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5A-150 Pinebush Road
Cambridge ON N1R 8J8
p: 519.896.3163
905.381.2229
416.479.9684

www.ptsl.com

2024-07-12

Project: 220328:400 Millennium Boulevard

Trevor Hawkins, MCIP, RPP

Partner

MHBC Planning, Urban Design & Landscape Architecture

540 Bingemans Centre Drive, Suite 200

Kitchener ON N2B 3X9

Dear Mr. Hawkins:

RE: CITY OF WATERLOO STAFF COMMENTS (TRANSPORTATION IMPACT ASSESSMENT), 400 MILLENNIUM BOULEVARD, WATERLOO

We have had the opportunity to investigate the City of Waterloo staff comments dated 2023-06-21 regarding the Transportation Impact Study prepared in support of the planning applications for the above-noted location and provided to us via e-mail on 2024-04-24. Overall we can conclude that there are no new impacts with respect to our report and the City should proceed to clear the TIA on this basis.

Comment 80: Staff request an updated signal warrant analysis at the University Avenue at Millennium Boulevard intersection with more recent traffic counts. There are inconsistencies between the turning movement count volumes shown in the TIS compared to the most recent counts the City has. The City requests that the warrant analysis be run again utilizing the most recent counts. Please contact traffic@waterloo.ca for this information.

Response 80: We contacted City staff in early July 2024 and obtained the revised traffic counts identified by staff. The City counts conducted in April 2023 showed that while the AM peak hour values were quite similar, the through volumes on University Avenue during the PM peak hour were somewhat higher than the December 2022 counts while the turns to and from University via Millennium Boulevard were quite similar. **Figure 1** illustrates the two datasets.

The updated forecasts using the April 2023 counts were used to revise the OTM Book 12 Justification 7. The updated analysis (**Appendix A**) confirmed that traffic signal control is not justified through 2036.

Comment 81: RIM Park Lane and Park Road are driveway accesses/private roads to access the Golf Course and RIM Park. These are not alternatives for drivers turning left onto University Avenue. The Street Two at Millennium Boulevard intersection shall be redesigned to incorporate the eastbound leftturn lane as warranted in the TIS. This design should also include elements to restrict drivers from travelling straight through to RIM Park Lane from Street Two. Examples of designs have been provided below. The applicant shall provide preliminary designs for this improvement. All works shall be at the cost of the applicant. The design must consider winter maintenance operations.

Response 81: The TIA showed that RIM Park Lane, Park Road would not be relied on to any substantial degree to service the Activa site at 400 Millennium as it offered little travel time and delay savings. This is supported by the observed data the shows for the entire existing development Carriage Crossing less than 4% of the AM PM peak hour traffic and about 6% of the PM peak hour traffic uses the Park Road route to University Avenue over the Millennium Boulevard Route.

The proposed designs provided by the City have potentially significant operational impacts beyond access to 400 Millennium Boulevard. Eliminating northbound left-turns from RIM Park onto Millennium Boulevard will force all traffic from RIM Park to exit via Park Road adding up to 1000 vehicles per day to Park Road. In addition, it impacts connectivity to the public facilities at RIM Park for area residents.

It remains our view that the use of Park Road offers little advantage to area residents over Millennium Boulevard. Further that restricting movements at the intersection of Street Two with Millennium Boulevard will have unjustified and negative impacts on existing system users including area residents and patrons of RIM Park.

Comment 82: Staff note that an extension of the west-bound right-turn lane at University Avenue and Millennium Boulevard is warranted. All costs related to design and implementation is the responsibility of the applicant.

Response 82: There exists sufficient platform width to extend the westbound right turn lane via a re-striping exercise. Depending on the City's desired length, it may require removal of some off-street parking spaces. Given the available space on between the on-street parking on the north side of Millennium Boulevard and the right-turn lane, the taper length can be reduced from its current length to 30 metres which would allow an additional approximately 19 metres of right-turn storage, or nearly 100 metres total, without impacting the on-street parking. **Figure 2** presents this in conceptual form.



Closure

We trust the this provides the City with sufficient information to provide final acceptance of the Transportation Impact Assessment.

Yours truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED



Matt Brouwer

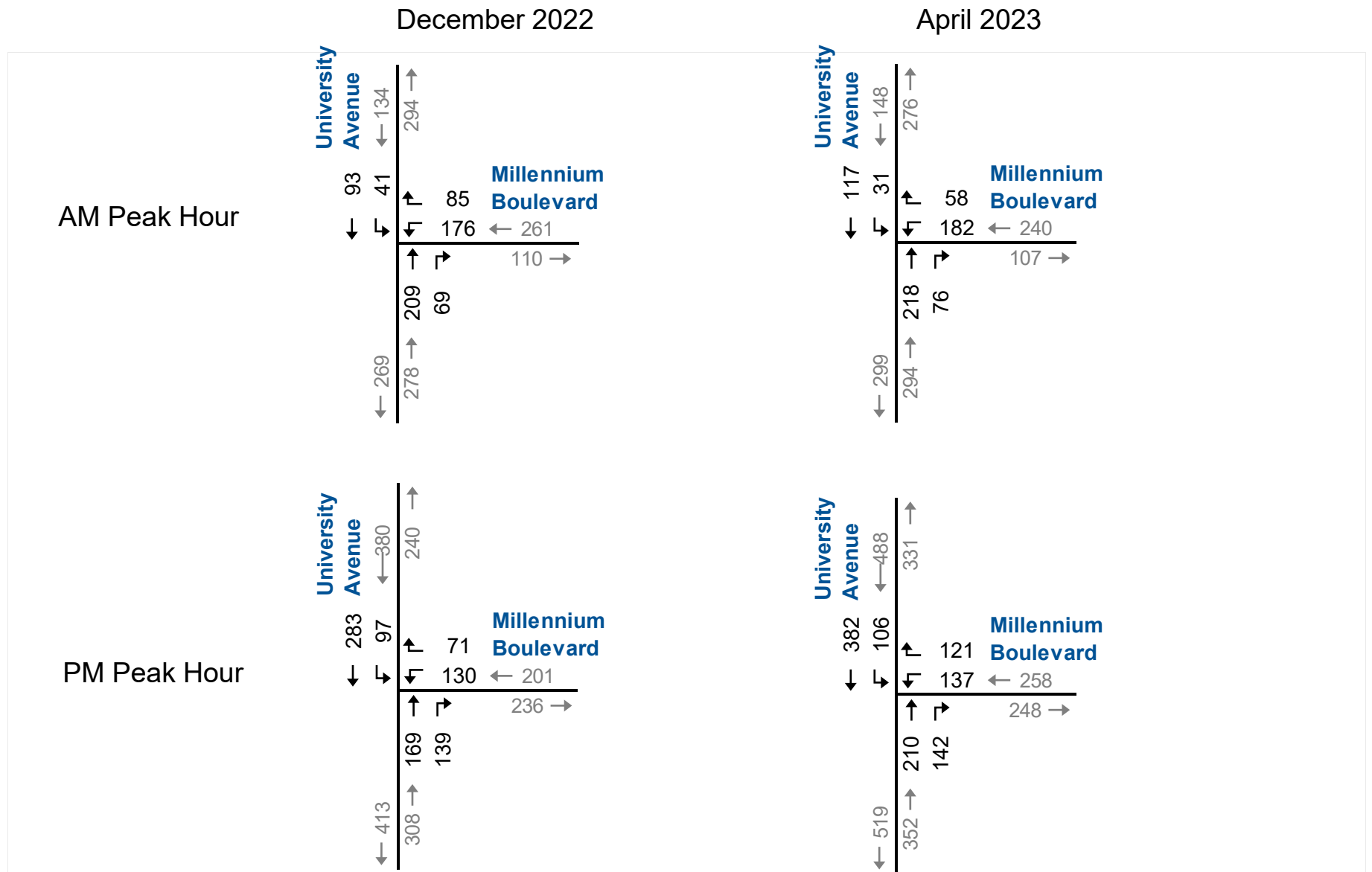
P.Eng.
Senior Project Manager, Associate

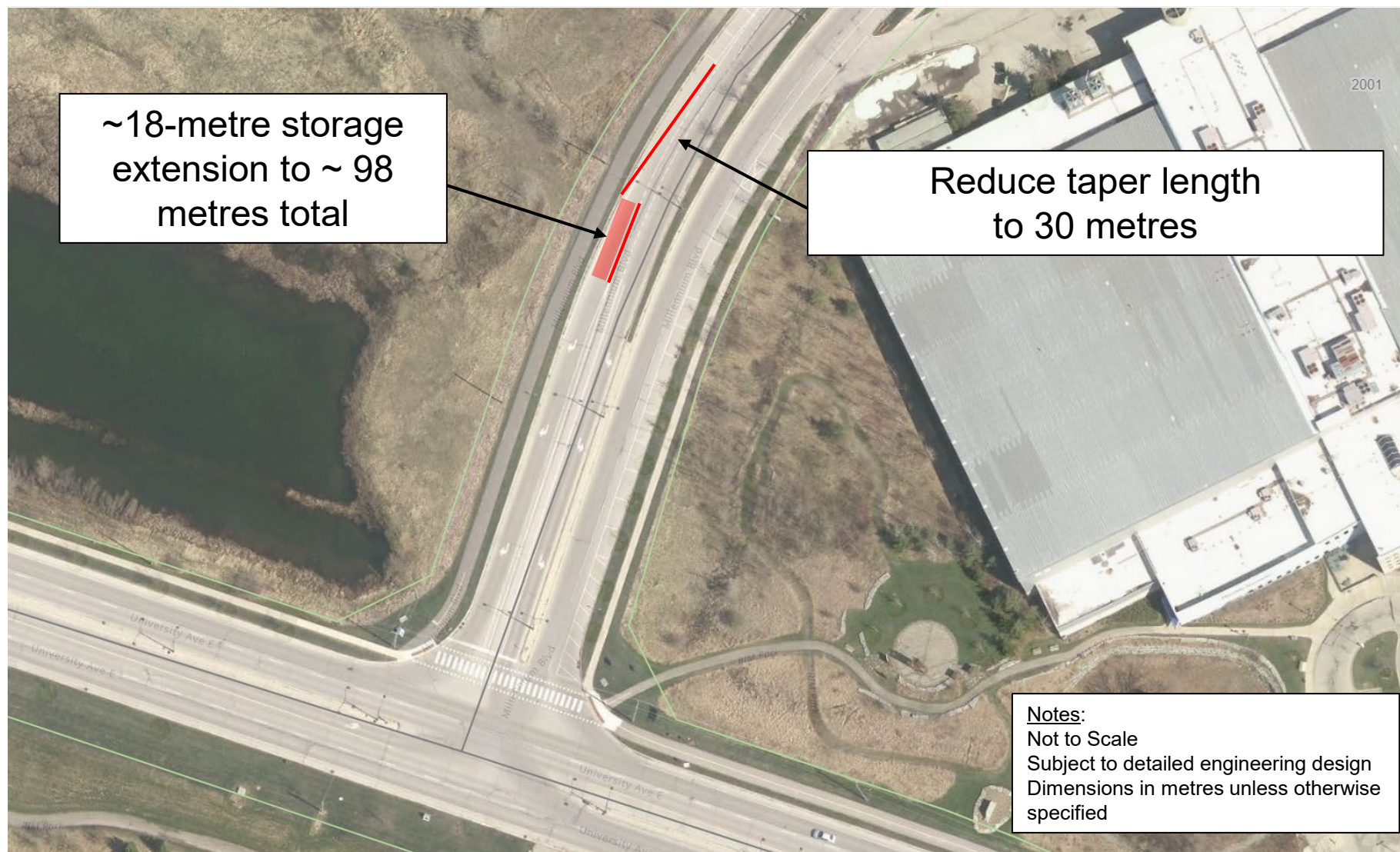


Jim Mallett

M.A.Sc., P.Eng., PTOE
President and Chief Executive Officer, Principal







Source: Region of Waterloo GIS Locator



Potential Right-turn Lane Extension

400 Millennium Boulevard
220328

Figure 2

Appendix A

Updated 2036 OTM Book 12

Traffic Signal Justification



Signal Justification Calculation for Forecast Volumes (OTM Book 12 - Justification 7)



Horizon Year: 2036 Total Traffic
Region/City/Township: City of Waterloo

Major Street: University Avenue North/South?: Y
Minor Street: Millennium Boulevard

Number of Approach Lanes: 2 or more
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	No	Justification for new intersections with forecast traffic
120% Satisfied	No	Justification for existing intersections with forecast traffic

Time Period	Major Street						Minor Street						Peds Crossing
	University Avenue						Millennium Boulevard						
	Northbound			Southbound			Eastbound			Westbound			
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
AM Peak Hour		282	145	63	151					367		137	
PM Peak Hour		272	334	209	494					278		206	
Average Hourly Volume	0	139	120	68	161	0	0	0	0	161	0	86	0

Warrant	AHV
1A - All	735
1B - Minor	247
2A - Major	488
2B - Cross	161

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	All Approaches	480	720	600	900	735
% Fulfilled						81.6%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	Minor Street Approaches	180	255	180	255	247
% Fulfilled						96.9%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	Major Street Approaches	480	720	600	900	488
% Fulfilled						54.2%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	Traffic Crossing Major Street	50	75	50	75	161
% Fulfilled						215.0%