

MUNICIPALITY OF STRATHROY-CARADOC

Road Needs Study

PRESENTATION TO
COUNCIL ON :
Nov 18, 2024

Scope of Assessment

1. Prepared the maps and inventory of the assets
2. Reviewed the hard surface road sections and assigned condition scores as per MTO Manual
3. Analysed and develop a priority list for the needs
4. Calculate costs for proposed work
5. Prepare the report to summarize recommendations

Road Inventory

Road Surface Type	Length (km)
Gravel	80.96
HCB – 1 lift	13.92
HCB – 2 lifts	93.77
LCB – 1 lift	0.84
LCB – 2 lifts	145.87
Total	335.36

Roadside Environment	Length (km)
Urban	57.3
Semi-Urban	43.2
Rural	234.9
Total	335.4

Legend:

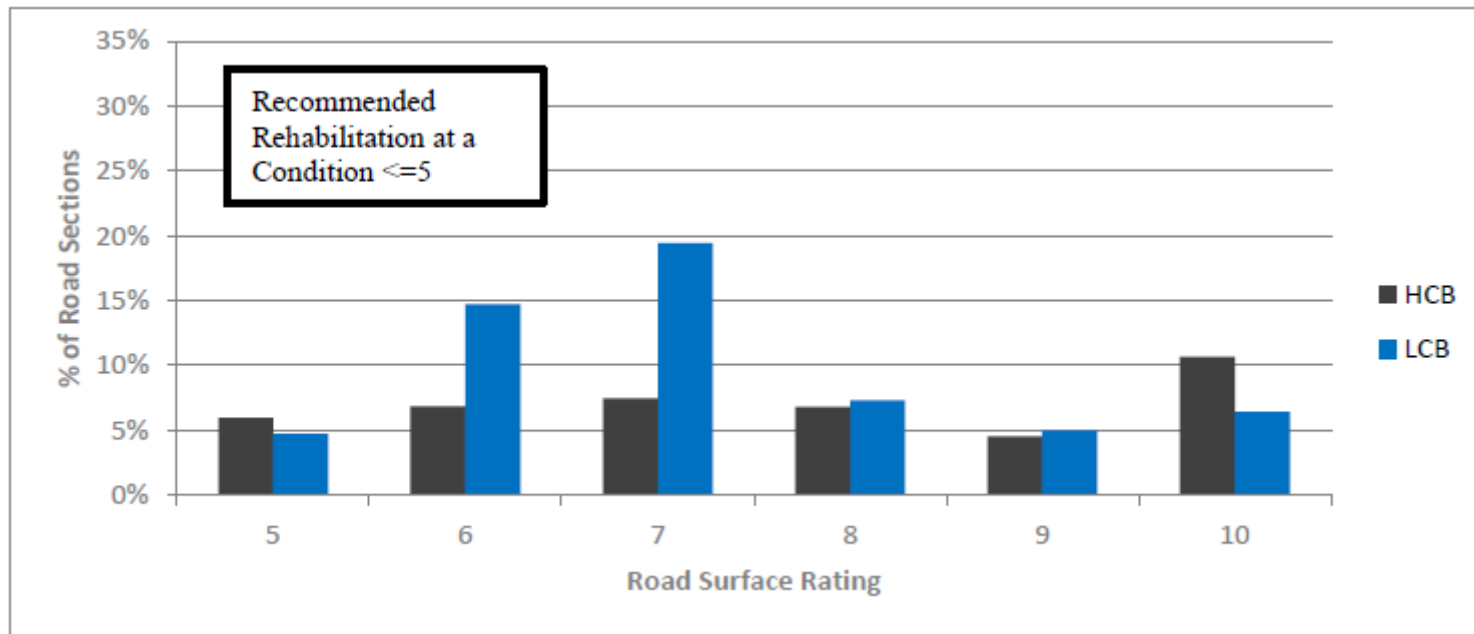
HCB is High Class Bituminum, Asphalt

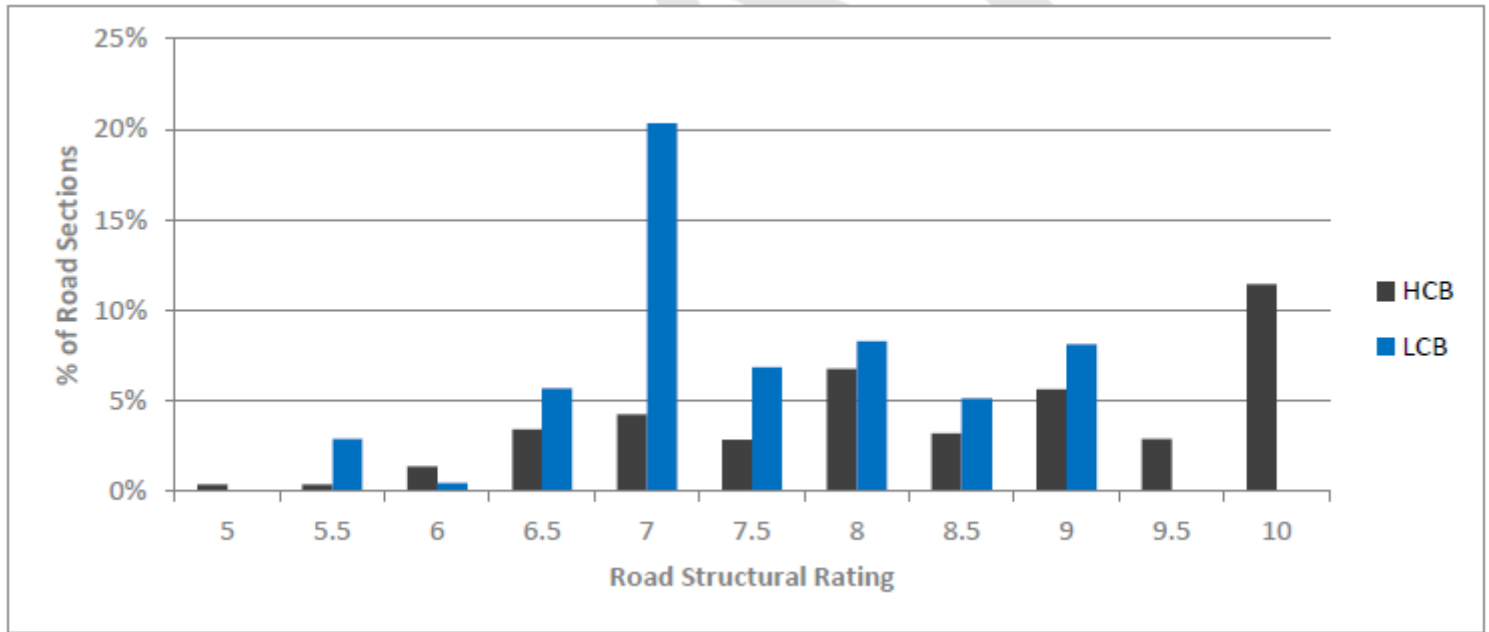
LCB is Low Class Bituminum, Tar and Chip

Surface	Assumed Life	Recommended Rehab (km/year)
Gravel	100	0.81
LCB	6	24.45
HCB – 1 lift	15	0.93
HCB – 2 or 3 lifts	30	3.13

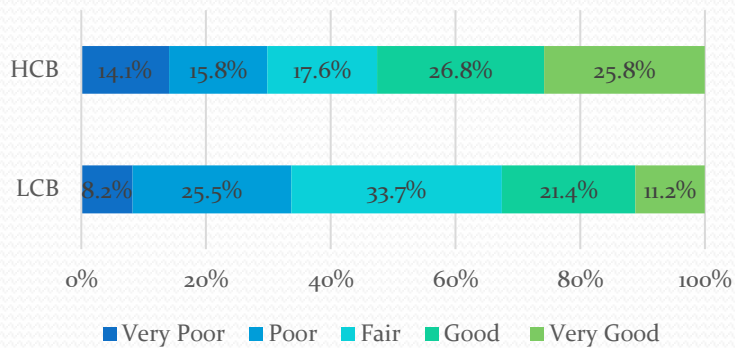
Condition Ratings of Road Sections

	Average Surface Rating	Average Structural Rating
LCB	7.2	7.5
HCB	7.7	8.5
Average (all surface types)	7.4	7.9

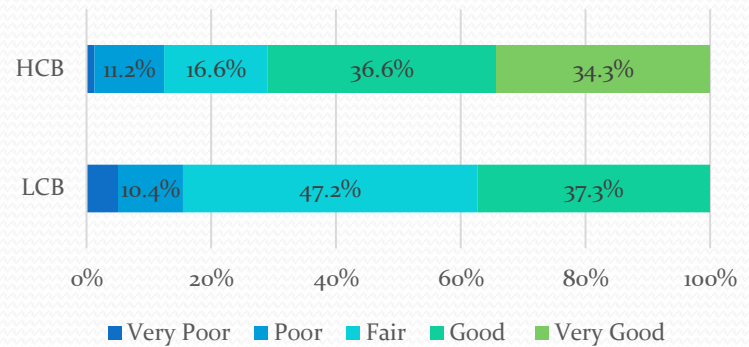




Road Surface Asset Condition



Road Structure Asset Condition



Observations for HCB Roads

- Roads with a surface condition rating of 5 or lower are due for rehabilitation now. Roads scoring 6, due in about 5 to 9 years.
- The average condition ratings are lower than in 2015 (HCB average rating decreased from 8.4 to 8.1).
- Drainage system in parts of Strathroy & Mount Brydges appear sub-standard, ie. storm sewer outlets or storage facilities are needed, flooding & boulevard ponding was observed
- Life expectancy can be extended with more maintenance repairs, like crack sealing, spray patching, shoulder/ditching improvements or localized patching.

Observations for LCB Roads

- All road sections will need to be resurfaced within 10 years.
- The average condition ratings are lower now than in 2015(LCB average rating decreased from 7.9 to 7.3).
- Suggests road reconstruction work has not been keeping up.
- Typically resurface LCB roads every 5 to 7 years, single lift. If road is not resurfaced soon enough, road surface must be reconstructed and two lifts of resurfacing material applied.
- LCB road surfaces appear to perform well in some areas and not as well in other areas (traffic volume/weight, base, drainage, narrow shoulders affect performance)

Analysis of data for LCB Roads

- Over past three years, resurfaced, on average, less than 14km for LCB roads vs. recommended 24.4 km.
- Spent on average \$700,000 vs. suggest budget of about \$1,400,000 to resurface LCB with average 8 year intervals.
 - Once S-C is caught up with their LCB program, the annual cost could be reduced to \$900,000
- Some LCB roads are experiencing relatively high traffic volumes year-round and warrant upgrading to HCB.

Probable Cost to Maintain Gravel, LCB and HCB roads over service life

Component	Gravel	LCB	HCB
Annual Maintenance	\$6,184	\$954	\$1,344
Annualized Capital Cost	\$0	\$8,576	\$10,931
Total	\$6,184/km	\$9,530/km	\$12,276/km

- Where appropriate we used input costs from Strathroy-Caradoc to do these cost comparisons.

LCB and HCB Road Maintenance

- An allowance of \$39,100 per year is recommended to address specific maintenance needs on LCB and HCB
- Additional costs are above doing shoulder grading, line painting, cold mix patching on LCB and HCB roads are to be address by staff doing roadside maintenance.

Road Section to Consider Converting from LCB to HCB

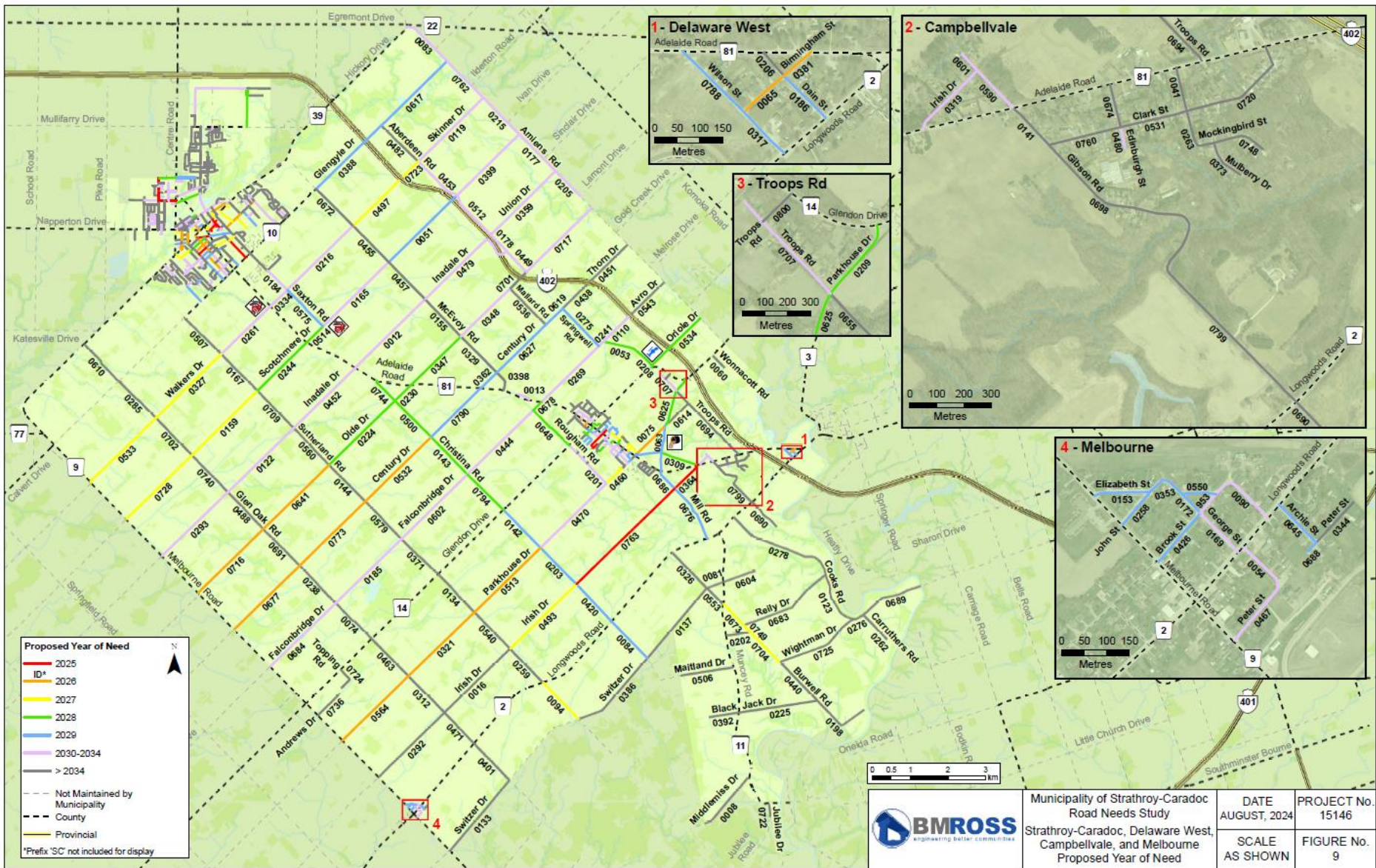
Road Name	From	To	Length (m)	Daily Traffic Count (2024)
Glengyle Drive	McEvoy Rd	Amiens Rd	4851	2,200
Amiens Road	Ilderton Rd	Glengyle Dr	950	2,050
Parkhouse Drive	Adelaide Rd	Glendon Dr	2483	2,000
Christina Road	Adelaide Rd	Longwoods Rd	8957	1,150
Falconbridge Drive	Adelaide Rd	Springwell Rd	2121	1,250
Springwell Road	Falconbridge Dr	Glendon Dr	1524	1,500

- Only included cost to upgrade Glengyle Drive in proposed plan.

Capital Improvement Costs per year of Need

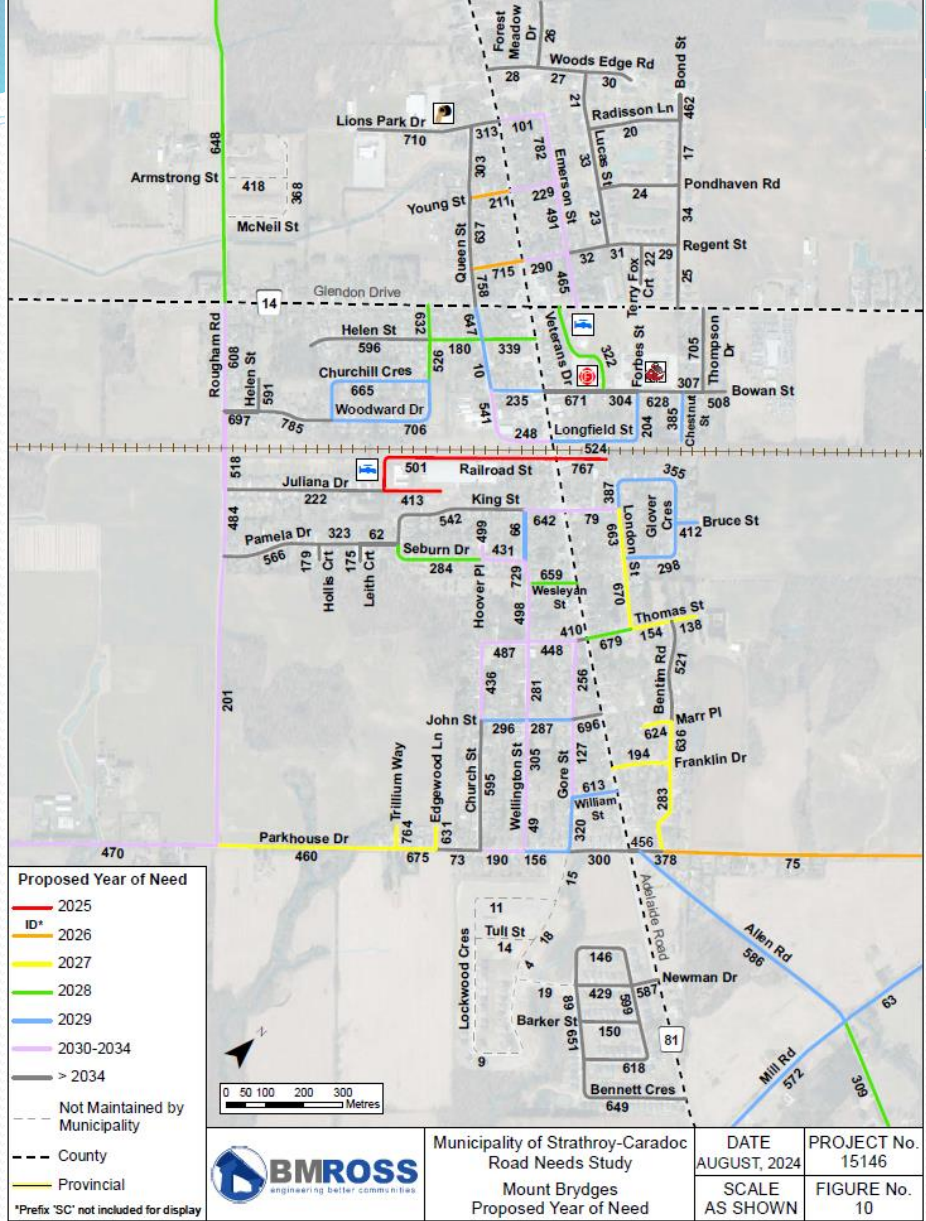
Year	Capital Improvements by Current Surface			Total Cost (\$,000)
	Gravel (km)	LCB (km)	HCB (km)	
2025	0.0	4.7	3.4	\$ 4,186.7
2026	0.0	20.6	3.6	\$ 8,569.5
2027	0.0	18.8	3.2	\$ 5,061.7
2028	0.0	19.5	3.9	\$ 8,388.1
2029	0.0	24.8	8.2	\$ 14,216.0
2030	0.0	22.0	4.5	\$ 8,354.8
2031	0.0	11.0	7.3	\$ 7,578.6
2032	0.0	9.6	4.3	\$ 7,323.8
2033	0.0	7.1	2.8	\$ 3,033.5
2034	0.0	7.5	0.8	\$ 1,254.0
Total	0 km	145.6km	42km	\$ 67,966.7
Average	0 km/yr	14.6 km/yr	4.2km/yr	\$ 6,796.7/yr

- Determined a theoretical year of need but the costs are presented in the proposed year of need.
- Staff should schedule road improvements taking into consideration other needs and priorities.



Proposed Year of Improvement - Rural

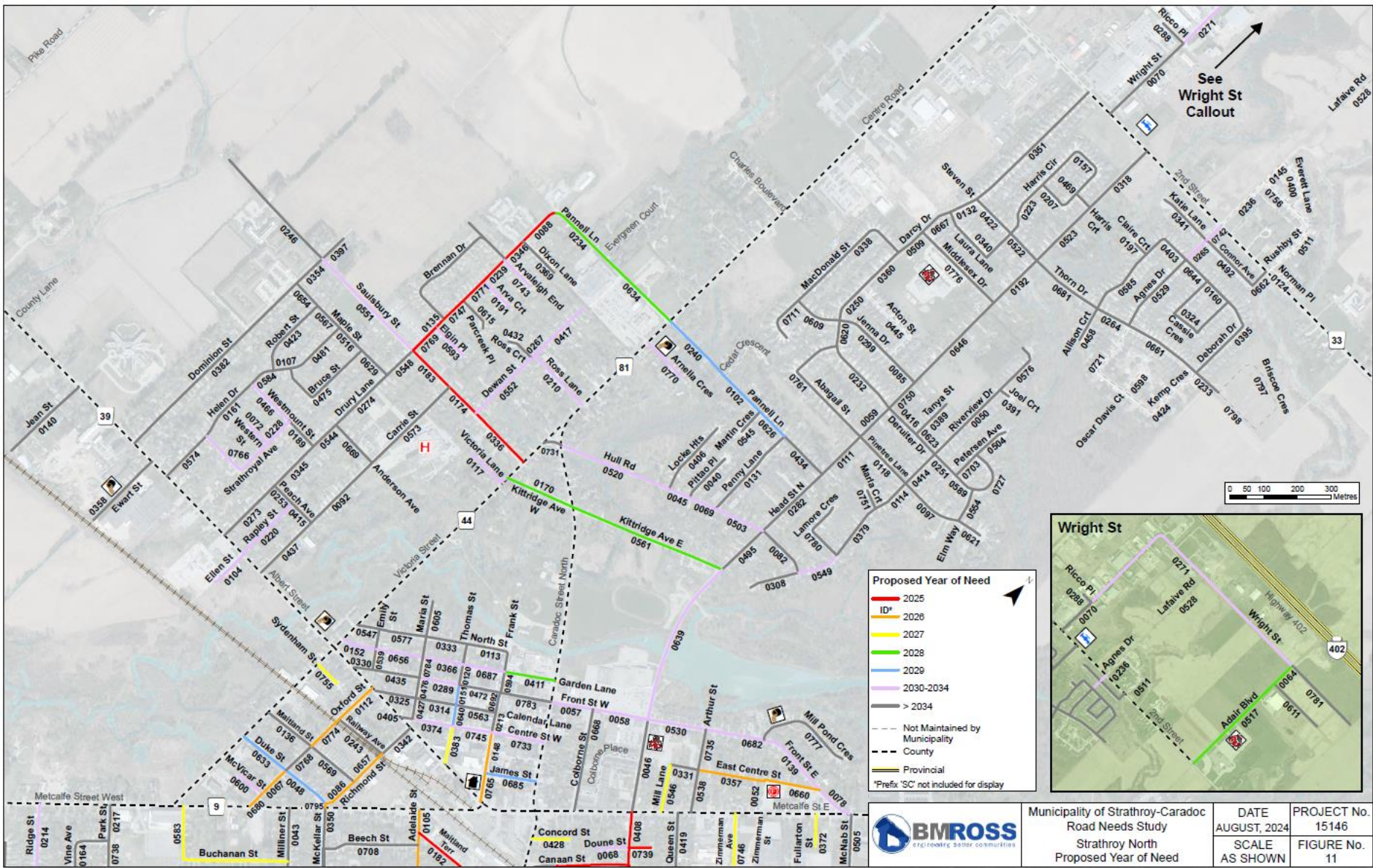




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Proposed Year of Improvement – Mount Brydges

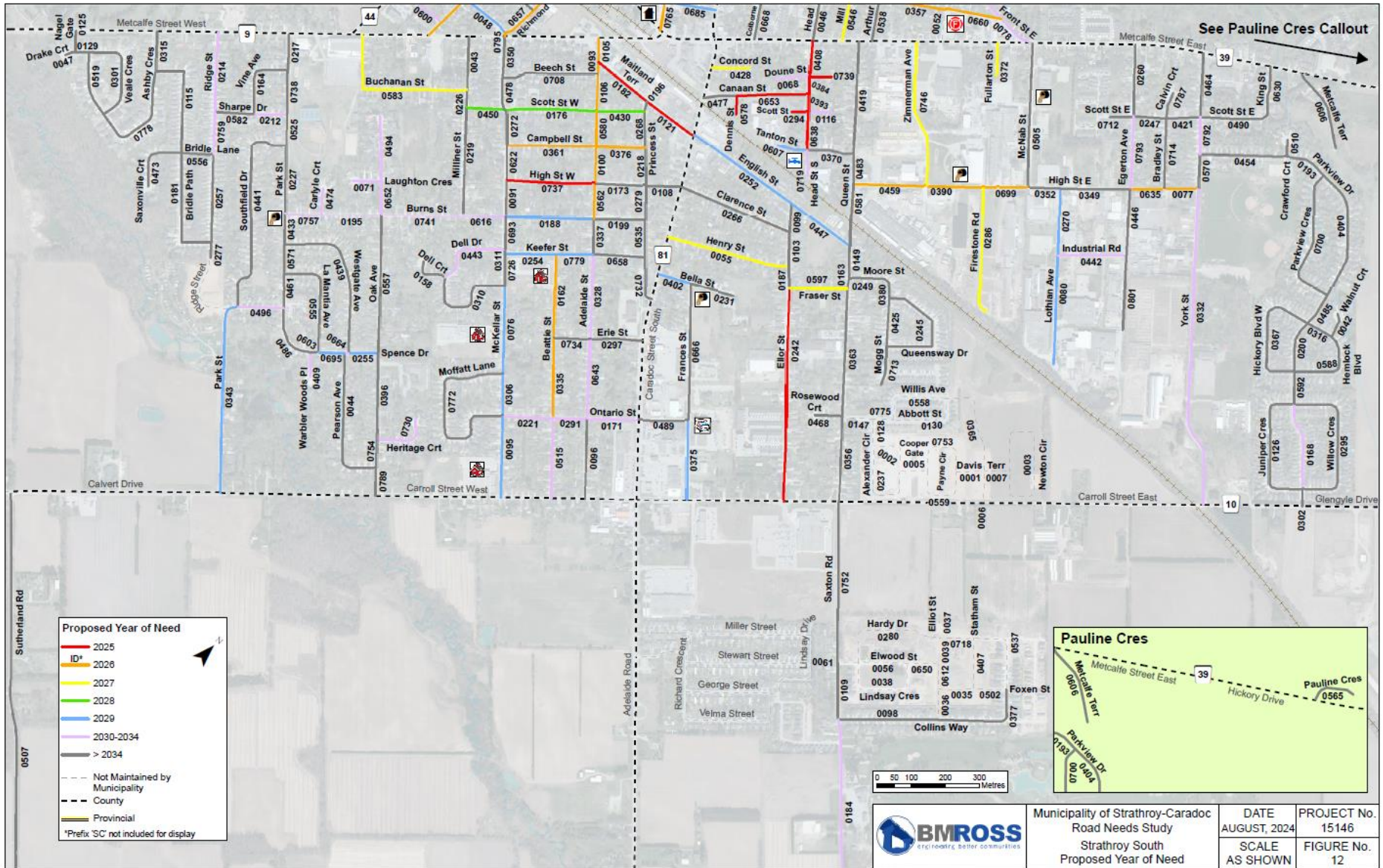




Proposed Year of Improvement – Strathroy North



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Proposed Year of Improvement – Strathroy South



Summary of Recommended Improvements

Category	2025	2026	2027	2028	2029
Specific Maintenance Needs	\$39,130	\$39,130	\$39,130	\$39,130	\$39,130
Road Improvements	\$4,186,700	\$8,569,600	\$5,061,700	\$8,388,100	\$14,216,000
Suggested Annual Budget	\$4,225,830	\$8,608,730	\$5,100,830	\$8,727,230	\$14,255,130
Category	2030	2031	2032	2033	2034
Specific Maintenance Needs	\$39,130	\$39,130	\$39,130	\$39,130	\$39,130
Road Improvements	\$8,354,800	\$7,578,600	\$7,323,800	\$3,033,500	\$1,254,000
Suggested Annual Budget	\$8,393,930	\$7,617,730	\$7,362,930	\$3,072,630	\$1,293,130

Note:

- The above table does not include the costs for any bridge repairs or any other infrastructure upgrades.
- These costs are in addition to basic maintenance work that the Municipality is currently doing each year.
- Costs are in 2024 dollars, have not been inflated for future years and are HST exclusive.
- **Historically, Municipality has been spending on average about \$1,500,000 per year.**

Concluding Comments

- There is a significant difference between historical spend and recommended budget. Recommended increasing the budget for LCB road resurfacing costs to help re-establish the road base for those road types.
- Recommending conversion of some LCB roads to HCB roads, work should include geotechnical investigation and platform widening
- Allow staff to adjust schedule as required to line up with other infrastructure projects

Questions