is recommended.
- Beta Group analyzed all roads in the Town of Weston in October 2023. The purpose was to create a roadmap for prioritizing road work. By performing timely maintenance on the roadway, it has been shown that it will avoid costly repairs down the road.

The State of Weston Roads

- The weighted average (by road mileage) RSR for Weston is 66 with 37% of the roads requiring either major or minor rehabilitation.
- The estimated cost of addressing all roads is estimated at \$12.45 million; all work must be carefully prioritized and planned over several years.
- Disciplined and timely ongoing maintenance is essential given the cost/mile differential between maintaining good roads and rehabilitating roads that have been neglected.

	Low RSR Band	High RSR Band	Length (Miles)	RSR (weighed)	%	Cost (\$m)	Cost/mile (\$,000)
Major Rehabilitation	0	50	16.6	36	20%	8.06	487.0
Minor Rehabilitation	50	65	14.2	58	17%	2.21	156.2
Preventative Maintenance	65	80	22.9	69	28%	2.09	91.3
Routine Maintenance	80	94	12.9	89	16%	0.09	6.7
No Maintenance Required	94	100	15.8	97	19%	0.00	0.0
	Accepted Asphalt Roads		82.2		Total	12.45	
	Private Roads		19.7				
	State Roads		11.4				
	Gravel Roads		1.5				
	Total Roads		114.8				

All road condition data and cost estimates from Beta Group, October 2023

Addressing the Roads / Multi Year Plan / No RSR Migration

- Paving Plan prioritizes RSR<65 (Major and Minor Rehabilitation) in the first four years.
- Some prioritization of selected roads where RSR>65, however most of the work on the fair and good roads to be done in FY 29 and beyond.
- Cost estimate assumes that there is **no RSR migration for the good roads** while the high priority roads are addressed (i.e. the 15.8 miles of roads requiring no maintenance today).

Cost Estimates for Paving by Fiscal Year

	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	Total
Major Rehabilitation	\$3,577,237	\$2,671,462	\$1,461,020	\$348,066					\$8,057,785
Minor Rehabilitation	\$501,145	\$331,525	\$284,373	\$1,095,867					\$2,212,911
Preventative Maintenance	\$553,129		\$87,973	\$62,869	\$1,390,998				\$2,094,968
Routine Maintenance						\$87,683			\$87,683
No Maintenance									\$0
Total	\$4,631,510	\$3,002,987	\$1,833,367	\$1,506,802	\$1,390,998	\$87,683			\$12,453,347

RSR (weighed)	25.2	44.6	49.7	50.3	69.8	88.9	100.0	100.0
Avg. RSR (unweighed)	35.3	41.8	46.3	54.0	68.7	93.8	100.0	100.0

Coverage Amount in Miles by Fiscal Year

	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	Total
Major Rehabilitation	7.5	5.4	2.8	0.7		-			16.3
Minor Rehabilitation	1.5	2.1	1.7	6.0					11.2
Preventative Maintenance	3.6		1.1	0.7	17.6				22.9
Routine Maintenance						12.9			12.9
No Maintenance									15.8
Total	12.5	7.4	5.5	7.4	17.6	12.9			79.0

Does not include 3.2 miles of road covered by state grant

All road condition data from Beta Group, October 2023

Addressing the Roads / Multi Year Plan / RSR Migration

- Paving Plan prioritizes RSR<65 (Major and Minor Rehabilitation) in the first four years.
- Some prioritization of selected roads where RSR>50, however most of the work on the fair and good roads to be done in FY 29 and beyond.
- Cost estimate assumes that the good road conditions deteriorate at a conservative rate of 1.5 RSR per year; this will add approximately \$1.8m in today's dollars to the overall project as many of the good roads will require additional maintenance in FY 29 and FY 30.

Cost Estimates for Paving by Fiscal Year

	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	Total
Major Rehabilitation	\$ 3,577,237	\$2,671,462	\$ 1,461,020	\$ 348,066					\$ 8,057,785
Minor Rehabilitation	\$ 501,145	\$ 331,525	\$ 284,373	\$1,095,867	\$ 1,700,000				\$ 3,912,911
Preventative Maintenance	\$ 553,129		\$ 87,973	\$ 62,869		\$ 1,136,000			\$ 1,839,970
Routine Maintenance						\$ 219,000	\$ 125,300	\$ 74,100	\$ 418,400
No Maintenance									\$ -
Total	\$ 4,631,510	\$ 3,002,987	\$ 1,833,367	\$ 1,506,802	\$ 1,700,000	\$ 1,355,000	\$ 125,300	\$ 74,100	\$ 14,229,066

Coverage Amount in Miles by Fiscal Year

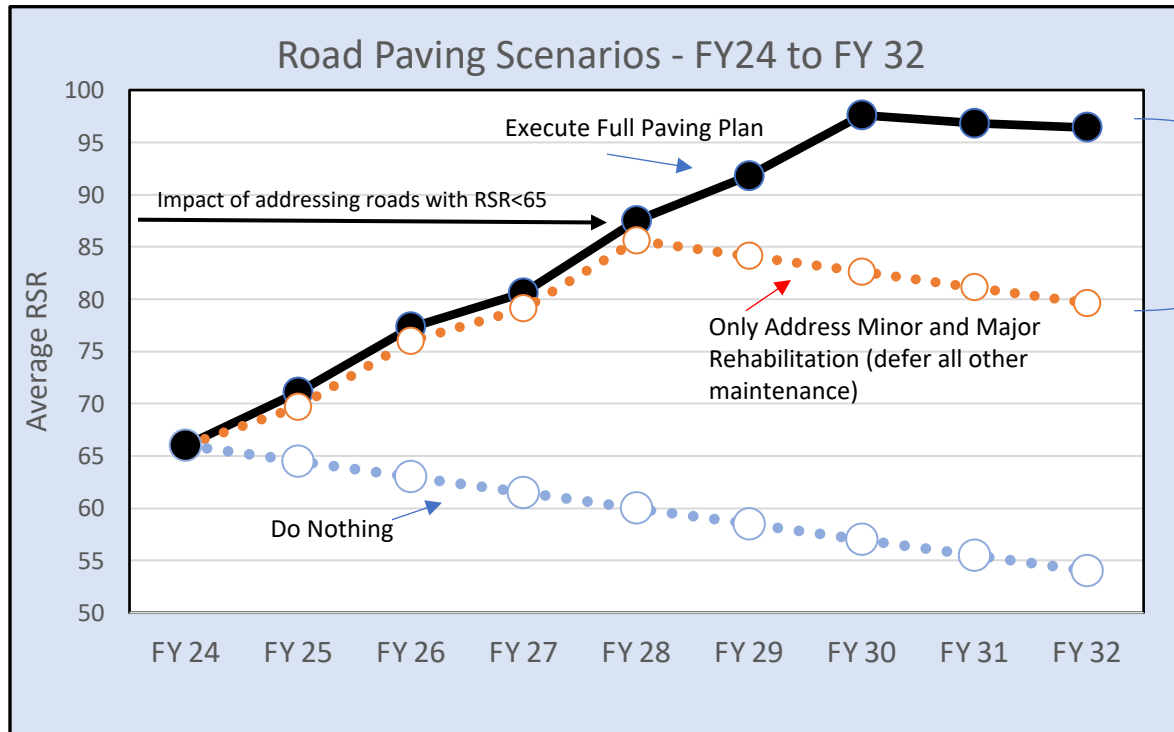
	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	Total
Major Rehabilitation	7.5	5.4	2.8	0.7		-			16.3
Minor Rehabilitation	1.5	2.1	1.7	6.0	10.0				21.2
Preventative Maintenance	3.6		1.1	0.7		14.2			19.5
Routine Maintenance						21.9	12.5	7.4	21.9
No Maintenance									
Total	12.5	7.4	5.5	7.4	10.0	36.1	12.5	7.4	78.9

Does not include 3.2 miles of road covered by state grant

All road condition data from Beta Group, October 2023

Impact of Paving Plan on RSR

- Addressing the roads requiring major (RSR < 50) and minor (50 < RSR < 65) rehabilitation will have a significant impact on the overall road rating for the town.
- Avoiding large costly repairs will require an annual and properly funded maintenance program that becomes a permanent fixture in the capital budget.



Keeping overall roads in this RSR range through a ongoing maintenance program will be critical in managing road maintenance costs once the bad roads are rehabilitated

Comparison with Beta Group February 2020 Report

- Overall RSR has not changed materially from the February 2020 report by Beat Group; significant reduction (7.5m) in roads requiring Minor Rehabilitation.
- Local Roadway conditions remained stable with RSR reductions observed in Collector and Cul de Sac / Dead End roads.

Beta Group – October 2023

Road Conditions	Low RSR Band	High RSR Band	Length (Miles)	%	Cost (\$m)	Cost/mile (\$,000)
Major Rehabilitation	0	50	16.6	20%	8.06	487.0
Minor Rehabilitation	50	65	14.2	17%	2.21	156.2
Preventative Maintenance	65	80	22.9	28%	2.09	91.3
Routine Maintenance	80	94	12.9	16%	0.09	6.7
No Maintenance Required	94	100	15.8	19%	0.00	0.0
Accepted Asphalt Roads			82.2	Total	12.45	
Private Roads			19.7			
State Roads			11.4			
Gravel Roads			1.5			
Total Roads			114.8			

Road Type	Miles	RSR
Collector Roadways	14.7	66.8
Local Roadway	49.4	69.0
Cul de Sac / Dead End	18.0	57.5
Weighted RSR		66.1

Beta Group – February 2020

Road Conditions	Low RSR Band	High RSR Band	Length (Miles)	%	Cost (\$m)	Cost/mile (\$,000)
Major Rehabilitation	0	50	15.3	19%	7.97	522.2
Minor Rehabilitation	50	65	22.7	28%	4.16	183.1
Preventative Maintenance	65	80	26.6	33%	2.17	81.5
Routine Maintenance	80	94	7.2	9%	0.05	6.6
No Maintenance Required	94	100	9.2	11%	0.00	0.0
Accepted Asphalt Roads			81.0	Total	14.35	
Private Roads			19.7			
State Roads			11.4			
Gravel Roads			1.5			
Total Roads			113.6			

Road Type	Miles	RSR
Collector Roadways	10.6	73.0
Local Roadway	49.8	68.6
Cul de Sac / Dead End	20.7	60.8
Weighted RSR		67.2

Beta Group February 2020 Scenario Context

- **Beta Group Scenario A:** Annual investment of \$930K / year for 10 years (\$9.3m) to achieve an aggregate RSR of 70.5
- **Beta Group Scenario B:** Three-year investment of \$2.8m (RSR increase to 67.5) followed by a year 4 investment of \$2.8m to achieve an aggregate RSR of 70.
- **Beta Group Scenario C:** Three-year investment of \$1.5m (RSR decrease to 65.5) followed by a year 4 investment of \$3.5m to achieve an aggregate RSR of 70.
- Chart Below shows that a Year 1 investment of \$4.0m for Major and Minor Rehabilitation will achieve an aggregate RSR of 70; consistent with the Beta Group Scenario analysis performed in February of 2020.

