

## **APPENDIX 8**

### **DESIGN CRITERIA**



205388 - TOWN OF CALEDON

**Mill Street - Rural Reconstruction**

Segments	Road Construction	Posted Speed km/h	Design Speed km/h	Baseline ADT Provided	Growth Rate per TMP	2031 ADT
	Type			from Town	Screenline Analysis	
Mill St	Rural	40	60	189	0.5%*	202
* Note: Negligible growth anticipated.						

ITEM	STANDARDS					REHAB ROAD GEOMETRY	Final Selected Alternative Per PIC
	TAC (For Design Speed 60km/h)	2019 DC	Town of Caledon (ToFC)	Transportation Master Plan (TMP)	Existing		
<b>CLASSIFICATION</b>							
ROAD CLASSIFICATIONS	RLU60	RSS-U	Local Residential			Local Residential	
DESIGN SPEED (km/h)	60						
POSTED SPEED (km/h)	40		40		40	40	Warning signs with reduced speeds can be provided for local sections of road with insufficient sight distances
NUMBER OF LANES		2			2	2	
TRAFFIC VOLUME ADT			<1000		189	202	
TRUCK VOLUME (%)							
<b>HORIZONTAL ALIGNMENTS</b>							
NC NORMAL CROWN (-0.02m/m) Rmin. (m) , e=0.04	1200					40	Substandard between Sta. 2+260 to Sta. 2+280. Between Sta. 1+880 to Sta. 2+040 there are two compound horizontal curves that are substandard. Alignment adjustment is constrained by road allowance and will require property acquisition.
CURVE RADIUS WITH SUPERELEV. RATE e=0.04 Rmin (m)	150		90				
RC REVERSE CROWN (+0.02m/m) Rmin (m) , e=0.04	180						
NC NORMAL CROWN (-0.02m/m) Rmin. (m) , e=0.06	2000						No collision history record available for Mill St.
CURVE RADIUS WITH SUPERELEV. RATE e=0.06 Rmin (m)	130						
RC REVERSE CROWN (+0.02m/m) Rmin (m) , e=0.06	225						Keep same as the existing as per PIC
<b>CROSS SECTIONS</b>							
ROAD WIDTH (m)		9.8-Urban / 10-Rural	7.9		6.0 - 7.4	6.0-8.0	Max road width that can be accommodated by the existing road allowance. Additional width will require property acquisition.  Road is also classified as local urban with 40km/h, and narrower road with will help reduce traffic speed.
THROUGH LANE WIDTH (m)	3.0-3.7	3.5-Urban / 3.75-Rural	3.8	3.5	5.0-7.0	3.0-4.0	
TANGENT SECTION CROSS FALL, %	2%					2%	
SHOULDER (m)	1.0	1.5-Rural		1.5	0	0	
SHOULDER ROUNDING (m)						0.5 or 1.0	1.0m if guiderail is needed
DESIRABLE MIN SIDE SLOPE			4:1 OR LESS			3:1 or 1.5:1 MAX	Side slopes are steepened to 1.5:1 to minimize property impacts at some locations. Erosion control blankets, steel beam guiderail, and granular sealing will be required
BACK SLOPE						As existing	
FILL SLOPE WITH BARRIER						3:1 or 1.5:1 MAX	
FILL SLOPE WITHOUT BARRIER						3:1	
CLEARZONE (m) FOR MAX CUT SLOPE OF 3:1 - UNDER 750 ADT	2.0 - 3.0				0.3 MIN	As existing	Existing utility within the widened road will be relocated to outside of the clearzone. Steel beam guiderails, warning signs, or speed reductions will be recommended for obstacles which cannot be relocated due to environmental (such as trees that cannot be removed) or property impacts.
CLEARZONE (m) FOR MAX FILL SLOPE OF 4:1 - UNDER 750 ADT	2.0 - 3.0				0.3 MIN	As existing	
<b>RIGHT OF WAY</b>							
<b>VERTICAL ALIGNMENTS</b>							
MINIMUM GRADE (%)	0.00%				0.0%	Not greater than the existing	
MAXIMUM GRADE (%) (Mountainous Topograpy)	11%		6%		9.5%	Not greater than the existing	
SAG VERTICAL CURVE Kmin. - HEADLIGHT CONTROL	18		12		5	Not less than the existing	Substandard K-values for the majority section of the road. Profile adjustment between Sta. 1+200 to Sta. 1+340 to adjust K-values of the back-to-back crest and sag curves to meet Town's standards will require full depth road reconstruction and significant property acquisition to adjust profile. Profile adjustment is also contrained by adjacent driveways.
CREST VERTICAL CURVE Kmin.	11		8		5	Not less than the existing	Keep same as the existing as per PIC