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Appendix H: ROUNDABOUT SCREENING TECHNICAL MEMORANDUM



MEMORANDUM

TO : Rory O'Sullivan, City of Mississauga

FROM : Stephen Keen, CIMA+

DATE : December 21, 2020

SUBJECT : Roundabout Alternatives at Lakeshore and Clarkson

1. DESCRIPTION OF ALTERNATIVES

Option 7-1 is a three-leg roundabout with an inscribed circle diameter (ICD) of 50 metres, located such that the east edge of the ICD is at the east side of the Clarkson Road North intersection and the south edge is along the south side of Lakeshore Road. The roundabout would require acquisition of the Esso gas station on the northwest corner. It would also impact the frontage of the real estate office to the north, and Tim Hortons and Scotiabank to the west. The Clarkson Road South intersection would remain under stop control.

Option 7-2 is a three-leg roundabout with an ICD of 56 metres, shifted farther north than Option 7-1 such that Lakeshore Road is taken significantly off its current east-west alignment. Again, the Clarkson Road South intersection would remain under stop control.

Option 7-3 is a four-leg elliptical roundabout with an ICD of 75 metres on the long axis and 50 metres on the short axis. It incorporates both Clarkson Road intersections. The roundabout is angled such that the southwest corner takes up the space currently occupied by the front of the Benjamin Moore building on the southeast corner of the Clarkson Road South intersection (but not the remainder of the building). It would require acquisition of the Esso gas station, real estate office and Tim Hortons, and impact the frontage of the Scotiabank farther west similar to Option 7-2.

All the alternatives achieve reasonable speed control for the context except Option 7-1 in the eastbound direction, where the fastest-path entry speed is too high. This is a function of the location of the roundabout and will be very difficult to address through further design effort. Option 7-2 results in very inconsistent speeds along Lakeshore Road since the roundabout is shifted so far to the north. Because of the location of the central island, it will be difficult for eastbound drivers to discern Option 7-1, and eastbound and westbound drivers to discern Option 7-2, especially at night. Option 7-3 is the most preferred in terms of a roundabout geometric design (despite the non-circular shape) but it has the greatest overall impact to buildings and property. In particular it requires removal of the front of a heritage building (the *Benjamin Moore* Paint shop), which is apparently to be avoided.

2. EVALUATION OF ALTERNATIVES

Table 1 summarizes the results of an informal evaluation of the alternatives, that does not involve any detailed technical analysis or cost estimation.

Table 1: Evaluation of Alternatives

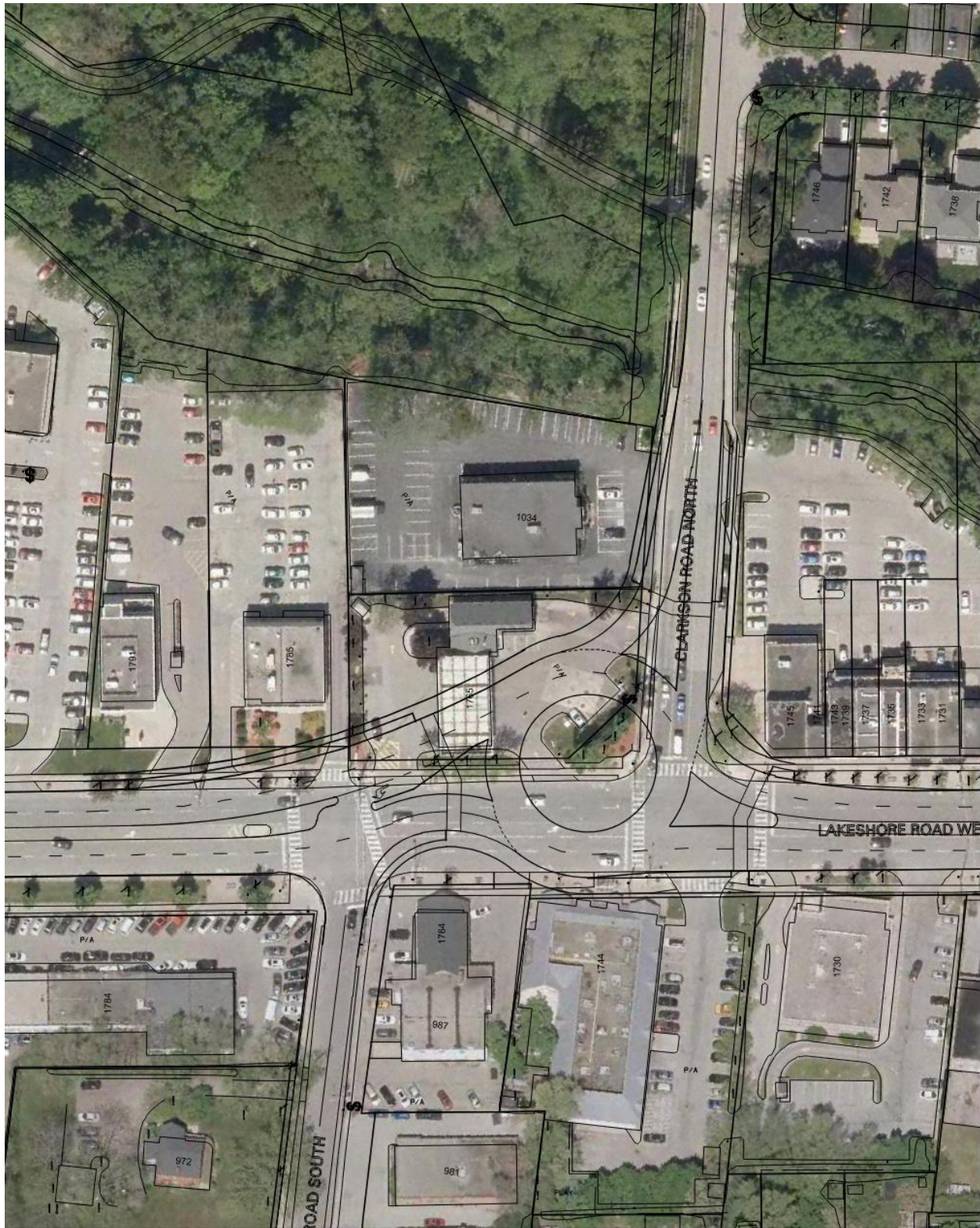
Objective	Option 7-1	Option 7-2	Option 7-3
Safety/Speed Control	Insufficient eastbound 0	Good 4	Reasonably good 3
Speed Consistency Along Lakeshore Rd.	Reasonably good 2	Poor 0	Good 4
Forward Sight of Roundabout (Especially at Night)	Eastbound drivers won't have good sight of roundabout 2	Eastbound and westbound drivers won't have any sight of roundabout 0	Reasonably good sight of roundabout 3
Property Impacts	Requires acquisition of 1 property 3	Requires acquisition of 3 properties 1	Requires acquisition of 3 properties 1
Heritage Building Impact	None 4	None 4	Yes 0
Incorporation of Clarkson Rd. South Intersection	Separate intersection 1	Separate intersection 1	Part of Roundabout 4
Accommodation of Driveway Opposite Clarkson Rd. North	Possible right in/out 1	Possible all moves, likely right in/out, left in only 3	Possible all moves, likely right in/out, left in only 3
Community Space Potential	Some with roundabout central island 2	More with additional open space to south 4	Some with roundabout central island 2
Total	15	17	20

Option 7-3 is operationally the best and safest roundabout; however, it has the fatal flaw of requiring removal of the heritage building which is considered highly undesirable and therefore infeasible.

The other two alternatives do not satisfactorily address the criteria of Safety/Speed Control, Speed Consistency Along Lakeshore Road, and Forward Sight of Roundabout (Especially at Night).

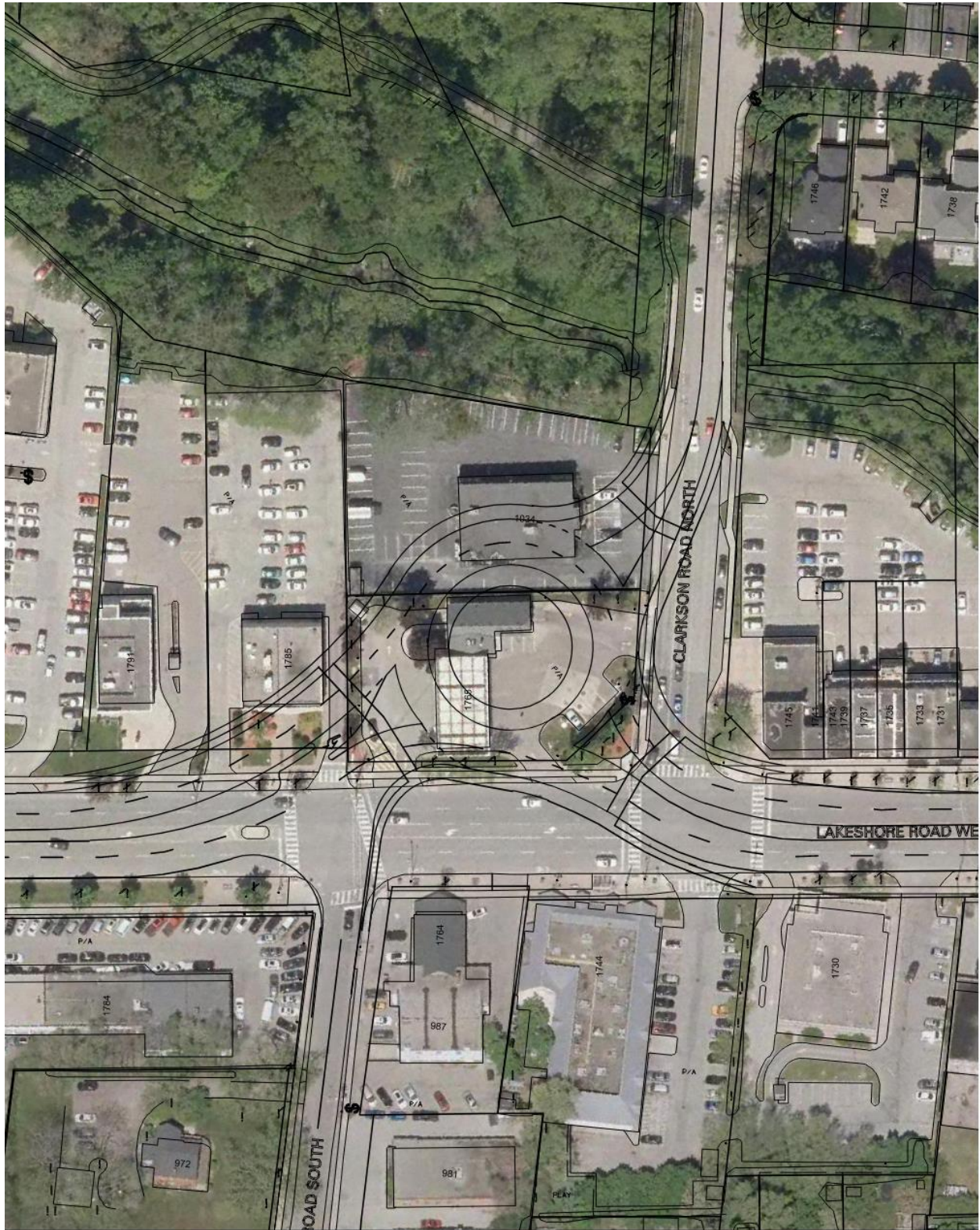
3. RECOMMENDATION

If impacting the (Benjamin Moore) heritage building is not possible, and as the current roadway does not appear to offer speed control and safety issues, then it is not recommended that a roundabout be implemented within the study area. As it happens, there are other alternatives that would better satisfy the study objectives than a roundabout.



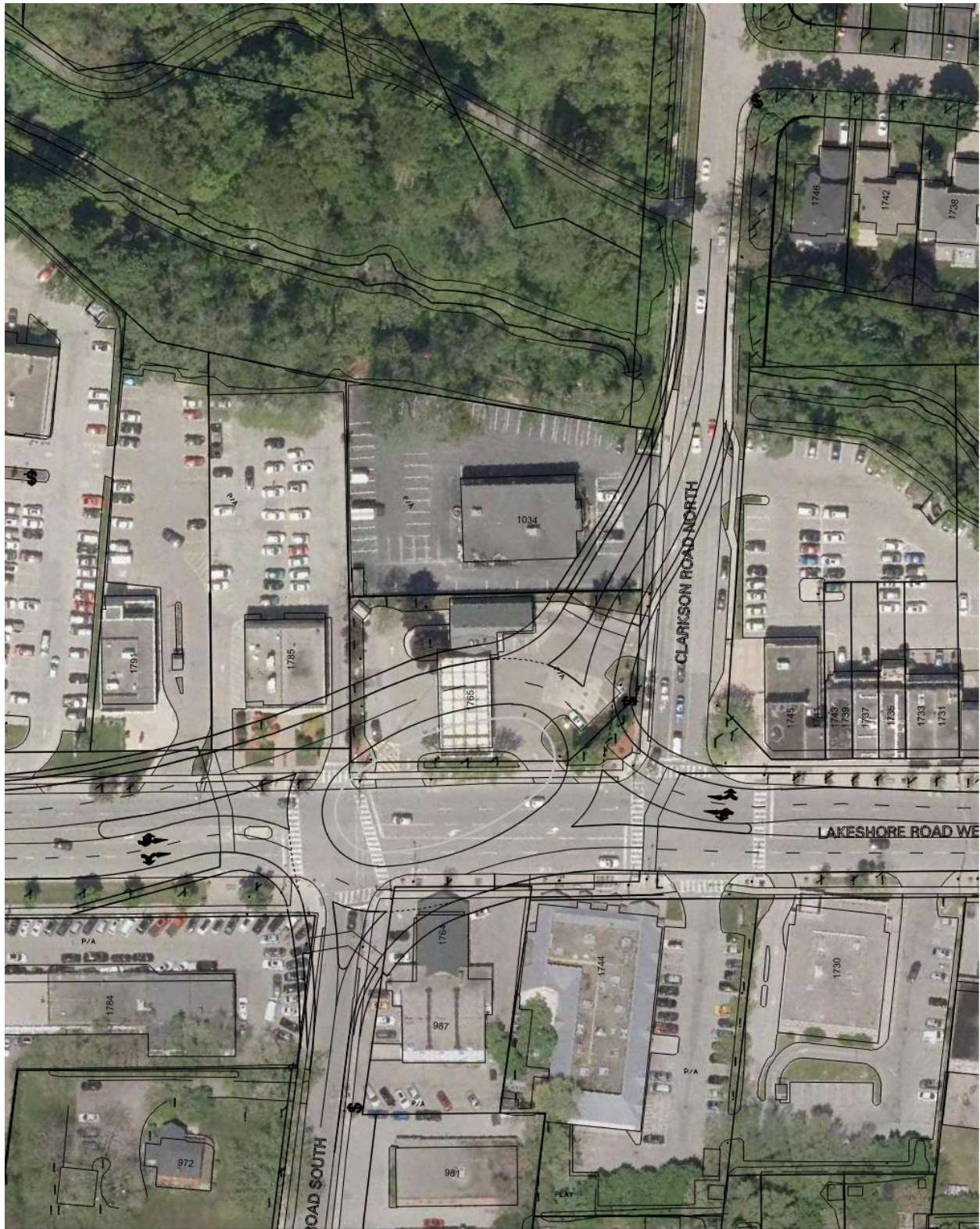
OPTION 7-1

ROUNDABOUT



OPTION 7-2

ROUNDABOUT



OPTION 7-3

ROUNDABOUT