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February 3, 2026

Infrastructure Ontario (IO)
Attn: Andrew Matheson
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Ministry of Infrastructure (MOI)
Attn: Idil Burale
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Subject: Oakville Transit-Oriented Community (TOC)
Step 4 (i.e. Resubmission #1) Circulation Comments

Location: 1) 217-227 Cross Avenue & 571-595 Argus Road
2) 157 & 165 Cross Avenue
3) 166 South Service Road
4) 590 Argus Road

The Town of Oakville received the Step 4 (i.e. Resubmission #1) Oakville Transit-Oriented Community (TOC) Development Proposal from the Province, through Infrastructure Ontario on November 17, 2025. It was reviewed for completeness based on the materials submitted by Infrastructure Ontario and the Ministry of Infrastructure, as outlined in the *Oakville TOC Resubmission #1 Reference Guide*. It should be noted that while some of the submission materials were extensive documents for each location, others were updated items or grouped the locations into a single document. The file was promptly circulated to various internal and external staff and agency members to meet the Province's 60 day timeline for comments by January 30, 2026.

The Town has coordinated the review of the proposal among Town departments and public agencies. The following provides a technical review of the resubmission and consolidated comments from those circulated for review. In doing so, the Town is not endorsing or deciding on the matter, as it is a Provincial project.

The TOC consists of four properties owned by Distrikt Developments within the Midtown Oakville Urban Growth Centre, also designated as a Protected Major Transit Station Area (PMTSA). Currently, the Town is undertaking the Midtown Oakville Growth Area review, for which OPA 70 was adopted by Town Council on February 18, 2025. The OPA authorized via by-law 2025-037 has been provided to MMAH for approval by the Minster, which can be found here.

Distrikt Developments submitted several development applications to the Town as outlined below pertaining to the TOC lands, all of which were appealed to the Ontario Land Tribunal (OLT) for lack of a decision by Town Council within the prescribed timelines of the *Planning Act*:

1) 217-227 Cross Avenue & 571-595 Argus Road
    - OPA 1614.78, Z.1614.78 and 24T-22005/1614

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2) 157 & 165 Cross Avenue
   - OPA 1614.83, Z.1614.83 and 24T-24002/1614
3) 166 South Service Road
   - OPA 1614.79, Z.1614.79 and 24T-22006/1614
4) 590 Argus Road
   - OPA 1614.81, Z.1614.81 and 24T-23001/1614

Staff have identified the following differences for each location from the 2024 Step 1 (i.e. 1st Submission) compared to the 2025 Step 4 (i.e. Resubmission #1) TOC proposal:

	217 227 Cross Avenue & 571 595 Argus Road	
	1st Submission	**Resubmission #1**
Site Area	12,598 sq. m	12,598 sq. m
Land Conveyances	2,790 sq. m	2,790 sq. m
POPS Area	2,574 sq. m	2,574 sq. m
Building Heights	Tower A – 46 storeys Tower B – 52 storeys Tower C – 59 storeys	Tower A – 49 storeys Tower B – 52 storeys Tower C – 56 storeys
Gross Floor Area ** Proposed Library*	147,538 sq. m Residential – 143,227 sq. m Non-residential – 4,311 sq. m	146,745 sq. m Residential – 142,567 sq. m Non-residential – 4,179 sq. m
Floor Space Index (FSI)	Gross – 11.71	Gross – 11.6
Units	1,977 Studio – 102 (5%) One-Bedroom – 1,213 (61%) Two-Bedroom – 550 (27%) Three-Bedroom – 112 (7%)	1,958 Studio – 99 (5%) One-Bedroom – 1,194 (61%) Two-Bedroom – 552 (28%) Three-Bedroom – 113 (6%)
Amenity Area	5,707 sq. m Indoor – 3,258 sq. m Outdoor – 2,324 sq. m	5,692 sq. m Indoor – 3,285 sq. m Outdoor – 2,407 sq. m
Vehicular Parking Spaces	1,315 Residential – 974 Non-residential – 49 Visitor – 292	1,307 Residential – 964 Non-residential – 49 Visitor – 294
Bicycle Parking Spaces	1,990	1,990
People / Jobs	3,032 - 3,334 persons / 112 jobs	

	157 & 165 Cross Avenue	
	1st Submission	**Resubmission #1**
Site Area	9,630 sq. m	9,630 sq. m
Land Conveyances	3,608.5 sq. m	3,608.5 sq. m
POPS Area	647.8 sq. m	606.1 sq. m
Building Heights	Tower A – 58 storeys Tower B – 50 storeys	Tower A – 56 storeys Tower B – 52 storeys
Gross Floor Area	102,609.9 sq. m	103,123.45 sq. m

** Proposed Daycare*	Residential – 98,833.3 sq. m Non-residential – 3,776.5 sq. m	Residential – 98,805.2 sq. m Non-residential – 4,318.22 sq. m
Floor Space Index	Gross – 10.64	Gross – 10.7
Units	1,222 Studio – 0 (0%) One-Bedroom – 811 (66%) Two-Bedroom – 308 (25%) Three-Bedroom – 103 (9%)	1,221 Studio – 0 (0%) One-Bedroom – 812 (66%) Two-Bedroom – 307 (25%) Three-Bedroom – 102 (9%)
Amenity Area	5,420.6 sq. m Indoor – 4,130.5 sq. m Outdoor – 1,290.1 sq. m	5,516.7 sq. m Indoor – 3,847.6 sq. m Outdoor – 1,669.1 sq. m
Vehicular Parking Spaces	955 Residential – 734 Non-residential – 37 Visitor – 184	953 Residential – 719 Non-residential – 50 Visitor – 184
Bicycle Parking Spaces	1,230	1,230
People / Jobs	1,888 - 2,079 persons / 116 jobs	

	166 South Service Road	
	1st Submission	**Resubmission #1**
Site Area	11,887.3 sq. m	11,887.3 sq. m
Land Conveyances	3,291 sq. m	3,291 sq. m
POPS Area	1,926 sq. m	1,926 sq. m
Building Heights	Tower 1 – 51 storeys Tower 2 – 55 storeys Tower 3 – 49 storeys	Tower 1 – 50 storeys Tower 2 – 56 storeys Tower 3 – 49 storeys
Gross Floor Area ** Proposed Comm. Centre*	134,616.3 sq. m Residential – 128,350.2 sq. m Non-residential – 6,2661.1 sq. m	133,981.3 sq. m Residential – 129,963.2 sq. m Non-residential – 4,018.1 sq. m
Floor Space Index	Gross – 11.32	Gross – 11.2
Units	1,853 Studio – 109 (6%) One-Bedroom – 1,115 (60%) Two-Bedroom – 499 (27%) Three-Bedroom – 130 (7%)	1,848 Studio – 108 (6%) One-Bedroom – 1,111 (60%) Two-Bedroom – 502 (27%) Three-Bedroom – 127 (7%)
Amenity Area	6,184.4 sq. m Indoor – 3,710 sq. m Outdoor – 2,474 sq. m	6,184.4 sq. m Indoor – 3,710.3 sq. m Outdoor – 2,474.1 sq. m
Vehicular Parking Spaces	1,208 Residential – 930 Non-residential – 0 Visitor – 278	1,228 Residential – 870 Non-residential – 81 Visitor – 227
Bicycle Parking Spaces	1,861	1,872
People / Jobs	2,862 - 3,147 persons / 107 jobs	

	590 Argus Road	
	1st Submission	Resubmission #1
Site Area	15,378 sq. m	15,378 sq. m
Land Conveyances	1,431 sq. m	1,431 sq. m
POPS Area	2,417.5 sq. m	2,781.5 sq. m
Building Heights	Tower A – 47 storeys Tower B – 50 storeys Tower C – 55 storeys	Tower A – 45 storeys Tower B – 51 storeys Tower C – 56 storeys
Gross Floor Area ** Proposed M/P Space*	151,295.9 sq. m Residential – 148,852.7 sq. m Non-residential – 2,443.2 sq. m	151,139.2 sq. m Residential – 148,719.0 sq. m Non-residential – 2,420.2 sq. m
Floor Space Index	Gross – 9.84	Gross – 9.8
Units	1,856 Studio – 153 (8%) One-Bedroom – 1,072 (58%) Two-Bedroom – 505 (27%) Three-Bedroom – 126 (7%)	1,854 Studio – 153 (8%) One-Bedroom – 1,0725 (58%) Two-Bedroom – 503 (27%) Three-Bedroom – 123 (7%)
Amenity Area	7,363.6 sq. m Indoor – 3,815.5 sq. m Outdoor – 3,547.1 sq. m	24,672 sq. m Indoor – 14,912 sq. m Outdoor – 9,760 sq. m
Vehicular Parking Spaces	1,283 Residential – 971 Non-residential – 36 Visitor – 276	1,283 Residential – 969 Non-residential – 36 Visitor – 278
Bicycle Parking Spaces	1,974	1,862
People / Jobs	2,869 - 3,157 persons / 65 jobs	

Based on the Towns OPA 70, the maximum FSI for three of the TOC sites owned by Distrikt Developments is 6.0, with the 157 & 165 Cross Avenue site being partially 5.0 and 6.0 FSI.

1) 217-227 Cross Avenue & 571-595 Argus Road
   - Max GFA as permitted by OPA (6 FSI) is 75,588 sq. m
   - Typical floorplate sizes for three buildings being approximately 19-30 storeys

2) 157 & 165 Cross Avenue:
   - Max GFA as permitted by OPA (5.15 FSI) is 49,507 sq. m
   - Typical floorplate sizes for two buildings being approximately 19 and 25 storeys

3) 166 South Service Road:
   - Max GFA as permitted by OPA (6 FSI) is 71,313 sq. m
   - Typical floorplate sizes for three buildings being approximately 23-29 storeys

4) 590 Argus Road:
   - Max GFA as permitted by OPA (6 FSI) is 92,268 sq. m
   - Typical floorplate sizes for three buildings being approximately 23-32 storeys

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CIRCULATION COMMENTS

PLANNING

The Distrikt Development sites that form the Transit-Oriented Community proposal from Infrastructure Ontario are located in a Protected Major Transit Station Area which encourages dense, mixed-use development in support of Provincial, Regional and Town policies for focusing housing near higher-order transit. Midtown is being planned in alignment with provincial growth policies, as identified in both the in-effect Official Plan policies, and the emerging policies provided in the Towns OPA 70. As proposed, the TOC submission does not address either the in-effect or emerging policies.

OPA 70 was adopted by Town Council on February 18, 2025 and is awaiting approval by the Minister of Municipal Affairs and Housing. Prior to adoption, the Town received comments from the Ministry of Municipal Affairs and Housing dated January 9, 2025, through their One-Window review process, which includes comments from various partner ministries such as Ministry of Transportation and their agent Metrolinx, Ministry of Infrastructure, and several others. Within the Ministry's comments, it notes that Infrastructure Ontario had proposed a Transit Oriented Community on a portion of Midtown lands, and it states: *"We acknowledge the Town's intention to conduct further review on the TOC proposal, and we encourage the Town to continue collaborating with the Ministry of Infrastructure and Infrastructure Ontario to align the TOC development with the draft Midtown Oakville OPA, to the extent possible, without compromising program objectives."* This letter was sent to the Town shortly after the Town had provided comments to IO, which noted the draft OPA at the time and requested that the TOC better align with the overall Midtown vision, and which noted that the overall redevelopment of Midtown would provide a highly transit oriented community that is supported by the planned infrastructure for the area and beyond.

Following receipt of the Ministry's letters, Town staff prepared and recommended OPA 70 which included amendments to the draft OPA that addressed all the One-Window comments. To staffs knowledge, the changes that were made to the draft OPA in the recommended OPA 70 are to the Ministry's satisfaction. When evaluating the proposed TOC, staff provide analysis and technical comments that have regard to Provincial interests and related Council objectives, that are consistent with the Provincial Planning Statement, and that are in conformity with relevant Provincial Plans. As such, in so far as OPA 70 is adopted by Council, it represents a Council decision to which regard is given when reviewing the TOC proposal. It provides an overarching vision and policy direction for Midtown and also directs that the plan be implemented by a Community Planning Permit (CPP) by-law, which has since been drafted and presently out for public consultation.

Based on OPA 70 and the draft CPP by-law, the proposed TOC is not in full alignment with these documents. The most significant misalignment is the planned density of development within the TOC sites. This level of density is not contemplated in OPA 70 and all of its supporting studies which include:

- Council endorsed Midtown Transportation Plan
- Council endorsed Midtown Stormwater Management Plan
- Council endorsed Designing Midtown – Urban Design Direction
- Council approved Townwide Transportation Master Plan
- The Midtown Area Servicing Plan

- Halton Region Water, Wastewater and Transportation Integrated Master Plan
- Draft Town of Oakville Community Planning Permit By-law

The Towns efforts to date provide land use certainty for all development within Midtown, provide a level playing field and access to foundational information for development proposals to be prepared, and will soon provide a streamlined development approval process that supports overall development that yields nearly 530 residents and jobs per hectare, well above the minimum target of 150 residents and jobs per hectare that is required for GO Rail Transit as per the Provincial Planning Statement (PPS), 2024 (policy 2.4.2 (2)(c)). The Midtown Implementation Program represents an unprecedented investment in time, resources, and money by the Town to support significant intensification through the redevelopment of an important growth area of the Town in a timely, efficient and effective manner resulting in a complete livable community.

Conversely, should the TOC densities be imposed (come into effect), this will undermine the work undertaken to date and significantly set back redevelopment of this area, as studies and by-laws will need to be reviewed and redrafted, especially if there is a creep effect wherein adjacent sites request an increase in density on par with TOC densities. Consequently, the imposition of the TOC densities would have the effect of further delaying redevelopment rather than expediting it.

Overall, the TOC proposal is at odds with the Towns ongoing Midtown planning and is proposing densities well beyond what would result in a livable community in this area for the following reasons:

1. The TOC proposes building heights well beyond what would otherwise be permitted on other lands in Midtown resulting in a disproportionate distribution of building height across Midtown. These building heights may also be more imposing, create greater wind and shadow conditions than what is contemplated via OPA 70, thereby diminishing economic, walkability/active transportation, and recreation goals provided in OPA 70.

2. Proposing such tall towers that are complemented by underground parking is much more costly than the more modest buildings contemplated in OPA 70, which makes providing affordable housing (an important goal of OPA 70) much more challenging.

3. The TOC development would be highly delayed due to current trends of low market-absorption rates, and/or possibly delay development on adjacent sites due to competition for residential unit purchasers. Consequently, running counter to the objective of providing needed housing, let alone affordable housing.

4. Should the creep effect noted above occur, it would result in an overall underserved community in terms of the provision of parkland, social, transportation, water and sewer infrastructure, without updating studies and proposed infrastructure needs to ensure that the significant increase in growth is accommodated.

Concurrently with the TOC Resubmission #1 review, staff provided a response memo to the Ministry of Infrastructure related to ERO 025-1368 - *Provincial priority request for four (4) Minister's Zoning Orders for the Transit-Oriented Community in the Town of Oakville* on January 16, 2026. ERO 025-1368 proposes regulations in the form of MZOs that shift the balance toward building expediency at the

potential cost of valuable public input and municipal autonomy. Staff recognise the importance of accelerating housing and infrastructure delivery; however, these goals should be pursued without compromising long-term sustainability, service delivery, and community planning objectives. However, in the absence of draft MZOs to review and comment on, further consultation is required in order to validate any proposed regulations.

If the Province is intent on proceeding with Zoning certainty, it should complete all of its due diligence by seeking vital input from the public and all levels of government, including other Ministries and federal regulations regarding land use clearances. It should be noted that NAV Canada has raised concerns related to impacts of Navigation Canada's Minimum Vectoring Altitude (MVA) for the TOC sites, that cannot have any structures such as buildings and/or construction cranes intruding into that airspace. The TOC proposal should be amended to address NAV Canada comments in accordance with Section 3.4 of the PPS, and the Town should have a further opportunity to provide comments on any changes to the proposal necessary to address these concerns.

The Provincial priority request for four (4) Minister's Zoning Orders for the Transit-Oriented Community in the Town of Oakville contemplates the development of 11 buildings with heights above the OPA 70 20-storey height threshold, after which the Towns adopted policies for Midtown Oakville would require that community benefits be provided in exchange for additional height approval. On that basis, the ERO proposal would permit 352 additional storeys for which proportional community benefits would be required. The proposed MZO however indicates that the Town's height, density and community benefit requirements would be superseded and this suppression results in a huge opportunity loss for the Town and creates a highly unfair advantage for the TOC landowners over landowner/builders of lands on the balance of Midtown developable properties.

As mentioned above, the Town is presently consulting on a draft Community Planning Permit By-law, with the intention of passing the final by-law shortly after receiving approval of OPA 70. With the Community Planning Permit System fully in effect, the Town will be in a position to streamline planning approval for new development in a manner that is more efficient than the current Zoning and Site Plan or even MZO processes. This demonstrates the Towns commitment to facilitate new, transit-oriented development across Midtown in an expedient manner, and as such there is no need for the MZO. Nevertheless, should the Province proceed with establishing an MZO for the TOC sites, exceptions to the Towns Zoning By-law 2014-014 should align with the Towns OPA 70 policies and the emerging Community Planning Permit By-law.

The Town of Oakville is committed to responsible growth management, environmental protection, social diversity and viable development. The proposed MZOs directly related to the TOC proposal will result in significant changes that challenge these commitments. While development is a shared priority, it should not come at the expense of municipal planning authority or transparent governance.

Staff respectfully request that the Province:

- Preserve the role of local decision-making through the Towns OPA 70.
- Ensure full and transparent consultation with municipalities before enacting policies or regulations that impact ongoing community planning and effective governance.

- Provide the Town with drafts of the proposed MZOs for review and detailed comments to be provided.
- Defer implementation of the MZOs pending results of the fulsome “Step 4” TOC staff and agency feedback.
- Although the TOC is not supported by the Town, should the Province proceed without further consultation, it is strongly recommended that Conditions for the TOC through any MZOs include, but not be limited to:

    - construction, sign-off and acquisition of public or private streets to the satisfaction of Halton Region and the Town of Oakville.
    - extension or improvement of existing public streets to the satisfaction of Halton Region and the Town of Oakville.
    - completion of infrastructure projects required for Midtown within the surrounding transportation network to the satisfaction of the Ministry of Transportation, Metrolinx, Halton Region and the Town of Oakville.
    - installation and operation of any required watermains, sewers or stormwater infrastructure to the satisfaction of Halton Region and the Town of Oakville.
    - public health and safety aspects to be determined by the Conservation Authority.
    - acceptance and agreement of public facilities, services and community benefits to be provided, including affordable housing, to the satisfaction of Halton Region and the Town of Oakville.

ARCHAEOLOGY

The Halton Regional Official Plan, now implemented by the Town, contains policies concerning archaeological potential and the preservation, mitigation, and documentation of archaeological sites and artifacts. The Region of Halton previously commented on the archaeological assessment requirements and potential of the area of the proposed TOC, which consisted of:

- “An archaeological assessment or information regarding previous archaeological assessments did not appear to be included in the available reporting.”
- “If an archaeological assessment has be completed previously and can be shared, those would help greatly in confirming any potential gaps.”
- “A Stage 1 archaeological assessment at minimum should be completed to confirm if the development project area retains any areas of archaeological potential. There are areas of potential in close proximity, and surface parking lots can retain potential for deeper archaeological sites depending on when they were constructed. A Stage 1 archaeological assessment for this type of property can likely be complete over the winter months.”
- “Stage 1 archaeological is not required to be completed prior to MZO, but prior to transaction and/or additional in-ground preparation works or construction activities. If the Stage 1 identified archaeological potential, subsequent stages of assessment may be required. The sooner a Stage 1 can be completed the better.”

Town staff note that no archaeological assessment(s) or letter(s) of acknowledgement from MCM were submitted as part of this first resubmission.

As such, a stage 1 archaeological assessment is requested, as well as any subsequent assessments as recommended, to be prepared by a qualified archaeology professional with a future submission, to the satisfaction of the Town of Oakville, for the properties below as part of the proposed TOC:

- 217-227 Cross Ave. & 571-595 Argus Rd.;
- 157 & 165 Cross Ave.;
- 166 South Service Rd.; and
- 590 Argus Rd.

See the Towns Terms of Reference for an archaeological assessment. This needs to be conducted before any soil disturbance of the site. As the Region noted, a stage 1 assessment is a desktop analysis and can be conducted in the winter months, with later fieldwork, if required, happening in the spring, summer, or fall months of the archaeological field season. Please note archaeological assessments can often be done in conjunction or in succession to help meet timelines.

As part of any stage 2-4 archaeological assessment, the Town requests the archaeological consulting company hire First Nations monitors from the relevant interested communities to be on-site during any archaeological fieldwork on the subject property. This must be shown through the assessment to the satisfaction of the Town of Oakville.

A Letter of Acknowledgement from the Ministry of Citizenship and Multiculturalism confirming all assessment(s) were submitted and registered is also required.

REGION OF HALTON

The Region's Official Plan (ROP) provides goals, objectives and policies to direct physical development and change in Halton. Due to recent Provincial legislation, as of July 1, 2024, the Halton Region's role in land use planning and development matters is changing. The Region is no longer responsible for the Regional Official Plan – as it is now the responsibility of Halton's four local municipalities. As a result of this change, a Memorandum of Understanding (MOU) between the Halton municipalities and Conservation Authorities has been prepared which identifies the local municipality as the primary authority on matters of land use planning and development. The MOU also defines a much narrower scope of interests for the Region and the Conservation Authorities in these matters.

As outlined in the MOU, the Region has an interest in supporting our local municipal partners by providing review and comments on interests that include:

- Water and Wastewater Infrastructure;
- Regional Transportation Systems including stormwater management infrastructure and acoustic mitigation on Regional right-of-ways;
- Waste Collection;
- Affordable and Assisted Housing;
- Responsibilities associated with a specific mandate prescribed by legislation (e.g. sourcewater protection, public heath); and
- Other Regional services that have a land component.

The lands are designated as “Urban Area” on Map 1: Regional Structure of the ROP. They are within an “Urban Growth Centre” and “Major Transit Station Area” per Map 1H: Regional Urban Structure and Map 6a: Midtown Oakville GO UGC/MTSA. The railway corridor to the south of the lands is shown as a “Priority Transit Corridor” and “Commuter Rail Corridor” on Map 1H (and Map 3: Functional Plan of Major Transportation Facilities). A “Major Transit Station” is also depicted on Map 1H and Map 3 in the general location of the GO station to the south of the lands. Trafalgar Road is shown as a “Higher Order Transit Corridor” on Map 1H and Map 3.

Trafalgar Road is also considered a “Regional Corridor” within the “Strategic Growth Areas” of the ROP. Lands on the northeast side of Trafalgar Road and the Queen Elizabeth Way (QEW) are shown as an “Employment Area” on Schedule 1C and 1H.

Background:

Regional staff are forwarding comments in response to the 2nd submission of the above-noted TOC Oakville application circulated on November 15, 2025. The purpose of these applications is to permit a four phased mixed-use development with the following development statistics:

Phase 1: 157 – 165 Cross Avenue
- Total of 1,221 residential units
- Non-Residential GFA (Retail) 1,589.64 m²
- Non-Residential GFA (Office) 2,264.03 m²
- Non-Residential GFA (Daycare) 464.55 m²

Phase 2: 166 South Service Road East
- Total of 1,848 residential units
- Non-Residential GFA (Retail) 1230.93 m²
- Non-Residential GFA (Community Centre) 2,787.11 m²

Phase 3: 217-227 Cross Avenue & 571-587 Argus Road
- Total of 1,958 residential units
- Non-Residential GFA (Library) 1101 m²
- Non-Residential GFA (Office) 1612 m²
- Non-Residential GFA (Retail) 1556 m²

Phase 4: 590 Argus Road
- Total of 1,854 residential units
- Non-Residential 1 GFA (Retail) 961.76 m²
- Non-Residential 2 GFA (Multi-Purpose Community Space) 464.53 m²
- Non-Residential 3 GFA (Office) 993.90 m²

Planning Act Applications and Ontario Land Tribunal (OLT) Appeals:

The four phases associated with the TOC Oakville application are associated with a series of *Planning Act* applications which have been previously commented on, reviewed, and subsequently appealed to

the Ontario Land Tribunal (OLT). Each of the development applications were not supported by the Region for various reasons. Furthermore, each of the *Planning Act* application appeals were consolidated at the OLT.

The submission of the TOC Oakville application is independent from the *Planning Act* and OLT approval process and is being reviewed as a new standalone application. The Region's review of this file acts as the 2nd submission of the TOC Oakville Application being circulated by Infrastructure Ontario.

Water and Wastewater Servicing:

In accordance with the MOU and to ensure water and wastewater services are provided in accordance with Regional requirements, Halton Region provides the following comments.

Midtown Implementation Plan: Midtown Area Servicing Plan (ASP):

Water and wastewater services within Midtown Oakville are being analyzed through the ongoing work of the Town of Oakville's Midtown Implementation Plan and the outcomes of various studies yet to be finalized, which among other things includes an update to the Midtown Area Servicing Plan (ASP). The update to the Midtown ASP will determine ultimate water and wastewater needs to support the anticipated people and jobs growth for Midtown Oakville as identified through JBPEs.

A single FSR was prepared by Trafalgar Engineering titled Functional Servicing & Stormwater Management Report for the Oakville Transit Oriented Community, dated July 2025. Note, for improved readability of the FSR, the numbering of the sites should correspond with the phasing approach preferred by the developer. Please ensure that the phasing in the FSR aligns with the phasing outlined in the phasing plan submitted with the TOC application.

Additionally, due to timing of the submission of TOC Oakville and a comment deadline, the Midtown ASP and its final conclusions have not been incorporated. It is anticipated that the Final ASP will be prepared for circulation to the development community in early 2026. Regional Development Servicing Staff will correspond with the engineering consultant through a separate letter once the Midtown ASP has been finalized.

PR3447/PR3547 – Trafalgar Road Capital Works: Watermain & Wastewater Midtown Oakville:

The Region of Halton is currently in the Request for Proposal (RFP) stage of the tender for the construction of a 1200mm sanitary sewer within Trafalgar Road corridor within Midtown Oakville referred to as PR3447 and PR3547.

- For additional reference, PR3447 and PR3547 are associated with DC projects ID #6535 and ID #6537.
- During the design development of the Region's project (PR3447/PR3547), it was confirmed that the proposed 1200mm trunk sewer required additional depth to accommodate the servicing needs of the Midtown buildout. The alignment of the proposed trunk is planned along Trafalgar

Road between Lawson Street to Argus Road before connecting to existing sanitary sub-trunk that runs beneath the QEW Highway.

- The design of the 1200mm diameter sanitary sewer (PR3447/PR3547) is complete and construction is currently out for tender. The RFP was posted publicly on December 23, 2025, through Bid Document ID WS-3547B-25. Construction is anticipated to begin the spring of 2026 lasting approximately until Q4 2027.

A baseline assumption to be made is that proposed developments may reflect an interim scenario where existing infrastructure is utilized however ultimate servicing solutions for all Midtown Oakville development proposals must account for the latest design of the 1200mm diameter sanitary trunk and align with the updated Midtown ASP once finalized.

The Region's PR3447 and PR3547 project is being planned and designed in such way that all sanitary flows from Midtown Oakville are conveyed to the new sewer on Argus Road, MH 105A. This flow conveyance is outlined as a key characteristic of the Midtown ASP and must be considered in the ultimate condition. Provided so, the ultimate condition of TOC Oakville must convey all sanitary flows to MH 105A.

Interim Water and Wastewater Servicing

Through the submitted Functional Servicing Report (FSR) by Trafalgar Engineering and the accompanying Phasing Plan, it is contemplated that several existing services will be utilized during initial phases of development. The Region is supportive of interim water and wastewater connections to allow for early building occupancy and phasing.

It is expected that the Midtown ASP will be publicly available by early 2026. Furthermore, Phase 4 of the Midtown Implementation Program will include a Comprehensive Phasing and Implementation Strategy. This strategy will identify interim conditions for Midtown Oakville as new infrastructure is built, and old infrastructure is abandoned. In the absence of a finalized ASP, the Region remains committed to exploring an interim servicing approach to support Phase 1 and 2.

A baseline expectation is that the FSR shall identify how the developer will transition interim conditions, for initial phases, to the ultimate servicing solution, as identified in the forthcoming Midtown ASP. Detailed comments associated with each phase are noted below in further detail.

Phase 1: 166 South Service Road East:

Wastewater Servicing:

The FSR provides an analysis demonstrating what the proposed sewage flows generated from this development will be. The existing flows from the site are noted as 0.6 l/s Peak Flow and the proposed flow from the development are noted as 41.5 l/s Peak Flow.

The FSR also notes that the proposed servicing for the development would be to construct a new local sanitary sewer on Proposed Street 'A' through the adjacent land (165 Cross Avenue). The downstream sewer on the future portion of the roadway that is south of the site (165 Cross Avenue) would have to

be constructed as part of these works. That would require a temporary Regional easement to be located over the future part of the road to the south.

The FSR notes that the site will be connected to the existing 300mm diameter sanitary sewer that is located on Cross Avenue. This sewer will drain eastward into the existing 525mm diameter sanitary sewer located on Cross Avenue east of Argus Road. The FSR provided an analysis of the downstream sewer system to analyze if there is sufficient capacity to accommodate the development; however, the Region advises that there are downstream sewer constraints.

Please note that there are downstream sanitary sewer capacity issues in the existing sewer on Cross Avenue as well with some of the existing sewers on Trafalgar Road. These capacity issues have been noted in the Region's Water and Wastewater Master Plan, and these downstream sewers have been slated for replacement with larger sewers. The downstream sewer constraints would have to be addressed before this development could proceed. The downstream sewer upgrades and/or replacement would have to be constructed and in operation prior to the proposed development proceeding. The proposed downstream sewer upgrades/replacements on Cross Avenue and Trafalgar Road are DC projects (ID #6535 and 6537). Design and Contract Administration of the DC project ID's (ID #6535 and 6537) are funded through the council report PW-26-23. The construction of these projects are now currently funded via Regional budget and are planned for the construction window of 2026/2027.

Water Servicing:

The site will connect to a new watermain along Street A, which will be extended from the 165 Cross Avenue property and constructed as part of that development phase. Street A, located on the eastern portion of the property, will also include a watermain connection to the existing 500mm watermain on South Service Road, creating a loop for the first two phases of the TOC development area. A temporary Regional easement will be required over the future northern section of the road to ensure access and maintenance.

A local road (Street A) is proposed on the eastern part of the property. The FSR notes that a 300mm diameter proposed watermain is to be constructed on this road with temporary servicing easement on the adjacent land (165 Cross Ave) and connect to the existing 300mm diameter watermain on Cross Avenue to form a loop.

Fire flow tests were completed and confirmed that the existing water system provides sufficient pressure and flow to support the proposed development. Note, no hydraulic water modelling analysis was submitted with this application. The Region requires that all future water system modeling be completed using the Region's current water model, InfoWater Pro, to accurately determine hydraulic capacity. Any future modeling must be conducted within the Region's model using the correct software. The watermain network for the area will be provided through the Town of Oakville's Midtown Implementation Plan to support this requirement.

Cross Avenue Realignment:

Please note that the Town of Oakville is planning to realign Cross Avenue in the area of the proposed development as part of the Midtown Oakville re-development. The existing Regional servicing that is located on Cross Avenue will also have to be relocated as part of this road realignment. The FSR did not address the realignment of Cross Avenue and the relocation of the existing local servicing that will be required. Local services are the responsibility of the developers in the area to design, fund, and construct the relocation of the existing local services on this street. The FSR should also address how the relocation of the existing services will be implemented.

Phase 2: 157-165 Cross Avenue:

Wastewater Servicing:

The FSR provides an analysis demonstrating what the proposed sewage flows generated from this development will be. The FSR also provides what the existing flows from the various properties comprising the site will be. The existing flows from the site are noted as 0.4 l/s and the proposed flow from the development are noted as 28.5 l/s.

The FSR notes that, due to population increases, a portion of the existing 300mm diameter sanitary sewer on Cross Avenue will need to be upsized to a 525mm diameter sanitary sewer. The proposed servicing strategy includes the extension of sanitary sewers along the proposed Street A to accommodate future development. This sewer is proposed to drain eastward into the existing 525mm diameter sanitary sewer located on Cross Avenue east of Argus Road. The FSR notes that an approximate 140m section of existing local sanitary sewer extending westerly from Argus Road and Cross Avenue will require upsizing when any additional development is added to the local sanitary sewer on Cross Avenue. The FSR provided an analysis of the downstream sewer system to analyze if there is sufficient capacity to accommodate the development; however, the Region advises that there are downstream sewer constraints.

The Region is open to exploring interim servicing strategies for phases of the Midtown Oakville TOC Development Area; however, any costs associated with both interim and ultimate servicing will be the responsibility of the developer. Detailed servicing strategies impacting this site will be outlined in the Town's Midtown Implementation Plan. It is critical that any proposed infrastructure supports the full build-out scenario and aligns with the outcomes of the Midtown Implementation Plan. Any ultimate servicing strategy must conform to the Town's Midtown Implementation Plan, and all infrastructure required to meet these objectives will be constructed at the developer's cost.

Please note that there are downstream sanitary sewer capacity issues in the existing sewer on Cross Avenue as well with some of the existing sewers on Trafalgar Road. These capacity issues have been noted in the Region's Water and Wastewater Master Plan and these downstream sewers have been slated for replacement with larger sewers. The downstream sewer constraints would have to be addressed before this development could proceed. The downstream sewer upgrades and/or replacement would have to be constructed and in operation prior to the proposed development proceeding. The proposed downstream sewer upgrades/replacements on Cross Avenue and Trafalgar Road are DC projects (ID #6535 and 6537). Design and Contract Administration of the DC project ID's (ID #6535 and 6537) are funded through the council report PW-26-23. The construction of these projects are now currently funded via Regional budget and are planned for the construction window of 2026/2027.

Water Servicing:

The FSR indicates that water servicing for the site will be provided by connecting to the existing 300mm watermain on Cross Avenue and extending a watermain along the proposed Street A. Street A, located on the eastern portion of the property, will include a new watermain that connects to the existing 500mm watermain on South Service Road, creating a loop for the first two phases of the TOC development area. A temporary Regional easement will be required over the future northern section of the road to ensure access and maintenance.

Fire flow tests were completed and confirmed that the existing water system provides sufficient pressure and flow to support the proposed development. Note, no hydraulic water modelling analysis was submitted with this application. The Region requires that all future water system modeling be completed using the Region's current water model, InfoWater Pro, to accurately determine hydraulic capacity. Any future modeling must be conducted within the Region's model using the correct software. The watermain network for the area will be provided through the Town of Oakville's Midtown Implementation Plan to support this requirement.

The Town of Oakville's Midtown Implementation Plan will establish, through the Area Servicing Plan, the required water network and road network necessary to adequately service the development area, including provisions for proper watermain looping. All ultimate watermain alignments for this site must conform to the water servicing network identified in the Area Servicing Plan to ensure consistency with the Town's long-term servicing strategy.

Cross Avenue Realignment:

Please note that the Town of Oakville is planning to realign Cross Avenue in the area of the proposed development as part of the Midtown Oakville re-development. The existing Regional servicing that is located on Cross Avenue will also have to be relocated as part of this road realignment. The FSR did not address the realignment of Cross Avenue and the relocation of the existing local servicing that will be required. Local services are the responsibility of the developers in the area to design, fund, and construct the relocation of the existing local services on this street. The FSR should also address how the relocation of the existing services will be implemented.

<u>Phase 3: 217-227 Cross Avenue & 571-587 Argus Road:</u>

Wastewater Servicing:

The FSR provides an analysis demonstrating what the proposed sewage flows generated from this development will be. The FSR also provides what the existing flows from the various properties comprising the site will be. The existing flows from the site are noted as 1.83 l/s and the proposed flow from the development are noted as 44.74 l/s.

The FSR proposes that the northern building on the site will be connected to the existing 600mm diameter sanitary sewer that is located on Argus Road and southern buildings connect to the existing 300mm diameter sanitary sewer located on Cross Avenue. The 600mm sanitary sewer currently drains southward into the existing 525mm diameter sanitary sewer located on Cross Avenue. The existing 300mm sanitary sewer on Cross Avenue currently drains to Trafalgar Road and ultimately to the

existing trunk sanitary sewer on Trafalgar Road. The FSR provided an analysis of the downstream sewer system to analyze if there is sufficient capacity to accommodate the development; however, the Region advises that there are existing downstream sewer constraints for the Midtown Oakville TOC.

The existing 300mm sanitary sewer on Cross Avenue will be abandoned as part of the Town of Oakville's Cross Avenue Realignment Project and ultimately new sanitary sewers will be constructed in realigned Cross Avenue. Detailed servicing strategies impacting this site will be outlined in the Town's Midtown Implementation Plan. It is critical that any proposed infrastructure supports the full build-out scenario and aligns with the outcomes of the Midtown Implementation Plan. Any infrastructure required to meet these objectives will be constructed at the developer's cost.

Please note that there are downstream sanitary sewer capacity issues in the existing sewer on Cross Avenue as well with some of the existing sewers on Trafalgar Road. These capacity issues have been noted in the Region's Water and Wastewater Master Plan and these downstream sewers have been slated for replacement with larger sewers. The downstream sewer constraints would have to be addressed before this development could proceed. The downstream sewer upgrades and/or replacement would have to be constructed and in operation prior to the proposed development proceeding. The proposed downstream sewer upgrades/replacements on Cross Avenue and Trafalgar Road are DC projects (ID #6535 and 6537). Design and Contract Administration of the DC project ID's (ID #6535 and 6537) are funded through the council report PW-26-23. The construction of these projects are now currently funded via Regional budget and are planned for the construction window of 2026/2027.

Water Servicing:

The FSR notes that the proposed water servicing of this site will be by connecting the development to the existing 300mm diameter watermain on Argus Road and the existing 300mm diameter watermain on Cross Avenue. The Region requires that all future water system modeling be completed using the Region's current water model, InfoWater Pro, to accurately determine hydraulic capacity. Any future modeling must be conducted within the Region's model using the correct software. The watermain network for the area will be provided through the Town of Oakville's Midtown Implementation Plan to support this requirement.

Cross Avenue Realignment:

Please note that the Town of Oakville is planning to realign Cross Avenue in the area of the proposed development as part of the Midtown Oakville re-development. The existing Regional servicing that is located on Cross Avenue will also have to be relocated as part of this road realignment. The FSR did not address the realignment of Cross Avenue and the relocation of the existing local servicing that will be required. Local services that are proposed are the responsibility of the developers in the area to design, fund, and construct the relocation of the existing local services on this street. The FSR should also address how the relocation of the existing services will be implemented.

Street C:

A portion of a future municipal road that is oriented north south is proposed to be located on the eastern limit of the property. This road is referenced on the Site Servicing Plan as Street C. The FSR does not

reference what the proposed servicing in this road will be. The Site Servicing Plan shows no local watermain and/or local sanitary sewer on this roadway. The requirement for water and or sanitary servicing in Street C will be determined through Town of Oakville's Midtown Implementation Plan.

Phase 4: 590 Argus Road:

Wastewater Servicing:

The FSR provides an analysis demonstrating what the proposed sewage flows generated from this development will be. The FSR also provides what the existing flows from the various properties comprising the site will be. The existing flows from the site are noted as 2.29 l/s and the proposed flow from the development are noted as 45.04 l/s.

The FSR notes that the site will be connected to the existing 600mm diameter sanitary sewer that is located on Argus Road. This sewer is proposed to drain southward into the existing 525mm diameter sanitary sewer located on Cross Avenue. The FSR does provide an analysis of the downstream sewer system to demonstrate if there is sufficient capacity to accommodate the development. The Region advise that there are downstream sewer constraints.

The existing 600mm sanitary sewer within the easement at 590 Argus Road is proposed to be relocated to the future alignment of South Service Road. The FSR must include the timing and costs associated with this realignment, and all future road and sanitary sewer alignments must comply with the Town of Oakville's Midtown Implementation Plan.

Please note that there are downstream sanitary sewer capacity issues in the existing sewer on Cross Avenue as well with some of the existing sewers on Trafalgar Road. These capacity issues have been noted in the Region's Water and Wastewater Master Plan and these downstream sewers have been slated for replacement with larger sewers. The downstream sewer constraints would have to be addressed before this development could proceed. The downstream sewer upgrades and/or replacement would have to be constructed and in operation prior to the proposed development proceeding. The proposed downstream sewer upgrades/replacements on Cross Avenue and Trafalgar Road are DC projects (ID #6535 and 6537). Design and Contract Administration of the DC project ID's (ID #6535 and 6537) are funded through the council report PW-26-23. The construction of these projects are now currently funded via Regional budget and are planned for the construction window of 2026/2027.

Water Servicing:

The FSR notes that the proposed water servicing of this site will be by connecting the development to the existing 300mm diameter watermain on Argus Road.

The FSR identifies that a watermain will be required along the realigned South Service Road to provide adequate watermain looping for the development area. In addition to confirming this requirement, the FSR must address any Regional easement needs associated with the South Service Road watermain, as provincial setback standards for underground infrastructure may impact its placement. These easements are necessary to ensure proper access, maintenance, and compliance with regulatory requirements.

Fire flow tests were completed and confirmed that the existing water system provides sufficient pressure and flow to support the proposed development. Note, no hydraulic water modelling analysis was submitted with this application. The Region requires that all future water system modeling be completed using the Region's current water model, InfoWater Pro, to accurately determine hydraulic capacity. Any future modeling must be conducted within the Region's model using the correct software. The watermain network for the area will be provided through the Town of Oakville's Midtown Implementation Plan to support this requirement.

Transportation Development Review:

In accordance with the MOU and to support an effective Regional transportation network, Halton Region provides the following comments.

Regional Transportation Staff have reviewed the above-noted application for zoning amendment, draft plan of subdivision and official plan amendment and have the following comments:

Right-Of-Way (ROW) Requirements and Access:

Phases 1 throughout 4 fronts onto multiple municipal ROW owned and maintained by the Town of Oakville including Cross Avenue, South Service Road East, and Argus Road. Argus Road and Cross Avenue intersection with the Trafalgar Road Regional ROW. As a general comment, vehicle access will be provided through private driveway connections and new municipal local streets, as identified in the submitted TOC Oakville Application.

That the TOC Oakville Development concept must align with the adopted Town of Oakville's Midtown Official Plan Amendment and Transportation Master Plan in the ultimate condition.

Technical Studies: Traffic Impact Study (TIS):

Regional Transportation Staff have reviewed the submitted 2nd submission of the TIS dated August 19, 2025, prepared by BA Group titled "Oakville TOC Development – Midtown Oakville – Distrikt Development – Memorandum.

The study was submitted to the Regional Peer Reviewer. The review notes that major intersections such as Trafalgar Road at Leighland Avenue/Iroquois Shore Road, Cornwall Road, and highway ramp terminals (QEW and Highway 403) demonstrate multiple critical movements in both AM and PM peaks, highlighting significant demand pressures on through and turning movements. Secondary corridors, including Cross Avenue, Chartwell Road, and South Service Road, also show localized operational failures, primarily due to excessive queues and turning movement constraints.

Collectively, these results suggest that without extensive mitigation measures, the future network will experience substantial delays, recurring congestion, and reduced reliability, underscoring the need for targeted capacity improvements, operational optimization, and potential network enhancements to accommodate projected traffic growth. The following revisions are required:

Trip Distribution:

Section 10.5 provides the site trip distribution for residential, office and retail land uses. However, some discrepancies are apparent when comparing the percentages provided within Tables 35, 36, 37 and primary vehicle trip generation provided within Table 28. For example, Table 28 provides a vehicle generation estimate for Community Use (166 Service Road), however no associated distribution is provided. Additionally, a review of the percentage distribution for the tables does not correspond with the Site Generated Traffic Volumes provided within Figure 19. A review of the tables indicates that with the exclusion of 166 Service Road, 85 vehicles should be exiting the network northbound on Trafalgar Road during the AM Peak. However, Figure 19 shows 0 vehicles.

Proposed Solution / Recommendation for Addressing Comment:

- Provide the trip distribution for 166 Service Road.
- Reconcile the differences between the percentage distribution provided within Tables 28, 35, 36, 37 and the volumes provided within Figure 19.

Transportation Tomorrow Survey:

Section 10.5.1 indicates that Transportation Tomorrow Survey (TTS) data used to derive the retail trip distribution was from 2016. However, section 11.0 of the TIS indicates that the latest available TTS study is dated 2023.

Proposed Solution / Recommendation for Addressing Comment:

- Provide justification for not using the most current available travel data to assign the traffic distribution.
- Provide the TTS data within the Appendix of the report.

Turning Movement Counts:

Section 10.2.1 describes the study area intersections and provides the turning movement count details. However, at no point within the document or the Appendix, are the turning movement counts provided. While Figure 15 provides the baseline traffic volumes, these can not be verified without reviewing the turning movement counts.

Proposed Solution / Recommendation for Addressing Comment:

- Provide the turning movement counts used to establish the baseline traffic volumes within the Appendices of the report.

Growth Rates:

Section 10.3.2 provides the growth rates for each section of the road network, for municipal road ands highways. According to this section a comprehensive review of the historical data from Trafalgar and Cross Avenue/South Service Road between 2001 and 2024 were reviewed to determine any changes within the traffic activity indicating corridor growth. While the result of this analysis is stated to legitimize the lack of a growth rate used along the corridor within the future scenarios, no calculations were provided within the document. Additionally, the proponent indicates that a review of the background developments deemed them representative of future volumes, and the application of each stakeholder's growth rate would likely overgrow the network. However, the Future Total for the EBT at

Royal Windsor Drive/QEW On-Off Ramps and South Service Road East is less than the approximate background with the application of a growth rate. (i.e., 630 base year vehicles, at a 1.031 growth rate compounded over 20 years is 1160 vehicles, whereas the future total shows 1140 vehicles.)

Proposed Solution / Recommendation for Addressing Comment:

- Provide the calculations used to track the traffic activity between 2001 and 2024.
- Reconcile the differences between the corridor growth used within the report, and the growth rates provided by the stakeholders.

Connected Vehicle Data:

Section 10.3.2.2 of the subject tis illustrates the use of connected vehicle data from a variety of vehicle manufacturers and navigation application providers, which were used to analyze origin-destination data. This data was then used to approximate traffic reduction based on the vehicles proximity to Key GO Station Areas. However, the data used to derive this information was not provided within the Appendix of the report.

Proposed Solution / Recommendation for Addressing Comment:

- Provide the connected vehicle data used to approximate traffic reduction within the Appendices of the report.

Model Parameters:

Section 11.3 of the subject TIS discusses the analysis parameters used within the Synchro Models. According to this section, a Lost Time Adjust value of -1.0 seconds was applied to all movements. Adjustments from the default value may over or underestimate performance unless supported by field study data, while values too low result in operational errors.

Proposed Solution / Recommendation for Addressing Comment:

- Provide justification for the application of Lost Time Adjustment values straying from the default of 0s.

Argus Realignment:

Section 3.6.2 details the “swelbow” alignment of Argus Road. Previously, option one is the existing “elbow alignment”, which was originally considered by the Town of Oakville Official Plan, while option two is the alternative “swoosh” alignment. The Section indicates that the current version of the alignment reflects a combination of the two. However, no evaluation of this alignment was conducted. The Distrikt’s “Cross-Argus” development application as well as for the subject TIS’s 590 Argus Road development application evaluation found that the existing “elbow” alignment to be the preferred option, as it appropriately accommodates the anticipated needs of Argus Road within the larger context of the intensification of the Midtown area. Though the document illustrates the differences within both scenarios, the evaluation for the alternative alignment was not provided in the body of the report or the Appendices for review.

Proposed Solution / Recommendation for Addressing Comment:

- Evaluate the alternative alignment and provide it within the body of the report or the Appendices.

Model Results and Mitigation Strategies:

The overall model results and discussion of results in TIS report Section 11 was reviewed to ensure they followed industry standards, Town of Oakville – North Oakville Terms of Reference for Transportation Studies and Functional Design Studies ("Oakville Guidelines"), and the Halton Region Guidelines for the preparation of Traffic Impact Studies ("Halton Guidelines"). According to the operational assessment, the TIS found that at intersections; where signalized – movements operating with a v/c ratio of 0.84 are classified as within capacity, 0.85 – 1.00 as approaching capacity, and over 1.00 as exceeding capacity; where unsignalized LOS F is classified as significant delays. This classification of measures of effectiveness does not align with Oakville or Halton guidelines.

Halton Guidelines 3.6.1 Capacity Analysis at Intersections & Oakville Guidelines 3.8.2 Capacity Analysis at Intersections:

Upon review of the submitted, TIS, the report requires updates to meet the Halton and Oakville Guidelines with respect to capacity analysis. The noted guidelines identify the following:

- Halton Guidelines 3.6.1: movements are identified as critical when impacts beyond existing condition result in:
    - Signalized intersections where:
        - v/c ratios for overall intersection, through movement or shared through/turning movements are 0.85 or above
        - v/c ratios for exclusive movements are 0.95 or above
        - 95th percentile queues exceed available turning lane storage
    - Unsignalized intersections where:
        - LOS for individual movements exceeds LOS D.
        - 95th percentile queues exceed available turning lane storage
        - Critical movements require a mitigation strategy
- Oakville Guidelines 3.8.2: movements are identified as critical when impacts beyond existing condition result in:
    - Signalized intersections where:
        - v/c ratio for overall intersection are 0.85 or above
        - v/c ratio for individual through or turning movements are 1.00 or above
        - 95th percentile queues for an individual movement exceed available turning lane storage
        - 95th percentile queues for through lanes block vehicles from entering turning lanes
        - Impacts to transit service levels
    - Unsignalized intersections where:
        - LOS for individual movements exceeds LOS E
- Maximum queue length for an individual movement exceeds the available queue storage.

- Movements identified as critical as per the guidelines should be identified and include a discussion of how site traffic contributes to the situation, possible remedial measures, a recommended solution, and the effectiveness of the solution.

Tables 38-42 which summarizes the results of the operational analysis does not provide available storage which makes it hard to quantify the 95th percentiles queues provided within the table.

The analysis does not identify mitigation measures for several movements which are expected to operate at a critical level. For example, for the SBT at Trafalgar Road at North Service Road and the 403 WB Off-Ramp is expected to operate with a v/c ratio of 1.92 during the AM Peak hour, which is not discussed within section 11.4.1.

Critical metrics within the tables are not flagged or highlighted, leaving them indistinguishable from acceptable movements.

Proposed Solution / Recommendation for Addressing Comment:

- Any movement exceeding the listed guidelines should be identified in the results table (flagged via bold, color, or other method)
- Any movement exceeding the listed guidelines should be discussed in the body of the report, with an associated discussion of if the movement will operate satisfactorily, mitigation strategies and effectiveness of the mitigation strategy if required. This discussion should be repeated for each horizon in which the movement exceeds the guideline.
    - For discussion of total performance compared to background performance, the difference in performance should be quantified explicitly in terms of LOS and queue length. Performance should only be qualified as 'similar' if it maintains the same level of service and does not result in a change of queueing condition (unstable queues or queueing past upstream intersections or accesses).
    - Mitigation strategies should provide discussion of how the proposed mitigation strategy will directly impact the specific critical movements it is intended to affect.
- Storage lengths should be provided for each auxiliary lane movement for comparison against the simulated queues and identification of overcapacity queueing as per the guidelines.
- All measures of effectiveness should be reported for all movements at unsignalized intersections.

<u>Operational Errors:</u>

The Synchro files submitted contain errors which may impact the results of the operational analysis. Examples of these errors include the Total Lost Time being less than three seconds, a reference Phase not being in use, Storage length exceeding the link length, Poor coordination upstream causing starvation, Yellow + All Red time less than 3 seconds, All red time less than 0.5 seconds.

Proposed Solution / Recommendation for Addressing Comment:

- Address the Synchro/SimTraffic errors which may create operational inconsistencies.

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Technical Study Review: Noise Study:

Phase / Site #1 – 157-165 Cross Avenue:
An updated Noise Feasibility Study Letter dated August 2025 prepared by Dillion Consulting was submitted to support Phase 1 of the proposed development application. The submitted study is found to be generally acceptable. Regional Staff will continue to review and confirm the submitted Noise Studies as part of downstream Planning Act development applications.

Phase / Site #2 – 166 South Service Road:
An updated Noise Feasibility Study August 2025, prepared by HGC Engineering was submitted to support Phase 2 of the proposed development application. The submitted study is found to be generally acceptable, with updates made to the Annual Average Daily Traffic (AADT) traffic data associated with the ultimate Trafalgar Road. Regional Staff will continue to review and confirm the submitted Noise Studies as part of downstream Planning Act development applications.

Phase / Site #3 – 217 – 227 Cross and 571-587 Argus Road:
An updated Noise Feasibility Study August 2025 has been prepared by HGC Engineering and was submitted to support Phase 3 of the proposed development application. The submitted study is found to be generally acceptable. Regional Staff will continue to review and confirm the submitted Noise Studies as part of downstream Planning Act development applications.

Phase / Site #4 – 590 Argus Road:
An updated Noise Feasibility Study dated August 2025 has been prepared by HGC Engineering was submitted to support Phase 4 of the proposed development application. The submitted study is found to be generally acceptable. Regional Staff will continue to review and confirm the submitted Noise Studies as part of downstream Planning Act development applications.

Additional Noise Warning Clauses to Include:

As mentioned above, the submitted studies to support Phase 1 throughout 4 have been reviewed by Regional Staff and are identified as generally acceptable. As commented on previously, the following additional warning clause shall be added in the final Noise Studies for future Purchase and Sale, Rental, or Lease Agreements:

- Purchasers/tenants are advised that this development and associated blocks/units are directly adjacent/in close proximity to a Regional Road. Halton's Regional roads are classified as major arterial roadways and as such: Serve mainly inter-regional and regional travel demands; May serve an Intensification Corridor; Accommodate all truck traffic; Accommodate higher order transit services and high occupancy vehicle lanes; Connect Urban Areas in different municipalities; Carry high volumes of traffic; Distribute traffic to and from Provincial Freeways and Highways; Accommodate active transportation. Truck traffic is permitted on all Regional roads and is one of the functions of the Regional road network. Therefore, despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic will interfere with some activities of the dwelling occupants, including any raised patio and/or balcony, as sound levels exceed the sound level limits of the Municipality and the Ministry of Environment, Conservation and Parks

Waste Management:
To ensure that Regional waste collection services can be provided in a safe and cost-effective manner, this proposal has been reviewed against the Region's *Development Design Guidelines for Source Separation of Solid Waste.* Region Waste Management staff offer the following comments:

Technical comments associated with all four Phases of the Oakville TOC Development Applicant can be found in *Appendix A.*

Regional Waste Management staff continue to have questions and required clarification associated with each of the phases and sub-phases of the proposed Oakville TOC application. It is recommended that clarity and individual issues are addressed on a site-by-site basis provided the uniqueness of each phase.

Capital & Development Financing:

The Owner shall be responsible for payment of all applicable Regional Development Charges in accordance with the Development Charge Act and the Region of Halton Development Charges By-law(s), as amended. In addition, a Front-ending Recovery Payment will be required and shall become payable at the earlier of the Owner entering into a Subdivision Agreement or obtaining a Building Permit, including for High Density Apartment developments.

The Front-ending Recovery Payment shall not apply to any development parcel that obtained residential servicing capacity through a 2012 or earlier Allocation Program, or that is subject to an executed Subdivision, Site Plan, or Consent Agreement with the Region or the local municipality entered into prior to January 1, 2017.

All residential development applicants and every owner of land located in Halton Region assume all of the responsibilities and risks related to the use of the information provided herein.

Please visit our website at https://www.halton.ca/The-Region/Finance-and-Transparency/Financing-Growth/Development-Charges-Front-ending-Recovery-Payment to obtain the most current information which is subject to change.

Implementing Zoning (Future MZO): Proposing Holding Provisions / Conditions:

For reference and consistency, the below noted phases align with the proposed phases as identified in the Infrastructure Ontario, Ministry of Ontario, and Distrikt Developments submitted through the Oakville TOC application.

Should zoning approvals proceed in advance of the required studies and Midtown Implementation Plan, the Region requests the following holding provisions or conditions associated with the implementing zoning of the proposed phases.

<u>The following Holding (H) Provisions / Conditions apply to Phases 1 throughout 4:</u>

1. The Region requires that development in Midtown Oakville TOC Development Application not proceed until downstream sewers have been upgraded and are operational. Alternatively, if it can be demonstrated that there is sufficient capacity within the existing sanitary sewers, the Region will accept an interim solution, subject to until such time the ultimate preferred servicing solution is operational. Should zoning proceed in advance of downstream sewers. Preliminary H wording is noted below, and final wording will be developed in associated with the appropriate stakeholders:

    - *That prior to the lifting of the H, the Owner shall have addressed the Regions concerns in relation to downstream sanitary sewer constraints and availability capacity in the system to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed.*

2. The Region requires that an updated FSR shall be revised to provide hydraulic water modelling analysis of the existing water system in the area to determine if it can accommodate this development. The FSR's need to be revised to provide analysis to determine if the existing downstream sewer system and pumping station can accommodate the proposed flows from this development. Preliminary H wording is noted below, and final wording will be developed in associated with the appropriate stakeholders:

    - *That prior to the lifting of the H, the Owner shall provide a revised Functional Servicing Report (FSR) to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed.*

3. The Region requires that a revised TIS shall be revised to address technical concerns and provide clarity on which improvements are required, if any, to Trafalgar Road. Preliminary H wording is noted below, and final wording will be developed in associated with the appropriate stakeholders:

    - *That prior to the lifting of the H, the Owner shall provide a revised Traffic Impact Study to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed.*

<u>The following Holding (H) Provisions / Conditions apply to 217-227 Cross Avenue & 571-587 Argus Road:</u>

1. The Region notes that the future Cross Avenue intersecting with Trafalgar Road does not have any associated detailed design drawings confirming the implications at Trafalgar Road. Preliminary H wording is noted below, and final wording will be developed in associated with the appropriate stakeholders:

    - *That prior to the lifting of the H, the Owner shall confirm the ultimate configuration of Cross Avenue at Trafalgar Road and that any land dedications, as appropriate, are secured to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed.*

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The following Holding Provisions / Conditions apply to Phase 4: 590 Argus Road:

1. The Region notes that the future Argus Road intersecting with Trafalgar Road does not have any associated detailed design drawings confirming the implications at Trafalgar Road. Preliminary H wording is noted below, and final wording will be developed in associated with the appropriate stakeholders:

    - *That prior to the lifting of the H, the Owner shall confirm that the ultimate configuration of Argus Road at Trafalgar Road and that any land dedications, as appropriate, are secured to the satisfaction of the Region of Halton. The Region of Halton shall provide written confirmation that these matters have been addressed.*

Preferred Phasing Solution:

Regional Staff have reviewed the proposed development concept and note that the proposed phasing of 157 – 165 Cross Avenue and 166 South Service Road East as Phase 1 / 2 and 217-227 Cross Avenue & 571-587 Argus Road, 590 Argus Road as Phase 3 / 4 aligns with the Region's preferred phasing solution as previously identified as part of the 1st submission.

The Midtown Oakville Official Plan Amendment, Schedule L5 Transportation Network, and Transportation Master Plan for Midtown Oakville are now in final form. Ultimate Region right-of-way requirements shall be adhered to and gratuitously conveyed to the Region of Halton.

We acknowledge that the proposed phasing has reduced the range of Regional concerns.

Conclusion:

This application has been reviewed in accordance with the MOU and, to ensure water and wastewater services are provided in accordance with Regional requirements, transportation is provided per Regional requirements, to ensure the safe and cost-effective collection of waste and to ensure an effective Regional infrastructure.

In conclusion, Regional staff are of the opinion that the implementation of an MZO or Zoning for the proposal lands are premature at this time. The Town Oakville continues to advance its Midtown Oakville Implementation Plan and many of the critical issues noted here rely on the outcomes of various studies and reports.

In view of the ongoing work related to the Midtown Implementation Plan, in particular, as it relates to Regional interests in servicing and transportation, decisions related to the subject applications should be made in consideration of the approval timelines and process set out in the Midtown Implementation Plan.

SITE CONTAMINATION

Section 147(17) of the Regional Official Plan (ROP) requires the applicant of a development proposal to determine whether there is any potential contamination on the site they wish to develop, and if there is,

to undertake the steps necessary to bring the site to a condition suitable for its intended use. This process is described in the Town's Protocol for Reviewing Development Applications with Respect to Contaminated or Potentially Contaminated Sites. The Owner shall comply with O. Reg. 153/04 and the Protocol for Reviewing Development Applications with respect to Contaminated or Potentially Contaminated Sites, to the satisfaction of Town of Oakville.

Within all the submissions to date, the following documents/reports were submitted:

590 Argus Road:

- Site-Screening Questionnaire, dated September 24, 2024
- Phase One Environmental Site Assessment, 590 Argus Road, Oakville, Ontario, by B.I.G Consulting Inc., dated April 28, 2023
- Draft - Phase Two Environmental Site Assessment, 590 Argus Road, Oakville, Ontario, by B.I.G Consulting Inc., dated September 28, 2023
- Reliance Letter for 590 Argus Road, Oakville, Ontario – Phase One Environmental Site Assessment, by B.I.G Consulting Inc., dated September 20, 2024

157-165 Cross Avenue:

- Site-Screening Questionnaire, dated September 20, 2024
- Phase One Environmental Site Assessment, 157 and 165 Cross Avenue, Oakville, Ontario, by B.I.G Consulting Inc., dated September 7, 2023
- Draft - Phase Two Environmental Site Assessment, 157 and 165 Cross Avenue, Oakville, Ontario, by B.I.G Consulting Inc., dated November 25, 2024
- Reliance Letter for 157 and 165 Cross Avenue, Oakville, Ontario – Phase One Environmental Site Assessment, by B.I.G Consulting Inc., dated September 7, 2023

217 Cross Ave:

- Site-Screening Questionnaire, dated September 20, 2024
- Phase One Environmental Site Assessment, 217 and 227 Cross Avenue and 571 – 595 Argus Road, Oakville, Ontario, by B.I.G Consulting Inc., dated September 19, 2022
- Phase Two Environmental Site Assessment, 217 and 227 Cross Avenue and 571 – 595 Argus Road, Oakville, Ontario, by B.I.G Consulting Inc., dated May 23, 2023
- Reliance Letter for 217 and 227 Cross Avenue and 571 – 595 Argus Road, Oakville, Ontario – Phase One and Phase Two Environmental Site Assessment, by B.I.G Consulting Inc., dated September 20, 2024

166 South Service Road East:

- Site-Screening Questionnaire, dated October 4, 2024
- Phase One Environmental Site Assessment, 166 South Service Road, Oakville, Ontario, by B.I.G Consulting Inc., dated November 10, 2022

- Phase Two Environmental Site Assessment, 166 South Service Road, Oakville, Ontario East, by B.I.G Consulting Inc., dated November 14, 2022
- Reliance Letter for 166 South Service Road East, Oakville, Ontario – Phase One and Phase Two Environmental Site Assessment, by B.I.G Consulting Inc., dated September 20, 2024
- Record of Site Condition, Under Part XV.1 of the Environmental Protection Act, RSC Number: B-403-1196415995, March 29, 2023.
- Letter of Environmental Status Update – Oakville TOC Resubmission #1, 166 South Service Road East, Oakville, Ontario, by B.I.G Consulting Inc., dated April 11, 2025

Comments from earlier submission:

590 Argus Road:

- Staff *concur* with the QP that a Phase Two ESA is required to assess the soil and groundwater conditions on the Site prior to the filing of the RSC.

157-165 Cross Avenue:

- The Qualified Professional (QP) states that a Record of Site Condition (RSC) is required due to a change to a more sensitive use and that a Phase Two ESA will be required to assess the soil and groundwater conditions at the site, prior to filing and staff agree with these findings.

217 Cross Ave:

- Staff *concur* with the QP that the following work needs to be completed: 1. Excavate the impacted soil and dispose of off-site at a registered landfill facility, 2. Conduct confirmatory soil sampling, 3. Prepare a report documenting remedial activities, 4. Update Phase Two ESA, and 5. File RSC.

166 South Service Road East:

- Staff note that the RSC was filed on March 29, 2023 and the environmental assessment studies included in the submission to file the RSC are beyond 18 months. Staff request a letter of update from the QP confirming that the site remains suitable for it's intended use. *The author of the letter of update must extend third party reliance to Town of Oakville and Halton Region.*

Comments on the latest submission and applicant comments:

590 Argus Road:

- A draft Phase Two ESA report was submitted.
- Staff concur with the QP more work needs to be completed prior to the filing of the RSC, including delineation of the contamination and remediation by excavation.

157-165 Cross Avenue:

- A draft Phase Two ESA report was submitted.
- The report elected to use Table 3 non-potable site condition standards (SCS) for the property.
- Staff concur with the QP more work needs to be completed prior to the filing of the RSC, including remediation by excavation.

217 Cross Ave:

Applicant Comments: “The soil remediation at the Site has been completed; however, some additional fieldwork is required prior to refiling the RSC in order to meet the MECP's current sampling requirements. As the Phase One and Two ESA reports are older than 18 months, they will require to be updated.” Staff acknowledge the applicant comments.

166 South Service Road East:

- Applicant Comments: “A letter has been provided by the QP confirming that the Site remains suitable for it's intended residential land use.”
- Letter of Update was submitted; however, no Reliance Letter for the Letter of Update provided.

Submission Requirements:

590 Argus Road:

- An updated Phase One Environmental Site Assessment (ESA) report prepared for the filing of the RSC (no older than 18 months).
- The finalized Phase Two ESA report, including further delineation and remediation report, prepared for the filing of the RSC (no older than 18 months).
- A Reliance Letter for the ESA reports prepared for the filing of the RSC by the author(s) to the Town and Halton Region, as per the town’s reliance letter template, indicating that liability insurance coverage is no less than $2,000,000.
- The copy of the record of the RSC and the MECP acknowledgement of the successful filing. The acknowledgement is needed only if the RSC is not posted at the Ministry’s Access Environment website at the time of the submission.

157-165 Cross Avenue:

- An updated Phase One Environmental Site Assessment (ESA) report prepared for the filing of the RSC (no older than 18 months).
- The finalized Phase Two ESA report, including the remediation report and the Halton Region non-objection letter for the use of non-potable SCSs, prepared for the filing of the RSC (no older than 18 months).
- A Reliance Letter for the ESA reports prepared for the filing of the RSC by the author(s) to the Town and Halton Region, as per the town’s reliance letter template, indicating that liability insurance coverage is no less than $2,000,000.

- The copy of the record of the RSC and the MECP acknowledgement of the successful filing. The acknowledgement is needed only if the RSC is not posted at the Ministry's Access Environment website at the time of the submission.

217 Cross Ave:

- As per applicant comments, the updated ESA report(s) prepared for the filing of the RSC (no older than 18 months) to confirm the site has no new activities and contaminants that impacts the site and the site is still suitable for the intended use.
- A Reliance Letter for the updated ESA report(s) prepared for the filing of the RSC by the author(s) to the Town and Halton Region, as per the town's reliance letter template, indicating that liability insurance coverage is no less than $2,000,000.
- The copy of the record of the RSC and the MECP acknowledgement of the successful filing. The acknowledgement is needed only if the RSC is not posted at the Ministry's Access Environment website at the time of the submission.

166 South Service Road East:

- Reliance Letter for the Letter of Update by the author of the Letter of Update to the Town and Halton Region, as per the town's reliance letter template, indicating that liability insurance coverage is no less than $2,000,000.

Site Contamination – Conveyance

For conveyance, the Town only accepts lands that meet the generic Ministry of the Environment, Conservation and Parks (MECP) site condition standards for the intended use. Therefore, an environmental audit (i.e., Environmental Site Assessment [ESA] report(s)) is required to determine the environmental conditions of the proposed conveyed land and confirm its suitability for the intended use.

Submission Requirements:

- Environmental Site Assessment (ESA) report(s) as per O. Reg 153/04 standards by a Qualified Person (QP) to confirm the conveyed land meets the generic standards for proposed use along with a reliance letter as per the town's template by the consultant for the Town to rely on the report(s). All Environmental Site Assessment (ESA) reports and supporting documentation should follow the processes outlined in Reg. 153/04, not the Canadian Standards Association (CSA) standards. As such, ESA reports must be no older than 18 months old and completed in accordance with part VII and VIII and Schedule D and E of the regulation.
- If the both the areas for the development and the conveyance are included in the above ESA reports, they would be sufficient.
- No Record of Site Condition (RSC) is necessary for the conveyed lands that do not require RSC under the O. Reg. 153/04.

URBAN DESIGN

The following comments are based on materials Circulated November 24, 2025 [Step 4]. These comments reflect the Town's concerns identified in the high-level assessment as noted below and

provide direction on necessary modifications. Additional and/or modified comments may be provided after review of subsequently submitted revised materials.

Policies and Guidelines

In framing our review and drafting our comments, we have utilized and relied upon the following:

- Livable Oakville Official Plan; including
  - Section 6 Urban Design (Part C (oakville.ca)) [pages C-15 to C-23]
  - Existing Midtown Oakville policies
- Draft Midtown OPA (Midtown Oakville Draft Official Plan Amendment – September 2024)
- Midtown Oakville OPA 70
- Designing Midtown Oakville - Part 1
- Designing Midtown Oakville - Part 2
- Draft Designing Midtown Urban Design Direction (November 2025)
- Livable by Design Urban Design Manual (LbDM); specifically
  - Urban Design Direction for Oakville - Part A
  - Site Design and Development Standards - Part C [referenced to ensure site functionality]

Conditions

The following conditions are focused on required 'horizontal' shifts to accommodate an enhanced public realm and site organization and on 'vertical' shifts to achieve desirable outcomes through the built form:

The Horizontal Plane Shifts (Public Realm and Site Organization)

1. 157 & 165 Cross Ave

   a. [Step 4] Comment addressed.

      [Step 1] Provide signature on Landscape Architect's stamp.

   b. **[Step 4] Comment not satisfied.** Development shall promote an east-west midblock 'off-road active transportation connection', in alignment with *Midtown Oakville OPA 70* policies, including section 20.5.2 c) and Schedule L6.

      [Step 1] Provide an east-west midblock 'off-road active transportation connection', in alignment with Midtown Oakville Official Plan Amendment DRAFT September 2024 policies, including section 20.5.1 l), 20.5.2 c) and DRAFT Schedule L6.

   c. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.5.1.3 Tower Separation in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

      - *Design towers to incorporate a minimum separation distance of 30 metres between the facing walls of towers, and a minimum of 35 metres for towers taller than 25*

storeys. The facing wall condition is defined as the exterior wall of a tower directly facing the exterior wall of another tower, excluding balconies.

- *The distances between towers can be minimum 25 metres where there are no facing walls.*

[Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "The distance between the facing walls of towers shall generally be a minimum of 30 metres at the tower base, and expand to a minimum of 35 metres above the 25th storey, as applicable."

The proposal shows less than these separation distances between adjacent towers for the proposed heights.

d. **[Step 4]** Provide streetscape works within the public rights-of-way that align with *Midtown Oakville OPA 70* policies, including section 20.5.1 a), b) and *Designing Midtown Urban Design Direction (November 2025)* guidelines, including street layout and cross sections.

e. **[Step 4]** Buildings with active frontages, as identified in *Figure E2 Active Frontages*, should provide deeper setbacks to the public realm in alignment with *Midtown Oakville OPA 70* policies, including section 20.4.1 f) and be designed in accordance with *Designing Midtown Urban Design Direction (November 2025)*.

f. **[Step 4]** Provide site access in alignment with *Midtown Oakville OPA 70*, including section 20.5.1 a) and b). Argus/Davis Road is a collector road and is envisioned as Midtown's Mainstreet with retail, restaurants and commercial uses to animate the street. This street will become the primary shopping or high street in Midtown and function as a destination and civic gathering street. There should be no servicing, loading or vehicular access along portions of development blocks fronting Argus/Davis Road (and Cross Avenue), in alignment with *Designing Midtown Urban Design Direction (November 2025)*, including section 4.7.5.

2. 166 South Service Road

a. **[Step 4] Comment not fully addressed.** Provide streetscape works within the public rights-of-way that align with *Midtown Oakville OPA 70* policies, including section 20.5.1 a), b) and *Designing Midtown Urban Design Direction (November 2025)* guidelines, including street layout and cross sections.

[Step 1] Landscape Plan shall provide 20m right-of-way width for Street 'A' and 26m right-of-way for Street B, as shown on the submitted site plan drawings and in alignment with Midtown Oakville Official Plan Amendment DRAFT September 2024 policies, including DRAFT Schedule L5.

b. [Step 4] Comment addressed.

[Step 1] Provide an east-west midblock 'off-road active transportation connection', in alignment with Midtown Oakville Official Plan Amendment DRAFT September 2024 policies, including section 20.5.2 c) and DRAFT Schedule L6. (Midblock connection through the POPS is provided; however, clarify where a future connection can be made to the property to the west)

c. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.5.1.3 Tower Separation in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

   - *Design towers to incorporate a minimum separation distance of 30 metres between the facing walls of towers, and a minimum of 35 metres for towers taller than 25 storeys. The facing wall condition is defined as the exterior wall of a tower directly facing the exterior wall of another tower, excluding balconies.*
   - *The distances between towers can be minimum 25 metres where there are no facing walls.*

   [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "The distance between the facing walls of towers shall generally be a minimum of 30 metres at the tower base, and expand to a minimum of 35 metres above the 25th storey, as applicable."

   The proposal shows less than these separation distances between adjacent towers for the proposed heights.

3. 217–227 Cross Ave. & 571–595 Argus Rd

   a. [Step 4] Comment addressed.

      [Step 1] Provide signature on Landscape Architect's stamp.

   b. [Step 4] Applicants response is noted, comment to be addressed at detailed site plan approval phase.

      [Step 1] Provide 2% cross slope across public right-of-way sidewalk and planted boulevard, while maintaining flush transition across the property line and max 2 – 4% slope from property line to building face. (ultimate grading condition appears to exceed these maximum slopes along Cross Ave)

   c. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.5.1.3 Tower Separation in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

      - *Design towers to incorporate a minimum separation distance of 30 metres between the facing walls of towers, and a minimum of 35 metres for towers taller than 25*

storeys. The facing wall condition is defined as the exterior wall of a tower directly facing the exterior wall of another tower, excluding balconies.
- *The distances between towers can be minimum 25 metres where there are no facing walls.*

[Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "The distance between the facing walls of towers shall generally be a minimum of 30 metres at the tower base, and expand to a minimum of 35 metres above the 25th storey, as applicable."

The proposal shows less than these separation distances between adjacent towers for the proposed heights.

d. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.3 Base Building in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

- *Provide a minimum building separation distance of 15 metres to another building and a minimum 7.5 metre separation from a shared property line*
- *Where two abutting buildings have primary windows (all windows except those in a bedroom, bathroom, kitchen, hallway or storage area) facing each other on the sides of the streetwall, primary windows should be situated within inset balconies to increase the separation distance between the podium from 15 metres to a minimum of 20 metres to minimize privacy and overlook issues.*

[Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "The distance between facing walls of podiums, where there are windows on both building faces, shall generally be a minimum of 15 metres"

The proposed separation between the podiums of buildings A and B is 10 metres only for the third to sixth storeys. Provide a minimum separation of 20 metres for residential uses between primary windows and 15 meters between secondary windows.

e. **[Step 4]** Provide streetscape works within the public rights-of-way that align with *Midtown Oakville OPA 70* policies, including section 20.5.1 a), b) and *Designing Midtown Urban Design Direction (November 2025)* guidelines, including street layout and cross sections.

f. **[Step 4]** Provide site access in alignment with *Midtown Oakville OPA 70*, including sections 20.5.1 a) and b). Argus/Davis Road is a collector road and is envisioned as Midtown's Mainstreet with retail, restaurants and commercial uses to animate the street. This street will become the primary shopping or high street in Midtown and function as a destination and civic gathering street. There should be no servicing, loading or vehicular access along portions of development blocks fronting Argus/Davis Road (and Cross Avenue), in alignment with *Designing Midtown Urban Design Direction (November*

2025), including section 4.7.5.

g. **[Step 4]** Privately owned public spaces (POPS), should align with *Midtown Oakville OPA 70*, including sections 20.5.1 a), c) and *Designing Midtown Urban Design Direction (November 2025)*, including section 3.3.3. Please note that *Designing Midtown* explicitly requires POPS to have a minimum frontage of 12 metres on at least one public street.

4. 590 Argus Rd

a. [Step 4] Comment addressed.

[Step 1] Provide rights-of-way widths of 20m for South Service Road and 26m for Argus Road in alignment with Midtown Oakville Official Plan Amendment DRAFT September 2024 and provide these dimensions on the plans.

b. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.5.1.3 Tower Separation in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

- *Design towers to incorporate a minimum separation distance of 30 metres between the facing walls of towers, and a minimum of 35 metres for towers taller than 25 storeys. The facing wall condition is defined as the exterior wall of a tower directly facing the exterior wall of another tower, excluding balconies.*
- *The distances between towers can be minimum 25 metres where there are no facing walls.*

[Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form “The distance between the facing walls of towers shall generally be a minimum of 30 metres at the tower base, and expand to a minimum of 35 metres above the 25th storey, as applicable.”

The proposal shows less than these separation distances between adjacent towers for the proposed heights.

c. **[Step 4]** Provide streetscape works within the public rights-of-way that align with *Midtown Oakville OPA 70* policies, including section 20.5.1 a), b) and *Designing Midtown Urban Design Direction (November 2025)* guidelines, including street layout and cross sections.

5. All sites

a. [Step 4] Comment withdrawn, urban design brief sufficiently addresses.

[Step 1] Provide a Sustainable Development Report that describes how the development incorporates the policies of the Midtown Oakville Official Plan Amendment DRAFT

September 2024, including section 20.5.5.

b. **[Step 4] Comment remains applicable.**

[Step 1] Provide utility meters and similar infrastructure in locations internal to a building or development block, within mid-block connections, or underground to ensure a clear and unobstructed public realm, in alignment with Midtown Oakville Official Plan Amendment DRAFT September 2024 policies, including section 20.5.1 d).

c. **[Step 4] Comment remains applicable.** However, Sections 4 (Policy Context) and 6 (Detailed Design Direction) of the Urban Design Brief should reference and demonstrate alignment with the Draft Designing Midtown Urban Design Direction (November 2025).

[Step 1] Please note that comments on the Urban Design Brief, as well as the Shadow and Wind Studies, will be provided once the above feedback has been addressed in subsequent submissions to the satisfaction of the Town.

d. **[Step 4]** All sites should demonstrate that adequate podium and tower separations are provided both within the site and in relation to adjacent lands. These separations should be equitably achieved through setbacks on both properties.

For tower separations, please refer to Midtown Oakville OPA 70, and Section 4.5.1.3 Tower Separation in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

- *Design towers to incorporate a minimum separation distance of 30 metres between the facing walls of towers, and a minimum of 35 metres for towers taller than 25 storeys. The facing wall condition is defined as the exterior wall of a tower directly facing the exterior wall of another tower, excluding balconies.*
- *The distances between towers can be minimum 25 metres where there are no facing walls.*

For podium separations, please refer to Midtown Oakville OPA 70, and Section 4.3 Base Building in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

- *Provide a minimum building separation distance of 15 metres to another building and a minimum 7.5 metre separation from a shared property line*
- *Where two abutting buildings have primary windows (all windows except those in a bedroom, bathroom, kitchen, hallway or storage area) facing each other on the sides of the streetwall, primary windows should be situated within inset balconies to increase the separation distance between the podium from 15 metres to a minimum of 20 metres to minimize privacy and overlook issues.*

The Vertical Plane Shifts (Built Form)

6. 157 & 165 Cross Ave

   a. [Step 4] Comment addressed. According to Section 4.3 Base Building in the draft Designing Midtown Urban Design Direction (November 2025): *When there is no established building base height, the height of the building base shall be no greater than the width of the right-of-way width up to a maximum of 7-storeys (25 metres) and no less than 3-storeys.*

      [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "The height of the building base (podium) for tall buildings should generally be equivalent to the building-to-building distance across the adjacent right-of-way, up to a maximum of 25 metres in height, in order to frame the street and enhance pedestrian comfort."

      Vary the height and form of the base building to respect and respond appropriately to differences in adjacent building height, built-form character, open space size, and right-of-way width for each facing condition.

   b. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.5.1.2 Tower Floorplate in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

      - *Residential tower floorplates must fit within a 42 m diameter circle to guarantee slender towers, thereby reducing the bulk and impact of tall buildings.*
      - *Where projecting balconies are contiguous and wrap around the entire tower, the massing may appear larger therefore, a decrease in floor plate size or an increase in separation distances may be required to mitigate this impact.*

      [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "For tall buildings, the floorplate of each tower (the portion of the building above the base or podium) shall provide a slender tower profile to minimize adverse shadowing, maximize sun exposure and enhance the skyline."

      Limit the tower floor plate size to a maximum of 750 square metres per floor, including all floor area within the main walls of the building, but excluding projected balconies. However, where the projecting balconies are contiguous and wrap around the entire tower or significant portions thereof, the massing may appear larger, therefore a decrease in floor plate size or increase in separation distances may be required to mitigate this impact.

   c. [Step 4] Comment addressed. According to Section 4.5.1.1 Tower Placement in the draft Designing Midtown Urban Design Direction (November 2025): *Provide a minimum 3 metre step back between the building base and tower portion on tall buildings facing the*

public realm to reduce the prominence and presence of the tower element on the public realm and maintain the pedestrian scale focus on the streetwall.

[Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "For tall buildings along public streets or publicly accessible amenity space, a stepback between the podium base and tower portion should be provided to reinforce the character of the public realm."

Increase this stepback between the podium and the tower to a minimum of 5 metres to further mitigate the visual impact of these tall tower at grade, improve wind conditions and access to sunlight and sky view in the surrounding area.

7. 166 South Service Road

   a. [Step 4] Comment addressed. According to Section 4.3 Base Building in the draft Designing Midtown Urban Design Direction (November 2025): *When there is no established building base height, the height of the building base shall be no greater than the width of the right-of-way width up to a maximum of 7-storeys (25 metres) and no less than 3-storeys.*

      [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "The height of the building base (podium) for tall buildings should generally be equivalent to the building-to-building distance across the adjacent right-of-way, up to a maximum of 25 metres in height, in order to frame the street and enhance pedestrian comfort."

      Vary the height and form of the base building to respect and respond appropriately to differences in adjacent building height, built-form character, open space size, and right-of-way width for each facing condition.

   b. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.5.1.2 Tower Floorplate in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

      - *Residential tower floorplates must fit within a 42 m diameter circle to guarantee slender towers, thereby reducing the bulk and impact of tall buildings.*
      - *Where projecting balconies are contiguous and wrap around the entire tower, the massing may appear larger therefore, a decrease in floor plate size or an increase in separation distances may be required to mitigate this impact.*

      [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "For tall buildings, the floorplate of each tower (the portion of the building above the base or podium) shall provide a slender tower profile to minimize adverse shadowing, maximize sun exposure and enhance the skyline."

Limit the tower floor plate size to a maximum of 750 square metres per floor, including all floor area within the main walls of the building, but excluding projected balconies. However, where the projecting balconies are contiguous and wrap around the entire tower or significant portions thereof, the massing may appear larger, therefore a decrease in floor plate size or increase in separation distances may be required to mitigate this impact.

c. [Step 4] Comment addressed.

   [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "Multiple towers within a block, development site, or within close proximity to each other on abutting sites should vary in height from one another in order to create variation in building height and a distinctive skyline for Midtown Oakville."

   Provide variation in tower heights to respond to the local context, provide sky view and create an interesting skyline. A variation of 5 storeys or more provides a difference in height that can be perceived at street level.

d. [Step 4] Comment addressed. According to Section 4.5.1.1 Tower Placement in the draft Designing Midtown Urban Design Direction (November 2025): *Provide a minimum 3 metre step back between the building base and tower portion on tall buildings facing the public realm to reduce the prominence and presence of the tower element on the public realm and maintain the pedestrian scale focus on the streetwall.*

   [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "For tall buildings along public streets or publicly accessible amenity space, a stepback between the podium base and tower portion should be provided to reinforce the character of the public realm."

   Increase this stepback between the podium and the tower to a minimum of 5 metres to further mitigate the visual impact of these tall tower at grade, improve wind conditions and access to sunlight and sky view in the surrounding area.

8. 217–227 Cross Ave. & 571–595 Argus Rd

   a. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.5.1.2 Tower Floorplate in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

      - *Residential tower floorplates must fit within a 42 m diameter circle to guarantee slender towers, thereby reducing the bulk and impact of tall buildings.*
      - *Where projecting balconies are contiguous and wrap around the entire tower, the massing may appear larger therefore, a decrease in floor plate size or an increase in separation distances may be required to mitigate this impact.*

[Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form “For tall buildings, the floorplate of each tower (the portion of the building above the base or podium) shall provide a slender tower profile to minimize adverse shadowing, maximize sun exposure and enhance the skyline.”

Limit the tower floor plate size to a maximum of 750 square metres per floor, including all floor area within the main walls of the building, but excluding projected balconies. However, where the projecting balconies are contiguous and wrap around the entire tower or significant portions thereof, the massing may appear larger, therefore a decrease in floor plate size or increase in separation distances may be required to mitigate this impact.

9. 590 Argus Rd

    a. [Step 4] Comment addressed.

    [Step 1] The proposed north elevation exhibits some height variation, however, there is still a lack of distinct changes in plane or significant breaks to mitigate the length of the massing.

    Provide significant vertical massing breaks along all frontages that exceed 55 metres in length. Refer to the Livable by Design Manual, Section 3.1 Tall and mid-rise buildings: “Design the building at a maximum length of 55.0m along the façade zone before incorporating a significant break in massing. Incorporate a break with a minimum depth of 6.0m and minimum length of 9.0m to achieve a significant vertical break and setbacks.”

    b. **[Step 4] Comment not addressed.** Please refer to Midtown Oakville OPA 70, and Section 4.5.1.2 Tower Floorplate in the draft Designing Midtown Urban Design Direction (November 2025) for the applicable detailed design direction:

        - *Residential tower floorplates must fit within a 42 m diameter circle to guarantee slender towers, thereby reducing the bulk and impact of tall buildings.*
        - *Where projecting balconies are contiguous and wrap around the entire tower, the massing may appear larger therefore, a decrease in floor plate size or an increase in separation distances may be required to mitigate this impact.*

    [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form “For tall buildings, the floorplate of each tower (the portion of the building above the base or podium) shall provide a slender tower profile to minimize adverse shadowing, maximize sun exposure and enhance the skyline.“

Limit the tower floor plate size to a maximum of 750 square metres per floor, including all floor area within the main walls of the building, but excluding projected balconies. However, where the projecting balconies are contiguous and wrap around the entire tower or significant portions thereof, the massing may appear larger, therefore a decrease in floor plate size or increase in separation distances may be required to mitigate this impact.

c. [Step 4] Comment addressed.

   [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "Multiple towers within a block, development site, or within close proximity to each other on abutting sites should vary in height from one another in order to create variation in building height and a distinctive skyline for Midtown Oakville."

   Provide variation in tower heights to respond to the local context, provide sky view and create an interesting skyline. A variation of 5 storeys or more provides a difference in height that can be perceived at street level.

10. All sites

    a. [Step 4] Comment still applicable. No action needed at this stage.

       [Step 1] As per Midtown Oakville Official Plan Amendment DRAFT September 2024, including 20.5.1 Urban Design and Built Form "Tall buildings shall be designed to the highest architectural quality and detail, and shall ensure a pedestrian-oriented built form, provide active façades oriented to public streets, and contribute to a distinctive skyline."

       Please note that further detailed comments on the architectural design and expressions will be provided at the Site Plan Approval stage.

    b. **[Step 4] Comment remains applicable.** However, Sections 4 (Policy Context) and 6 (Detailed Design Direction) of the Urban Design Brief should reference and demonstrate alignment with the Draft Designing Midtown Urban Design Direction (November 2025).

       [Step 1] Please note that comments on the Urban Design Brief, as well as the Shadow and Wind Studies, will be provided once the above feedback has been addressed in subsequent submissions to the satisfaction of the Town.

Urban Design requirements to be implemented through Site Plan Approval process

In addition to the *Designing Midtown Urban Design Direction (November 2025)*, the development shall provide the following public realm, built form and site landscaping design requirements to the satisfaction of and at no expense to the municipality, through the future Site Plan Approval process:

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11. [Step 1] Provide interim and ultimate streetscape treatment within the public rights-of-way. Cash-in-lieu of ultimate streetscape treatment may be required.

12. [Step 1] Provide at least 19% tree canopy cover on each of the subject sites, in alignment with town tree canopy and planting standards contained in Livable by Design Manual | Part C. (including section 2.1 & 2.2)

13. [Step 1] Provide tree protection for existing trees located on both the site and on neighbouring properties, in alignment with Livable by Design Manual | Part C standards. (including section 2.3)

14. [Step 1] Provide tree and understory planting treatment for all zoning required landscape setbacks, in alignment with Livable by Design Manual | Part C standards. (including section 2.6)

15. [Step 1] Provide all surface parking areas with shade planting to the maximum extent possible, in alignment with Livable by Design Manual | Part C standards. (including section 2.8)

16. [Step 1] Provide equitably distributed barrier-free parking stalls located in close proximity to all barrier-free principal entrances and with direct access to a barrier-free path of travel to the principle entrance that does not require users to cross vehicular Stepulation routes, in alignment with Livable by Design Manual | Part C standards (including section 3.3)

17. [Step 1] Provide pedestrian walkways that are equitable, convenient, barrier-free and provide safe and continuous site Stepulation, including connections to the public sidewalk, parking areas, and building entrances, in alignment with Livable by Design Manual | Part C standards (including section 3.1)

18. [Step 1] Hydro and other utility transmission lines located within a public right-of-way, should be provided or relocated underground where feasible, in alignment with Midtown Oakville Official Plan Amendment DRAFT September 2024 policies, including section 20.5.1 d).

19. [Step 1] Locate any permitted exterior waste storage facilities in non-prominent areas not visible from the public realm and provide enclosures for the storage of garbage and other waste material, in alignment with Livable by Design Manual | Part C standards. (including section 4.1 and 4.2)

20. [Step 1] Provide snow storage areas, in alignment with Livable by Design Manual | Part C standards (including section 4.4)

21. [Step 1] Provide fencing, in alignment with Livable by Design Manual | Part C standards, including section 3.4, and the towns fence By-law 2002-034 as amended.

22. [Step 1] Provide exterior lighting, in alignment with Livable by Design Manual | Part C standards, including section 4.5, and in compliance with the towns property standard's by-law 2023-047 and public nuisance By-law 2007-143, as amended.

23. [Step 1] Provide the location of all existing and proposed services / utilities, demonstrating no conflicts with proposed site works, including but not limited to building placement and tree planting.

24. [Step 1] Provide street trees and sidewalks within public right-of-way, in alignment with Livable by Design Manual | Part C standards (including sections 5.0, 5.1 and 5.2) and town engineering standard drawings for Midtown.

25. [Step 1] Site Plan approval does not include approvals of any proposed signage regulated by the Town of Oakville Sign By-law 2018-153. All signage should be removed from the drawings. The applicant should contact Enforcement Services regarding applicable sign permit process.

Conclusion/Conditions

Should the development be deemed acceptable the following conditions shall be satisfied prior to any final approval:

- **Urban Design**: That the owner submits and obtains final approval for the following to the satisfaction of the Planning Services Department:

  a) Revised and final conceptual Site Plan
  b) Revised and final conceptual Architectural Drawings.
  c) Revised and final 3D Model
  d) Revised and final Urban Design Brief
  e) Revised and final Shadow Impact Study
  f) Revised and final Wind Study
  g) Revised and final Design Rationale
  h) Revised and final conceptual Landscape Plan
  i) Revised and final conceptual Grading Plan

- **Additional comments may be provided after review of subsequently submitted new and revised materials.**

<u>DEVELOPMENT ENGINEERING</u>

Development Engineering has reviewed the submitted package by the Province, Infrastructure Ontario, for the Transit-Oriented Communities (TOC) Development Submission (TOC Submission). This submission comprises of the sites municipally known as: (1) 217-227 Cross Avenue & 571-595 Argus Road; (2) 157&165 Cross Avenue; (3) 166 South Service Road; and (4) 590 Argus Road. The documents being reviewed and commented are listed below:

1. SWM/Functional Servicing Memo/Report by Trafalgar Engineering, July 2025
2. Spill Hazard Study by Trafalgar Engineering, February 2025;
3. Civil Engineering Plans/Drawings (includes site grading plan) by Trafalgar Engineering, various dates between January 2022 and October 2023
4. Area and Block Context Plan by Bousfields, August 2025

5. Hydro Geological Investigation Report by B.I.G.Consulting, October 2024
6. TOC All Comment Response Matrix, September 2025.

SECTION 1: GENERAL

1. The draft final Midtown Stormwater Management Plan Report is available online, dated November 2025. The applicant must demonstrate that the stormwater management system and servicing network can function effectively under the interim and ultimate condition scenario. All proposed servicing must account for drainage contributions from the finalized road network as required by the ultimate drainage strategy, be constructed in their final locations, and provide flexibility to address the ongoing spill analysis by Conservation Halton.

2. All local roadways, including infrastructure supporting development, are to be designed and constructed as part of the development applications.

3. Environmental Compliance Approvals for all future municipal infrastructure must be obtained during the detailed design stage of the application.

4. On Drawings SWM-F1 and SWM-F2, the block of 586 Argus Road is shown as draining to West Morrison Creek. However, according to the latest Midtown Stormwater Management Plan Report, this area drains to Sixteen Mile Creek. Please revise the drawings, calculations, and storm design sheets accordingly.

SECTION 2: SERVICING AND ROAD LAYOUT

217 & 227Cross Avenue & 571-595 Argus Road

5. The 8m-wide block, intended as access for the development and the neighboring property to the east, shall be dedicated to the Town of Oakville. All servicing within this block will be owned and operated by the Town of Oakville and the Region of Halton. If required, access easements will be granted in favor of private parties until the full construction of the future street is completed.

6. The proposed 610 mm × 965 mm elliptical storm sewers under Street C exceed their full-flow capacity under the 5-year interim condition. Please revise the design and upgrade the pipe size to accommodate the proposed development.

7. The minimum earth cover requirement is not met for the pipe between MH118 and MH117 at the Street C and Cross Avenue intersection. Please revise the design to meet the minimum cover requirements.

157 & 165 Cross Avenue

8. All servicing within Street A will be owned and operated by the Town of Oakville and the Region of Halton. If required, access easements will be granted in favor of private parties until the full construction of the future street is completed.

9. Regarding Street A vertical alignment, the maximum road garde change is 1.5%, vertical curves shall be introduced if the grade changes exceed 1.5%. This sawtooth profile may cause maintenance difficulties; discussion with Road and Works is required.

10. The superelevated design of Street B and its intersection with Street A will not be supported. The proposed superelevated Street B is not consistent with the standard right-of-way cross-section and may create difficulties for a future extension of Street B through adjacent properties.

166 South Service Road

11. All servicing within Street B will be owned and operated by the Town of Oakville and the Region of Halton. If required, access easements will be granted in favor of private parties until the full construction of the future street is completed.

12. According to the latest Midtown Stormwater Management Plan Report, the majority of South Service Road drains eastward and ultimately discharges to West Morrison Creek. Please revise Drawings SWM-F1 and SWM-F2 to reflect the full South Service Road drainage area. The storm design sheets should also include pipe sizing from MH140 to MH102 within the South Service Road realignment, and account for all applicable external drainage areas.

    Additionally, please consider the opportunity to redirect a portion of the South Service Road drainage area to Sixteen Mile Creek through Street A, as West Morrison Creek has a severe flooding issue.

590 Argus Road

13. It is the developer's responsibility to construct the proposed 450mm storm sewer on Argus Road, as the development relies on this sewer as a storm outlet. Currently, the development cannot be serviced, and these works on municipal land will be required. The application must illustrate the full extent of the construction, including the sewer's outlet to an existing structure located to the south, adjacent to the Phase 1 development. An overall servicing drawing is required to demonstrate the feasibility of the proposed servicing designs.

    Additionally, the sewer alignment crosses into the future road alignment of Argus Road and appears to enter private property. Further discussions with the Town will be necessary before finalizing the sewer and road alignments.

14. Please investigate whether there are any private storm connections currently connecting to the existing storm sewer network at manhole number MH.114. It appears that this sewer may potentially be servicing multiple properties, and any existing connections must be incorporated into the new storm sewer design and clearly shown on the plans.

SECTION 3: STORMWATER MANAGEMENT

15. Please not that the stormwater management requirements and calculations should be updated as per latest Draft Final Midtown Stormwater Management Plan Report dated November 2025.

16. Please note that the developer is responsible for the design and construction of the stormwater management strategies for the proposed local roads and the work should be done in the coordinated fashion.
17. The overall report does not provide the proper SWM controls for the proposed local roads. There is no SWM designs for the Street 'C', Argus Road and South Service Roads under both interim and ultimate conditions. The proposed quantity control for Street 'B' and 'A' might not be sufficient, please refer to the latest Draft Final Midtown SWM Requirements to see if the PCSWMM model needs to be run to prove the post to pre control are met at the subwatershed outlet.

18. Please provide more details on ROW water balance analysis not limited to the required volume and its relevant calculations, please also provide the in-situ data to justify and demonstrate the feasibility of the water balance strategies for the proposed local roads.

19. Please note that the detail water balance calculations for both sites and roads should be provided at the draft plan stage.

20. Section 2.3.1 indicates that "Additional stormwater management infrastructure (i.e. low impact developments) can be implemented into the road allowance design at a later date…", which is not acceptable. Please note that all SWM controls proposed for the local roads should be designed and constructed by the developer in a coordination fashion.

21. The Town recommended the proposed storm sewer in the ROW incorporates the flexibility to convey the spill flows within the SWM strategy.

22. Please talk about the existing stormwater servicing connection for Site 2&3&4 under Section 1.2.

23. What is the proposed total developable area of Site 4 in Section 1.3?

24. Please provide the storm drainage plan under "ultimate conditions" in Appendix D.

25. It is understood that most of the sites have uncontrolled areas due to different levels of the constrains and the sites have been overcontrolled for uncontrolled flows. However, please demonstrate the receiving major system of the ROWs have sufficient capacity to accommodate these uncontrolled proposed flows under both interim and ultimate conditions.

26. The design of major and minor systems of the proposed roads should be provided at the detail design stage.

27. The HGL analysis will be required to review during the detail design stage.

28. Based on the available information, without any justification on the appliable of taking the large amount of groundwater from the underground and discharge to municipal storm sewer, the Town does not support this method and will be recommending the bath-tubbing for groundwater dewatering.

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29. The ETV certifications of the selected water quality treatment unit for both roadway and the subject site will be required to review during the detail design process.

30. There are two phases SWM calculations in Appendix D for Site 3, however, these two phases were not reflected in the Section 6.3 of main SWMR. Please revise it accordingly.

31. Pre-development flow rates in Table 11 and Table 12 do not match the values in Appendix D. Please revise it accordingly.

32. Why does the proposed drainage area are less than pre-development drainage area for 590 Argus Road - Phase 2 in Appendix D? Total of proposed drainage from phases 1 and 2 are 1.409 ha, while the total of existing area is 1.536 ha. There seems to be some proposed area was not accounted as part of SWM Calcs, please correct it accordingly.

33. Why does the water balance only calculated based on 1.32 ha for Site 4? Should be the total proposed area?

34. Section 6.5 indicates that “Any required LIDs are to be designed and constructed by the Town of Oakville as capital works projects”, which is incorrect statement. Same as above, the applicant is responsible for the design and construction of the stormwater management strategies for the proposed local roads, and the work should be done in coordinated fashion.

35. The town has not received the spill hydraulic model in the package. Please provide it to the town for record.

36. Section 4.2 of the Spill memo indicates that there a small increase in flows on Metrolinx Lands, please provide the value of increase flows.

37. The Spill memo analyze two scenarios, interim and ultimate conditions. However, the interim conditions seem representing the four sites being built out with the local roads remain interim conditions. However, there should be multiple interim conditions due to the construction phases of these four sites. Please provide modelling and demonstration on the spill impact in different construction phases.

38. General comments for Section 4.2.1 to 4.2.4 and 4.3.1 to 4.3.4 of the Spill memo, please provide the maximum and minimum values of depth, velocity and depth velocity product in table as well. Please also indicate if the interim and ultimate conditions have brought any impacts on the adjacent properties of these four sites, as well as the downstream area, when it comparing to the existing conditions. The site and the proposed roads should demonstrate its consideration about safely conveying the spill flows without increasing the flood risk on the adjacent sites.

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TRANSPORTATION

General Comments

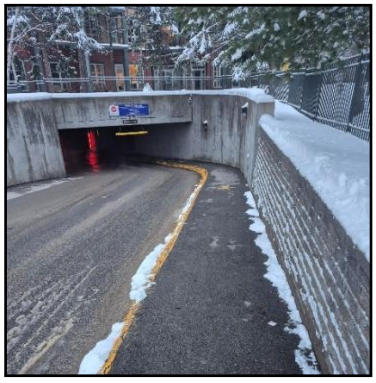
1. A phasing plan that includes further analysis and details is required as part of the TIS that identifies horizon years that are tied to the anticipated build-out of each phase of the development. The phasing plan should also include, but not be limited to, interim modelling, anticipated road improvements, mitigating measures and road network drawings as well as interim TDM measures. As currently shown, the TIS does not adequately demonstrate how the proposed developments will operate prior to the full build out of the Midtown Transportation network and associated infrastructure.
2. The submission materials must be revised to align with the approved Midtown Transportation Plan and Designing Midtown. All road designs should align with the approved plans and are subject to review and approval of the Town. A Design Conformance Review is required, and any deviations must be justified through transportation engineering rationale, including the application of first-principles analysis where appropriate.
3. The Town continues to advocate for improvements such as Oakville GO Station Expansion, new North-South Road over QEW and rail corridor, Kerr Street grade separations, and Royal Windsor interchange improvements. The impact and need of these improvements should be reviewed as part of the TIS to determine the conditions with and without each of these improvements.
4. The submitted TIS does not sufficiently address key traffic operational issues, nor does it identify necessary interim multimodal infrastructure improvements. The Midtown Transportation Plan identifies a road network capable of supporting redevelopment in Midtown to 2051. The TIS must therefore be updated to address the additional operational concerns identified and include a sensitivity analysis that quantifies the incremental impacts of the proposed density increase.
5. The applicant should confirm with Oakville Hydro the appropriate location of the site transformers as there will not be space within the public ROW, including local roads, to accommodate this infrastructure. These would be subject to the review and approval of Oakville Hydro.
6. The Phasing Plan denotes the construction of the Oakville GO Parking Lot entrance to be reconfigured with construction of Street 'A' in Phase 1 of the project. The TIS should be updated to be consistent with the phasing plan and show this reconfiguration in the interim and ultimate phases. An offset intersection will not be accepted.
7. Review and address Peer Reviewer comments in addition to these prepared by Town staff (see Attachment 2 – Transportation Peer Review Comments).
8. Refer to the follow-up responses of the 1st Circulation Comments.

Sustainable Transportation

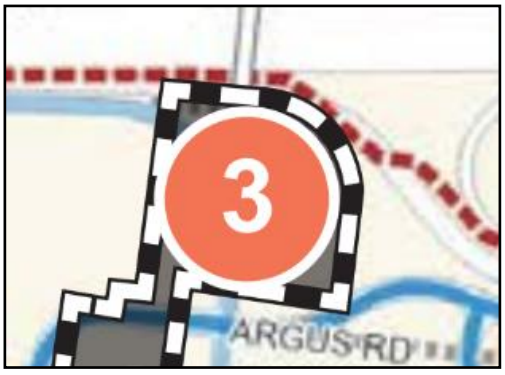
1. **Site Plan**

   Bike Parking

a. [Circ. 2 MD] – Bike parking information shown on the submitted floor plans is incomplete and does not allow for an adequate assessment at this time. Full dimensional measurements of all bike locker rooms and bike parking rooms must be provided on the floor plans. In addition, detailed dimensions of each bike parking space are required, including individual stall dimensions as well as aisle widths and spacing between bike racks, in accordance with Ontario Traffic Manual Book 18.
b. [Circ. 2 MD] A minimum of 5% of the total bike parking spaces must be provided as horizontal parking to meet AODA accessibility standards, and these accessible spaces must be clearly identified and dimensioned in the plans. Not all floor plans currently include the required bike parking details; therefore, all floor plans containing bike parking spaces must be reviewed and revised to ensure consistency. The plans must include the type of bike rack to be installed, to allow for a complete review of the proposed bike parking facilities.
c. [Circ.2 MD] Show dimensions of the "bike elevator" on the floor plans. Identify a secondary exit, with bike ramps, if the elevator is not in use. Bike ramps can be in the stairwell or the car ramp as a pedestrian walkway- both ramps must be "in addition" to statutory width requirements of stairwells and underground driveway accesses (see below example).



d. [Circ 2 MD] All external bike racks are required to have a direct burial installation in the interest of security and safety.
e. [Circ 2 MD] Identify how bike parking will be allocated to occupants of the individual proposed development site.



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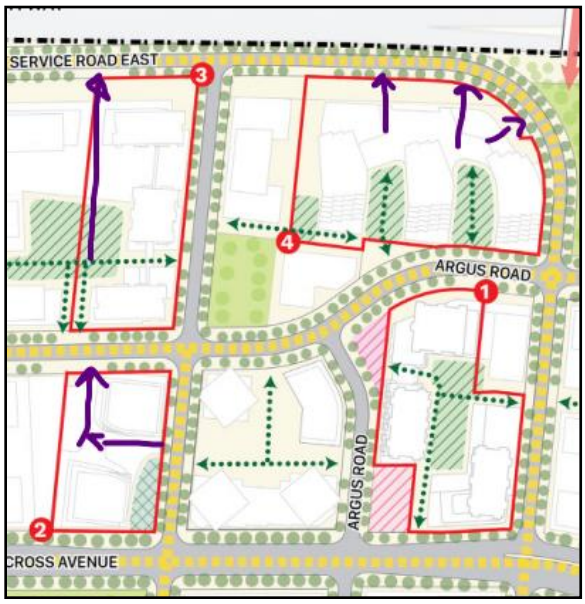
2. Site Plan General

a. [Circ 2] The Area Block Plan (left above) and the Traffic Study Plan (right above) contain different development boundaries. Please correctly identify the site boundary for **590 Argus Rd** on all plans in the development application package.
b. [Circ 2] Identify any pedestrian and cycling connections to ROW here (circled below). An important feature is the proposed North- South pedestrian bridge and there is no functional connectivity to this location.
c. [Circ 1] Confirm and identify in the drawing "*Area Block and Context Plan, Active Transportation Connections*", the pedestrian connections to the ROW, as shown in the excerpt below.

From Area Block and Context Plan: *Active Transportation connections*



d. [Circ 2] The midblock active transportation connections deviate from the OPA and don't provide the continuity needed for continuous travel through the area. Please revise AT routing to align with OPA 70 Schedule 6 to ensure there is continuity across blocks between POPS Spaces.
e. [Circ. 2] - Residential multimodal spatial dimensions and locations (bikes, e-scooters and other types of multi-mobility) within each building footprint, are recommended to be stated on the Site Plan, in accordance with the requirements in Ontario Traffic Manual, Book 18.
f. [Circ 2] - Please provide a cycling circulation plan for the development site illustrating connections to the road network.
g. [Circ 2] - A wayfinding strategy within the building to identify sustainable modes spaces is recommended.
h. [Circ 2] - A wayfinding strategy throughout the POPs areas is recommended.

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3. Pedestrian and Cycling Circulation Plan

a. [Circ. 2] – All internal areas with bike parking (underground, ground floor or mezzanine parking) require a circulation plan from the bike parking area to the nearest 2 exits (elevator and ramp) and to the ROW.
b. [Circ 2] – Please provide pedestrian circulation plan from any POPs, courtyard areas to the ROW for each proposed development site.
c. [Circ 2] – A circulation plan shall also be prepared to identify safe pedestrian routes within underground parking areas, including the locations of wayfinding signage and pedestrian pavement markings.

Transportation Demand Management Measures

a) [Circ 2 MD] Staff strongly recommend the applicant to join the Smart Commute Program in Oakville. Please contact the Sustainable Transportation Program Coordinator to discuss further. (mary.dimas@oakville.ca)
b) [Circ. 2 - MC] – Interim TDM measures tied to the build out of each phase are required until the full transit, Midtown road network and AT infrastructure is built. The TIS should consider the Midtown TP target mode split, identify gaps and propose appropriate TDM measures through the interim horizon years.
c) [Circ. 2 MD] – Please identify the implementation phasing of the TDM measures across the proposed site for hard and soft measures, with a focus on car share, bike share, and private shared mobility devises.
d) [Circ. 2 – MC]
All proposed TDM measures (interim and ultimate) should include detailed descriptions and commitments from the applicant, rather than general suggestions. The measures should reflect actual agreed-upon implementations by the applicant. If Micromobility is proposed, provide details as to where, and how it will be is implemented.
e) [Circ. 2 - MC] Car-share is suggested. Provide car-share agreements and illustrate the number of parking spaces designated for car-share vehicles only. Confirm whether these spaces would be located within the tenant section of the parking lot or within the general visitor center where the general public may have access.
f) [Circ 2 MD - Information] Car Share - Staff strongly recommend that the applicant seek the same car share vendor for all proposed developments in order to support greater car share opportunities for future occupants.
g) [Circ 2 MD] **Bike lockers** – Please state in the buyer agreement that any surplus, or unused bike spaces will first be offered to residents in the associated units.
h) [Circ 2 MD] Provide details on the optional annual car share membership, and how the car share membership will be distributed. It is strongly recommended that a 5-year free membership is available for all future occupants.
i) [Circ 2 MD] **Bike Facilities** - Bike Share should include the location of bike share stations, vendor and other bike share system requirements.
j) [Circ 2 MD] **Bike Repair Stations** should be identified on a map, with associated wayfinding and the identification of set responsibilities for repairs.
k) [Circ 2 MD] **Micromobility.** The applicant has mentioned micromobility as a TDM measure. Town Staff require further clarification as to what is intended to be delivered including

clarification on if the micromobility solutions will be available for general public use or limited to occupants of the developments.

l) [Circ 2 MD] **Transit information**

Digital displays in lobbies are strongly recommended for transit and cycling, car share and any other active transportation information.

m) [Circ 2 MD] **Travel Mode information package**

This package will be required to be shown to the Sustainable Transportation program coordinator for approval. Provide a communication and marketing plan for the distribution of this material, to include time of delivery of information

n) [Circ 2 MD] Through a **Residential TDM program**, provide a TDM monitoring data collection program for each phase of development to measure program effectiveness of the TDM plan and inform future phases of development. This would include:

a. Parking utilization surveys; three days from 7:00am to 12:00am, and 3:00 am
b. Vehicle "ins & outs" at site driveway(s); three days from 7:00am to 12:00am
c. Person counts (i.e. person tracing); three days from 7:00am to 12:00am

Survey work with new occupants on travel behavior, with a reward of presto card reimbursements.

o) [Circ 2 MD] **Shower facilities** are required for cyclists. Any ground floor bike ancillary facilities should include a clever design, such as shower facilities being designed with easy access for cyclists and gym users.

p) [Circ 2 MD] Please include carpooling spaces near exits, in the interest of promoting TDM measures

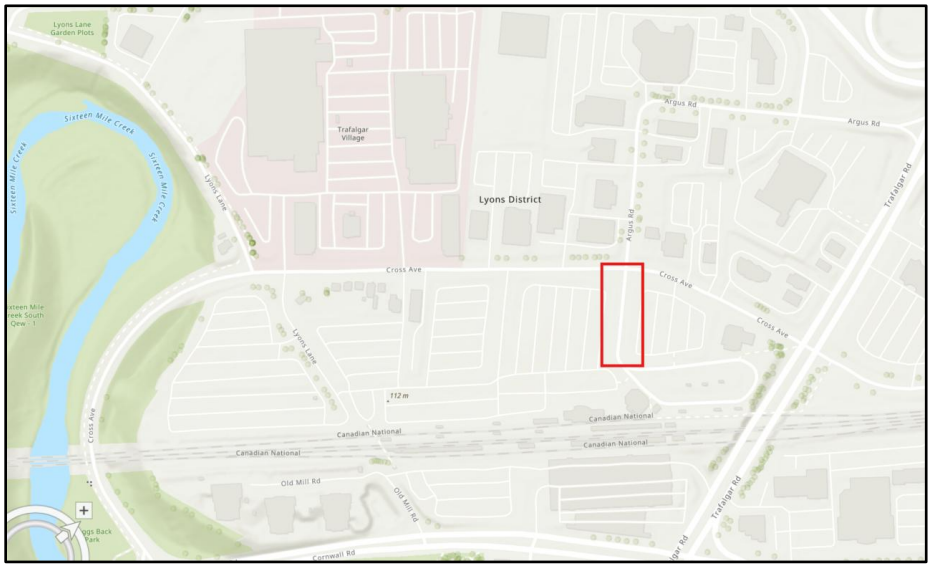
q) [Circ 2 MD] Update the TDM measures in the TIS to provide dates of delivery of each TDM measure proposed.

r) [Circ 2 MD] - Please use the OTC MMLOS guidelines to set level of service targets for all users of the road network. Proposed MMLOS targets are also identified in the Midtown Transportation Plan, Active Transportation Appendix.

Oakville Transit

a. [Circ. 2] – The road network design initially outlined in the 2014 Midtown EA was predicated on moving the location of the bus terminal to the East side of Trafalgar with the platform extending across the bridge to allow pedestrian access. The Town is continuing to work with Metrolinx (MX) to confirm the movement of the bus terminal to the East side of Trafalgar Rd. MX is constructing station improvements including the construction of new bus bays at the current site. These bays are located where a proposed new local road is located. It is recommended that the developer confirms with MX if the movement of the station is still planned. If not, the road network and subsequently the flow of traffic within the proposed development could be impacted. Specifics regarding the design of the additional bays can be requested of MX if necessary but were listed as confidential in distribution so they cannot be shared on this platform.

Figure 2. Location of new bus bay construction



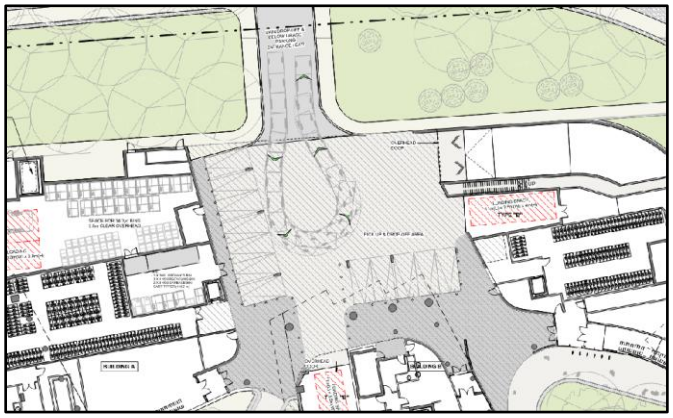
2. [Circ. 1] – For information - as per the Town of Oakville's draft Midtown OPA, Cross Avenue will continue to serve as a transit route for transit services to and from the Midtown Oakville transit hub.
3. [Circ. 1] Planning Justification Report Section 3.6.3 – please make the following changes:
    A. Route 4 operates from 7:30AM midnight on Saturdays and from 8AM to 8PM on Sundays.
    B. Route 5A no longer exists. Please remove references to route 5A including the reference to the route operating along Sixteen Mile Drive. Service along Sixteen Mile Drive is now provided by Route 37.
    C. Route 20 operates until 11:30pm on weekdays.
    D. Route 24 operates until midnight on weekdays.
    E. Route 120 operates from 6:30AM – 9:30AM and 3:00PM – 7:00PM. There is no mid-day service.
4. [Circ. 1] Planning Justification Report Section 3.6.4 - please add the following: "Oakville Town Council has recently approved Oakville Transit's 5-Year Business plan. The plan maps out Oakville Transit's plans from 2025 to 2029. There are a number of planned changes to Oakville Transit's bus network, including changes to routes that serve the Oakville GO Oakville Transit Bus Hub. The changes will be done in phases between 2025 and 2029."

Transportation Services

1. Site Plan

a. [Circ. 2] – Cross section designs are subject to review and approval of the Town. Cross section and streetscape should reflect council approved Midtown Transportation Plan (TP) and Midtown Implementation Plan including "Designing Midtown – Urban Design Direction". The current conceptual cross sections are not consistent with the Midtown TP plans.

b. [Circ. 2] - Oakville TMP was approved by Council on October 6, 2025. Prepared in coordination, Oakville TP was approved by Council on December 8, 2025. The development proposal should incorporate principles and recommendations outlined in Midtown TP. For example, Site Plan design elements include centralized loading areas, centralized parking, streetscape and curbside management, end-of-trip Active Transportation amenities and TDM etc., should align with the strategies and objectives identified in the TMP/TP.
c. [Circ. 2] – Per the Midtown TP Cross Section, please identify location of on-street parking along the local and collector street frontage. Note the on-street parking along Argus/Davis Road is also a mixed-use zone for bike share facilities, potential street patios etc.
d. [Circ. 2] – Midblock AT connections are not proposed. Refer to OPA 70 Section 20.5.2 and the Midtown TP for intended design and purpose of Midblock connections.
e. [Circ. 2] - Separate Phasing Plan has been provided to illustrate the interim road network for each phase of development. In order for the Town to provide road and winter maintenance, temporary dead ends will require cul-de-sac, designed to the Town's road standards. Based on the current concepts, the cul-de-sac may impact building limits during the interim condition for Phase 2 and Phase 3.
f. [Circ. 2] Given the of the cul-de-sac, which may significantly impact right-of-way and interim building limits, it is recommended that the roads be phased from intersections to intersections, and temporary dead ends be avoided during each phase of the development
g. [Circ. 2] - All site accesses shall be designed in accordance with the Town of Oakville By-law 1988-220, Standard Drawing STD 10-2. It is understood that a deviation is being proposed, however the current designs are not supportable. Vehicle Turning Diagrams indicate a truck cannot enter the site while a passenger car is waiting to exit. Similarly, when a truck is exiting, the proposed access width does not allow the trucks to remain within its designated lane, nor does it provide sufficient space for a truck to queue while conflicting through traffic is present along the roadway.
h. [Circ. 2] – For 217-227 Cross Avenue & 571-587 Argus Road, multiple accesses are proposed along Argus Road. Consolidate access into the local roads; the future local street or Argus Road (North-South direction/segment). The access at Argus Road (East-West Segment), is located in close proximity to upstream and downstream intersections.
i. [Circ. 2] - During interim conditions, circulation and fire access should be reviewed to ensure that each building maintains an alternative means of access; (i.e., two accesses are maintained through the interim conditions).
j. [Circ. 2] – Propose at-grade pedestrian crossing, and/or underground pedestrian connections/concourse that links buildings within the same block and connections to other developments in Midtown.
k. [Circ. 2] – Designated PUDO area is unclear in all plans.
    i.e., 590 Argus Concept Plan identifies a PUDO area, however, the area does not seem to allow a vehicle to stop curb-side to pick-up and drop-off passengers. Confirm intentions and if the parking spaces are to be used as PUDO, and confirm if PUDO is provided in other buildings.



l. [Circ. 2] – Site Specific (internal) Traffic Calming measures should be proposed in detailed submissions.

2. Traffic Impact Assessment/Study

Road Design

a. [Circ. 2] – Midtown Cross-sections and Functional Design are still in progress. Updates to the cross-section drawings and TIS will be required. The proponent must acknowledge that the development will comply with applicable Midtown cross-sectional and road design requirements. If deviations are necessary, the applicant shall clearly state each deviation and collaborate with the Town, Region, Metrolinx, MTO and other affected stakeholders to develop a coordinated, and effective design.
b. [Circ. 2] – Section 3.3: Include the OPA 70 approved vehicle and AT road network diagrams. In subsequent section, provide a detailed outline of the proposed modifications currently being requested. Include diagrams with overlay to illustrate the deviations.
c. [Circ. 2] – Sight Distance Analysis has not been conducted for all new intersections.
d. [Circ. 2] – Given the number of road design elements included in this application, TIS should incorporate a section on **Road Design Conformance** for the Midtown network. This section must review the proposed road design elements against the Town standards and, where applicable, TAC guidelines or industry best practices. Any identified non-conformance (e.g., daylight triangles) must be supported by appropriate transportation engineering justification. The Road Design Conformance review should include an assessment of the following:

- Table of Summary: Road Classifications, ROW, Posted and Design Speeds
- Cross Sectional Requirements
- Tangent Length Requirements
- Horizontal Curvature
- Vertical Curvature
- Road Centerline Radius
- Intersection Radius
- Intersection Angle
- Intersection Spacing

- Driveway Spacing
- Daylight Triangle Requirements
- Sight Line Review
- Vehicle Turning Review
- Interim Design – See Interim Road Design comments below.
- Access Review - See Access comments below.

e. [Circ. 2] – The review should note the required ROW widths from OPA 70 and the provided ROW width. The review should include South Service Road, Cross Avenue, Argus Road, and the new road networks surrounding the Subject Lands; Street A, Street B, Street C (or also referred to as Street 1, Street C, Street D in TIS Figure 9), Argus Road (east-west), Argus Road (north-south).
f. [Circ. 2] – Table 2: Town requires a daylight of 15.0 m for Collector-Collector and 5.0 m for local-local. All buildings, fencing, landscaping and physical obstructions over 1.0 m must be located outside of the daylight triangle.
g. [Circ. 2] – The proposed reductions in daylight triangles and corner rounding dimensions should be supported by examples in other comparable suburban municipalities such as Mississauga as opposed to City of Toronto. Drivers within Toronto have come to expect tight radii and small daylight triangles that are often times as a result of existing infrastructure whereas the proposed developments does not share the same constraints and will not serve the same types of drivers as within a City like Toronto.
h. [Circ. 2] The reduction in daylight triangles should be based on first principles rooted through TAC or other recognized standards. TIS proposes providing daylight triangles and surface easements to support underground parking. This should be confirmed to ensure the underground area is not needed for the installation of utilities or other infrastructure required to support the road network.
i. [Circ. 2] – Section 3.6.2 – Justify the revised design of Argus Road “Swelbow” alignment.

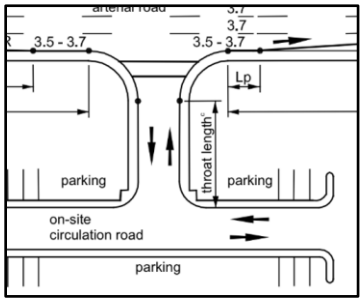
Interim Road Design

a. [Circ. 2] – The Town is in support of the Oakville GO relocation and will continue to work with Metrolinx (MX) to design an efficient Midtown road network to accommodate the relocation.
b. [Circ. 2] – Town will collaborate on an acceptable design once the applicant confirms MX’s timeline and supportability.
c. [Circ. 2] – The offset intersection of Cross Avenue and Street C/Oakville GO access is not supportable. As part of this development, realignment of the south leg should be part of the Street C construction.
d. [Circ. 2] – The interim design is not supportable due to:
    - lack of coordination and confirmation from MX,
    - Absence of traffic operational analysis,
    - Reduction in through and eastbound left-turn lanes, and,
    - Duration of interim configuration is unknown.
e. [Circ. 2] – MX driveway to the west is proposed to become a local road in the future. The Town does not support the one-way entry, one-way exit during the weekday a.m. and p.m. peaks, respectively. Such operation would require strict enforcements.

It is also unclear how “gate control” would enforce one-way reversible flow since the “gate” has to be open to allow entry or exit. If gate is located at or in close proximity to Cross Avenue, queue and spillback to Cross Avenue would be expected should a vehicle attempt an illegal maneuver. Furthermore, a U-turn would be required should an illegal attempt fail and the vehicle is stuck within the driveway.

Access

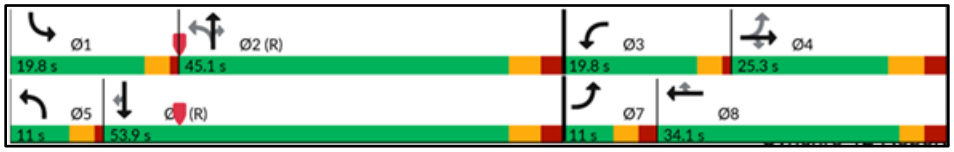
a. [Circ. 2] – Please provide figure(s) within the TIS with dimensions illustrating all access meets the relative corner clearance from the external intersection(s).
b. [Circ. 2] – Provide a separate figure(s) with all accesses’ radius and width shown. Drive aisle dimensions, parking and loading space dimensions should also be shown.
c. [Circ. 2] – Required throat length is not provided. Note TAC’s measurement starts from the curb return of the main road, to the first internal conflict point, typically, beginning of where vehicles must turn left or right.



d. [Circ. 2] – Conduct Sight Distance Analysis for all accesses.

Traffic Operations

a. [Circ. 2] – For all intersection operations, provide synchro output from Lanes, Volumes, Timings for signalized intersections.
b. [Circ. 2] – Provide storage lengths of all turning movements with dedicated auxiliary lanes, and provide downstream intersection spacing for all remaining movements without dedicated storage lengths.
c. [Circ. 2] – Section 11.3 - Lost time adjustment “-1.0” should not be applied to all movements. -1.0 can be applied to turning movements only to simulate vehicles clearing the intersection during the amber and all red.
d. [Circ. 2] – For signal timing optimizations, more detail is required. Please identify which intersection under which scenario was optimized. A diagram of the existing vs. proposed signal changes should be shown. A side-by-side screenshot diagram of the splits would suffice. Example of a screenshot:



e. [Circ. 2] – For comparative purposes, the same optimized signal timings should be used between future background and future total conditions, unless the optimization is only warranted by site generated traffic. In such case, site warranted improvements should be specified and the future total condition before and after signal optimization should be shown.
f. [Circ. 2] – Ensure Sim Traffic simulations are based on a minimum of 3 simulations of 60-minute runs, with a seed time of 15 minutes.
g. [Circ. 2] – Analysis of the corridors without growth is not supportable without substantial evidence to prove that the study road network has not grown over the years and will not grow in the near to long-term future.
h. [Circ. 2] – Provide the relevant AADT to support the basis for no growth analysis, AADT for each roadway should be reviewed including the MTO highways.
i. [Circ. 2] – It is mentioned that the historic AADT is compared to 2023, during which hybrid and remote work were still prevalent. Confirm these trends are still representative of the current conditions.
j. [Circ. 2] – Clarify why growth rate is only applied to through movements. This blanket assumption seems unreasonable, particularly at arterial and collector intersections where area wide growth and intensification would increase all turning movements. In some intersections such as Cross Avenue at Trafalgar Road, turning movements are the current predominant flows. Unless justification with valid data is provided, revise study to apply the same annual growth rate to all movements.
k. [Circ. 2] – TIS does not adequately address traffic operational concerns. The new Midtown road network may be underestimated without majority of the Midtown sites accounted for. Despite the under-estimation, the proposed development is still expected to cause delays with intersections expected to operate beyond capacity with queue spillback. Mitigation measures are required.
l. [Circ. 2] Based on the available Midtown TP info at this time, the following intersection configurations are:
    - Cross Avenue: 2 EB and 2 WB, with dedicated left-turns at the signalized intersections.
    - Argus Road: 1 EB and 1 WB, all assumed to be unsignalized with the exception of South Service Road and Argus Road, where dedicated EB and WB left-turn lanes are proposed.
m. [Circ. 2] – In the TIS update, show results for Existing, FB (with Growth & 420 SSR), FT with Growth.
n. [Circ. 2] – The TIS should also reference the proposed timelines for the Midtown TP road network improvements. It should assess whether the temporary traffic operational constraints are acceptable in anticipation of further Midtown Road work and improvements. Additionally, the TIS should recommend if any specific road improvement timelines need to be accelerated.
o. [Circ. 2] – New intersections and site access must be clearly defined in the TIS and consistently referenced across all TIS write up, figures and Synchro outputs.
p. [Circ. 2] – A diagram of the assumed future lane configurations should be included.
q. [Circ. 2] – The new Midtown local streets surrounding the Subject Lands were neither reviewed nor discussed in the TIS operations section. In the Synchro output, “N-S Road 2W at Cross Avenue” is included; however, it is unclear which intersection this refers to, as the naming is inconsistent with other figures in the report. The TIS future traffic operation summary and Synchro outputs must include all local roads surrounding the Subject Lands and the TIS must reference consistent street names. These include:
    - Argus Road/Street 1 at Street C

- Argus Road at South Service Road/Street D
- Cross Avenue at Street C
- Cross Avenue at Street D
- Cross Avenue at Private GO Access (West of Street C)
- South Service Road at Street C

r. [Circ. 2] – Likewise, several existing critical intersections surrounding the Subject Lands have not been reviewed in TIS. For instance, Cross Avenue and Oakville GO Parking Access, Cross Avenue and West GO Parking Access have not been reviewed. Based on the 95th percentile queues blockage from the upstream intersection of Cross Avenue and Oakville GO Bus Access is expected.

s. [Circ. 2] – Volumes for SBLT are missing at Royal Windsor Drive and South Service Road/QEW ON-OFF Ramp in 2024. Confirm if SBT volumes are correct. Based on the surrounding road network, SBL provides connects to the east towards Ford Drive, SBT connects to South Service Road, which directs traffic back to the west towards Trafalgar Road. The expectation is that there would be a higher SBL than SBT volumes.

t. [Circ. 2] – Mitigation measures should be reviewed for all intersections with v/c at or above 1.0, and queues beyond current/proposed storage lengths and/or beyond downstream intersection. The mitigation measures should include background warranted improvements and identify as such. For example (but not limited to):

1. <u>Trafalgar AT Cross:</u>
   - EBL Queue of 173 (186) metres will block the downstream intersection. While the Town does not support the no growth analysis, it is evident that the Subject Lands will materially affect the traffic operations at this intersection; queue is expected to increase from 81 to 173 metres in AM, 168 to 186 metres in PM.
   - Likewise for SBTR from FB no growth to FT no growth (177 to 255 metres in AM)
   - Confirm 50th percentile and 95th percentile is correct for FT with growth. Unclear why the 50th percentile queue is longer than 95th percentile.
2. <u>Trafalgar AT Cornwall:</u>
   - unexplained decreased in queue for SBL from FT no growth to FT with growth.
3. <u>Argus AT Cross:</u>
   - EBT: AM and PM block downstream intersections
   - WBT: AM block downstream. The site generated traffic is expected to materially affect this queue.
   - EBT: AM queue increases from 58 meters to 92 meters from FB to FT.
   - SBL: AM queue increases from 31 to 71 meters.

u. [Circ. 2] – Based on the updated analysis, provide a clear summary of the required mitigation measures, identifying the improvements needed, the applicable horizon year, the responsible triggering party, and the party responsible for implementation.

Proposed Density

a. [Circ. 2] – The Midtown TP identifies a road network capable of supporting redevelopment in Midtown to 2051. OPA 70 and Midtown TP evaluated numerous potential road network improvements that were not recommended due to the projected population through 2051 and

associated traffic conditions expected in 2051. The increase in proposed density utilizes most of the available road capacity.

To determine the supportability of the proposed density for the approved Midtown TP road network:

- Conduct a sensitivity analysis that quantifies the incremental impacts of the proposed density.
- Summarize the net trip generation difference between the proposed development and the scenario assuming maximum FSI permitted under the Midtown OPA/Midtown TP assumption.

b. [Circ. 2] It's noted that there will be additional work completed using the Town's and Region's EMME macroscopic model. Details on how this approach would work and next steps should be explored following the review of these comments with Town staff.

Interim Operations

a. [Circ. 2] – TIS Phasing Diagram (Figure 9) is inconsistent with Section 4.2.3 and Trafalgar Engineering's Phasing diagram. Phase 3 and 4 seem to be swapped.
b. [Circ. 2] – Summarize the proposed multi-modal road network through the development phases as shown by Trafalgar Engineering.
c. [Circ. 2] – Provide interim traffic operational analysis. The interim analysis must include each phase of the development, **every 1000 units buildout**, and at a minimum every 5-year increments (whichever comes first), to confirm if specific infrastructures are needed prior to buildout of the development, or if temporary improvements are required. The analysis should also confirm intersection lane configuration and type of control through the interim years.
d. [Circ. 2] – Outline the gross trip generation and internal trip generation separately.
e. [Circ. 2] – Based on the interim analysis, update phasing drawings illustrating the proposed road network, identifying what new infrastructure will be built and when.

Trip Generation

a. [Circ. 2] – Existing Trip Generation should be estimated and removed from future total volumes.
b. [Circ. 2] – Provide additional details regarding which trip generation categories for the non-residential uses. For example, for retail, is trip generation conducted using Dense Multi-use? With or without supermarket?
c. [Circ. 2] – For the Retail Trip Generation, why is LUC821 used when each individual block proposes a GFA well below 40,000 sq ft to 150,000 sq ft threshold?
d. [Circ. 2] – Surrogate data of the Community Use Trip Generation in North York should be provided in the Appendix for review. Provide additional details to clarify how this site in North York would be comparable to the proposed development in Midtown Oakville.
e. [Circ. 2] – Provide excerpt of the internal trip captures from NCHRP Report 684.

Minor TIS Revisions

c. [Circ. 2] – Section 2.0 – correct the following:

- QEW has speed limit of 110 km/h?
- Clarify Trafalgar Road has a posted speed of 60 km/h north of Argus Road and 50 km/h south of Argus Road.

- Chartwell Road is a minor collector road south of Cornwall Road and provides connection to Lakeshore Road E.
- South Service Road E is currently designated as Minor Arterial Road with a posted speed of 50 km/h and 60 km/h.
- Leighland Avenue is two lane cross section west of Oakville Place and Iroquois Shore is only reduced to two lane cross section east of North Service Road.
- Oakville Transit and GO-Transit Routes and schedules have changed since the preparation of this report. i.e., Route 24 is no longer in operation. While the consultant is not expected to continuously update this background information, Table and Figures (i.e., Figure 2) should indicate the date of which the review was conducted.
- Figure 3 is not legible due to the poor image quality provided.
- Clarify "Community Use" within the TIS.

d. [Circ. 2] – TIS volumes figures of the future road network are not consistent with the approved OPA 70 (February 2025) nor the Contextual Plan prepared by Bousfield. Notable differences include:
   - Removal of Lyons Lane North of Cross Avenue
   - Extend Lyons Lane east-west south of Cross Avenue
   - Realignment of South Service Road (west of Trafalgar)
   - South Service Road extends south, through Cross Avenue, to Lyons Lane.
   - Local Road network (east of Trafalgar)
   - Assume north-south roads go nowhere
   - South of Trafalgar Road and Argus Road

e. [Circ. 2] Summary of Recommendations should be included in the TIS Conclusion. The Summary of Recommendations should be tabulated with a list of mitigation measures, whose responsibility and the recommended timing of the improvement.

3. Parking Review

a. [Circ. 2] – Parking Rates referenced seem to be calculated with studios included. The actual parking rates excluding studio homes would be higher.

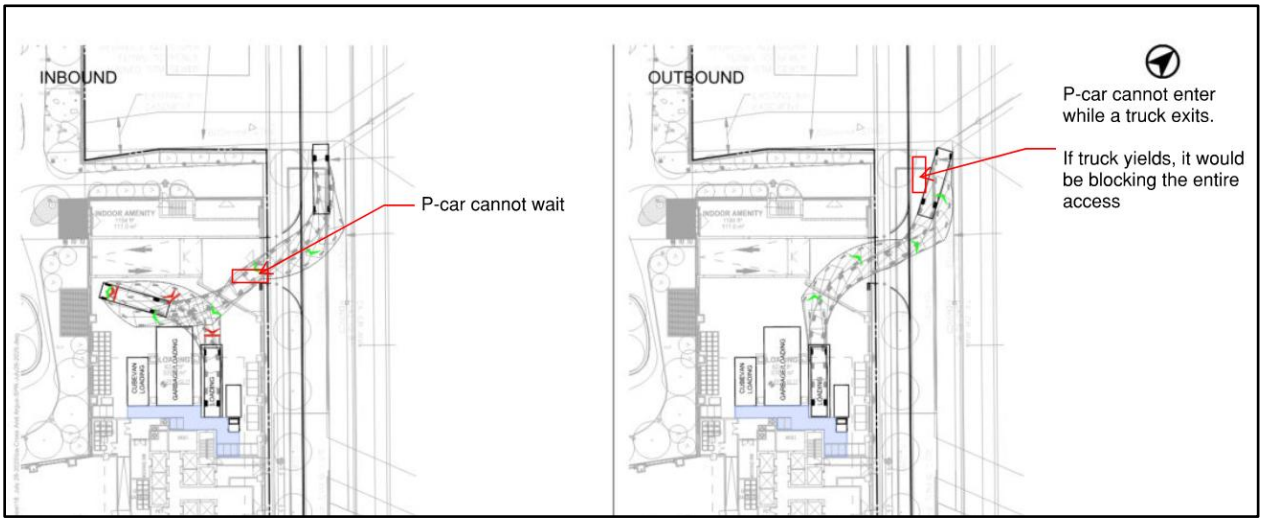
b. [Circ. 2] – Non-residential proposed parking rates is incorrect. Based on the non-residential GFA of 14,871 m^2, the parking rate would be 1.45 spaces per 100 m^2 GFA.

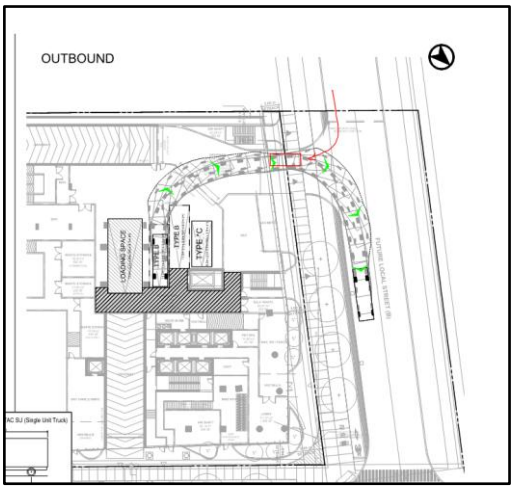
c. [Circ. 2] - Section 11 of the TIS: The report noted that many residents who choose to live in Midtown will do so because of its proximity to transit and the ability to live and work without the daily use of a car. Staff request further review of the proposed parking supply, consider strategies noted in Section 4.8 and 4.9 of Midtown TP's Parking Appendix, and consider the following parking strategies:
   - Visitor parking and non-residential (retail) parking are to be made available to general public as paid parking.
   - Discounted or free short-term visitor parking for retail shops – which may facility pick-up and drop-off operations of passengers and goods.
   - Separate parking pricing for overnight visitors.
   - Consider separate parking pricing and/or limited number of permits for overnight visitor from the Subject Development's tenants.

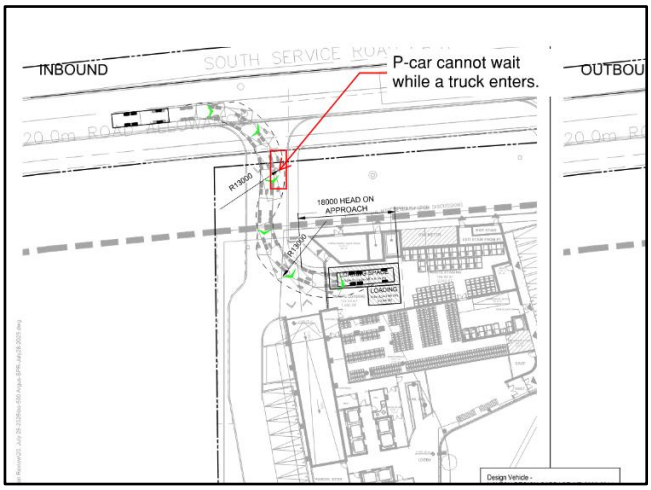
d. [Circ. 2] –The reduced parking supply is contingent on several infrastructure improvements, including the implementation of a frequent rapid transit network, the Trafalgar BRT, electrification of the Lakeshore West GO corridor, and the restoration of 15-minute or better headways on Lakeshore West GO etc. Until the necessary Active Transportation and Transit infrastructures are built, what interim strategies and TDM measures are proposed for the residents and visitors of the site? Are there considerations to use shuttle buses, and/or approach to phased development where Phase 2, 3 and/or 4 would be used as temporary parking until certain Midtown milestones are achieved?
e. [Circ. 2] Staff supports the concept of shared parking between residential visitors and commercial visitors, as well as the overall reduction in parking supply in recognition of Midtown's PMTSA designation and provincial policy directions. However, the applicant must demonstrate that the proposed visitor parking supply is appropriate for the intended development. The applicant must ensure that the proposed parking reduction will continue to meet the functional and operational needs of the site, and won't create operational issues (i.e., spillover at parking lots or Town roads within and outside of Midtown).
f. [Circ. 2] While TIS noted that residential visitor and retail visitor parking demands may peak at different times during weekdays and weekends, data sources such as the ITE Parking Generation Manual indicate that both typically peak during weekday evenings and mid-day over the weekend. To validate assumption made in the TIS, further clarification is required regarding the type of non-residential retail proposed with supporting time of day parking demand or shared parking demand data.
g. [Circ. 2] - Designated PUDO area is unclear in all plans. Please summarize in a table within a dedicated TIS section, whether PUDO is provided for each block of development proposal. i.e., For 590 Argus, the Concept Plan identifies a PUDO area, however, the area does not seem to allow a vehicle to stop curb-side to pick-up and drop-off passengers. Confirm intentions, the proposed stop location and if the parking spaces shown are to be used as pick-up and drop-off.

4. Vehicle Turning Diagrams

a. [Circ. 2] – Two sets of Vehicle Turning Diagrams were submitted. New diagrams from July 2025 and revised diagrams from October 2023. The diagram numbers are duplicated. July 2025 Vehicle Turning Diagrams have poor resolutions. Staff cannot zoom in and review the drawings clearly.
b. [Circ. 2] – Underground circulation is not shown.
c. [Circ. 2] – Ensure simultaneous circulations can be maintained within the parking ramp, as well as while entering and exiting the parking ramp.
d. [Circ. 2] – For accesses where both trucks and passenger cars are expected, revise access width and radius to allow for two-way access simultaneously. At a minimum, a vehicle should be able to wait at the stop bar while another vehicle enters.
e. i.e., 217 Cross Avenue, a truck is expected to use both sides of the access to either enter or exit. A passenger car present at the same time would be in conflict.
Other examples:







5. Pedestrian Circulation Plan

a. [Circ. 2] - Pedestrian circulation plan is required.

b. [Circ. 2] – Plan should identify if pedestrian connections between buildings within the same block are provided through internal hallways/pedestrian concourse, above or underground connections.

c. [Circ. 2] – Applicant should consider providing at-grade, or underground pedestrian connections to other lands in Midtown (i.e., consider providing underground pedestrian concourse, similar to PATH in Downtown Toronto).

ZONING

1. The TOC properties are currently zoned MTC (Midtown Transitional Commercial) under the 2014-014 Zoning By-law which is currently under appeal. Since the MTC zone is still under appeal the town's former Zoning By-law 1984-063 regulations for the C3A zone are still in effect for these properties where the most restrictive regulations are applied for both by-laws. The

regulations for MTC are the more restrictive for lot area, lot frontage, lot coverage, all yards and height shall be legally existing on the effective date of the Zoning By-law. Additionally, the permitted uses are also under appeal where the uses are required to comply for both C3A and MTC Zones. It is recommend using the MU4 zone as the base zoning and apply special provision for each site which already has base regulations which could be applied to re-development.

2. Zoning By-law Amendment applications have been submitted for each of the properties where comments have been provided and are available upon request from IO. Please provide Draft By-law regulations for review which incorporates the Zoning comments provided for the Zoning By-law Amendment applications and changes to the design which have occurred since the submission. When the draft regulations are circulated further comments will be provided.

ECONOMIC DEVELOPMENT

As per OPA 70, developments within the Urban Core designation are to include a minimum of 12 per cent non-residential GFA as a tool to ensure that Midtown Oakville evolves as a complete community with a mix of uses beyond residential, including office, cultural, institutional, and commercial service uses. This application proposes 3 percent non-residential GFA and a 5 percent Amenities GFA. This is significantly lower than the minimum required for OPA 70. Economic Development would like to see a large increase in non-residential GFA to satisfy OPA 70 and increase the total amount of jobs created over the 4 parcels.

CONSERVATION HALTON

Conservation Halton (CH) staff has reviewed the above-noted resubmission as per our regulatory responsibilities under the *Conservation Authorities Act* (*CA Act*) and Ontario Regulation 41/24 and our provincially delegated responsibilities under Ontario Regulation 686/21.

Documents reviewed as part of this submission, received on November 24, 2025, are listed in **Appendix A**. Key Comments can be found in this letter, and detailed comments are included in **Appendix C**. Should another resubmission to address outstanding comments not be provided, CH conditions recommended to be added to the approval of the Midtown Oakville TOC development are included in **Appendix D**.

For the purposes of this letter, “Midtown Oakville TOC” is used when comments refer to all four parcels of land. For parcel specific comments, the following naming convention noted below (and identified in **Appendix B**) is used:

- **Site 1:** 217 and 227 Cross Avenue and 571, 581, and 587-595 Argus Road
- **Site 2:** 157 and 165 Cross Avenue
- **Site 3:** 166 South Service Road
- **Site 4:** 590 Argus Road

CH previously provided comments on the first submission of this application in a letter dated December 6, 2024, and this letter should be referred to for additional background.

OAKVILLE

Flood Hazard Mapping Study

Flood hazard modelling and mapping was recently updated and approved by the CH Board on September 18, 2025, for the Kent Gardens, the QEW Corridor, Midtown Oakville Growth Area, and adjacent areas as part of the *Sixteen Mile Creek to Lower Morrison Creek Flood Hazard Mapping Study*. As previously identified, portions of the Midtown Oakville TOC are located within a spill flood hazard. The mapping is available online at https://www.conservationhalton.ca/mapping-and-studies/. The updated modelling and mapping has been incorporated by Trafalgar Engineering as part of this resubmission.

CH Spill Flood Hazard Policies

CH staff has reviewed the current proposal under CH's approved spill flood hazard policies and the supporting technical guide (April 2025).

Key Comments

On February 27, 2025, Trafalgar Engineering submitted a HEC-RAS model and Design Brief directly to CH for review. This modelling submission included assessment of the proposed interim (development of all TOC lands and portions of roadways) and ultimate (development of all TOC lands with future roadways per the Midtown OPA) conditions. A meeting was held with the applicant and CH on April 9, 2025, to discuss. This submission includes the same model and Design Brief that was submitted in February 2025. Therefore, comments contained in this letter reflect the discussions and feedback provided at the April 2025 meeting.

1. The current submission does not fully assess the impact of each development stage within the spill flood hazard based on the Construction Staging Plans. For each stage, hydraulic modelling should be updated to confirm that the proposed development and each of these interim conditions meets the tests of the *Conservation Authorities (CA) Act* and the natural hazards policies of the PPS, by demonstrating that:

    i. The development does not significantly impede flood conveyance or storage, and changes in flood depths, velocities and storage will not result in an unacceptable risk to life or property;
    ii. The development has safe access;
    iii. New buildings are located in areas where flood depths are less than one metre (1 m) and velocities are less than one metre per second (1 m/s);
    iv. New buildings are flood free or adequately floodproofed; and
    v. New buildings will not contain a sensitive or vulnerable use.

    Note:
    - Development of Site 1 ahead of Site 4 may result in interim conditions which do not meet the tests of the *CA Act* and are not consistent with the PPS natural hazard policies (i.e., it has not be demonstrated that the above criteria can be met).

- Sites 2 and 3 can likely meet the above criteria provided the increased flood risk at the Oakville GO station can be mitigated (see General comment below).

2. Based on the interim and ultimate conditions models submitted, CH's analysis is outlined below.

General

- Development of proposed Street A appears to increase flood depths at the Oakville GO station. To reduce risks, revisions should be made to the proposal to demonstrate the criteria noted in Comment 1 can be met or it should be confirmed that mitigation works can occur on the Oakville GO station lands.
- CH typically recommends that new buildings within spill flood hazards be dry floodproofed a minimum of 0.3 metres above the elevation of the regulatory flood. Buildings have not been dry passive flood proofed to 0.3 metres above the maximum spill elevation. Considering the characteristics of the spill, a moderate reduction in freeboard may be appropriate; however, additional engineering and planning analysis should be provided in the final reports and plans to justify freeboard less than 0.3 metres.

Site 1

- Based on the interim condition modelling:
  - Revisions to grading and site design are required to locate Tower C outside the portion of the spill flood hazard where velocities exceed one metre per second (1 m/s).

Sites 1 and 4

- Based on the interim condition modelling:
  - Grading revisions and/or site and building design changes for Sites 1 and 4 are likely needed to meet the criteria noted in Comment 1, as outlined in the Detailed Comments below.
- Based on the interim and ultimate condition modelling:
  - Sites 1 and 4 do not have safe vehicular access at all underground parking entrances. Confirm for each site that the entrance(s) with safe vehicular access can service the entire site.

Site 4

- Based on the interim condition modelling:
  - Safe access for vehicles to Site 4 is not available. The western-most driveway should be shifted to the west or proposed grades along South Service Road should be raised to provide safe access, provided this does not result in unacceptable impacts elsewhere.

Recommendation

CH recommends that the Key Comments above and Detailed Comments in **Appendix C** be addressed in a revised submission prior to making a decision on the Midtown Oakville TOC development proposal. Should the proposal be approved, CH recommends that the conditions in **Appendix D** be added to the approval.

To facilitate CH's review, the following is requested in the resubmission:

1. Consolidated response table (word format preferred) addressing CH's comments;
2. Cover letter listing all documents submitted; and
3. A digital copy of all resubmission materials in reduced file size format for fast loading and viewing (digital download preferred). Redlined drawings and reports with tracked changes are also appreciated.

Encl: **Appendix A: Materials/Technical Reports Reviewed**
Appendix B: Midtown Oakville TOC Figure
Appendix C: Detailed Comments
Appendix D: CH Conditions

Appendix A: Materials/Technical Reports Reviewed

CH staff has reviewed the following Resubmission #1 (Step 4) materials, received on November 24, 2025:

- Transit Oriented Communities, Oakville GO Station, Comment Matrix, dated September 15, 2025;
- 157-165 Cross Avenue Oakville TOC Resubmission #1, prepared by Teeple Architects, dated July 25, 2025;
- 166 South Service Road East: Oakville TOC Resubmission #1, prepared by Sweeny & Co Architects, dated July 25, 2025;
- 217-227 Cross Avenue and 571-587 Argus Road: Architectural Drawings, prepared by BDP Quadrangle dated August 8, 2025;
- 590 Argus Road: Oakville TOC Resubmission #1, prepared by Teeple Architects, dated July 25, 2025;
- Civil Engineering Plans/Drawings (all sites), prepared by Trafalgar Engineering, various dates;
- Functional Servicing & Stormwater Management Report: Water, Sanitary, and Stormwater Management (all sites), prepared by Trafalgar Engineering dated July 2025;
- Hydraulic Modelling Files for Existing, Interim and Ultimate Conditions;
- Oakville Transit Oriented Community: Aerial Photos, prepared by Bousfields dated October 2024;
- Oakville Transit Oriented Community: Area & Block Context Plan, prepared by Bousfields dated August 2025;
- Oakville Transit Oriented Community: Planning & Urban Design Justification Report, prepared by Bousfields dated September 2025;
- Drawing No. CS-F1, Construction Staging Plan Stage 1, prepared by Trafalgar Engineering, dated March 22, 2024;
- Drawing No. CS-F2, Construction Staging Plan Stage 2, prepared by Trafalgar Engineering, dated March 22, 2024;
- Drawing No. CS-F3, Construction Staging Plan Stage 3, prepared by Trafalgar Engineering, dated March 22, 2024;

- Drawing No. CS-F4, Construction Staging Plan Stage 4, prepared by Trafalgar Engineering, dated March 22, 2024;
- Drawing No. CS-F5, Construction Staging Plan Ultimate Works (By Others), prepared by Trafalgar Engineering, dated March 22, 2024; and
- Site Surveys (all sites) prepared by JD Barnes, various dates.

Appendix B: Midtown Oakville TOC Figure

Appendix C: Detailed Comments

[Provided separately as Attachment 3]

Appendix D: CH Conditions

CH staff recommends that the following conditions be added to the approval of the Midtown Oakville TOC development should another resubmission to address outstanding comments not be provided.

1. That an updated spill flood hazard study including hydraulic modelling and a flood storage assessment (for all interim and ultimate conditions) be provided to the satisfaction of Conservation Halton, whereby it is demonstrated that the proposed development:

   a) Does not significantly impede flood conveyance or storage, and changes in flood depths, velocities and storage will not result in an unacceptable risk to life or property;
   b) Meets access standards that are appropriate for the nature of the development activity;
   c) Does not include new buildings located in areas where the flood depths are greater than one metre (1 m) and velocities are greater than one metre per second (1 m/s) under regulatory event conditions;
   d) Meets required floodproofing standards; and,
   e) Does not contain sensitive or vulnerable uses within the spill flood hazard.

OAKVILLE

2. That the Owner meets the requirements under the ***Conservation Authorities Act*** and **Ontario Regulation 41/24**, for the proposed development activities in the spill flood hazard.

HALTON DISTRICT SCHOOL BOARD

Thank you for the opportunity to comment on the Oakville TOC Development Proposal Resubmission. It is understood that the Province resubmitted on November 17, 2025 for review and to provide comments. The Town is coordinating all comments from the Town's internal departments and external public agencies.
The revised Oakville TOC comprises four (4) sites within the Midtown Oakville Growth Area.

Site 1: 217 and 227 Cross Avenue / 571, 581, 587-595 Argus Road
Site 2: 157 - 165 Cross Avenue
Site 3: 166 South Service Road East
Site 4: 590 Argus Road

In the Planning and Urban Design Justification Report, it is noted the development proposes 11 mixed-use buildings across the four sites, ranging from 45- to 56-storeys in height. A mix of residential units types from studio to three-bedroom units is proposed across 6,881 high density residential units.

In the Board approved 2023 Education Development Charges Background Study (Table 4.11.1), the study notes that the HDSB elementary growth-related pupil yield for high density dwelling units in the Town of Oakville is 0.067 elementary students per unit. This translates to approximately 461 HDSB elementary school students that would be generated from the Oakville TOC submission.

Comments on Student Accommodation in Midtown Oakville

Students from this area are currently within the **New Central PS, Maple Grove PS, E.J. James PS** and **Oakville Trafalgar HS** catchment areas. According to the Board's projections a number of these schools are projected to be at or over building capacity. Long range projections for schools can be viewed in our Long Term Accommodation Plan (LTAP) which can be found on the Board's website (It should be noted that the LTAP enrolment projections do not account for this development application). Specifically, Elementary Review Area (ERA) 113 and Secondary Review Area (SRA) 102 are the areas on which this application will have the greatest impact.

Official Plan Amendment (OPA) 70 was adopted by Town Council on February 18, 2025. Schedule L identifies three (3) priority areas for schools. It is anticipated that the Halton District School Board will require two (2) for those sites. The Board continues to assess the impact of the changes to the projected population of Midtown Oakville and what impact this may have on the student accommodation needs as consideration needs to be given to overall neighbourhood lifecycles and student yield trends over a long period of time.

Schedule L shows a school site west of Trafalgar Road in proximity to the TOC sites. **The Board continues to emphasize the importance of flexibility in where schools can be permitted within Midtown Oakville where elementary schools are permitted in all designations and zones within the Midtown Official Plan, including the Oakville TOC Lands.** Note that the TOC Lands could

therefore be the recipients of a school site. The Board requests that the applicant continues to consult with the Board to discuss the future student accommodation needs that their development proposal will generate. **Figure 1** identifies the location of a proposed school site to the subject lands.

Figure 1 - Location of Proposed School Site (west of Trafalgar Road)

TOC Core Studies and Technical Reports

The Board submitted comments in a letter (**Appendix A**, attached) dated December 6, 2024 in response to the initial submission. Since the initial submission, it is noted that OPA 70 was adopted by Town Council on February 18, 2025. The Board's comments are outlined in the Town's Comment Matrix and remain applicable to the resubmission. The Board would like to reiterate that **conditions be placed on this application to secure an interest in providing for future student accommodation needs within the development until further notice. The proponent will be required to obtain clearance from the Board confirming that the necessary accommodation has been secured or waived, and whether accommodation needs to be identified in the subject TOC lands.**

The Board acknowledges that Midtown Oakville is seeking a more urban form of development. As such, the Board is currently exploring alternative accommodation school designs to permit a more urban form of development as opposed to the traditional school design models for the reduction in land needs dedicated strictly to school uses.

The Board has reviewed the application as submitted. Please notify us of the adoption of the proposed application and include us in the circulation of any future applications, including site plans, related to this development.

Draft Plan of Subdivision Comments and Conditions

OAKVILLE

Appendix B (attached) are the conditions that this submission may be subject to. Please include us in the circulation of any future applications, including site plans, related to this development. The Halton District School Board will provide comments and conditions on each proposed development application received. The Board will review and revise comments on this application as the growth area review moves forward and on any future circulations associated with this application.

In addition to Appendix A, the Board would like to apply additional comments to this development application and to future circulations:

1. The Owner agrees to include a draft plan of subdivision as one of their future applications, if possible. Currently, school boards are not allowed to issue conditions on Zoning By-law applications. If all applications are required to submit a draft plan of subdivision applications, this allows the Board to submit conditions on every application received by the Town to ensure that school board requirements have been reviewed and considered by all developers.

2. In case of no submission of a draft plan of subdivision, the Town should place a holding provisions on all or portions of the lands to ensure that the owner has discussed with school boards of student accommodation needs and possible locations of school sites before continuing with the planning process of their application.

Appendix 2: Draft Plan of Subdivision Conditions

The following provides the general draft plan of subdivision comments related to the provision of school sites. These comments will guide subdivision applications and form the basis for draft plan conditions to be incorporated into future planning approval submissions.

Variations to these comments should be anticipated, as they may be required based on the context of individual development applications, the location and configuration of proposed school sites, and any additional information received through the development review process. Please note that any site plan, plan of condominium or other planning application may receive the same comments.

Future Draft Plan Conditions

The following draft plan conditions will be requested in future planning approval submissions. Note that variations to the below comments should be anticipated, subject to the context of the development application, locations of school sites, and based on any further information received as part of the development review process.

General Development Conditions

1. The Owner agrees to place the following notification in all offers of purchase and sale for all lots/units and in the Town's subdivision agreement, to be registered on the title:

    a. Prospective purchasers are advised that schools on sites designated for the Halton District School Board in the community are not guaranteed. Attendance at schools in the area yet to be constructed is also not guaranteed. Pupils may be accommodated in temporary facilities and/or be directed to schools outside of the area. School attendance areas are

subject to change and/or redirections can be put into place to address immediate school accommodation pressures.

b. Prospective purchasers are advised that the surrounding neighbourhood may not be fully constructed, and will be under construction once the school is in operation. As such, not all sidewalks, roadways, and/or other infrastructure may not be immediately available.
c. Prospective purchasers are advised that school buses will not enter cul-de-sacs and pick-up points will be generally located on through streets convenient to the Halton Student Transportation Services. Prospective purchasers are advised that School buses shall not enter new subdivisions (construction areas) until all major construction activity has been completed. School bus stops will be placed at or near the entrance to the new subdivision. Bus stop locations within new subdivisions will be determined by Halton Student Transportation Services upon completed site reviews. It is therefore the responsibility of future purchasers that have students attending an HDSB school to identify a suitable means for home to school transportation requirements (whether walking or bused).
d. Prospective purchasers of lots/units abutting, fronting, and adjacent to the school site designated for the Halton District School Board are advised that temporary facilities/portables may be sited on the school site in order to accommodate pupils in excess of the school building capacity.
e. Prospective purchasers of lots/units abutting, fronting, and adjacent to the school site designated for the Halton District School Board are advised that the school building may be constructed as a two (2) to five (5) storey building, pending the final design and panel (elementary or secondary) of the school.
f. Prospective purchasers of lots/units adjoining the site intended for use or used for a Halton District School Board school are prohibited from installing or using for any purpose a gate in any boundary line fence on such school property. In the event a gate is installed, the Board will remove it at the owner's expense.
g. Purchasers and/or tenants are advised that due to the proximity of the adjacent school, sound levels from these facilities may at times be audible.
h. Purchasers and/or tenants are advised that roads adjacent to the Halton District School Board school sites will be subject to higher-than-normal traffic volumes as a result of the school facilities and activities.
i. Purchasers and/or tenants of lots or units within this subdivision are advised that the Halton District School Board elementary school sports field and play areas may be in use during daytime, evening, and weekends, with operating hours from 7:00 a.m. until nightfall. In the event that an elementary school sports field receives lighting, those hours may be extended from 7:00 am to 11:59 pm. Uses programmed on elementary school sites may generate noise or lights that could affect the occupants of properties adjacent to or nearby this facility.
j. Purchasers and/or tenants of lots or units within this development are advised that the Halton District School Board secondary school facility is programmed for active indoor and outdoor recreational use, including major sports field activities and tournament play. In addition to daytime use, the facility operates during evening and weekend hours (7:00 am to 11:59 pm). The outdoor facilities may also receive future enhancements, such as, but not limited to, an artificial turf field, sports field lighting, air-supported dome structures, and/or other ancillary buildings/structures that may operate during the above-mentioned hours of operation, and generate noise or lights that could affect the occupants of properties adjacent

to or nearby this facility. Please note that the facility amenities and programming are subject to change based on user demand or agreements in place.

1. That in cases where offers of purchase and sale have already been executed, the Owner will send a letter to all purchasers, which includes the above statements.

2. The Owner agrees to reserve within the proposed plan of subdivision an elementary school site of XXX acres in favour of the Halton District School Board, as identified as Block XXX on the draft plan of subdivision dated XXX. Prior to final approval of the draft plan of subdivision or a phase of the draft plan that contains the school site, satisfactory arrangements will have been made with the Halton District School Board by either an agreement of purchase and sale or a XXX year option agreement for the acquisition of the school site for public elementary [or secondary] school purposes, in a state and condition acceptable to the School Board.

3. The Owner agrees to submit to the satisfaction of the Halton District School Board the following studies:

   - Functional Servicing Report
   - Stormwater Management Report
   - Archaeological Assessment Impact Assessment
   - Cultural Heritage / Archaeological Assessment
   - Sustainability Study
   - Hydrogeology, Geotechnical & Geomorphology Report
   - Noise and Vibration Report
   - Environmental Site Assessments
   - Traffic Impact Study
   - Pipeline Details (if necessary)
   - Site Grading Plans

   In the event of an identified concern, the Halton District School Board may commission its own studies at the cost of the landowners. Prior to registration of the plan, the Owner shall certify that all properties to be conveyed to the Halton District School Board are free of contamination.

4. Prior to Draft Plan approval, the Board requires that the Owner provide a Permission to Enter that allows the Board to conduct studies on site to confirm the developability of the site.

5. Prior to Draft Plan approval, the Board requires that the Owner provide the Board with the necessary authorization forms to submit applications under the Planning Act, for the purpose of advancing the school site development review process. This can include, but is not limited to: Site Plan Applications, Minor Variances, Building Permit (full or conditional), and/or Site Alterations Permits. It is understood by the Board that the Site Plan Agreement, and/or any other conditions placed on title, will need to wait for the transfer of the lands, unless otherwise agreed to by the Owner.

6. The Owner shall provide all required municipal subdivision services necessary to accommodate the construction of a school on the designated school site, as contemplated by the Halton

District School Board. Such services shall include, without limitation, storm and sanitary sewers, stormwater management facilities, hydro, water, telephone, natural gas, fibre optics, and cable television, excluding any switchgear. These services must be of sufficient capacity and appropriately designed to support a school of the intended size and shall be made available at the boundary between the school site and the adjacent public roadway, at a location that optimally facilitates the development of the school site.

7. The Owner agrees to rough grade the school block to the satisfaction of the Halton District School Board, to ensure that it meets the grades of adjacent lots/ blocks. The Board also requires that there be no swales that cross the property, which would adversely impact or encumber the development of the site. Prior to commencing rough grading operations, the Owner is responsible for coordinating with the Halton District School Board to confirm site specifications. Subsequent to the completion of grading operations, the Halton District School Board will require that the Owner deliver a certificate from a qualified engineer confirming the quality, compaction (100% SMPDD), and final grades of the site, among other School Board specifications provided to the Owner. It is strongly recommended that the Owner coordinate with the Halton District School Board prior to engaging in earthworks to confirm grading and compaction requirements.

8. The Owner agrees to grade the school lands and transition to the adjacent park to a suitable elevation that will provide AODA-compliant grades from our site and connections to the park.

9. Permanent drainage swales are not to be installed at the shared property line between the Halton District School Board school block and the park, which would have the impact of reducing sharing opportunities.

10. That the Owner agrees to the satisfaction of the Halton District School Board to erect a chain link vinyl fence and/or privacy fence, in accordance with the Board's standards. The fence shall be located along the school block boundaries which abut residential properties as determined by the Board and shall be erected at such time as the adjacent development proceeds.

11. That the Owner will not place nor store any fill or topsoil in the school block (Block No. XXX, plan date) without the prior written consent of the Halton District School Board.

12. The Owner agrees that, should the development be phased, a copy of the phasing plan must be submitted prior to final approval to the Halton District School Board. The phasing plan will indicate the sequence of development, the land area, the number of lots and blocks, and units for each phase. The Owner will provide information on the anticipated start of construction and tentative occupancy dates of residential units.

13. The Owner ensures that designated school sites are identified in the first phase of development.

14. That the Owner shall supply, erect, and maintain signs at all major entrances into the new development advising prospective purchasers that pupils may be directed to schools outside of the area. The Owner will make these signs to the specifications of the Halton District School Board and erect them prior to final approval.

15. That a copy of the approved sidewalk plan, prepared to the satisfaction of the Municipality, be submitted to the Halton District School Board.

16. The Owner agrees to discuss with Halton District School Board, student active transportation needs, with possible input and requirements for future planned conditions of the road network and intersections within the development and the area surrounding the development, and supporting crossing infrastructure.

17. The Owner shall provide Halton District School Board a PDF copy and a geo-referenced AutoCAD file of the Draft Plan of Subdivision, as well as a Draft M-Plan once all Lot and Block numbering has been finalized. Should any changes occur after the initial submission to Lot and Block configuration or numbering on the draft M-Plan, the Owner shall provide a new AutoCAD file and a memo outlining the changes.

In addition, the following notes should be included in the conditions:

1. Education Development Charges (EDC) are payable in accordance with the applicable EDC By-law and are required at the issuance of a building permit. Any building permits that are additional to the maximum unit yield which is specified by the Subdivision Agreement are also subject to EDCs prior to the issuance of a building permit, at the rate in effect on the date of issuance.

2. Additional Dwelling Units (ADU) constructed as part of a primary dwelling unit prior to occupancy are subject to EDCs. For ADUs to be eligible for an exemption, the building permit must be issued after occupancy of the primary unit, and must meet other requirements such as size and number of units relative to the existing unit. For more information on EDCs and ADUs, please reach out to the School Boards.

3. The Board's 2023 EDC by-law provides a limited number of statutory and non-statutory exemptions. School Boards may not exempt a development from the payment of EDCs unless such a development falls squarely within the terms of an exemption provided under an EDC by-law. To qualify for an exemption, an applicant must submit appropriate documentation confirming the intended purpose of the development. Approval of the exemption will be subject to verification and compliance with all relevant legislative and regulatory requirements. For more information on EDCs, please reach out to the School Boards.

HALTON CATHOLIC DISTRICT SCHOOL BOARD

Thank you for providing the Halton Catholic District School Board (“HCDSB”) with an opportunity to review the Oakville Transit Oriented Community (“TOC”) resubmission and provide comments.

The Oakville TOC comprises of four (4) sites that are located within the Midtown Oakville Growth Area. The revised proposed development will consist of 11 mixed use buildings, ranging in height from 46- to 56-storeys and provide an estimated 6,881 residential apartment units.

OAKVILLE

Since the Board provided comments for this proposal on December 10, 2024, Council adopted the Midtown Oakville Official Plan Amendment (OPA70). The Board has reviewed the application as submitted, recognizing that the Midtown Oakville Growth Area Review has not received Ministry approval.

Schedule L1 of OPA70 identifies school locations, including one (1) elementary school site for the HCDSB. HCDSB has identified the westernmost school site for its school accommodation needs in consultation with the Halton District School Board. It is noted that a school site has not been identified in the Oakville TOC subject lands at this time. However, HCDSB reserves the right to identify additional school sites within Midtown Oakville should additional school accommodation needs arise as identified in OPA70.

The Board also reviewed the Planning & Urban Design Justification Report, dated September 2025; Shadow Study, dated August 2025 and, Transportation Impact Study, dated August 19, 2025. No additional comments are provided for these documents.

The conditions and notes provided on December 10, 2024, still apply for this development as outlined below.

1. The owner agrees to place the following notification in all offers of purchase and sale for all lots/units and in any subsequent agreements, to be registered on title:
    a. Prospective purchasers are advised that Catholic school accommodation may not be available for students residing in this area, and that you are notified that students may be accommodated in temporary facilities and/or bused to existing facilities outside the area.
    b. Prospective purchasers are advised that the HCDSB will designate pick up points for the children to meet the bus on roads presently in existence or other pick up areas convenient to the Board, and that you are notified that school buses will not enter cul-de-sacs and private roads.
2. In cases where offers of purchase and sale have already been executed, the owner is to send a letter to all purchasers which include the above statements.
3. That the owner agrees to the satisfaction of the HCDSB, to erect and maintain signs at all major
4. entrances into the new development advising prospective purchasers that if a permanent school is not available alternative accommodation and/or busing will be provided. The owner will make these signs to the specifications of the HCDSB and erect them prior to final approval.
5. That the developer agrees that should the development be phased, a copy of the phasing plan must be submitted prior to final approval to the HCDSB. The phasing plan will indicate the sequence of development, the land area, the number of lots and blocks and units for each phase.
6. That a copy of the approved sidewalk plan, prepared to the satisfaction of the Town of Oakville be submitted to the HCDSB.
7. The owner shall provide HCDSB a geo-referenced AutoCAD file of the Draft M-plan once all Lot and Block numbering has been finalized. Should any changes occur after the initial submission to Lot and Block configuration or numbering on the draft M-plan the Owner shall provide a new AutoCAD file and a memo outlining the changes.

OAKVILLE

It should be noted that Education Development Charges are payable in accordance with the applicable Education Development Charge By-law and are required at the issuance of a building permit. Any building permits that are additional to the maximum approved unit count will be subject to Education Development Charges prior to the issuance of a building permit, at the rate in effect at the date of issuance.

We look forward to collaborating on this project and making ourselves available to discuss the above comments at your convenience.

OAKVILLE HYDRO

Oakville Hydro's 27.6kV distribution system would need to be expanded to meet the demand requirements for these site(s). Hydro servicing options will need to be reviewed with the owner and/or their consultants to confirm the supply location. While the development site plan advances, consideration for maintaining the minimum clearance to the overhead and/or underground infrastructure is required. Space on the property is required to locate pad-mounted transformers, pad-mounted switchgears, or other distribution assets. An easement, registered in the name of "Oakville Hydro Electricity Distribution Inc.", is required for the transformer(s), switchgear(s) and associated primary cable/duct bank. An electrical room with direct outside access and Stanley Canada Corporation locks is required per Oakville Hydro's "Conditions of Service". The buildings will be equipped with an electronic interval metering system capable of remote meter reading for all individual units. All unit owners will be direct customers of Oakville Hydro Electricity Distribution Inc.

Developer to provide:

- An acceptable site plan, site servicing plan, landscape plan and grading plan. Plans to be integrated with Town of Oakville's road re-construction and expansion plan exterior to development with compliance provided from Town of Oakville.
- Forecasted demand load breakdown with service size, single line diagram, any proposed Distribution Energy Resource (DER) / Electric Vehicle (EV) requirements and 5-year anticipated load forecast demand.
- Preference for either Oakville Hydro to provide transformation with space for installation or customer owned station.
- Access for hydro distribution facilities to expend within private property. This includes space/access for transformation, switchgear(s), ductbank etc.
- Documentation for Oakville Hydro to complete the CIA (Connection Impact Assessment) and/or to submit documentation to IESO/HYDRO ONE to complete the SIA (System Impact Assessment).
- Upfront costs for required system studies, design, construction (including any relocation work) to connect development to grid.

Town of Oakville to provide:

- Guidance to developer to coordinate utility relocation design to ensure alignment with ultimate road re-construction.

- Engineering road re-construction design(s) that include right of way cross section(s) with all proposed utilities and accurate information for placement of existing utilities.
- Overall urbanization plan including staging, building setbacks, landscaping that aligns with road re-construction.
- Acceptance that developer(s) site plans, site servicing plans, landscaping plans include existing/proposed utilities, urbanization and road re-construction exterior to the development block.
- Plans to include any known plan for utility relocation as coordinated with ultimate road re-construction.
- Overall Midtown Development Plan including road transportation, phasing and estimated timelines to allow Oakville Hydro to analyze the total demand and develop a master plan for hydro distribution system expansion requirements.
- Collaboration opportunities through TAC meetings to ensure developer(s)/utilities can master plan the required expansions within the Midtown Development area.

METROLINX

Metrolinx notes that the concept plan identifies a relocated Oakville GO Station driveaway. The driveway should be identified as conceptual in nature and shown for information purposes only, thus, is in no way shape or form, an acceptance or approval of the location of the driveway by Metrolinx. It is understood this driveway is not part of the proponent's scope of work, therefore appropriate traffic assessments and other considerations should be made based on the existing station driveway.

Please refer to Appendix A for detailed Metrolinx comments that will need to be addressed as part of the application review. Responses to each comment should be provided in the next submission to demonstrate how they have been addressed.

Appendix A:
Metrolinx Comments and Proponent Responses

Item	Metrolinx Oakville TOC Step 4 Resubmission Comments (2026-01-07)	Proponent/ Consultant Response
	Noise and Vibration	
1.	The property is subject to a Noise & Vibration Study, prepared by a qualified consultant. The proponent shall submit the study for review and satisfaction of Metrolinx. Please respond to the following feedback per address: a) 217-227 Cross Road – Please make reference to Metrolinx's Warning Clause – not GO transit. In addition, the rail traffic data is out of date as it was obtained in 2021, please do not apply a growth rate. Please submit a request to raildatarequests@metrolinx.com for the most up to date information. b) 166 South Service Road – Please make reference to Metrolinx's Warning Clause – not GO transit. In addition,	

	the rail traffic data is out of date as it was obtained in 2021, please do not apply a growth rate. Please submit a request to raildatarequests@metrolinx.com for the most up to date information. c) 157-165 Cross Road - this noise study contains the correct rail data and warning clause. Please do not use a growth factor in the analysis undertaken in section 2.2 d) 590 Argus Road - this noise study contains the correct rail data and warning clause please make reference to Metrolinx's Warning Clause – not GO transit. Please do not use a growth factor in the analysis undertaken in section 4.2.	
Agreements		
2.	The Owner shall grant Metrolinx an environmental easement for operational emissions, which is to be registered on title for all uses within 300 metres of the rail right-of-way. Included is a copy of the form of easement for the Proponent's information. The Proponent may contact Patrycja.jankowski@metrolinx.com with questions and to initiate the registration process. Registration of the easement will be required prior to clearance of Site Plan Approval (It should be noted that the registration process can take up to 6 weeks).	
3.	The Proponent shall provide confirmation to Metrolinx, that the following warning clause will be inserted into all Development Agreements, Offers to Purchase, and Agreements of Purchase and Sale or Lease of each unit within 300 metres of the Railway Corridor: Warning: Metrolinx and its assigns and successors in interest has or have a right-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of- way in the future including the possibility that Metrolinx or any railway entering into an agreement with Metrolinx to use the right-of-way or their assigns or successors as aforesaid may expand their operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). Metrolinx will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way.	
4.	(General Information) The Owner shall be responsible for all costs for the preparation and registration of agreements/undertakings/ easements/warning clauses as	

	determined appropriate by Metrolinx, to the satisfaction of Metrolinx. They shall also consider the timelines required to advance such agreements and reviews in their schedule accordingly.	

Form of Easement

WHEREAS the Transferor is the owner of those lands legally described in the Properties section of the Transfer Easement to which this Schedule is attached (the "Easement Lands").

IN CONSIDERATION OF the sum of TWO DOLLARS ($2.00) and such other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by the Transferor, the Transferor transfers to the Transferee, and its successors and assigns, a permanent and perpetual non-exclusive easement or right and interest in the nature of a permanent and perpetual non-exclusive easement over, under, along and upon the whole of the Easement Lands and every part thereof for the purposes of discharging, emitting, releasing or venting thereon or otherwise affecting the Easement Lands at any time during the day or night (provided that doing so is not contrary to law applicable to Metrolinx) with noise, vibration and other sounds and emissions of every nature and kind whatsoever, including fumes, odours, dust, smoke, gaseous and particulate matter, electromagnetic interference and stray current but excluding spills, arising from or out of, or in connection with, any and all present and future railway or other transit facilities and operations upon the lands of the Transferee and including, without limitation, all such facilities and operations presently existing and all future renovations, additions, expansions and other changes to such facilities and all future expansions, extensions, increases, enlargement and other changes to such operations.

THIS Easement and all rights and obligations arising from the above easement shall extend to, be binding upon and ensure to the benefit of the parties hereto and their respective officers, directors, shareholders, agents, employees, tenants, sub-tenants, customers, licensees and other operators, occupants and invitees and each of its or their respective heirs, executors, legal personal representatives, successors and assigns. The covenants and obligations of a party hereto, if such party comprises more than one person, shall be joint and several.

Easement in gross.

MINISTRY OF TRANSPORTATION (MTO)

After review of the Resubmission #1 materials for the above-described proposed development, and in accordance with the PTHIA, the MTO offers the following comments:

Transportation Infrastructure Management:

1. 217-227 Cross Avenue & 571-595 Argus Road – no comments
2. 157 and 165 Cross Avenue – no comments

3. 166 Cross Avenue
    a. QEW EB off ramp and South Service Road to be shifted south per approved Midtown Oakville EA. Proponent indicates 20 m ROW for this; proponent to ensure this matches what is indicated in the EA and accommodates shifting both the QEW off-ramp and Service Road.
    b. Tower 1 appears to have direct access to the Service Road. Can this be changed to access from other areas instead? Access road/driveway and sidewalk are both in the 14 m setback.
4. 590 Argus Road
    a. 20 m ROW indicated for shifting of South Service Road. Does this include ROW for shifting of QEW off ramp?
    b. Access road/driveways indicated in MTO setback.
5. Future submissions should include a set of civil utility drawings separate to the Functional Servicing Report.
6. Any underground utilities installed below the South Service Rd, along with associated structures (ex. manholes, valve chambers, etc.) must be setback 14 m measured from the QEW property line. This setback should also be indicated on drawings with underground servicing and does not apply to aboveground structures which should have setback measured from the South Service Rd property line.
7. Fire hydrants adjacent to the South Service Rd should be located beyond the desirable clear zone.

Drainage:

1. MTO shall require detailed Stormwater Management Report, Grading, Servicing and Erosion and Sediment Control plans at a later design stage for review. All documents shall be stamped and signed by P.Eng.
2. Please note that rooftop storage and unconventional underground storage such as chambers and infiltration systems are not permitted by MTO. Underground storages provided in manholes, stormsewer, super pipe or storage tank are permitted as such storages are accessible through a manhole and can be easily inspected for their continued functionality. If proponent persists on providing such storages then calculation and major flow path should be provided to confirm that the proposed development will not impact the MTO's drainage system under such condition.

Electrical:

1. Future submission to include a photometric plan for review if proponents are planning to install outdoor lighting as part of the development to determine that the light trespass is within MTO's requirements.
2. The plan drawings should include the following:
    - To-scale site plan showing the site location and the highway
    - Lighting layout showing pole/luminaire locations and orientation
    - Luminaire installation info such as mounting height, orientation angle, shielding info, etc.
    - Luminaire material info including catalog info and photometric data file
    - Lighting calculation plan showing horizontal illuminance levels at and beyond the MTO right-of-way in metric units of lux to 1 decimal place minimum.

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Traffic:

Comments previously not addressed:

- Clearly identify development stages or phasing and confirm how these stages align with the traffic analysis horizons assessed.
- MTO comments specified that traffic operations analysis should include weekday AM, weekday PM, and Saturday peak periods. Review of the revised summary TIS confirms that operational analysis was limited to weekday AM and PM peak periods only and did not include a Saturday analysis as part of the revised submission.
- In addition, MTO comments requested assessment of multiple future analysis years, including the development opening year, five-year, and ten-year horizons, with consideration of phased build out where applicable. These analysis periods were not included in the revised submission.
- Include Saturday peak period traffic operations analysis where required, consistent with MTO expectations. Assess multiple analysis years, including the development opening year and interim future horizons, as part of the full Transportation Impact Study.
- The revised submission indicates that a microsimulation model is being prepared as part of broader modelling initiatives being undertaken by the Town of Oakville. MTO comments further specified that capacity analysis for intersections and interchanges under MTO jurisdiction must follow MTO/TAC protocols and be based on current HCM based methodologies. In addition, the revised submission does not document use of the arrival rate method for calculating queue and storage lengths for left turn and through movements at signalized intersections under MTO jurisdiction, as required by MTO's Signal Operating and Timing Policy. These items have not yet been documented within the revised submission.
- Confirm that all capacity analyses within MTO jurisdiction are undertaken using current HCM methodologies. Apply and clearly document the arrival rate method for queue and storage length calculations at MTO signalized intersections.
- It has come apparent to us in the review that there could be potential operational and safety issues affecting the freeway operations. Therefore, micro-simulation is required to analyze ramp terminal and freeway operations and to develop appropriated mitigation measures for identified operational concerns.

Comments partially addressed:

Traffic Planning and Network Assumptions:

- MTO comments identified comments related to assumed ramp network improvements and requested updated analysis demonstrating network performance where such improvements are not in place for applicable planning horizons. While the revised submission references planned transportation network improvements, the supporting figures are unclear and updated modelling reflecting the absence of these improvements was not provided. This item is considered partially addressed.
- Furthermore, Section 9.4 of the previous Summary TIS referenced a potential "jug handle" connection between Argus Road and Trafalgar Road, which was not part of the preferred network identified in the 2021 study. The Revised Summary Transportation Impact Study omits this connection and does not include further discussion or analysis of the jug handle.

- Provide updated modelling and figures demonstrating network performance where assumed ramp improvements are not in place.
- Confirm the future network configuration applied in the analysis, including documentation of any removed elements such as the previously referenced jug handle connection.

Traffic Volume Forecasting

- The revised submission provides an improved breakdown of traffic scenarios, including clear labeling of the 2024 existing condition and multiple 2044 future background and future total scenarios. MTO comments specified application of a 3.1% annual growth rate for the QEW and Trafalgar Road ramps. Based on review of the revised submission, this growth rate was only applied to the Future Total, including 420–468 South Service Road Development, Including Corridor Growth (2044) Scenario, and was not applied across the remaining future scenarios. As such, this item is considered partially addressed. The initial review also requested that traffic counts and signal timing plans used for the existing conditions traffic analysis be provided in the appendices. Based on review of the revised submission, these materials were not included in the appendices. This item remains not addressed.
- Confirm and document the application of the 3.1% ramp growth rate across all relevant future scenarios, consistent with MTO requirements, and clearly identify where and how the growth assumptions were applied. Include the existing conditions traffic counts and signal timing plans used in the operational analysis within the appendices to support verification of the baseline modelling inputs.

Traffic Volumes and Forecasting Methodology

- Section 9 of the Summary TIS presents the approach used to estimate site generated vehicular traffic; however, the sequencing of the analysis focuses on site generated demand prior to clearly establishing existing and future background traffic conditions. For clarity, Transportation Impact Studies typically establish the existing and future background traffic context first, followed by the introduction of site generated traffic to assess incremental network impacts. This sequencing is particularly important where future traffic volumes are applied to freeway ramps and interchange movements.
- The following summarizes key items identified through the review of the revised submission that require clarification with respect to QEW ramp volumes and growth assumptions:

Application of ramp growth rates

- A 3.1% annual growth rate for QEW and Trafalgar Road ramp movements was requested as part of earlier review comments.
- This growth rate was applied to one of the future scenarios – Future Total (Including Site Traffic and 420-468 South Service Road with Corridor Growth) and was classified as a “Sensitivity Analysis” in the Summary and Conclusion section. It should be noted that Town of Oakville also requested similar growth rate to be applied for the local corridors, as noted in the report. Further justification should be provided to determine why the traffic operations’ recommendations were not based on this scenario and why **no background growth rate was applied for any of the other future scenarios**.

- For this scenario, the traffic operations at QEW WB Off-Ramp / North Service Road and Trafalgar Road intersection operate at LOS F, whereas the other future scenarios the intersection is shown to operate at LOS D or better.
- The commentary in Section 11.4.1 that site traffic alone (without future background growth) will not cause the intersection to exceed capacity is not a realistic future condition, as this is an urban area with presence of highway connection, regional roads, and key local corridors, which will be utilized by background traffic in addition to the site-generated traffic.

Trip Distribution between adjacent ramp terminals

- The trip-distribution methodology that concludes that minimal site-related traffic will utilize the QEW WB Off-Ramp / North Service Road and Trafalgar Road ramp terminal is not clear and requires further clarification.
- If the site-traffic is expected to use Royal Windsor Drive interchange, as per commentary in the Summary and Conclusion section, then potential mitigation measures should be identified for the interchange as it is also performing at LOS F during PM peak under the Future Total (Including Site Traffic and 420-468 South Service Road with Corridor Growth).

Ramp queuing, spillback, and mainline impacts

- The revised submission does not explicitly assess potential ramp queuing, spillback, or impacts to mainline freeway operations under future conditions.

- Given the sensitivity of ramp terminals to downstream congestion, a microsimulation analysis is required to appropriately assess these interactions, including ramp– mainline interactions and queue spillback effects.
- It is understood that broader study area microsimulation work is underway by the Town of Oakville. The findings from the microsimulation model should inform the future conditions' ramp and interchange traffic operations associated with appropriate background growth rate and site-related trips, especially as it relates to ramp terminal queueing, potential spillback to mainline, and overall mainline operations.

Evaluation of Interim Network Conditions

- Section 4.2.3 notes that the TOC development is expected to be built out incrementally over an approximately 20-year horizon, however, the summary TIS does not assess interim network conditions associated with this phased built-out.
- Section 10.3.1 discusses background development traffic but does not clearly identify build-out timing or how background development growth aligns with the phased TOC development and associated traffic increases and distribution assumptions.
- Without evaluation of representative interim horizon conditions, it is not possible to confirm ramp and interchange performance during periods when development and background growth are partially implemented and planned network improvements may not be fully in place.
- Confirm that ramp and interchange conclusions and recommended mitigation measures are derived from the future scenario incorporating the 3.1% annual growth rate for MTO ramp

terminals. Clarify how site traffic was distributed to freeway ramps, including how assumptions reflect adjacent ramp configurations and potential shifts in routing.
- Undertake microsimulation analysis to evaluate ramp queuing, spillback, and mainline impacts with background growth applied.
- Evaluate representative interim horizon conditions reflecting phased TOC and background development build-out to confirm ramp and interchange operations prior to full build-out.
- Clarify the sequencing of traffic forecasting, demonstrating how background and site generated traffic were combined and applied to ramp and interchange movements across scenarios.

Study Area and Transportation Network Assumptions

- The Revised Summary Transportation Impact Study outlines the study area road network based on a combination of existing and future transportation network conditions within the Midtown Oakville area. The following summarizes the findings from the review of the revised submission, which require additional clarification:

- Adjust existing transportation figure (Figure 5) to clearly reflect the existing intersection and lane configuration. For example, “Trafalgar/QEW Eastbound On-Ramp” is not shown on Figure 5 and Street names at “Royal Windsor Drive” and “South Service Road” are not accurate. The North leg of the intersection should be labelled “The Canadian Road” instead of “South Service Road”. Please apply the adjustments to all relevant figures.
- Include a figure illustrating the assumed final future road network for the specified horizon year and source.
- The revised submission focuses on a single long-term future horizon year (2044), with proposed/confirmed future network improvements assumed to be in place. MTO requests that interim horizon years be evaluated with interim network configuration that reflect the interim horizon year conditions, as per best available proposed network information.
- Overall, providing additional clarity regarding existing network representation, future network assumptions, and network phasing would strengthen the transparency and interpretability of the transportation impact assessment.
- Refine figures illustrating the existing transportation network to clearly depict lane configurations, ramp connections, and street naming.
- Include a figure summarizing the assumed final future transportation network for the analyzed future horizon years, clearly identifying which future network improvements are assumed to be in place.
- Include intermediate horizon year analysis with best available proposed network information to support evaluation of impacts to MTO facilities, particularly freeway ramp terminals, prior to full build out of planned corridor improvements.

Trip Generation, Distribution, and Assignment

- The Summary TIS outlines the future traffic scenarios and associated volume forecasting approach. While multiple future scenarios are presented, the scenario labelling and structure make it difficult to clearly track how background growth, site generated traffic, the 420–468 South Service Road development, and corridor growth are incrementally applied, particularly with respect to MTO controlled freeway ramps and interchange movements.

- Although the report references the application of background growth, corridor growth, and transit related traffic reductions, there is no clear documentation of how traffic volumes are specifically assigned to the QEW ramps, nor how ramp volumes differ between scenarios. Figures presenting existing and future traffic volumes do not consistently depict the QEW ramps, and supporting tables identifying ramp specific demand, growth assumptions, or distribution logic are not provided. As a result, it is not possible to clearly verify how future year ramp volumes were derived, how site generated traffic contributes to ramp demand, or how traffic reduction factors (e.g., BRT diversions) were applied to interchange movements.
- Furthermore, as part of the review, selected internal capture calculations were independently reviewed to assess consistency with NCHRP Report 684; however, certain land-use-level interaction values could not be replicated based on the methodology described in the report, indicating that additional assumptions or rounding may have been applied.
- Additional clarification is requested to confirm how site generated traffic volumes were combined with future background traffic scenarios and applied to the future road network. A clearer articulation of the overall forecasting framework would improve transparency and support interpretation of the results.
- Clearly document how traffic volumes were developed and applied across all scenarios, including growth assumptions, site generated traffic, transit related reductions, and the basis used to distribute traffic within the study area, especially to ramp terminals.

Summary of Recommendations:

Based on the review of the Revised Summary Transportation Impact Study for the Oakville TOC Development – Midtown Oakville, the following consolidated recommendations are provided to improve clarity, technical robustness, and alignment with MTO and municipal expectations, and to support preparation of the Final Transportation Impact Study.

Study Scope, Horizons, and Documentation

- Include the agreed Terms of Reference and/or correspondence with MTO and the Municipality in the Appendices to clearly document the approved study scope, assumptions, and horizon years.
- Clearly identify development staging/phasing and confirm alignment with all analysis horizons, including justification where intermediate horizons are not assessed.
- Include weekend (Saturday) traffic operations analysis as required by MTO.
- Include all traffic counts and signal timing plans used for the existing conditions analysis in the Appendices.

Transportation Network Assumptions

- Include a figure summarizing the assumed future transportation network for each analyzed horizon year, identifying which future network improvements are assumed to be in place and the source of the proposed improvement.
- Ensure all study area figures accurately reflect existing conditions, including correct lane configurations, street naming, and representation of freeway ramps.

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Traffic Volume Forecasting and Background Growth

- Apply the 3.1% annual growth rate for QEW ramp movements consistently across all relevant future scenarios and ensure that ramp and interchange conclusions and recommended mitigation measures are derived from the future scenarios that incorporate this growth.
- Clearly document how site generated, background and corridor traffic volumes were distributed to MTO freeway ramps and interchange movements, including how assumptions reflect adjacent ramp configurations, routing behaviours and potential shifts in traffic patterns.
- The revised submission does not explicitly assess potential ramp queuing, spillback, or impacts to mainline freeway operations under future conditions.
- Given the sensitivity of ramp terminals to downstream congestion, a microsimulation analysis is required to appropriately assess these interactions, including ramp– mainline interactions and queue spillback effects.
- Confirm that interchange and ramp performance conclusions are based on conservative, growth included scenarios consistent with MTO expectations.
- Clearly document the traffic forecasting framework, including how existing conditions, future background growth, site generated traffic, corridor growth, and transit related reductions were combined.
- Identify background development assumptions, including build-out timing, trip generation sources, and applicable TIS versions.
- Clarify the rationale for separating certain background developments into standalone scenarios and confirm consistency across all future scenarios.

Trip Generation, Distribution, and Internal Capture

- Provide clarification and justification for the selection of trip generation methods (average rates versus fitted curve equations) for each land use.
- Clarify any intentional exclusions of interaction trips by land use or peak period and document the rationale.
- Provide additional detail on the methodology used to develop trip distribution patterns, including the use of TTS data, external TAZ grouping, routing assumptions and any applied screening criteria.
- Clarify how trip distribution percentages differ by peak period (AM versus PM), particularly for retail and office uses.

Operations, Queuing, and Mitigation

- Confirm that all capacity analyses within MTO jurisdiction follow current MTO/TAC compliant HCM methodologies.
- Calculate queue and storage lengths for left turn and through movements at MTO signalized intersections using the arrival rate method in accordance with MTO's Signal Operating and Timing Policy.
- Identify and document direct mitigation strategies for all critical LOS, V/C, and queuing deficiencies.

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Other comments:

- Synchro files were not reviewed as it has come apparent to us in the review that there could be potential operational and safety issues affecting the freeway operations. Therefore, micro-simulation is required to analyze ramp terminal and freeway operations and to develop appropriated mitigation measures for identified operational concerns
- Table 1 shows both GFA and m2, clarify and correct.

Table 1 Oakville TOC Development Proposal Summary

Land Use	September 2024 Development Proposal	Current Development Proposal	Net Change
217-227 Cross Avenue & 571-587 Argus Road			
Residential	1,977 units	1,958 units	**-19 units**
Retail	1,605 m^2 GFA	1,556 m^2	**-49 m^2**
Office	2,125 m^2 GFA	1,612 m^2	**-513 m^2**
Community Use Library	--	1,011 m^2	**+1,011 m^2**

As noted in the review, MTO has identified potential operational and safety concerns affecting the QEW freeway operations, particularly related to ramp terminals, queuing, spillback, and mainline interactions.

Based on these findings, a microsimulation analysis – aligned with the MTO Traffic Microsimulation Protocol and Calibration Criteria (see Attachment 4) – is required to assess ramp terminal and freeway operations and to develop appropriate mitigation measures for the identified operational concerns.

SUMMARY

In conclusion, based on the comments provided by staff and circulated agencies further to the Town response letter dated December 19, 2024, the Town is not in agreement with the Oakville Transit-Oriented Community (TOC) Development Proposal from the Province through IO and MOI, and are unable to support it at this time. As outlined in this response letter, there are many implications identified by Town staff and external agencies with the Oakville TOC Resubmission #1 on the growth of Midtown. Common themes include, but are not limited to:

- Height and density
- Community benefits
- Schools
- Timing and phasing
- Environmental constraints
- Transportation and access
- Built form and scale
- Public open spaces
- Equitable distribution of development
- Implementation

Furthermore, there are numerous projects that require Provincial assistance to make not only the TOC sites, but Midtown Oakville as a whole successful, such as but not limited to:

- Kerr Street grade separation
- Royal Windsor Drive interchange improvements
- North-south road with QEW overpass and railway underpass
- Oakville GO Station platform extension

The Town of Oakville remains intent on collaborative governance and urges the Province to maintain open dialogue with municipalities. On-going consultation is essential to ensure that local strategies and Official Plans remain effective and aligned with provincial priorities.

Attachment 1 – Region of Halton Appendix A
Attachment 2 – Transportation Peer Review Comments
Attachment 3 – Conservation Halton Appendix C
Attachment 4 – MTO Traffic Simulation Protocol

Public Works
Development Services
1151 Bronte Road,
Oakville, ON, L6M 3L1

Appendix A:
Detailed Regional Waste Management Staff Comments and Technical Requirements:

The following section outlines detailed Regional Waste Management Comments specific to each phase, each site, and each building. Technical requirements are outlined as appropriate.

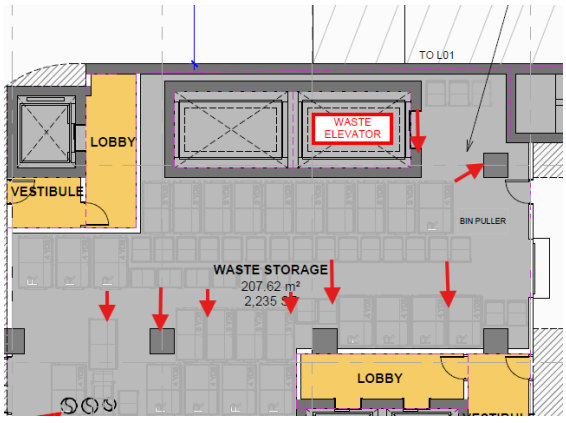
TOC Oakville Development - Phase 1: 157-165 Cross Avenue:

The following is associated with Regional Waste Management Staff technical comments with Phase 1: 157-165 Cross Avenue, Town of Oakville and the TOC Oakville Development application.

Waste Storage Room:

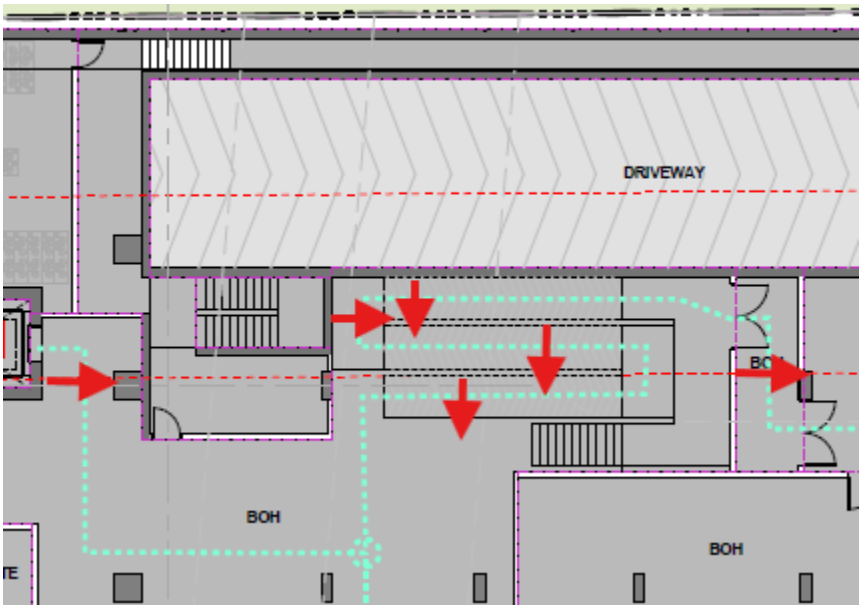
- *Waste Receptacles Capacity*
  - Tower A (633 units)
    - Organics: 360L carts – 25 units per cart = 26 carts
      - In the architectural plan, displays 24 carts. Should be increased to 26.
    - Recycling: A sufficient number of bins have been identified.
    - Garbage: A sufficient number of bins have been identified.
  - Tower B (588 units)
    - Organics: A sufficient number of bins have been identified.
    - Recycling: A sufficient number of bins have been identified.
    - Garbage: A sufficient number of bins have been identified.
- *Waste Movement*
  - Please indicate width of areas between carts
  - Tower A:
    - Please show the distance between pillars, as well as cart spacing within the middle walkway. Please ensure that there is enough space to move bins to the elevator. See Figure 1
  - Please indicate the dimensions of all waste elevators within the plan to ensure that waste receptacles can fit within the elevator.
  - Please indicate the width of the walkway to the loading area. See Figure 1A

Figure 1: Waste Storage Room of Tower A.



- Red arrows denote distances of concern regarding placement of waste receptacles and pillars.

Figure 1A: Waste Pathway to Loading area



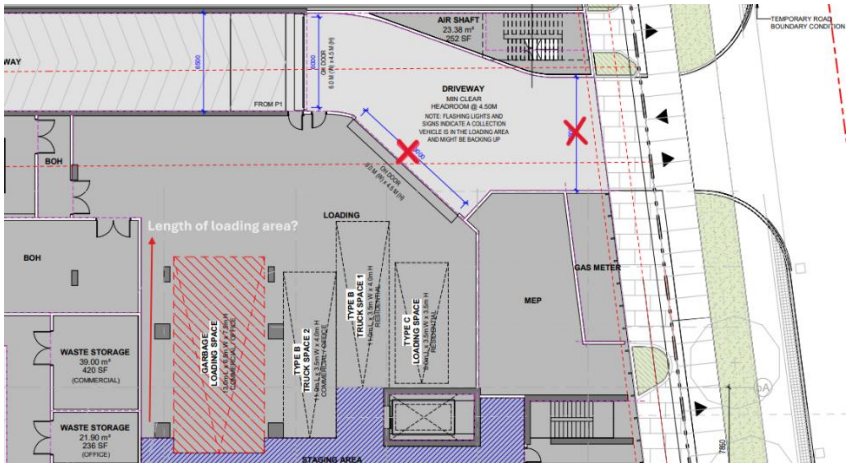
- Red arrows denote distances of concern regarding

<u>Waste Loading Area:</u>

- Please indicate the height of the entrance for door into driveway.
- Comments stand from previous submission regarding OH door. Should be increased to 5m to provided sufficient clearance for waste vehicles to enter.
- The Waste Loading area must be minimum 7.5 m high x 6 m wide x 18 m long to ensure the Waste collection vehicle can fully enter the Indoor loading are and ensure the minimum straight head-on approach requirement is met.
    - Currently length of loading area is 13 metres
    - Please indicate heights of doors/loading area in elevation drawings
- Please indicate if the staging area is raised
- Staging area for collection day must be shown with space for maximum number of bins/carts
    - For once a week collection, please show the following in the staging area:
        - 23 recycling bins
        - 23 garbage bins
        - 51 organics carts
    - For twice a week collection, please show the following in the staging area:
        - 12 recycling bins
        - 12 garbage bins
        - 26 organics carts
- Note: Region cannot currently guarantee collection days for each stream. Collection for both front end streams (recycling and garbage) may occur on the same day.

- Regional Waste Management Staff recommend a technical meeting to discuss collection with a Regional Waste Representative will be required at a later stage.

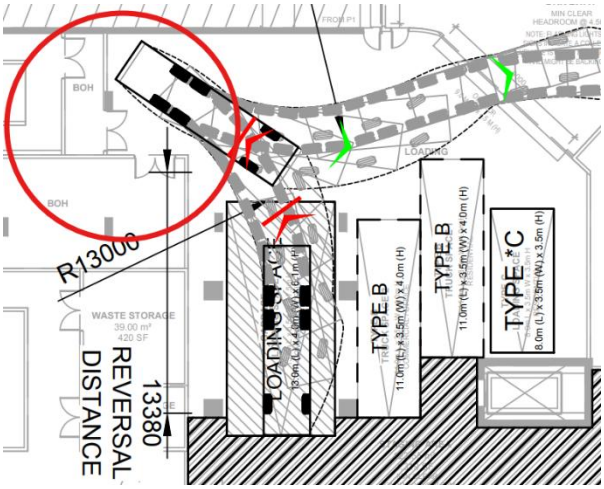
Figure 2: Image of Waste Loading Area



- Red “X” indicates where height should be indicated.
- Red arrow displays length needed for loading area

<u>Waste Vehicle Path:</u>

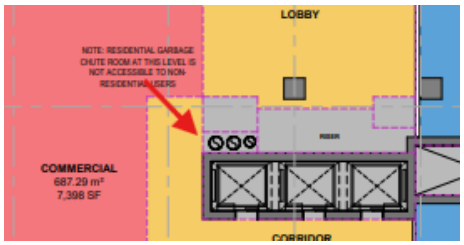
- Diagrams/Site Plans must show the following within the waste collection vehicles path:
  - Width of roads within the path of the collection truck (two way = 6 metres, one way = 4.5 metres)
    - Please indicate width of local road
  - Minimum head-on approach of 18 metres to the Collection Point. If entering an internal Waste Loading area, the waste collection vehicle should be entering it straight and not on a turn.
    - Currently vehicle enters on a turn.
- For Building A loading area, When vehicle reverses into two entry ways. To ensure the health and safety of staff, tenants, and residents, the path must avoid reversing into entry ways. Please indicate safety measures in place. See below for area of concern:



Chute Waste Room:

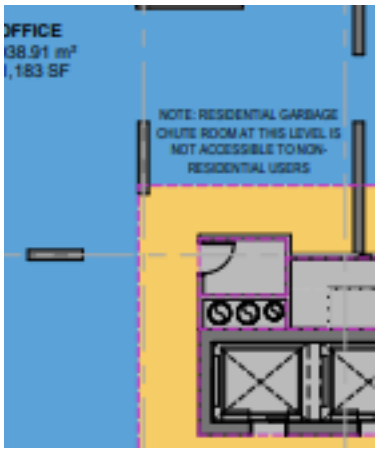
- Within Commercial/Office area on the mezzanine, please display walls for the chute area to ensure that non-residential users are not able to access (see figure 3). Should be similar to chute area near bike storage
- Please indicate what the Indoor Amenity will be on level 2 and level 3.
- On level 2 – why is one waste room accessible via door? How will the applicant ensure that waste room is not accessible to non-residents? (See figure 4)

Figure 3: Chutes on Commercial/Office are on the Mezzanine



- Red Arrow indicates chute area without any walls

Figure 4: Waste Room on Level 2



Levels of Service, Certifications and Drive Through Agreement:

- Waste Management comments are based on Halton Region's current levels of service as of December, 2025. Levels of service remain subject to Regional budget and Council approval.
- Under Ontario's Blue Box Regulation (O. Reg. 391/21), the responsibility for operating and funding the Blue Box recycling program is transitioning from municipalities to producers. In accordance with the regulation, effective January 1, 2026, Halton Region will no longer have operational control over the Blue Box program at properties classified as eligible sources under the regulation. While the regulation includes Multi residential buildings as eligible sources, their full inclusion has been deferred until 2031.
- If Regional waste collection is supported, a completed Drive Through Agreement must be submitted and signed off by Halton Region.

- The applicant shall submit a letter, from a Qualified Person that a minimum of 35 tonnes (weight of a fully loaded waste truck) can be supported.

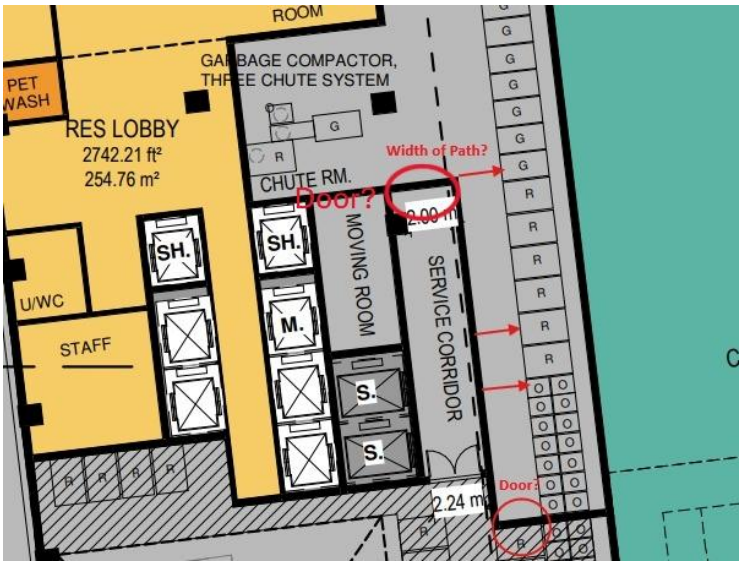
TOC Oakville Development - Phase 2: 166 South Service Road:

The following is associated with Regional Waste Management Staff technical comments associated with Phase 2: 166 South Service Road, Town of Oakville and the TOC Oakville Development application.

<u>Waste Storage Area:</u>

- Waste Movement
    - Within the plan, please display that the width of the pathway is included to accommodate for waste receptacles, as well as the dimensions of service elevators used. Ensure to clarify pathway of waste receptacles as it is not clear in the waste plan for Level P1– can use arrows to determine path.
        - For the waste storage room on level 1, access to the waste loading area may be impeded by placement of waste receptacles. There are also no doors to access the room. Please include width of waste receptacle path, as well as drawings of doors.

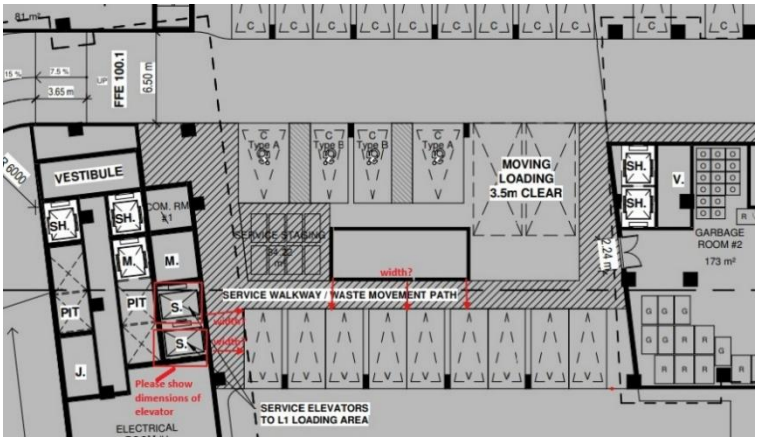
Figure 1: Waste Room on Level 1



- Red circles denote areas with possible doors
- Red arrows denote areas where width needs to be indicated.

    - For Garbage Room #2, please indicate width of waste receptacle movement path. Region is concerned with spacing between parking spaces/cars and wall. Also – if service elevators will be used, please indicate size of service elevators to ensure that they can accommodate waste receptacles. See figure 2.

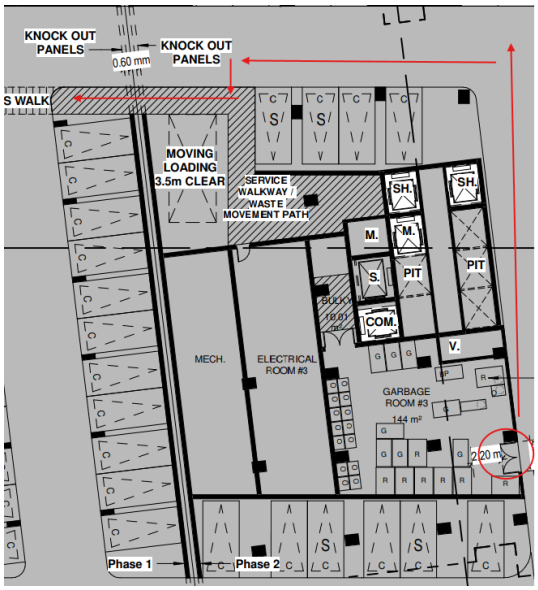
Figure 2: Garbage Room #2 and Waste Movement Path



- Red arrows denote areas where width needs to be indicated.
- Red squares indicate areas where dimensions of elevator need to be indicated.

    - For Garbage Room 3 – please confirm the waste path. Not clear within plan – See figure 3 for possible waste pathway

Figure 3: Displays Garbage Room #3 and potential waste movement pathway

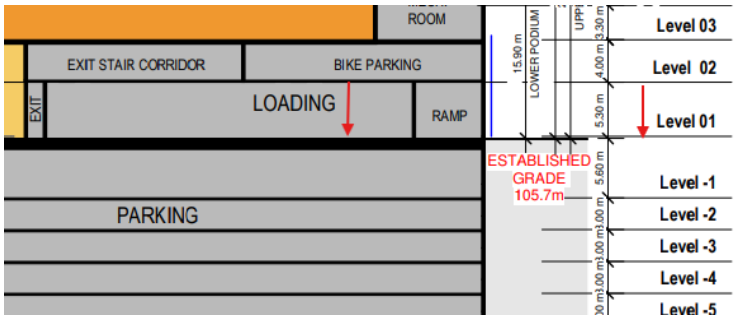


- Waste Capacity:
    - Number of waste receptacles should increase to accommodate capacity for residential units. See below for calculations:
        - Podium – 114 units
            - Organics – 360L carts – 25 Units = 5 carts
            - Recycling – 4 yd loose - 56 units – 2 bins
            - Garbage – 3 yd Compacted - 54 units = 2 bins

- Tower 1- 555 units
  - Organics – 360L carts – 25 Units = 23 carts
  - Recycling –4 yd loose - 56 units – 10 bins
  - Garbage – 3 yd Compacted - 54 units = 11 bins
- Tower 2 – 633 units
  - Organics – 360L carts – 25 Units = 26 carts
  - Recycling –4 yd loose - 56 units – 12 bins
  - Garbage – 3 yd Compacted - 54 units = 12 bins
- Tower 3 – 546 units
  - Organics – 360L carts – 25 Units = 22 carts
  - Recycling – 3 yd Loose – 42 units = 13 bins **OR** 4 yd loose - 56 units – 10 bins
  - Garbage – 3 yd Compacted - 54 units = 11 bins
- 23 recycling bins shown in total > bins need to increase
- 25 garbage bins shown in total > bins need to increase
- 47 organic carts shown in total > carts need to increase

Waste Loading Area:

- The Waste Loading area must be minimum 7.5 m high x 6 m wide x 18 m long to ensure the Waste collection vehicle can fully enter the Indoor loading are and ensure the minimum approach requirement is met.
  - Currently length of loading area is 13 metres
  - Within Elevation drawings – entire loading area is shown to 5.3 metres. Should be 7.5 metres throughout to avoid any potential collisions with the roof of the loading area. See below:



- Please show and label all bins for a day of collection in the staging area
  - For once a week collection, please show the following in the staging area:
    - 73 Organics carts
    - 31 Recycling bins
    - 33 Garbage bins
  - For twice a week collection, please show the following in the staging area:
    - 37 Organics carts
    - 16 Recycling bins
    - 17 Garbage bins
- Note: Region cannot currently guarantee collection days for each stream. Collection for both front end streams (recycling and garbage) may occur on the same day.
- Regional Waste Management Staff recommend a technical meeting to discuss collection with a Regional Waste Representative will be required at a later stage.

- Please indicate if the staging area is raised
- Region strongly suggests having all bins/carts staged within designated staging area on the ground level. With the additional movement of carts on the day of collection on P1, this can impact the efficiency of waste vehicle.

<u>Waste Vehicle Path:</u>

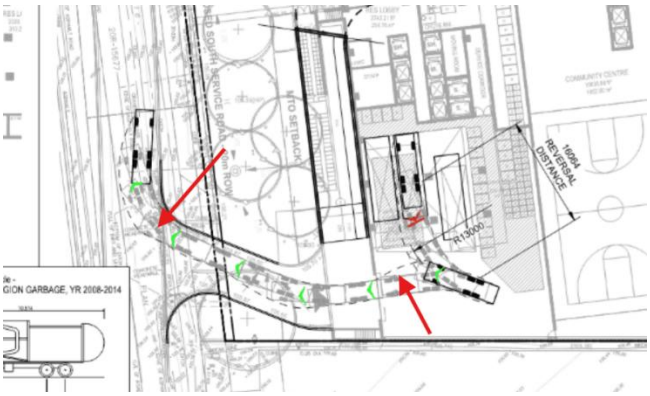
- Vehicle Sweep Diagram needs to display a minimum head-on approach of 18 metres to the Collection Point. If entering an internal Waste Loading area, the waste collection vehicle should be entering it straight and not on a turn.
    - Currently entering in on an angle
- Please show width of roads within the path of the collection truck (two way = 6 metres, one way = 4.5 metres)
- Within current vehicle sweep diagrams – the entrance of the waste vehicle into the loading area seems to make contact with the curb. Please confirm if there will be sufficient space for the vehicle. See Figure 4.

Figure 4: Entrance of Waste Vehicle into Loading Area

- Circle denotes area of concern

- Please indicate the turning radius of the waste vehicle exiting the loading area, as noted in Figure 5 below.

Figure 5: Waste Vehicle Exiting Loading Area



- Arrows denote missing turning radius

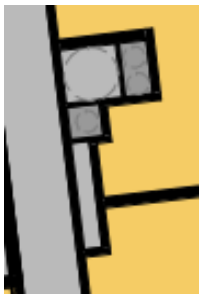
Waste Chute Rooms/General Building Comments:

- Will the community centre be private? Or through Town of Oakville?
- On Level 2: Please confirm that waste chutes will not be accessible
- On Level 3: Will this level (specifically indoor amenities highlighted – ex. Co-working space, screening room) be open to non-residents and please confirm the use of following indoor amenity.

Figure 6: Level 3 - Lower Podium

- What chute waste rooms will be accessible? Within current drawings on all floors, there is no door displayed for all chute waste rooms.
    - Note: Waste rooms should only be accessible to residents.

Figure 7: Example of Waste Room without doors



- On Level 5 will this level (specifically indoor amenities highlighted – ex. Co-working space, office room, screening room) be open to non-residents?

- The waste room in the middle of the tower displays more than 3 chutes. Please change to accommodate Halton's waste streams.

Figure 8: Example of drawing of middle tower waste room

Levels of Service, Certifications and Drive Through Agreement:

- Waste Management comments are based on Halton Region's current levels of service as of December, 2025. Levels of service remain subject to Regional budget and Council approval.
- Under Ontario's Blue Box Regulation (O. Reg. 391/21), the responsibility for operating and funding the Blue Box recycling program is transitioning from municipalities to producers. In accordance with the regulation, effective January 1, 2026, Halton Region will no longer have operational control over the Blue Box program at properties classified as eligible sources under the regulation. While the regulation includes Mult residential buildings as eligible sources, their full inclusion has been deferred until 2031.
- If Regional waste collection is supported, a completed Drive Through Agreement must be submitted and signed off by Halton Region.
  The applicant shall submit a letter, from a Qualified Person that a minimum of 35 tonnes (weight of a fully loaded waste truck) can be supported.

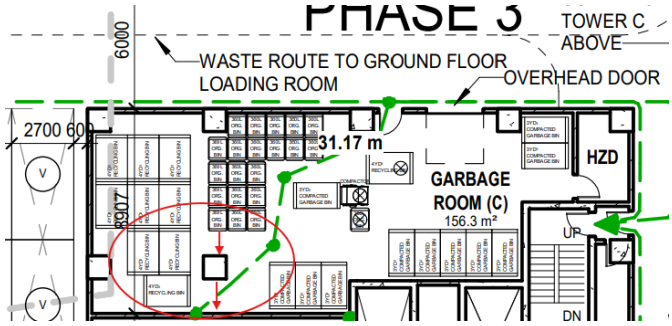
TOC Oakville Development - Phase 3: 217-227 Cross Avenue & 571-587 Argus Road

The following is associated with Regional Waste Management Staff technical comments associated with Phase 3: 217-227 Cross Avenue & 571-587 Argus Road, Town of Oakville and the TOC Oakville Development application.

Waste Storage Area:

- For Garbage Room C, the Region is concerned regarding the spacing of the bins to the pillars. Please ensure that each bin is accessible for use and move to the chutes/outside of storage room. Please see figure 1:

Figure 1: Garbage Room C on Parking Level 1



- Circle denotes area of concern
- Arrow denotes widths needed to confirm safe movement of bins

- Waste Capacity:
  - Number of waste receptacles needs to increase to accommodate capacity for residential units. See below for calculations:
    - Building A – 564 units
      - Organics – 360L carts – 25 Units = 23 carts
      - Recycling – 4 yd loose - 56 units – 10 bins
      - Garbage – 3 yd Compacted - 54 units = 11 bins
    - Building B- 651 units
      - Organics – 360L carts – 25 Units = 27 carts
      - Recycling – 4 yd loose - 56 units – 12 bins
      - Garbage – 3 yd Compacted - 54 units = 13 bins
    - Building C – 743 units
      - Organics – 360L carts – 25 Units = 30 carts
      - Recycling - 4 yd loose - 56 units – 13 bins
      - Garbage – 3 yd Compacted - 54 units = 14 bins
    - 26 recycling bins in total shown > bins need to increase
    - 27 garbage bins in total shown > bins need to increase
    - 52 organic carts in total shown > bins need to increase

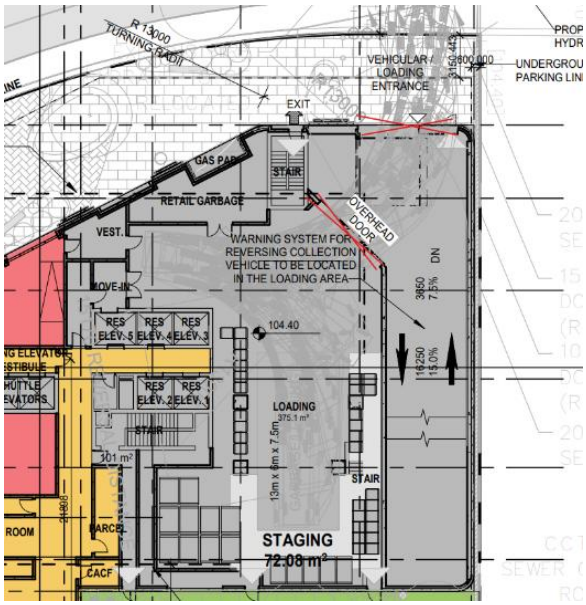
<u>Waste Loading Area:</u>

- Comments still stand from previous submission:
  - The applicant shall confirm if the staging area for waste collection is raised or at ground level.

- Tower A:
  - The Waste Loading area must be minimum 7.5 m high x 6 m wide x 18 m long to ensure the Waste collection vehicle can fully enter the Indoor loading are and ensure the minimum straight head on approach requirement is met.
    - Currently length of loading area is 13 metres
  - Please indicate the height and width of entrance doors to loading area. See figure 2 - must be:
    - 5m clearance
    - 6m in width
  - Please show and label all bins for a day of collection in the staging area
    - For once a week collection, please show the following in the staging area:
      - 40 Organics carts

        - 16 Recycling bins
        - 18 Garbage bins
    - For twice a week collection, please show the following in the staging area:
        - 20 Organics carts
        - 8 Recycling bins
        - 9 Garbage bins
- Note: Region cannot currently guarantee collection days for each stream. Collection for both front end streams (recycling and garbage) may occur on the same day.
- Regional Waste Management Staff recommend a technical meeting to discuss collection with a Regional Waste Representative will be required at a later stage.

Figure 2: Tower A Waste Loading Area

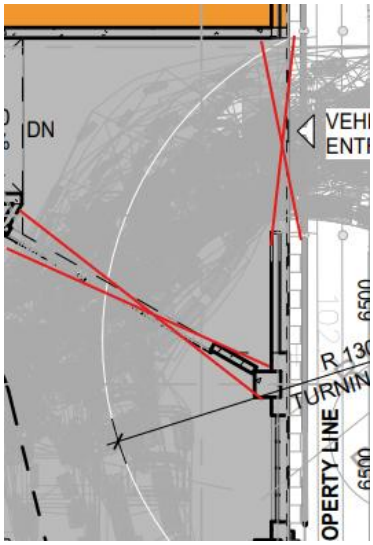


    - Red “X” denote entrance areas which need dimensions

- Tower C:
    - The Waste Loading area must be minimum 7.5 m high x 6 m wide x 18 m long to ensure the Waste collection vehicle can fully enter the Indoor loading are and ensure the minimum straight head on approach requirement is met.
        - Currently length of loading area is 13 metres
        - Please show waste loading area height with elevation drawings
    - Please indicate the height and width of entrance doors to loading area – see figure 3.
        - 5m clearance
        - 6m in width
    - Please show and label all bins for a day of collection in the staging area
        - For once a week collection, please show the following in the staging area:
            - 40 Organics carts
            - 16 Recycling bins
            - 18 Garbage bins
        - For twice a week collection, please show the following in the staging area:
            - 20 Organics carts

        - 8 Recycling bins
        - 9 Garbage bins
- Note: Region cannot currently guarantee collection days for each stream. Collection for both front end streams (recycling and garbage) may occur on the same day.
- Regional Waste Management Staff recommend a technical meeting to discuss collection with a Regional Waste Representative will be required at a later stage.

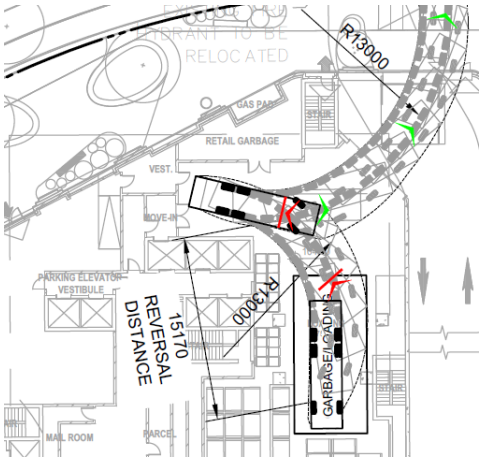
Figure 3: Waste Loading Area in Tower C



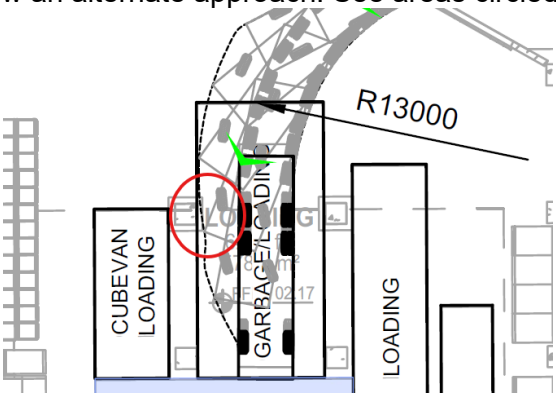
    - Red “X” denote entrance areas which need dimensions

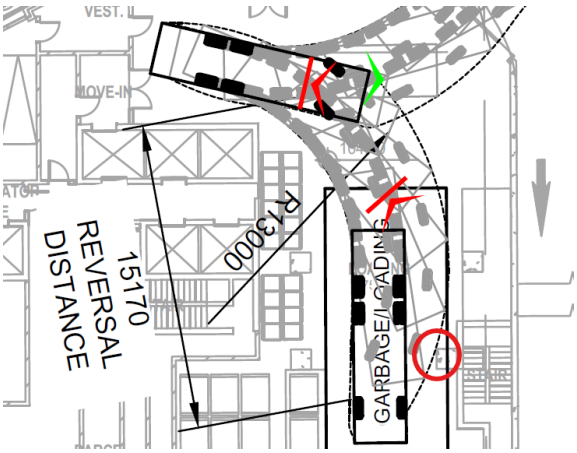
<u>Waste Vehicle Path:</u>

- Diagrams/Site Plans must show the following within the waste collection vehicles path:
    - Width of roads within the path of the collection truck (two way = 6 metres, one way = 4.5 metres)
    - Minimum straight head-on approach of 18 metres to the Collection Point.
        - Current head approach is not straight
- For Building A loading area, When vehicle reverses into two entry ways. To ensure the health and safety of staff, tenants, and residents, the path must avoid reversing into entry ways. Please indicate safety measures in place. See below for area of concern:



- For both Building A and Building C Loading area, Waste vehicle path interferes with pillars – please show an alternate approach. See areas circled below:



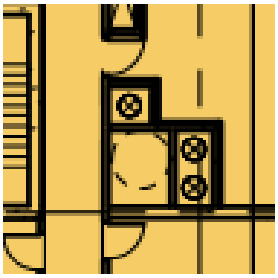


<u>Waste Chute Rooms/General Building Comments:</u>

- Will the Library be private? Or through Town of Oakville?
- Please confirm if / what amenities (co-working space, yoga studio, etc.) will be accessible by non-residents. If accessed by non residents, please ensure that the chute room is not accessible.

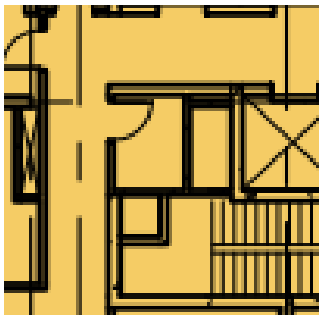
- What chute waste rooms will be accessible? Within current drawings on all floors, there is some waste rooms display doors – while others do not. Please include doors to waste rooms accessible by residents
    - Note: Waste rooms should only be accessible to residents.

Figure 4: Example of Waste Room without doors



- Some waste rooms do not display the 3 separate chutes. Please include within drawings

Figure 5: Example of Waste room without chutes



- Please ensure that the chute room is not accessible to the office portion in Phase 3.

<u>Levels of Service, Certifications and Drive Through Agreement:</u>

- Waste Management comments are based on Halton Region's current levels of service as of December 2025. Levels of service remain subject to Regional budget and Council approval.
- Under Ontario's Blue Box Regulation (O. Reg. 391/21), the responsibility for operating and funding the Blue Box recycling program is transitioning from municipalities to producers. In accordance with the regulation, effective January 1, 2026, Halton Region will no longer have operational control over the Blue Box program at properties classified as eligible sources under the regulation. While the regulation includes multi-residential buildings as eligible sources, their full inclusion has been deferred until 2031.
- If Regional waste collection is supported, a completed Drive Through Agreement must be submitted and signed off by Halton Region.
- The applicant shall submit a letter, from a Qualified Person that a minimum of 35 tonnes (weight of a fully loaded waste truck) can be supported.

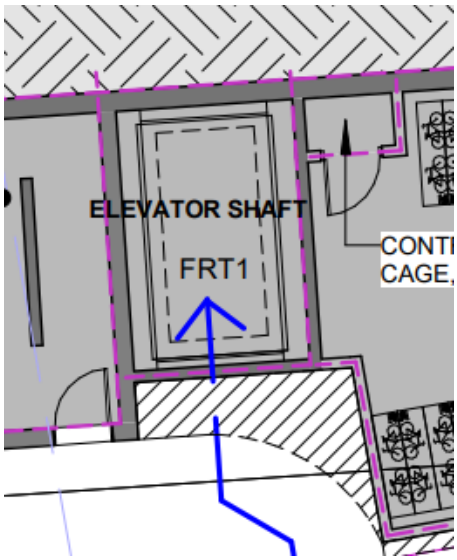
TOC Oakville Development - Phase 4: 590 Argus Road:

The following is associated with Regional Waste Management Staff technical comments associated with Phase 4, 590 Argus Road, Town of Oakville and the TOC Oakville Development application.

<u>Waste Storage Room:</u>

- Waste Receptacles Capacity
    - Please show all bins within each storage room - Tower A waste storage currently does not include all bins.
- Waste Movement
    - Please show dimensions of all service elevators being used to move waste receptacles to determine if waste receptacles cab fit. See Figure 1

Figure 1: Service Elevator Located within Tower A.



- Please show equipment being used to move waste receptacles within the storage areas in the plan – not clear what equipment will be used for residential use.
- For Tower C waste room, please show the distance between pillars, as well as cart spacing within the middle walkway. Please ensure that there is enough space to move bins to the doorway. See Figure 2
- For Tower B Waste Room, access doors do not fully open as there is a bin blocking one side. Please reconfigure the bins accordingly – see Figure 3.
    - Tower B waste storage currently shows recycling bin within a pillar – please rearrange:

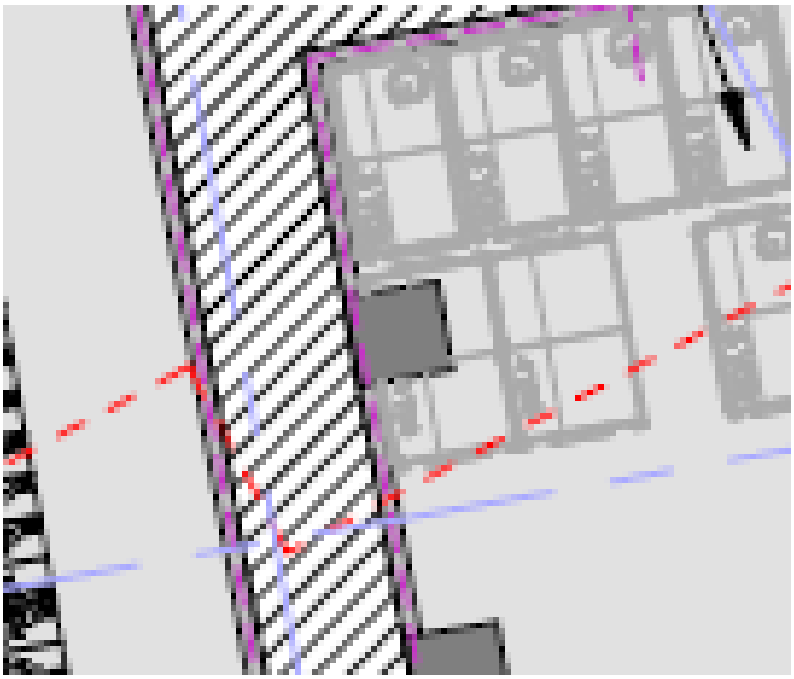
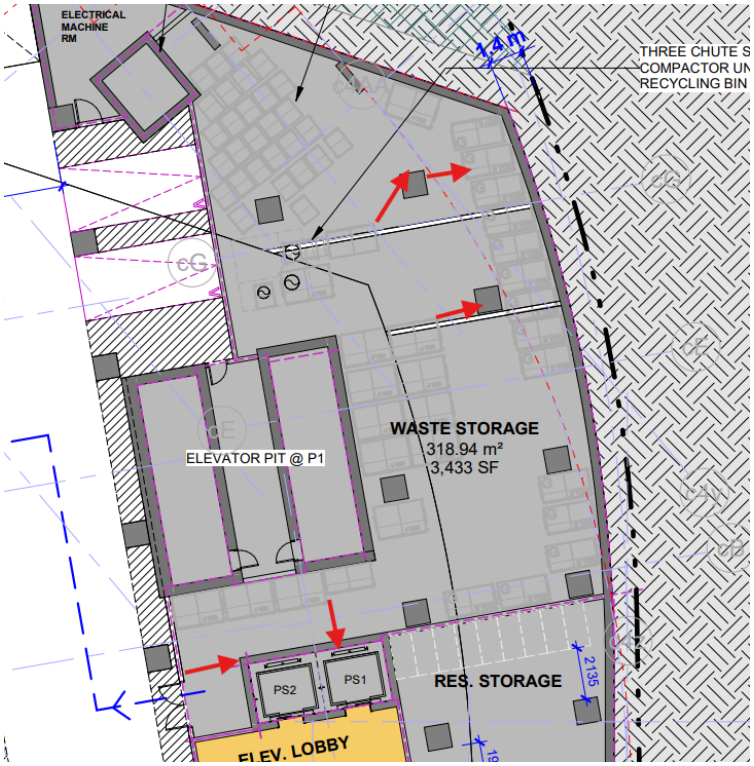
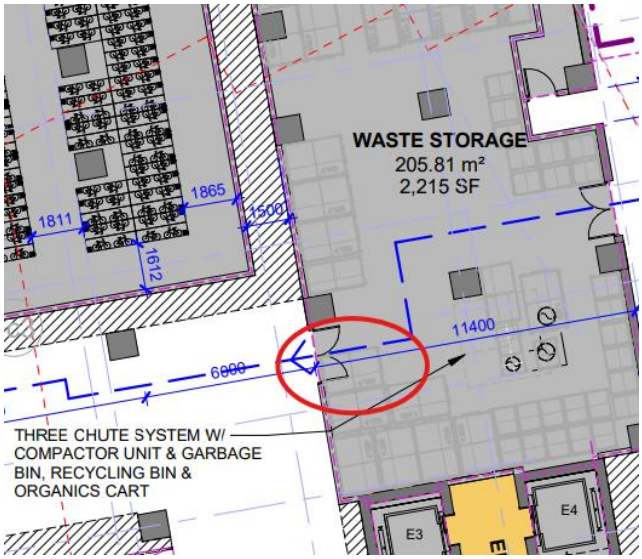


Figure 2: Tower C Waste Room



- Red arrows denote distances of concern regarding placement of waste receptacles and pillars.

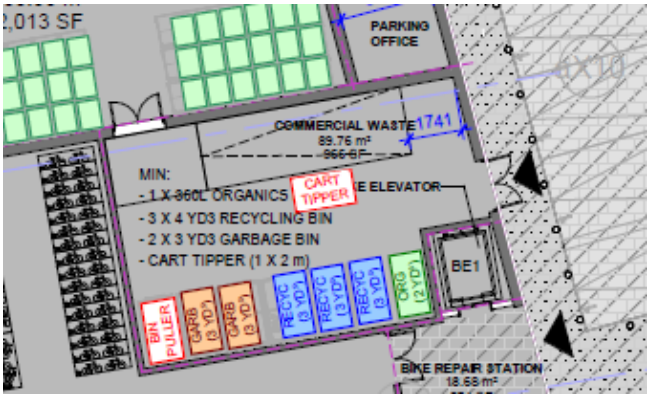
Figure 3: Tower B Waste Room



- Circle denotes area of concern

- Near waste staging area, there is a separate room with commercial waste storage and additional bins/carts. Please confirm if the room would only be used for commercial waste – should be stored separately from residential waste. See figure 4.

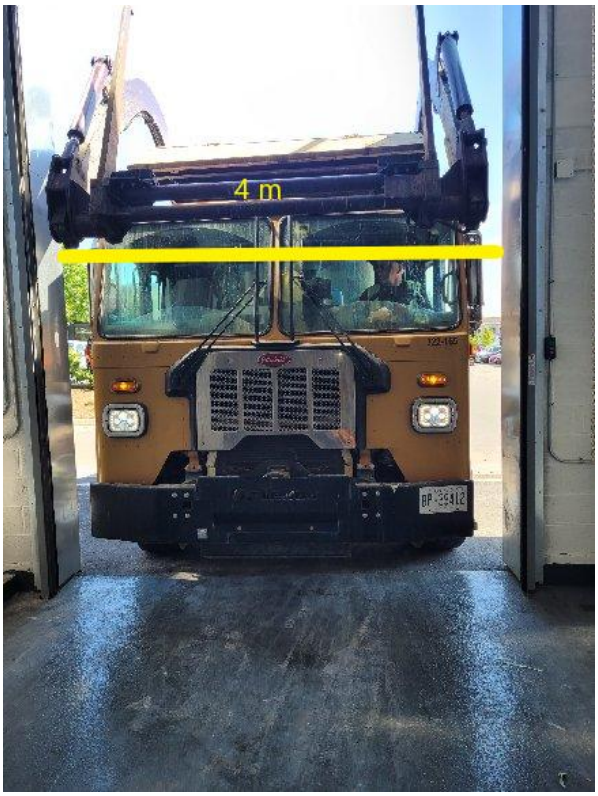
Figure 4: Display Additional Waste Storage on Level 1



Waste Loading Area:

- The Waste Loading area must be minimum 7.5 m high x 6 m wide x 18 m long to ensure the Waste collection vehicle can fully enter the Indoor loading are and ensure the minimum approach requirement is met.
    - Currently length of loading area is 13 metres
    - Please confirm if height of loading area is 7.5 m throughout loading area. Current plan shows a separate loading area with a height of 3.5m. To be shown in elevation drawings.

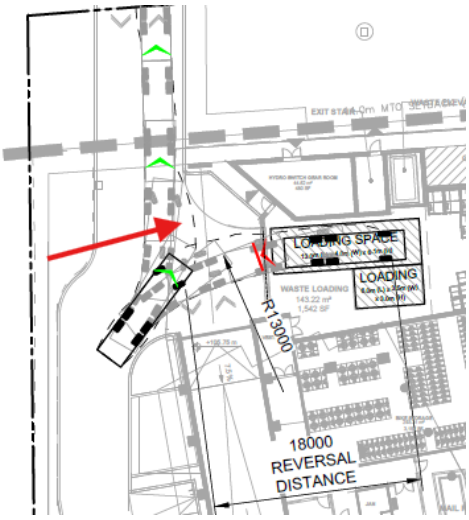
- Width of loading area is 4m – must meet Design Guidelines of 6m to provide sufficient space for circle checks in all areas. Please see images below displaying an example of 4m width restrictions:



- Staging area for collection day must be shown with space for maximum number of bins/carts
    - For once a week collection, please show the following in the staging area:
        - 34 recycling bins
        - 36 garbage bins
        - 79 organics carts
    - For twice a week collection, please show the following in the staging area:
        - 17 recycling bins
        - 18 garbage bins
        - 40 organics carts
- Note: Region cannot currently guarantee collection days for each stream. Collection for both front end streams (recycling and garbage) may occur on the same day.
- Regional Waste Management Staff recommend a technical meeting to discuss collection with a Regional Waste Representative will be required at a later stage.

<u>Waste Vehicle Path:</u>

- Diagrams must show the following within the waste collection vehicles path:
    - Width of roads within the path of the collection truck (two way = 6 metres, one way = 4.5 metres)
        - Please indicate width of local road
    - Minimum head-on approach of 18 metres to the Collection Point. If entering an internal Waste Loading area, the waste collection vehicle should be entering it straight and not on a turn.
        - Currently vehicle is entering on a turn
    - Turning radius of 13.0 metres from the centreline. Indicate all turning radii along vehicle path – see below for missing radius:

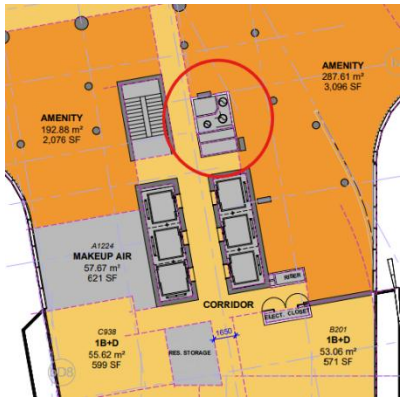


<u>Waste Chute Rooms/General Building Comments:</u>

- Will the community space be private? Or through Town of Oakville?
- Please identify what the amenities outlined in orange will be, and if they will be accessible to residents only.
- Waste Room in Tower B and C does not have doors. Please ensure that the waste room is accessible to only residents of the building. See Figure 5.

- Note: Please ensure that the office space will not have access to the waste room

Figure 5: Waste Room on Tower B



Levels of Service, Certifications and Drive Through Agreement:

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- Under Ontario's Blue Box Regulation (O. Reg. 391/21), the responsibility for operating and funding the Blue Box recycling program is transitioning from municipalities to producers. In accordance with the regulation, effective January 1, 2026, Halton Region will no longer have operational control over the Blue Box program at properties classified as eligible sources under the regulation. While the regulation includes Mult residential buildings as eligible sources, their full inclusion has been deferred until 2031.
- If Regional waste collection is supported, a completed Drive Through Agreement must be submitted and signed off by Halton Region.
  The applicant shall submit a letter, from a Qualified Person that a minimum of 35 tonnes (weight of a fully loaded waste truck) can be supported.

R.J. Burnside & Associates Limited 6990 Creditview Road, Unit 2 Mississauga ON L5N 8R9 CANADA
telephone (905) 821-1800 **fax** (226) 526-9660 **web** www.rjburnside.com

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January 23, 2026

Via: Email

Khalil Barakzai, P.Eng.
Manager
Town of Oakville
1225 Trafalgar Road
Oakville, ON L6H 0H3

Martin Chan, P.Eng.
Transportation Engineer
Town of Oakville
1225 Trafalgar Road
Oakville, ON L6H 0H3

Dear Khalil and Martin:

Re: Distrikt Transit-Oriented Community (TOC) Developments
Traffic Impact Study (TIS) Peer Review
Project No.: 300057839.1000

1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) was retained by the Town of Oakville (Town) to conduct a peer review on transportation planning and design matters for the Transportation Impact Study (TIS) of the Oakville Transit-Oriented Community (TOC) developments located on the lands municipally known as:

- Site 1: 217-227 Cross Avenue and 571, 581, 587-595 Argus Road
- Site 2: 157-165 Cross Avenue
- Site 3: 166 South Service Road East
- Site 4: 590 Argus Road

Burnside reviewed a revised TIS, dated August 19, 2025, for the Oakville TOC developments. Our peer review comments are listed below.

Further, Burnside has reviewed the Town comments on the first submission. Our responses to previous comments are included in the comments/response matrix provided in Attachment 1.

1. The proposed active transportation facilities shown on the site plans do not align with the Midtown Transportation Plan and Designing Midtown. Please update the site plans to incorporate the on-road active transportation facilities as recommended from the Midtown Transportation Plan and Designing Midtown. Appropriate transitions at site driveways should also be considered.

2. It is unclear how the TIS accounted for the off-road active transportation facilities recommended in Schedule L6 of the Midtown Official Plan Amendment. Please update the TIS to explain how the proposed site plans align and address the off-road (midblock) active transportation facilities as shown in Schedule L6 of the Midtown Official Plan Amendment. Any deviations from Schedule L6 should be explained and justified.
3. Please update the TIS to include consideration for pedestrian crossings to facilitate access to proposed off road (midblock) active transportation connections.
4. Please correct the following in "Figure 5 – Existing Lane Configuration and Traffic Control" and update the intersection operations analysis accordingly:
    - The southbound approach at the QEW WB On Ramp in Inset A should show three through lanes instead of two.
    - The westbound approach at Chartwell Road and Cornwall Road should have a through-right lane rather than an exclusive right turn lane.
5. Please update "Figure 15 – Existing (2024 Base Year) Traffic Volumes" to include the volumes for the southbound left turn lane at the Royal Windsor Drive / South Service Road / QEW On-Off Ramp intersection and ensure that it is included in the operations analysis.
6. The TIS has not assessed interim phasing requirements to ensure that mitigation is concurrent with impact. Please update the TIS to include a traffic operations assessment of the following scenarios:
    - Existing (2024)
    - Partial buildout year for each of the three interim phases of development
    - Full buildout of all four sites
    - Five years of post-buildout

    Please see Town's comment report.
    The study horizon years should include interim partial build-out years, and at a minimum, every 5-year increment.
7. The TIS has not assessed or identified improvements / mitigation measures required to accommodate the interim phases and full buildout of the development. For **each horizon year** as listed above, please:
    - Recommend improvements or mitigation measures to address any operational (i.e., capacity/delay/ queuing) constraints identified. This includes: 1) comparing 95th percentile queues against the available storage or link distance provided for each movement, 2) lane capacity that is sufficient to accommodate projected volumes, 3) delays for movements that are acceptable and do not lead to unsafe driver behaviour.
    - Provide a figure illustrating planned improvements per the Midtown Transportation Plan and intersection improvements, including turn lanes, signal optimization and traffic control updates, to address operational constraints.
8. The scenario without corridor growth is not appropriate and should not be considered as an analysis condition. The modelled link volume output for 2051 from the Midtown Transportation Plan can be provided to the applicant. However, it should be noted that the output provided is from a macro transportation forecasting model derived based on a subarea of Halton Region's transportation model and has been refined for strategic analysis for network development. Its application should be considered within the context of the TIS review. If traffic is assumed to be diverted to alternative routes, then those diverted trip

routes and volumes should be justified and the available capacity of the alternative routes quantitatively analyzed and confirmed.

9. Please note that “Figure 24 – Selected Recommended Future Lane Configurations – Midtown, West of Trafalgar Road” appears to be blank.
10. The interim offset intersection at Cross Avenue and Street A cannot be supported, given the safety and capacity concerns resulting from the offset north and south legs, lane discontinuity eastbound, lack of an eastbound left turn lane, and substandard left-turn storage and taper configurations. Please update the TIS and site plans to ensure that the south leg of Cross Avenue / Street A is aligned with Street A as part of the interim and ultimate conditions. Further, we recommend early coordination between Metrolinx and the applicant for the timing of the realignment of the south leg of the intersection.
11. The proposed phasing of the four sites as listed in Section 4.2.3 does not align with the phasing sequence identified in the Phasing Plans submitted as part of the application. Please confirm and update the TIS accordingly.
12. Please update the TIS to include recommendations for a parking management plan to address:
    - Potential parking oversupply and associated mitigation strategies (i.e., if specific lots will be constructed for adaptive reuse).
    - A shared parking strategy, including recommendations for pricing and the proportion of parking to be shared with other uses and how shared parking will be managed and enforced to the satisfaction of the Town.
    - On-street parking opportunities.
13. The proposed bicycle parking supply rate for non-residential uses should be updated to align with the Parking Strategy of the Midtown Transportation Plan, which proposes a minimum bicycle parking rate of 0.35 spaces per 100 m^2 for retail and office uses.
14. The site plan should incorporate bicycle parking amenities, such as shower and change room facilities, per the recommendations from the Parking Strategy of the Midtown Transportation Plan.
15. The site plans should be updated to show long-term bicycle storage rooms that are constructed with high-security measures.
16. Please confirm and specify what land use parameters were applied to derive trip generation rates for uses designated as Shopping Plaza.
17. The TIS should not assume that all trips generated from community uses proposed for the 590 Argus Road and 217-227 Cross Avenue site will be local in nature. Please update the analysis to include the community uses in the trip forecasts and reduce them accordingly based on internal capture rates per the NCHRP.
18. The 0% distribution applied to retail and office traffic for several directions (i.e., south via Trafalgar Road, east via South Service Road and south via Chartwell Road) is not reasonable, particularly since the TTS queries are based on the existing Midtown area, which differs significantly from the future land uses. Please provide further justification or update the analysis accordingly.

19. The trips generated from residential uses should not apply an inbound / outbound TTS filter to inform distribution, since in / out splits from the ITE Trip Generation database are already applied as part of the trip assignment stage.
20. Halton Region to review the proposed reduced daylighting requirements for arterials.
21. Please update the ROW width in the last row to “>36” rather than “<36” in “Table 4 – City of Toronto Corner Rounding Requirements”.
22. Please update Section 6.3.1.1. to reference the “Provincial **Planning** Statement” and ensure the supporting text is updated accordingly.
23. Please incorporate TDM strategies identified in Halton Region’s TIS Guidelines and Town staff’s comment report, as appropriate.
24. Please update the TDM strategy to include recommendations for the interim (i.e., as Midtown is developing) and ultimate (i.e., when Midtown is built out).
25. Please update the TIS to include an assessment of intersection spacing and clear throat lengths for all accesses. The adequacy of the spacing and clear throat lengths should be reviewed within the context of the anticipated 95th percentile queues, which have not been assessed for the site accesses.
26. Please update the TIS to include an assessment of sightlines for all site accesses.

The TIS does not adequately align with the latest Midtown plans, nor does it provide solutions to address operational issues for each phase of development. As such, Burnside recommends that this proposal be resubmitted with revisions.

If you have any questions or concerns, please do not hesitate to contact the undersigned.

Sincerely,

R.J. Burnside & Associates Limited

Xinli Tu, P.Eng.
Transportation Engineer
XT:rk

Ray Bacquie, P.Eng., MBA
Senior Vice President, Transportation

Enclosure(s) Attachment 1: TIS Submission 1 Comments Matrix

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Attachment 1

TIS Submission 1 Comments Matrix

Transit Oriented Communities

Oakville GO Station

Submittal Title :
File Number :
Submittal Date :

Review Comments Spreadsheet	*** Actions:**	**** Status:**
	1 = Acknowledged, will comply	O = Open, not resolved
	2 = Further discussion / clarification required	P = Pending incorporation in design
	3 = Not incorporated for reasons stated	C = Closed, implementation complete
	4 = Out of scope, not applicable to this contract	D = Deffered to another contract

Serial No.	Reviewer Name	Description	Comment	Response & Details	Action 1 / 2 / 3 / 4	Status O / P / C	Responsible Organization	IO / Arup Suggested Approach	Peer Reviewer Responses
1	Town of Oakville	General	1.(Step 1)- In order to confirm the traffic conditions generated by the TOC sites and their impacts to, and relationship with, Midtown itself and the broader transportation network, more details and analysis are required to: a.Demonstrate how the transportation infrastructure and traffic will be phased to and how that aligns with the projected growth of Midtown, the phasing of development, and the delivery of supporting infrastructure (interim and permanent) including the road network and subsurface services (see Halton and Engineering comments regarding locating sewers and watermains within the future road allowances). b.Demonstrate how the interim and ultimate road network will function with the TOC (and background and development traffic generated in the same horizon years) in place, including road capacity, queuing, intersection operations and delay. c.Be consistent with the most recent version of the Midtown OPA. d.Confirm the alignment and setback of the South Service Road and ensure that is appropriately referenced on all applicable plans. e.Demonstrate the parking needs and phasing, and how parking will function for the TOC sites. It is understood that formal parking requirements (X spaces/m2, for example) for MTSAs are no longer mandated as a result of Bill 185, however there does need to be an analysis of how parking on-site and on-street will work for the TOC sites and how the proposed parking plan – cars and bikes – will support the TOC and area. f.Demonstrate how the existing and future transit reach analysis aligns with Oakville's 5-Year Transit Service Plan, and how it relates to the traffic volumes, and parking rates. It is recognized that the traffic analysis in a TIS primarily focuses on personal vehicles, but given the TOC location and the "transit-oriented" nature of the community, it is important to understand what the expected reliance of transit will be for TOC-generated trips and how that contributes to the reduction in parking needs and personal vehicle trips as compared with a similar development located outside of a TOC or MTSA. g.Include the type and location of proposed active transportation infrastructure within the rights-of-way, and their connections with the broader network.	A revised transportation impact assessment is included in BA Group's August 2025 TIS report. The revised analysis adopts 2024 base vehicle and active transportation volumes. The analysis reflects the future impacts of the TOC Development (the 4 sites) and also includes background (non-TOC) developments in the general area as well as corridor growth assumptions provided by the Town of Oakville, Region of Halton, and the Ministry of Transportation, Ontario (MTO). The report also documents the future measures of operational capacity (V/C ratios, LOS, delay, and queuing - 50th and 95th percentiles) at the key signalized intersections within the study area adopted. The TOC-related traffic volumes generally only have a modest impact on the broader street network, relative to future background conditions. The assumed corridor growth results in some intersections experiencing long-term future conditions that may exceed the theoretical capacities. Phasing of the TOC Development has not been accounted for at this juncture. Further analyses will need to be undertaken, including phasing any future non-TOC growth to better reflect the incremental nature of both the TOC Development and non-TOC area development and importantly the effects of corridor growth within the Midtown area. The public street network that has been adopted in the TIS analysis is consistent with the Midtown Oakville Official Plan Amendment (OPA 70). The revised August 2025 TIS report provides a comprehensive review of the parking needs and justification of the proposed parking rates in Section 6.0.		O	BA	Report/analysis up	1a) The revised transportation impact study (TIS) does not propose transportation infrastructure improvements to support the development. Even if existing and background conditions are constrained, the TIS must show what measures the proponent will fund/implement to offset the incremental impact and address multimodal performance to support the Midtown Transportation Plan. b) While a Phasing Plan has been submitted, the TIS should identify associated infrastructure improvements required to support the development, identify how these improvements are phased, and assess how the interim road network will function under the recommended interim conditions. The TIS has only assessed the ultimate (2044) conditions. c) The revised TIS is noted to incorporate the latest OPA road network. However, the TIS should be updated to address how the active transportation network as proposed from the OPA and the Midtown Transportation Plan has been addressed and/or supported by the site plans. d) The alignment of South Service Road aligns with that of the latest OPA. A 14 m setback is noted. e) The revised TIS has proposed reduced resident and visitor parking rates, with justifications provided. However, the TIS should be updated to address interim parking needs. f) The revised TIS has included an analysis of transit impacts as a result of the Trafalgar BRT. However, the TIS should reference and consider improvements from the Oakville Transit Five-Year Business Plan. g) The TIS has not considered the active transportation strategy as proposed from the OPA and Midtown Transportation Plan. The TIS should be updated to include the type and location of proposed active transportation infrastructure within the rights-of-way, including their connections with the broader network.
				The Transit Reach analyses adopted in the revised August 2025 TIS report has made a conservative assumption that the Town's Transit service, other than the addition of planned regional improvements in the form of BRT services and GO Transit's GO Rail service improvements, remains similar to today's service levels. The planned active transportation system outlined in the Midtown Oakville OPA 70 has been adopted as part of the analyses in the revised April 2025 TIS report. It is important to note that the Synchro analyses undertaken represents a static macro-simulation based methodology (i.e., HCM methodology) to forecast and model future (2044) traffic operations. It is our understanding that the Town of Oakville and its consultant team is currently undertaking a dynamic multi-resolution model that could more accurately reflect the elastic nature of travel routes and travel modes on the area road network. In particular, the Halton Region maintains a macroscopic EMME travel forecasting model for the entire Region that more dynamically assigns trips to different routes and different modes based on overall network capacity. For example, the EMME model can better reflect route and mode choice elasticity compared to a static model – e.g. people can choose different routes, different modes and different times of travel depending on the travel options that are available and the capacity of the road network. Thus, as population in the Oakville and in Midtown grows, the model aims to forecast the changing travel characteristics that would result for the local and regional area. As part of the next steps of the Midtown Oakville planning process, BA Group seeks to collaborate with the Town to understand the inputs and outputs of the Town's modelling work and the changing travel characteristics of the local and regional area as Midtown is built		O			As noted above, the revised TIS has included an analysis of transit impacts as a result of the Trafalgar BRT. However, the TIS should reference and consider improvements from the Oakville Transit Five-Year Business Plan.
2	Town of Oakville	General	2.(Step 1) – There are some inconsistencies between the TIS and what is shown on the site plans for each of the 4 sites. Ensure that supporting and required infrastructure and the facilities that are referenced in the TIS are also shown on the site plans, and vice versa. There also needs to be consistency between these documents and the infrastructure recommendations in the FSR and urban design plans. This includes loading, pick-up/drop-off (PUDO), active transportation infrastructure, boulevards, transition from interim conditions (accesses, partial/interim roads, traffic control), parking, and the road network itself.	Trafalgar Engineering has been in ongoing coordination with BA group.		O	BA/Trafalgar	Report/analysis up	Based on the response provided, it is unclear whether the plans have been updated for consistency.

Serial No.	Reviewer Name	Description	Comment	Response & Details	Action 1 / 2 / 3 / 4	Status O / P / C	Responsible Organization	IO / Arup Suggested Approach	Peer Reviewer Responses
3	Town of Oakville	General	3.[Step 1] – Transportation comments (Sustainable Transportation, Oakville Transit, Transportation Services) should be read in conjunction with the comments from the peer reviewers and the comments from Oakville Development Engineering and Halton Region.	Noted		N/A		Noted	
4	Town of Oakville	Sustainable Transportation	1. Site Plan a. [Step 1] - Residential multimodal spatial dimensions and locations (bikes, e-scooters and other types of multi-mobility) within each building footprint, are recommended to be stated on the Site Plan, in accordance with the requirements in Ontario Traffic Manual, Book 18. b. [Circ 1] - Please provide a cycling circulation plan for the development site illustrating connections to the road network. c. [Circ 1] - A wayfinding strategy within the building to identify sustainable modes spaces is recommended. d. [Circ 1] - A wayfinding strategy throughout the POPs areas is recommended.	These details will be provided on future Site Plans submitted as part of the development application process.		O	BA	Report/analysis up	At a minimum, the site plans should illustrate how internal pedestrian and cycling connections integrate with proposed active transportation facilities within the OPA network. As mentioned, the TIS has not incorporated the active transportation facilities recommended from the OPA and Midtown Transportation Plan.
5	Town of Oakville	Sustainable Transportation	2. Transportation Demand Management Measures a. [Step 1] – Please identify the implementation phasing of the Transportation Demand Management measures across the proposed site for hard and soft measures, with a focus on car share, bike share, and private shared mobility devises. b. [Circ 1]- Please use the MMLOS guidelines to analysis the quality of service of commutes across the development site. c. [Circ 1] All sustainable travel handbooks or packages need to be cleared by the Sustainable Transportation Program Coordinator prior to distribution.	The proposed TDM Plan in the revised August 2025 TIS report in Section 5.0 classifies the TDM measures as Hard and Soft measures. Further analyses, using the Town's MMLOS approach will be included with the next submission. Further coordination of the TDM measures will be undertaken with Town of Oakville staff prior to implementation.		O	BA	Report/analysis up	2a) Noted, thank you. B) The TIS has not included an MMLOS analysis of facilities across the development site. C) Noted, thank you.
6	Town of Oakville	Sustainable Transportation	1. [Step 1] – For information- as per the Town of Oakville's draft Midtown OPA, Cross Avenue will continue to serve as a transit route for transit services to and from the Midtown Oakville transit hub.	Noted		N/A		Noted	
7	Town of Oakville	Sustainable Transportation	2. [Step 1] – Planning Justification Report Section 3.6.3 – please make the following changes: a. Route 4 operates from 7:30AM midnight on Saturdays and from 8AM to 8PM on Sundays. b. Route 5A no longer exists. Please remove references to route 5A including the reference to the route operating along Sixteen Mile Drive. Service along Sixteen Mile Drive is now provided by Route 37. c. Route 20 operates until 11:30pm on weekdays. d. Route 24 operates until midnight on weekdays. e. Route 120 operates from 6:30AM – 9:30AM and 3:00PM – 7:00PM. There is no mid-day service.	We have updated the bus route services based on the comments and based on the information available on the Oakville Transit website. Refer to Section 3.6.5 of the enclosed Planning and Urban Design Rationale Report.		O	BA/Bousfields	Report/analysis up	These changes do not appear to be reflected in the Planning and Urban Design Justification Report (September 2025) provided.
8	Town of Oakville	Sustainable Transportation	3. [Step 1] – Planning Justification Report Section 3.6.4- please add the following: "Oakville Town Council has recently approved Oakville Transit's 5-Year Business plan. The plan maps out Oakville Transit's plans from 2025 to 2029. There are a number of planned changes to Oakville Transit's bus network, including changes to routes that serve the Oakville GO Oakville Transit Bus Hub. The changes will be done in phases between 2025 and 2029."	A new subsection "Upgrades to Town of Oakville Bus Network" has been added to Section 3.6.4 of the enclosed Planning and Urban Design Rationale Report.		O	BA/Bousfields	Report/analysis up	These changes do not appear to be reflected in the Planning and Urban Design Justification Report (September 2025) provided.
9	Town of Oakville	Transportation Services	1. Site Plan - Step 1 comments based on "Overall Construction Phasing Plan" submission dated 2024/03/22 a. [Step 1] – The alignment of the road network and intersections should be consistent with the current draft OPA – Schedule L5 dated September 2024 and should extend to all road connections to the rest of the "Midtown Oakville Area". Refer also to the Engineering comments and the Halton Region comments regarding road network, interim conditions and phasing. b. [Step 1] – identify how the driveways for each site will work, including any impacts associated with queuing, on site or on the road that the driveway connects to, that would limit the ability of vehicles to enter or exit the site. c. [Step 1] – Identify the dimensions to illustrate the Right of Way widths on the drawings and ensure that they align with those proposed for the future road network as per the draft OPA – Schedule 5L dated September 2024. d. [Step 1] – For the pedestrian connectivity, please confirm/verify the locations of future Privately Owned Public Spaces (POPS) on the conceptual plans. e. [Step 1] – The subject developments accesses should be identified ensuring that the corner clearance from adjacent intersections is met. f. [Step 1] – The daylight triangles should be designed according to the Town of Oakville Design Standard for the respective proposed road categories as identified in Schedule L of the current Draft OPA (September 2024). g. [Step 1] – There are some inconsistencies between the TIS and what is shown on the site plans for each of the 4 sites. Ensure that supporting and required infrastructure and the facilities that are referenced in the TIS are also shown on the site plans, and vice versa. There also needs to be consistency between these documents and the infrastructure recommendations in the FSR and urban design plans. This includes loading, pick-up/drop- off (PUDO), active transportation infrastructure, boulevards, transition from interim conditions (accesses, partial/interim roads), parking, h. Please also refer to the attached Peer Review comments.	The proposed public street network adopted for transportation assessment is consistent with the Town's Midtown Oakville Official Plan Amendment OPA 70. This includes all ROW dimensions and component elements (boulevard elemnst including sidewalks, cycle tracks, and landscaping allownaces, and pavement dimensions). Subsequent submissions will review driveway operations associated with each TOC site along with mobility related detailed Site Plan elements (driveways, vehicular circulation, active transportation circulation and infrastructure, service vehicle loading favilities and operations, etc.). The revised August 2025 TIS report address daylighting conditions proposed in conjunction with the TOC sites in Section 3.5.2. Coordination between BA Group and Trafalgar Engineering is ongoing relative to Site Plan details and public street infrastructure details.		O	BA	Report/analysis up	1a) The revised TIS has incorporated the road network as recommended from the draft OPA. There is noted to be a variation in the geometry of the 'swellbow / swoosh' at the NW corner of the 217 Cross site. b) The revised TIS has not assessed how the driveways for each site will work. The TIS should be updated to include an assessment of intersection operations at the driveway accesses. c) The site plans illustrate right of way widths. However, the site plan for 166 South Service Road indicates that South Service Road has a proposed ROW of 16 m. The OPA illustrates a 20 m ROW for South Service Road. d) The locations of future POPs has been labelled on the conceptual plans. e) The TIS should be updated to assess corner clearances according to TAC requirements and based on queuing assessments. f) The revised TIS includes proposed daylighting requirements. It is noted that the daylighting requirements for Arterial roads have been reduced from 15 m to 7.5 m. This is acceptable considering requirements of other urban centres. However, daylighting triangles appear to be shown on some plans but not others. Please update all plans to ensure that the daylighting triangles are shown. g) Based on the response provided, it is unclear whether the plans have been updated for consistency.

Town's Notes: See Peer Reviewer Responses above.

Additionally:
a. Note that the OPA, as well as the Midtown TP have now been approved. The road designs and cross sections should be consistent with the Midtown TP and Designing Midtown documents. As noted in the circulation 2 comments, should deviations be required/requested, transportation justification using first principal would be required in the TIS. Given the scale of the development, please include a section in the TIS, Design Conformance Review and outline the relevant requirements, conformance, and any non-conformance, where applicable.
b. Traffic analysis has not demonstrated how the access will operate. The TIS should be updated to include operations of the accesses, as well as intersections in close proximity to confirm the supportability of the access location, and access configuration.
c. Partially Addressed. The TIS references the correct ROW widths, however, the Site Plan for 166 South Service Road still references 16.0 m ROW for South Service Road.

Serial No.	Reviewer Name	Description	Comment	Response & Details	Action 1 / 2 / 3 / 4	Status O / P / C	Responsible Organization	IO / Arup Suggested Approach	Peer Reviewer Responses
10	Town of Oakville		2.Traffic Impact Assessment/Study a.[Step 1] – Figures need to be clearly labelled to allow for proper review and analysis. For example, there are no years/dates on the "future" plans for Figures 10, 11, 14, 15, 16, 17, or 20 b.[Step 1] – Figures showing the existing conditions (traffic volumes) in the morning and afternoon peak periods are required to compare the changes in volumes with the TOC (i.e. to compare against Figures 17 and 18). c.[Step 1] – More detail is required regarding the anticipated 2038 traffic generated by the TOC (see Figures 17, 18). Some of the volumes look very low. For example, only 15 vehicles are shown heading westbound to the TOC area via Cross/future Cross(existing South Service Road) in the PM peak, and only 55 (through) and 49 (LT at Cornwall/Trafalgar). These seem like very low volumes for 6,908 residential units. The TOC generated volumes, bound for the TOC area at the end of the day, via Cornwall and Speers, also seem low – only 46 vehicles making the westbound left at Cross/Cornwall/Speers and 82 vehicles making the left turn at this same intersection. How are the anticipated cycling, transit and pedestrian volumes generated by the TOC at these times influencing the traffic volumes? •Conversely, there are over 803 vehicles projected to make the southbound right into the TOC area at the Argus/Trafalgar intersection in the PM peak. How will this intersection operate with such a high volume of right turns? Page 55 notes the intersection delay due to northbound through movements and the delay for the weekday PM peak for northbound left turns, but the southbound right turns are not mentioned here. d.[Step 1] – The expansion of the study area will be required as part of the Oakville TOC development technical review. The analysis does not include the traffic that will come into Midtown (west of Trafalgar, in the area of the TOC) from the connection of Argus/Davis, for example. e.[Step 1] – Other active and planned developments in the study area are required to be included as part of the background development trips. f.[Step 1] – Align the phasing assumed for the TIS horizons with the anticipated road network phasing. Demonstrate how the phasing of the Midtown road network, both roads to be built through development and roads to be built through town capital projects will influence the traffic patterns and volumes to/from the TOC area – include both background traffic and TOC-generated traffic. Identify which roads are needed to support the TOC and when they are required. Identify how and when the interim road/access conditions will transition to permanent roads. •Where sites rely on local roads that are not yet constructed (i.e. TOC Site #2 at 157 Cross) or are proposed to be initially serviced by only a portion of the right-of-way (i.e. TOC Site #1 at Cross/Argus), identify how the access to, from and around the site will be managed under these interim conditions and when the permanent roads are being constructed. •Please also refer to the Engineering comments regarding road network, phasing and interim conditions. g.[Step 1] – As part of the analysis of how the interim and ultimate road network will function with the TOC (and background and development traffic generated in the same horizon years) in place, including road capacity, queuing, intersection operations and delay, ensure that transit operations are also included. Cross Avenue will continue to be the primary route for transit (including future BRT service) to and from the Oakville GO Station. In order to support a decreased reliance on automobile trips and an increased use of transit, buses need to be able to access and leave the GO Station quickly and efficiently to get to the new north/south road on the east side of Trafalgar Road. Argus/Davis will also be an important transit route in the TOC area. The new north/south road will be the primary north/south transit route in this area. The queuing analysis and the capacity analysis both need to identify the impacts to this efficient transit movement and the mitigation methods. h.[Step 1] – Please confirm that the number of residential units, and the floor area for retail, day care, health/fitness club and office are correct and consistent throughout the TIS and between the TIS and the other plans and reports. The site plan details used for the analysis in Table 16 of the TIS do not match the details identified in Table 1 of the TIS, for example.	The August 2025 TIS report has been revised to address these comments. Note that phasing will be address in subsequent submissions. See also response provided to comments in Serial No. 1.		O	BA	Report/analysis up	2a) Figure titles have been updated to include a year, where appropriate. b) Existing traffic volumes for the morning and afternoon peak hours have been included. c) Please provide the trip assignment figures from the TIS' of background developments used to derive Figure 17. The vehicular trips appear low given the size of the background developments. d) The revised TIS has included traffic generated from developments located west of Trafalgar. However, as mentioned above, more details are required to show how traffic generated from background developments were assigned to the network. e) The revised TIS has included active and planned developments in the study area. However, as mentioned above, more details are required to show how traffic generated from background developments were assigned to the network. f) Phasing of the development and associated improvements have not been addressed. The revised TIS has only assessed the ultimate (2044) condition. The TIS should be updated to demonstrate how the phasing of the Midtown road network will work and identify which roads are needed to support the TOC and when they are required. Further, the TIS should be updated to identify how and when the interim road/access conditions will transition to permanent roads. Where sites rely on local roads that are not yet constructed (i.e. TOC Site #2 at 157 Cross) or are proposed to be initially serviced by only a portion of the right-of-way (i.e. TOC Site #1 at Cross/Argus), identify how the access to, from and around the site will be managed under these interim conditions and when the permanent roads are being constructed. g) The TIS should be updated to include an operations analysis of the interim road conditions. Future transit operations along Cross Avenue should be considered in the modelling and analysis, as it will continue to be the primary route for transit. The queuing analysis and the capacity analysis both need to identify the impacts to this efficient transit movement and the mitigation methods. h) The revised TIS has updated the site statistics for consistency. i) The capacity analysis details are required and will need to be updated based on appropriate traffic data and supporting documentation and reflect the updates to the TIS to address the Town's and peer reviewer's comments.

Town Notes:
See Peer Reviewer responses above.

c. Additional inconsistencies are also noted. See most recent comment report.

f. A review of the interim phasing is critical to identify the interim road and access conditions as well as infrastructure needs.

g. See response f.

* ACTIONS: 1 = Will comply
2 = Discuss, clarification required
3 = Not applicable because ....
** STATUS: O = Open, P = Pending, C = Closed

Appendix C: Detailed Comments

CH provides the following detailed comments regarding Resubmission #1 – Step 4 of the Midtown Oakville TOC submission (received November 24, 2025). Comments have been provided in accordance with CH's previous comments dated December 6, 2024, in addition to new comments based on the review of updated materials.

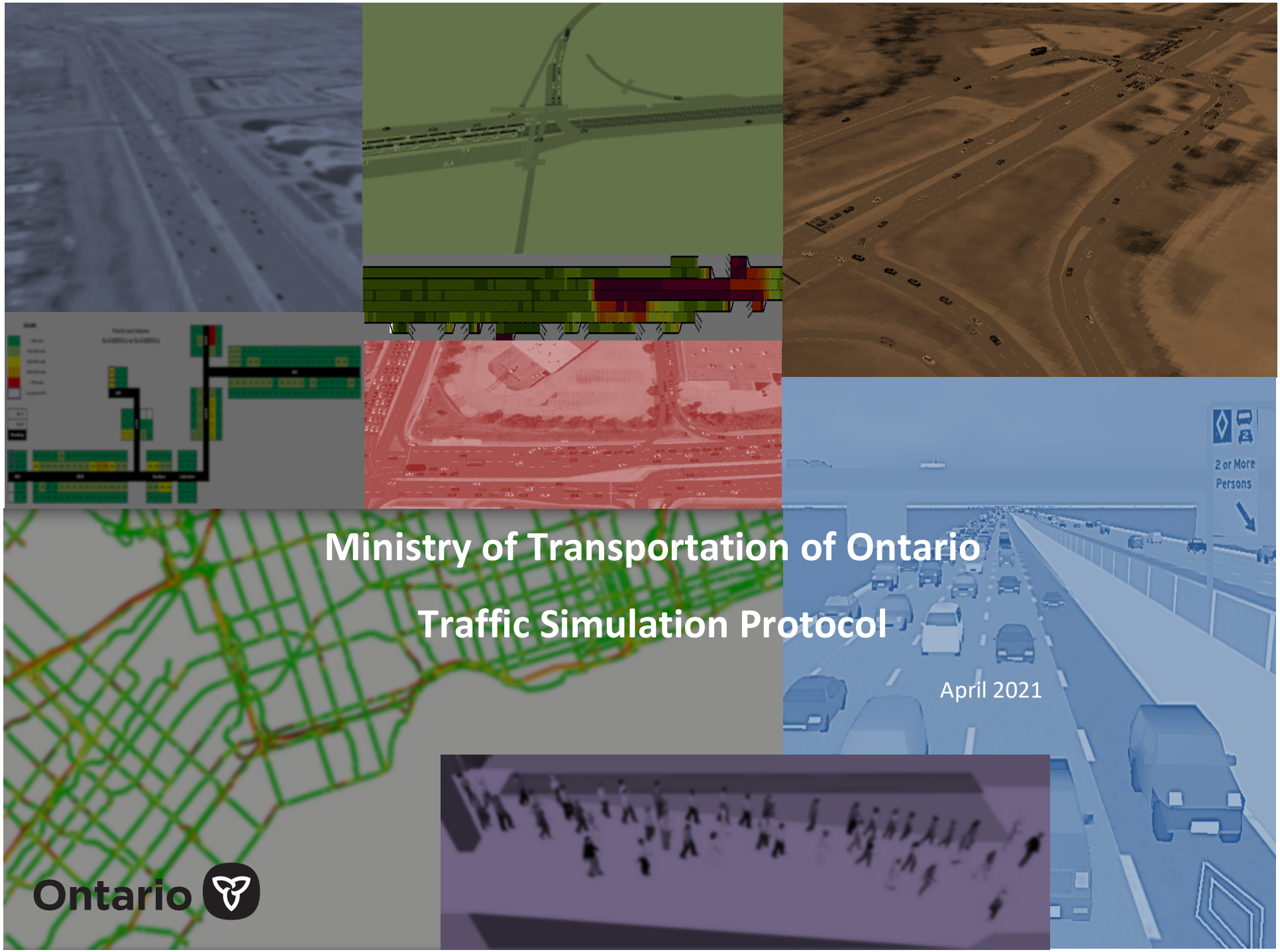
#	Topic/Section/ Plan	CH – Step 1 Submission Comments (December 6, 2024)	Applicant's Response (November 24, 2025)	CH Comments – Resubmission #1 – Step 4 (January 16, 2026)
General Comments				
1.	CH's Flood Hazard Mapping Study	As noted in the cover letter, CH is currently undertaking the *Sixteen Mile Creek to Lower Morrison Flood Hazard Mapping Study* to update flood hazard modelling and mapping within Kent Gardens, the QEW Corridor, Midtown Oakville Growth Area and adjacent areas, including mapping of spill flood hazards impacting the Oakville TOC site. The study considers existing conditions land use only. Draft modelling and mapping from the study indicates the subject lands are impacted by a spill flood hazard.	Trafalgar Engineering has prepared a Spill Hazard Assessment in support of the TOC lands and has provided it with this submission.	References to the *Sixteen Mile to Lower Morrison Creek Flood Hazard Mapping Study* being finalized and approved should be updated in the final reporting.
2.	Draft Mapping and Modelling	Considering the scale, scope, and timelines associated with the Midtown Oakville TOC proposal, CH has reviewed the proposal based on preliminary study information and in the interest of public health and safety. While still considered preliminary, a copy of the draft mapping and modelling from CH's ongoing flood hazard mapping study may be provided through a data licensing request and to confirm whether the proposed development meets the tests of the *CA Act* and is consistent with the natural hazard policies of the PPS. Through the data licensing agreement, CH staff will provide accompanying details and limitations of the draft mapping and modelling. In light of the above, please be advised that as CH's flood hazard study progresses and a peer review process is completed, CH staff will continue to refine the model and resulting flood lines. As updated information becomes available, CH staff will advise the proponent and provide updated information in support of future *Planning Act* and/or *CA Act* applications.	Acknowledged.	No further action required.
3.	Development Phasing	Hydraulic modelling and analysis should consider all interim conditions reflective of proposed development phasing, including future road network changes. Consult with CH staff to determine the exact number of scenarios required.	Trafalgar Engineering has prepared a Spill Hazard Assessment in support of the TOC lands and has provided it with this submission.	Not addressed. All interim conditions and the impact of each development stage detailed in the Construction Staging Plan have not been assessed. For interim conditions at each development stage, hydraulic modelling should be updated to confirm spill flood hazards are satisfactorily addressed (e.g., development of each subsequent stage with consideration for changes in road network at the time of development). CH staff note that development of Site 1 ahead of Site 4 may result in interim conditions which do not meet CA Act tests, regulatory requirements, and the PPS (e.g., could create unacceptable risk to life or property, etc.). Further to the above, CH staff advise that additional interim condition modelling may be required as part of future site plan applications, if development is to be further phased within each site. We note that Site 1 is currently shown on the plans to be developed in three phases.
4.	Planning Justification Report	The Planning Justification Report should be updated based on CH's comments regarding the Natural Hazard policies of the PPS.	No response.	Not addressed. CH staff continue to recommend updates to the Planning Justification Report (PJR) to demonstrate how PPS natural hazard polices are addressed in this resubmission.

5.	Land Use	Section 5.2.6 a) of the PPS states that institutional uses, including day cares, shall not be permitted to locate in hazardous lands, including flood hazards. The daycare proposed at Site 4 is currently within the spill flood hazard under existing conditions. To be consistent with the PPS, the proposed day care could be removed as a proposed use. Alternatively, the spill flood hazard will need to be removed from the site (based on the outcome of further proposed conditions flood hazard modelling analysis).	Acknowledged, the daycare has been moved to site 2 which is outside of the spill hazard.	Addressed.
6.	FSR & SWM Reports	CH staff appreciates recognition of the spill condition impacting the subject lands. CH staff recommends that the report also reference CH's ongoing flood hazard mapping study, and that future analysis of the proposed development should be completed using draft modelling available from CH's study.	Trafalgar Engineering has prepared a Spill Hazard Assessment in support of the TOC lands and has provided it with this submission.	Addressed.
7.	Drawings	Update drawings to show the limits of spill flood hazards and maximum water surface elevations impacting the proposed buildings, based on hydraulic modelling of proposed conditions for both interim and ultimate scenarios.	The interim and ultimate grading plans for each site have been updated to show the limits of the spill hazard. Maximum water surface elevation at key locations has been noted.	Not fully addressed. Maximum water surface elevations should be provided in final versions of figures for all conditions in the Spill Hazard Study.
Spill Flood Hazard (Higher Risk/Lower Risk)				
8.	Detailed modelling and mapping for the proposed development condition is needed to confirm all new buildings are located in areas of lower flood risk where depths are less than 1 m and velocities are less than 1 m/s. Modifications to the proposed grading and/or building footprint, as currently designed, may be required. Modelling and mapping should be provided for existing, interim, and ultimate conditions, including maps of flood depth, velocity, depth-velocity product, and flood risk (depths greater than 1 m and velocities greater than 1 m/s).		Trafalgar Engineering has prepared a Spill Hazard Assessment in support of the TOC lands and has provided it with this submission.	Not fully addressed. Final reporting should be updated to provide figures showing areas where depths exceed one metre (1 m) and velocities exceed one metre per second (1 m/s) (for all conditions), which can create significant hazards for development.
9.	Further to the comment above, CH staff notes the following based on draft mapping for existing conditions: • Site 1 is partially impacted by a spill flood hazard having areas of both lower and higher risk (velocities greater than 1 m/s). Specifically, the area in the vicinity of proposed Tower C is located in a significant spill conveyance pathway of higher risk; • Site 2 is partially impacted by a lower risk spill (depths less than 1 m and velocities less than 1 m/s), with the exception of two areas of higher risk (greater than 1 m/s velocities) on the property; • Site 3 is partially impacted by a lower risk spill flood hazard (depths less than 1 m and velocities less than 1 m/s); and, • Site 4 is partially impacted by a lower risk spill flood hazard (depths less than 1 m and velocities less than 1 m/s), with the exception of a small area of higher risk (greater than 1 m/s velocities) at the northwest corner of the property.		Acknowledged, refer to the Spill Hazard Study.	Not fully addressed. Review of hydraulic modelling for interim conditions indicates that Tower C on Site 1 is located within an area where velocities exceeding one metre per second (1 m/s) could create significant hazards for development. Grading changes are required to remove the proposed building from this portion of the spill hazard, including under interim conditions (e.g. Stage 3 of Construction Staging Plan) where Site 1 is developed but Site 4 is not.
Safe Access				
10.	Section 5.2.3 c) of the PPS states that it must be demonstrated that the site has safe access appropriate for the nature of the development and the natural hazard. Safe access is the ability of pedestrians, vehicles, and emergency services, to safely and efficiently, enter and exit a location during times of flooding. For interim and ultimate road conditions, provide a hydraulic modelling analysis to confirm all sites have safe access for pedestrians and vehicles, as outlined within the Ministry of Natural Resources Technical Guide (i.e. flood depths less than 0.3 m for safe vehicular access, and flood depths less than 0.8 m, velocities less than 1.7 m/s, and depth-velocity product less than 0.4 m^2/s for safe pedestrian access). CH staff reviewed the proposed developments and driveways relative to draft existing spill condition modelling and note the following: • Site 1 may not have safe access via the three proposed driveways. • Site 2 likely has safe access via proposed local roads.		Acknowledged, refer to the Spill Hazard Study.	Not fully addressed. Site 4 does not have safe vehicular access under the proposed interim condition, as spill depths exceed 0.3 m along South Service Road and Argus Road. The westernmost driveway should be shifted west or proposed grades along South Service Road should be raised to provide safe access, as long as this does not result in unacceptable impacts elsewhere. Site 1 and Site 4 do not have safe vehicular access at all underground parking entrances in interim and ultimate conditions. Confirm for each site that the entrance(s) with safe vehicular access can service the entire site.

	• Site 3 likely has safe access via South Service Road. • Site 4 likely has safe access via South Service Road for the western-most proposed driveway, while the eastern-most proposed driveway likely does not. If the eastern-most driveway is required to service the development, it must be relocated to an area with safe access, to be consistent with the PPS. • Flood-free access is not available to the proposed developments (this may be a requirement of municipal emergency services subject to their confirmation).		CH staff note flood free access for emergency vehicles is not available to the TOC properties in interim and ultimate conditions with the exception of the south side of Site 2 (157-165 Cross Avenue) and defer further comments on this matter to Town staff.
11.	Any proposed increases in flood depth or velocity on municipal and/or regional roadways must maintain the existing level of access, must be agreed to by the Town of Oakville and Region of Halton, and must consider potential cumulative impacts when adjacent lands develop. Use of new local roadways for spill conveyance must be agreed to by the Town of Oakville.	Acknowledged, refer to the Spill Hazard Study.	CH staff confirm that the existing level of access along public roads is generally not worsened by the proposed development based on modelled interim and ultimate conditions, though this must be confirmed for the additional interim conditions modelling based on the Construction Staging Plan. The proposed condition must be agreed to by the Town and Region for their respective roads.
Proposed Spill Condition			
12.	A hydraulic modelling and flood storage assessment is needed to confirm the proposed development does not significantly impede flood conveyance or storage that may result in unacceptable risk to life or property (e.g., no unacceptable increases in flood depths, velocities, depth-velocity product, or impedance of safe access). Mitigative grading on the subject lands, coordination with development on external lands, or infrastructure conveyance works may be used to maintain spill conveyance. Modifications to the proposed grading and/or building footprints may be required. Consultation with CH technical staff is recommended to identify potential solutions and analysis requirements.	Acknowledged, refer to the Spill Hazard Study.	Not fully addressed. The information provided for the interim and ultimate condition suggests increases to flood depths at the Oakville GO Station may result in unacceptable risks to life or property. Adjustments to the development design are required to address these off-site increases, or confirmation must be provided that increased flood risk can be managed on the Oakville GO station lands (e.g., through grading works which would require permission under O.Reg. 41/24).
13.	Further to the comment above, CH staff notes the following based on draft mapping for existing conditions: • Site 1 – Approximately 5 m^3/s of spill is conveyed through these lands, generally flowing from northeast to southwest along the eastern property boundary. Under interim conditions, a driveway is proposed at this location, which may not convey the entirety of the spill while also providing safe access and not increasing off-site flood risk. Under ultimate conditions, a local road is proposed at this location, which must be demonstrated to have sufficient capacity to convey the entirety of the spill while also providing safe access and not increasing off-site flood risk. Modifications to the proposed footprint of Tower C and/or driveway may be required to maintain conveyance and provide safe access. CH staff is open to discussions on alternate methods of maintaining conveyance, such as infrastructure conveyance measures. • Site 2 – Approximately 0.6 m^3/s of spill enters the site from the west at a location which would be blocked by the proposed building. Mitigative works to convey the spill may be required. • Site 3 – Approximately 0.9 m^3/s of spill is conveyed along the western limit of the site, and approximately 3 m^3/s of spill flows towards the northern limit of the property and is blocked by the existing building. Reduction in the western limit of the proposed buildings and/or mitigative grading along the northern property boundary may be necessary to maintain conveyance and mitigate impacts of spill alteration. • Site 4 – Spill flows enter the site from the north to the east and west of the existing building, having flow rates of 1.1 $m/^3s$ and 0.5 m^3/s, respectively, which would be blocked by the proposed building. Mitigative works to convey the spill may be required.	Acknowledged, refer to the Spill Hazard Study.	No action required.
Floodproofing			
14.	a. Proposed buildings and underground parking structures must be dry floodproofed, with all openings set above the maximum water surface elevation with at least 0.3 metres of freeboard, where achievable. First floor elevations and maximum grades at entrances for underground parking should be shown on plans for all proposed buildings. b. Consider the spill condition in other design elements of the proposed development, as appropriate.	Acknowledged, refer to the Spill Hazard Study.	Not fully addressed. The information provided has not demonstrated that underground parking entrances and building first floor elevations have adequate freeboard above the maximum spill elevation.

			The Spill Hazard Study should be updated to reference 0.3 metres of freeboard, rather than 0.15 metres as is currently described, as the objective of floodproofing. Considering the characteristics of the spill, a moderate reduction in freeboard may be appropriate however, sound engineering and planning analysis should be provided in the final reports and plans to justify freeboard less than 0.3 metres.

New Comments that should be addressed in the final Spill Hazard Study		
Spill Hazard Study		
15.	**Section 2.0 Hydrology, Page 9**	Revise the text at the end of this section referencing hydrographs at culverts which are capturing regulatory flows to the upstream limit of Lower Morrison Creek and are not considered to duplicate flows.
16.	**Section 4.2 Interim Condition Model Results & Section 4.3 Ultimate Conditions Model Results**	Update figures showing depth and velocity to include 1.0 m and 1.0 m/s in the legend to denote spill flood hazard areas that can create significant hazards for development.
17.	**Section 5.0 Site Design Criteria**	Revise the text to state that based on CH staff recommendations, 0.3 m of freeboard above the maximum spill elevation should be provided, where possible, for first floor elevations, building openings, air shafts, vents, and underground ramps.
18.	**Appendix A**	Include maximum water surface elevations of the spill at building and underground parking locations, as well as proposed ground elevations at underground parking entrances.
19.	**Appendix B**	Update emergency vehicle access legend to include 0.3 m depth, which is the CH access standard applied to all vehicles.



Ministry of Transportation of Ontario

Traffic Simulation Protocol

April 2021

Ontario

Important

1. This protocol is a living document and will be updated from time to time as experience is accumulated, as technology evolves, and as requirements change. It is the responsibility of the Service Provider to ensure that the current (at time of use) version of this protocol is being used.
2. The word “should”, as used in this protocol means that the guideline “shall” be followed unless an alternative approach has been justified and has been approved by MTO.

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1. Introduction

The development of this traffic simulation "protocol" is designed to achieve the following objectives with respect to traffic simulation undertaken for MTO or traffic simulation undertaken for others that is subject to review by MTO:

- To ensure consistency in the application of traffic simulation;
- To ensure that a high standard, consistent with professional and industry best practices and state-of-the-art knowledge, is maintained for traffic simulation work;
- To ensure that service providers working for MTO are operating under consistent expectations with respect to traffic simulation work; and,
- To facilitate the review of model calibration and validation by MTO.

Examples of traffic simulation work undertaken for others that is subject to review by MTO include:

- Traffic simulation analysis undertaken for municipalities or other public agencies where there could be traffic impacts on MTO's highway corridors and/or permit control areas; and,
- Traffic simulation analysis undertaken for developers or other private-sector entities where there could be traffic impacts on MTO's highway corridors and/or permit control areas.

This protocol does not attempt to provide a comprehensive set of guidelines on how to develop and apply a traffic simulation model. Instead it focuses on parameters and procedures for which a common standard is appropriate.

The requirements contained in this protocol are generally applicable to microscopic traffic simulation models and the microscopic "pockets" in "hybrid" traffic simulation models. Some requirements may also be directly applicable to strictly mesoscopic traffic simulation models or the mesoscopic portions of "hybrid" traffic simulation models. However, other requirements, particularly with respect to model calibration and validation, are tailored to microscopic-level model operation and the outputs available at the microscopic level. In these cases, the application of the protocol to mesoscopic models should respect the intent of the requirements but may be adjusted in light of the different available outputs. As experience with mesoscopic simulation is gained, specific requirements for mesoscopic simulation modelling may be developed. In the case of macroscopic travel demand modelling undertaken using MTO's Greater Golden Horseshoe Model or a comparable alternative model, in conjunction with or in support of traffic simulation, service providers must consult with the Systems Analysis and Forecasting Office (SAFO). In this protocol, "traffic simulation model" and "model" are used interchangeably.

This protocol represents a baseline approach that shall be adhered to by service providers undertaking traffic simulation work for MTO, or that will be reviewed by MTO, with the following exceptions:

- If a service provider has developed an alternative approach and can provide sufficient justification that such approach will provide results of comparable or improved reliability relative to the baseline approach, they may submit that approach for consideration by MTO and may follow such approach if and when it is approved by MTO.

- On a case by case basis, MTO may determine that there are alternative or additional requirements that must be satisfied with respect to traffic simulation work undertaken for MTO. Service providers are responsible for consulting with MTO prior to beginning any traffic simulation work to ensure that they are aware of such requirements in a timely fashion.

For situations outside the scope of this protocol, MTO staff should be consulted for guidance.

BASIC REQUIREMENT

1-1	
Requirement(s):	• A traffic simulation model calibration and validation report **(MCVR)** shall be submitted to MTO for review and approval. • Approval of an MCVR by MTO is required prior to consideration by MTO of any deliverables that rely upon results obtained from a traffic simulation model.

2. Geographic scope of the traffic simulation model

The geographic scope or boundary of a traffic simulation model will be determined by the study area defined for an assignment, by the issues to be addressed or evaluated through the assignment, and by the traffic conditions in the area to be modelled.

Requirements 2-1 through 2-8, taken together, shall be considered as defining the "focus area" or minimum extent of the traffic simulation model. The service provider should consult with MTO to confirm that the "focus area" as defined based on these requirements is adequate or to determine if the model needs to be extended beyond the focus area.

BASIC REQUIREMENTS

2-1	
Requirement(s):	• The focus area shall include, at a minimum, all highways, roads, interchanges, and intersections for which performance results are needed in accordance with the requirements of the underlying assignment.

2-2	
Applicable if:	• *Only highway mainline operations are being evaluated* ***AND*** • *There is no reasonable expectation that traffic operations on the on- or off-ramps will adversely affect mainline operation.*
Requirement(s):	• The focus area shall include the highway mainline, through one interchange beyond the study area in each direction, and the on and off-ramps up to, but not including, the ramp terminals.

SUPPLEMENTARY REQUIREMENTS

2-3	
Applicable if:	• *The assignment includes evaluation of ramp terminal operations* ***OR*** • *There is a potential risk that traffic operations on the on or off-ramps or at the ramp terminals will adversely affect mainline operations.*
Requirement(s):	• The focus area shall also include the ramp terminals, the crossing roads between the ramp terminals, and the first signalized intersection beyond each ramp terminal.

2-4	
Applicable if:	• *The assignment includes evaluation of off-highway diversion via alternative routes* ***OR*** • *The assignment includes evaluation of potential changes in the allocation of traffic between the highway and the arterial roads or potential changes to the location and/or distribution of traffic entering or leaving the highway.*
Requirement(s):	• The focus area shall also include at least one parallel arterial road or highway on either side of the subject highway as well as other highways or arterials that might be expected to form part of a diversion route. The crossing roads shall be included to a point sufficiently beyond the parallel arterial roads so as to include the reach of intersection-related queues.

2-5	
Applicable if:	• *One or more boundaries of a focus area defined according to **2-2** fall in an area of recurring congestion/queuing with respect to mainline traffic entering or leaving the focus area.*
Requirement(s):	• The focus area shall be extended, as required, to include the section of highway and any highway elements causing or significantly contributing to this congestion/queuing.

2-6	
Applicable if:	• *One or more boundaries of a focus area defined according to **2-2** are located such that traffic entering the model on the mainline is metered by a bottleneck beyond the model **AND** the metering effect of this bottleneck could increase or decrease as a result of anticipated future changes to the area highway system and/or traffic demand within the planning horizon.*
Requirement(s):	• The focus area shall be extended to include the mainline section where the bottleneck causing the metering of mainline traffic volumes is located **AND** that contains the queue related to the bottleneck.

2-7	
Applicable if:	• *Evaluation of the extent and/or duration of congestion/queuing is required.*
Requirement(s):	• The focus area shall be extended to include the anticipated upstream reach of the congestion/queuing of interest.

2-8	
Applicable if:	• *It is impractical, within the intent and scope of the assignment, to extend the mainline as required by **2-5**, **2-6** or **2-7**. This may be the case, for example, if the recurring congestion affecting the modelled corridor originates from an interchange with another major highway beyond the focus area **AND** the congestion originating from such an interchange could only be effectively represented by including a significant length of the intersecting highway.*

Requirement(s):	• It may be possible, with the concurrence of MTO staff, to represent the recurring congestion using, as proxy measures, capacity or speed constraints on the mainline or ramps connecting the modelled corridor with the adjacent highway. In this event, it will be necessary to:
	  ◦ calibrate such proxy measures to appropriately represent the boundary conditions;
	  ◦ undertake sensitivity analysis where the conditions causing the congestion in question could change as a result of anticipated future changes to the area highway system and/or traffic demand within the planning horizon.

2-9	
Applicable if:	• *It is impractical, within the intent and scope of the assignment, to extend the focus area as required by **2-7** to include the full extent of upstream queues associated with traffic entering the study area.*
Requirement(s):	• It may be possible, with the concurrence of MTO staff, to estimate the extent and/or duration of the "virtual" queue extending beyond the focus area.

2-10	
Applicable if:	• *Long (>1 km.) and/or severe (>5%) grades are present and the proportion of heavy trucks is significant (>10%)*
Requirement(s):	• Vertical grade should be represented appropriately if that capability is available in the software being used. If that capability is not available, it may be necessary to represent the grade using a speed reduction zone and calibrate/validate accordingly.

See also the Tip on p. 10.

Tip – Model scope vs. complexity

The addition of parallel roads in requirement 2.4 (for example) results in a two-dimensional (2-D) network model – other requirements may be satisfied with a one-dimensional (1-D) corridor model in most cases.

Generally:

- If a 1-D model will adequately address the requirements of the assignment, this approach is suggested over the use of a 2-D model;
- It is suggested that the size of the model be minimized subject to the requirements of the assignment.

Why? The calibration of traffic flows for 1-D and/or small model will typically involve less effort and a well-validated model will be more readily achievable. The results obtained from use of such a model will potentially be more reliable than for a 2-D and/or large model. Generally speaking, the correspondence between a calibration adjustment and its desired effect on the model is weaker/less-direct for larger 2-D.

In a 2-D model, the traffic flows are determined by assignment to alternate routes and successful model calibration and operation may be hindered by several factors:

- the degree of convergence and stability of the route assignment process;
- particularly in a larger and/or congested network - the latency caused by the travel time required to reach either a destination or the area of primary interest in the network;
- also in a larger and/or congested network –modifying the number of trips associated with a single origin-destination pair may affect the flow on multiple network elements and the flow on the network may be affected by constraints on these elements.

3. Planning horizons and analysis periods

Typically, the future planning horizons (analysis years) will be specified as a requirement of the assignment. In addition to planning horizons associated with alternative scenarios to be evaluated as a requirement of the assignment, it will typically be necessary to include baseline scenarios, including (a) a scenario representing "existing" conditions and (b) scenarios reflecting "do-nothing" conditions for different future planning horizons.

The definition and length of the analysis period(s) may be specified as a requirement of the assignment. If not, the following guidelines shall be used for both model calibration and modelling analysis.

	• *The primary focus of the analysis is on peak-hour operation* ***AND*** • *It can be demonstrated that congestion associated with existing conditions and future planning horizons will not extend beyond the peak hour (before or after).*
	• Model the peak hour plus a "warm-up" period (see requirement **4-7**) to populate the network. • The demand during the warm-up period should be scaled from peak-hour demand based on available time-distribution data that is as representative as possible of traffic entering the study area.

3-2	
Applicable if:	• *It is anticipated that congestion/queuing will begin before the peak hour and/or extend until after the peak hour.*
Requirement(s):	• Include those hours before or after the peak-hour during which congestion/queuing is expected to be present. It will be necessary to add a "warm-up" period (see requirement **4-7**).

The assignment may require, explicitly or implicitly, analysis of additional periods (peak seasons, weekend conditions, construction year/season, etc.). If so, the following guidelines shall be used.

	• *The study area involves a highway that carries tourism or recreational traffic, based on the applicable traffic pattern type (see Permanent Counting Station Pattern Descriptions).*
	• Critical weekend or holiday weekend periods during the peak season (eg. Friday afternoon/evening, Saturday afternoon, Sunday afternoon/evening), as applicable, shall be included as analysis periods.

	• *The focus of the analysis is on the traffic impacts of construction staging and construction is expected to occur during the summer period.*
	• Critical weekday, weekend, or holiday weekend periods during the construction season, as applicable, shall be included as analysis periods.

3-5	
Requirement(s):	• Where the traffic peak is short-term (less than and within the peak hour), it may be necessary to structure model outputs and results, both for calibration/validation and for analysis, around an appropriately reduced time period.

4. Simulation model resolution and operation

Depending on the software package, alternate simulation resolution levels (microscopic, mesoscopic, macroscopic, hybrid) may be available. The following guidelines are applicable primarily to assignments requiring traffic operational analysis. For such assignments, overall model operation in microscopic or hybrid mode is appropriate while operation in (pure) mesoscopic or macroscopic mode is generally not suitable, subject to exceptions with the concurrence of MTO staff.

4-1	
Applicable if:	• *Detailed operational analysis of a highway corridor or small network is required.*
Requirement(s):	• The model should be operated at the microscopic level.

4-2	
Applicable if:	• *Detailed operational analysis of a larger network is required where the network elements of primary interest represent only a small portion of the total network to be modelled.*
Requirement(s):	• The model may, with the concurrence of MTO staff, be operated in hybrid mode (if available), with the area of primary interest operating in microscopic mode and the remainder of the network operating in mesoscopic mode.

There are a number of parameters or procedures governing the overall operation of a traffic simulation model (ie. applicable to the entire model rather than to specific elements of the model). The actual terms used for these parameters or procedures may vary in different software packages from the terms used in this protocol – however, this does not negate the need for the Service Provider to comply with the "spirit" of the requirements identified here.

Traffic simulation models are stochastic in nature, requiring the results from multiple runs (replications), based on varying random seeds, to be combined before use. Since many different performance measures, with differing variabilities, may be produced by a single model and since the variability of the outputs may vary with the model or study area characteristics, it is not appropriate to specify a single value for the number of replications that would be required for all models and situations. A more general approach is therefore proposed.

4-3	
Requirement(s):	• A minimum of five (5) replications shall be used during the model calibration/validation process • A minimum of five (5) initial replications of the model shall be run with different random seeds and the results combined as appropriate for each performance measure intended to be reported and used for evaluation. The confidence intervals associated with key outputs will be calculated at the 90% and 95% levels of confidence for multiple representative locations in the model. If the variability associated with the model outputs is no greater than the variability associated with the model input data and the confidence intervals for the outputs are satisfactory to MTO staff, then five (5) replications will be run for each alternative or scenario considered. Otherwise, the required number of replications will be calculated based on the variance associated with the initial five (5) replications and confidence intervals satisfactory to MTO staff. • The model outputs actually used for evaluation and/or reporting purposes should be subjected to random checks to confirm that the required confidence intervals have been achieved.

4-4	

Requirement(s):	• The maximum simulation step size shall be as follows:
	  • 1 second if the model is being operated in microscopic or hybrid mode;
	  • 1.5 seconds if the model area is being operated in mesoscopic mode.

4-5	

Requirement(s):	• This requirement applies to global parameters that affect capacity, such as:
	  ◦ (in VISSIM) – CC parameters, bx_mult, bx_add;
	  ◦ (in Aimsun) – reaction time, reaction time when stopped.
	• The values of simulation parameters shall be within 10% of either the default values in the software or values recommended in documentation supplied by the software vendor that is relevant to the situation being modelled.
	• If values outside this range are to be used, such as values determined through calibration, they shall be documented, rationalized, and subject to approval by MTO.

4-6	
Requirement(s):	• Values for certain simulation parameters that determine capacity will need to be justified using available data or purpose-designed surveys. For example, gap acceptance at roundabouts under different conditions (roundabout and entrance configuration, roadway operating speed, etc.), particularly in areas where roundabouts are atypical, may need to be surveyed unless appropriate data is already available.

4-7	
Requirement(s):	• Under generally undersaturated conditions (no accumulating queues), a warm-up period of 30-60 minutes will be necessary to populate the simulation model and achieve steady-state conditions with longer periods in this range being required for larger models. • Under generally saturated conditions, the warm-up period should be extended so that it commences prior to the point in time at which congestion is apparent and queues start to form so that peak conditions are appropriately represented. • The demand during the warm-up period should either be calibrated to suitable control volume data or scaled from peak-hour demand based on available time-distribution data that is as representative as possible of traffic entering the study area.

5. Preparation and use of traffic demand inputs

Traffic demand inputs can be derived from a variety of sources, using a variety of processes and adjustments. The requirements of this section will focus only on specific aspects of the traffic demand inputs., namely the use of travel demand model outputs and the modelling of vehicle classes.

5-1	• A traffic simulation model requires traffic demand inputs derived from or based on information from a travel demand model.
Applicable if:	• This requirement does not apply to small-area traffic simulation models that do not rely on outputs from travel demand models. An example would be simulation models where the traffic demand inputs are based on existing traffic counts and growth factors derived from trend analysis. However, the use of such inputs in situations where there are implications for MTO's highways and/or permit control areas is subject to the approval of MTO's Systems Analysis and Forecasting Office (SAFO).
Requirement(s):	• Wherever possible, traffic demand inputs shall be based on information obtained from MTO's Systems Analysis and Forecasting Office. • If it is necessary that traffic demand inputs be derived from or based on information from municipal or other travel demand models, the inputs and related assumptions must be submitted to MTO's Systems Analysis and Forecasting Office for approval.

5-2	• Traffic demand shall be classified, at a minimum, into the following classes:
	  ◦ Autos (including trucks and vans with 4 wheels);
	  ◦ Medium trucks (single-unit trucks with 2 axles but more than 4 wheels);
	  ◦ Heavy trucks (multi-unit trucks with more than 2 axles).

Requirement(s):	• Where high-occupancy lanes, managed lanes or tolled facilities are being modelled, it may also be necessary to classify demand by occupancy level. • Where transit operations, or their effect on traffic operations are to be assessed, transit vehicles should be represented appropriately.

Tip – Dealing with unconstrained demand

Traffic demand obtained from a macroscopic travel demand forecasting model is typically unconstrained with respect to capacity. In the case of longer-term forecasts in a congested environment, traversal matrices reflecting future growth may produce inappropriately severe congestion in a highway corridor model when loaded directly onto highway on-ramps. In this case, metering of traffic demand, resulting from capacity constraints between the trip origins and entry to the highway corridor, has not had an opportunity to influence demand. While a micro-simulation model will meter traffic directly entering the mainline through headway constraints, on-ramps may not be operating as close to capacity and may not be metered appropriately.

Possible alternative approaches to address this issue include:

- Adding to the model a portion of the surface street system surrounding the highway corridor;
- Ensuring that the model includes the ramp terminals and at least the nearest arterial/arterial intersections on the intersecting roads;
- Implementing a 'proxy' metering device on the upstream end of each on-ramp.

In each of these cases, knowledge of the area road system, and possibly supplementary data and analysis, will need to be applied to ensure that the amount of metering that is applied reflects real-life constraints. It may be that arterial/arterial intersections close to the highway on the intersecting roads represent some of the more acute constraints likely to be encountered by trips heading to the highway.

6. Model calibration and validation

Calibration is considered to be the process of adjusting model inputs and parameters to achieve a model that is sufficiently representative of equivalent, observed real-world conditions. **Validation** is considered to be the process of comparing simulation results with equivalent real-life observations to assess the fidelity of the model.

Calibration is necessary for a variety of reasons. For example, data available to be used as model inputs may be inconsistent or out-of-date. Driver behaviour and the extent of recurring congestion associated with the conditions being modelled can vary significantly from those underlying the default model parameters.

Strictly speaking, it is normally stipulated that the real-life dataset used for model validation should be independent from that used for calibration. However, in the real world, constrained budgets and schedules do not usually permit the luxury of not using all available data for calibration and/or collecting additional data specifically for validation. In this document, validation will be taken to include comparisons between simulated results and all available data, whether used for calibration or not.

A number of jurisdictions have developed or adapted validation measures/criteria (see references in Appendix A, for example) and some validation measures/criteria have been widely used (GEH, for example). However, there is currently no comprehensive guidance on validation measures/criteria that are demonstrably suited to traffic simulation, have a technical or statistical basis and validity, and can serve as an industry standard. The Transportation Research Board has initiated a process to develop a simulation manual (for guidance) but it is yet to be seen how definitive this manual might be in the context of model calibration and validation.

The requirements summarized below represent a combination of borrowing from common practice and adapting or expanding common practice as necessary. The somewhat arbitrary nature of some aspects of common practice, validation criteria for example, is continued in the absence of more definitive and research-supported criteria.

The requirements identified here should be considered as provisional and may be updated based on the Transportation Research Board initiative, other research, or ongoing experience with their application.

Observed flows (unbalanced) are defined as counted flows, including any adjustments for seasonality or similar factors. Observed flows (balanced) are defined as counted flows that have been adjusted through a balancing process to achieve consistency in terms of conservation of flow. Simulated flows are defined as the actual throughput flows output by the simulation model.

This section requires that the specified model validation criteria “shall” be met. However, in practice, it may not always be possible, even with concerted effort, to meet a specific criterion. In such cases, it will be necessary to show that all reasonable steps have been taken to try and meet the criterion and to discuss the likely reasons why the criterion in question could not be met. It is recognized that model calibration and validation in a generally congested environment is challenging. Traffic flow data collected under congested conditions must be used judiciously and careful attention must be paid to the simultaneous and interactive calibration of flows and speeds for congested network elements.

The following requirements are generally applicable to the calibration of a simulation model operated at the microscopic level or the portion of a "hybrid" model operated at the microscopic level.

It is possible to "over-calibrate" a simulation model, conceptually analogous to "over-fitting" a statistical model. An "over-calibrated" simulation model, while it may display a high level of fidelity during validation, may prove to be unreliable when modelling scenarios other than the scenario used for calibration and validation. Over-calibration can result from the use of artificial, unrealistic, or extreme measures, including parameter modifications, to achieve specific validation targets, particularly on a localized or focused basis. For a simulation model where calibration and validation is particularly challenging, it will usually be better to accept a less-than-optimum level of validation in preference to resorting to artificial measures to improve the validation.

6-1	
Requirement(s):	• The calibration and validation process undertaken to meet the requirements identified in this section and the performance measures relevant to these requirements shall be documented in the MCVR.

6-2	
Requirement(s):	• Calibration and validation shall be undertaken for a year nominally consistent with both the travel demand matrices (if used) and control location counts used in the calibration process. This year shall be within 3 years of the year during which the model is to be applied. • Calibration and validation shall be undertaken for the peak hours associated with all required/critical analysis periods. Typically, these will include the morning and/or afternoon peak hours. These may also include weekend peak hours and/or seasonal peaks. It is recognized that data may not be available or may only be partially available (eg. traffic volumes only) for weekend or seasonal peaks – consult with MTO staff to determine their requirements for the peak hours to be included in the calibration/validation process.

6-3	
Requirement(s):	• Calibration and validation shall be undertaken for the focus area, including all highways, roads, interchanges, and intersections for which performance results are required in accordance with the underlying assignment. It will also typically be necessary to calibrate facilities falling outside this requirement although documentation is not required for these cases. • Calibration and validation shall be undertaken separately for the express and collector lanes of a highway, where present. • Calibration and validation shall be undertaken separately for general-purpose and managed lanes (eg. HOV lanes), where managed lanes are present.

6-4	
Requirement(s):	• For the calibration and validation of traffic flows, as a target, traffic flow data should be collected or obtained for control locations covering at least 75% of all highway sections (between adjacent interchanges or intersections) under MTO jurisdiction and within the focus area and for at least 90% of all ramps entering and exiting from highways under MTO jurisdiction within the focus area. MTO staff may indicate some latitude where data is not available, particularly where control volumes can be derived using conservation-of-flow principles or other means. This control data shall be adjusted as necessary to ensure consistency with the year and season for which model validation is being undertaken. • Where there is evidence that the counted traffic volume at one or more control locations is inconsistent with the overall pattern of traffic volumes suggested by traffic volumes at the control locations, taken together, a balancing process should be applied to address such inconsistencies.

	• Where the model or a portion of the model represents a closed system (eg. highway mainline and ramps), balancing shall be oriented to achieving conservation of flow. • The calibration and validation of traffic flows shall be undertaken using total vehicular flow (all classes combined) unless MTO staff have required vehicle-class-specific calibration and validation. This requirement recognizes the general lack of suitable vehicle-class-specific data at present. However, class-specific volumes and/or proportions shall be documented and verified at a more general level. • Control locations with flows less than 100 veh/h should be omitted from the validation process.

6-5	
Requirement(s):	• The GEH measure shall be used to evaluate the degree of fit between simulated and observed flows at control locations. • GEH shall be calculated as: $GEH = \sqrt{\frac{2(Vs-Vo)^2}{(Vs+Vo)}}$ where: Vs = Simulated flow Vo = Observed flow. • GEH values shall be shown with an appropriate +/- sign with the convention being that a negative value indicates that the simulated flow is less than the observed flows. • Where observed flows have been modified through a balancing process, GEH values shall be calculated and documented for both the unbalanced observed flows and the balanced observed flows.

	• GEH values shall be grouped as follows and the corresponding percentage of control locations in each group achieving a GEH value <5 shall be sought:
	  ◦ Controlled-access highway mainline: 85%;
	  ◦ Ramps entering and exiting from controlled-access highways: 85%;
	  ◦ Ramp terminal turning movements: 85%;
	  ◦ Other intersection turning movements: 75%; and
	  ◦ Surface street road sections: 85%.
	• For each location with GEH > 5, an effort will be made to determine the potential factors contributing to this outcome and to address these. In situations where a GEH < 5 cannot be achieved, the factors leading to this outcome shall be discussed. A GEH value > 10 suggests an issue with the data or with the model and logical and supportable corrections or adjustments shall be made to achieve a GEH ≤ 10 for all control locations.

6-6	
Requirement(s):	• A scatterplot shall be generated with observed (balanced) flows vs. simulated flows (after calibration). • A linear regression shall be developed from this scatterplot using all control locations with the regression line constrained to pass through the origin (simulated volume = observed volume = 0). • A slope for this regression line ≥1.0 and ≤1.05 shall be achieved. • An R^2 value for the regression line ≥0.95 shall be achieved.

6-7	
Requirement(s):	• Travel time validation shall be undertaken for all highway or road sections within the focus area for which performance analysis is required as part of the underlying assignment. Generally, speed/travel time validation is not necessary for ramps unless specifically required as part of an assignment.

Alternative sources of speed and travel time data are being evaluated and tested by MTO. It is therefore possible that the sections below will be updated as data collection sources and methods evolve.

6-8	

Requirement(s):	• The average simulated travel time (over a minimum of 5 replications) shall be within 15% of the average observed travel time for:
	  ◦ Uninterrupted (mainline) highway segments, by direction, where the average observed travel time is equivalent to a speed of 80 km/h or more;
	  ◦ The highway corridor as a whole, made up of adjoining highway sections, by direction, contained within the focus area;
	  ◦ Interrupted (surface street) highway or arterial road segments, with segments being defined by adjacent signalized intersections (or groups of intersections if these are closely-spaced);
	• The average simulated travel time (over a minimum of 5 replications) shall be within 25% of the average observed travel time for uninterrupted (mainline) highway segments, by direction, where the average observed travel time is equivalent to a speed less than 80 km/h;
	• In all cases, the location, duration, and magnitude of significant reductions in speed caused by congestion as recorded from the traffic simulation model should be comparable to those based on actual surveys/data. Minimum simulated speeds at the point of maximum delay should be within 20 km/h of observed speeds.
	
	It is recognized that on generally-congested highways operating at or near capacity levels, traffic speeds and travel times can be subject to significant variation and this will be recognized in the review by MTO of simulation models under these conditions.

6-9	
Requirement(s):	• "Artificial" means such as reduced speed zones shall not be used to achieve the required validation of speeds and travel times unless it can be shown to the satisfaction of MTO that there are legitimate factors that are affecting observed speeds. Such factors might include drivers facing low-sun conditions at certain times of the year or vertical grades that cannot be incorporated in the model. The effects of congestion shall not be represented by such means except as discussed under requirement **2-8**. • Illegal or inappropriate driver behaviour shall not be incorporated in a simulation model. If it can be shown that achieving the required validation criteria with respect to speeds and travel times is dependent on illegal or inappropriate behaviour, then this should be discussed/justified and some latitude with respect to the validation criteria can be considered.

6-10	

Requirement(s):	• Simulation model parameters governing saturation flow at signalized intersections (bx_mult and bx_add in VISSIM, reaction time at a traffic signal/ reaction time when stopped in Aimsun) shall be either:
	  ◦ Calibrated using observed saturation flows; or,
	  ◦ Calibrated to reflect "policy" or "default" saturation flows agreed to by MTO.
	• If saturation flows are being calibrated to conditions observed in the field, it will generally be necessary to conduct saturation flow surveys for a sample of different lane types (eg. protected left-turn, through, protected right turn lanes) at representative locations in the focus area. The capacity of unprotected movements is typically determined by gap acceptance and conflicting movements within the simulation model.

	• Saturation flow is not a stock output in either VISSIM or Aimsun. Unless a specialized script has been developed, it may be necessary to confirm simulated saturation flows using an on-screen survey equivalent to that used in the field. Alternatively, saturation flow may, under conditions of consistent saturation/queuing, be estimated from traffic flow data.

6-11	

Requirement(s):	• All simulation models operating in microscopic mode shall be visually inspected during operation under both uncongested and congested conditions (as relevant) to confirm that:
	  • All network elements are implemented appropriately in the model;
	  • Operation is realistic and representative of conditions in the field;
	  • There are no unrealistic "artefacts" affecting operation of the model (for example, inappropriate looping/routing of traffic through an interchange).

7. Sensitivity analysis

Sensitivity analysis may be required where conclusions or recommendations could be affected by changes in assumptions, inputs, or outputs within the limits of their variability. In such cases, on an assignment by assignment basis, sensitivity analysis may be necessary.

7-1	

Applicable if:	• Conclusions or recommendations based on traffic simulation results could change or be affected by:
	  • Changes in assumptions or parameters;
	  • Changes in travel demand inputs;
	  • Selection of alternative output values;
	within the range of their variability or within the range of supportable alternative values.

Requirement(s):	• Sensitivity analysis shall be undertaken to assess the effect of such changes or alternative values on the conclusions or recommendations. • Sensitivity analysis may be required by MTO to evaluate conditions that could lead to failure.

8. Simulation model outputs and analysis

Although it is not possible to specify all of the outputs that are necessary across a range of possible applications of traffic simulation, certain outputs are useful, are uniquely possible in relation to traffic simulation models and are applicable to a range of applications.

8-1	
Applicable if:	• *Mainline operational performance is a required output of the assignment.*

Requirement(s):	• Speed contour plots (an example is shown as Figure 8.1) shall be provided where, typically:
	  • The (horizontal) distance axis is divided into 100m segments;
	  • The (vertical) time axis is divided into 5-minute segments (or 10-minute intervals if more than 1 hour is being shown);
	  • Average speeds are provided for the critical hour or period and are colour coded as shown on Figure 8.5;
	  • A scaled and labelled schematic or aerial photograph of the section of highway represented is provided for reference.

8-2	
Applicable if (examples):	• *For calibration purposes;* • *Where multiple speed comparisons must be provided on a single graph;* • *Speed contour plots are not appropriate or are not supported by the data being used.*
Requirement(s):	• Speed profiles may be used to present traffic speed data or results. • Figure 8.2 is an example of a speed profile based on disaggregate speed/distance points. Figure 8.3 is an example of a "stepped" speed profile based on more aggregate section speed data.

8-3	
Applicable if (examples):	• *It is desired to show the relationship between geometric elements and speed variations;* • *Speed differentials are to be shown in a discussion of safety performance.*

Requirement(s):	• Lane-by-lane speed plots (an example is shown as Figure 8.4) where, typically:
	  • The (horizontal) distance axis is divided into 100m segments;
	  • The plot represents typically a single 5-minute "row" or "slice" of a speed contour plot as appropriate to the analysis (for example, a critical or worst-case 5-minute period);
	  • Average speeds during the time interval depicted are colour coded as shown on Figure 8.5;

8-4	
Applicable if:	• *Level-of-service (LOS) is a required output.*
Requirement(s):	• Intersection LOS should typically be represented through the conversion of average delay (typically measured from downstream of the stop line to upstream of the queue forming at the stop line) into LOS using the thresholds from the HCM: • For signalized intersections:

LOS	average delay (seconds)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

- For unsignalized intersections/roundabouts:

LOS	average delay (seconds)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 30
D	> 30 and ≤ 40
E	> 40 and ≤ 50
F	> 50

- Highway LOS should typically be represented through the conversion of average density (typically measured for appropriate highway sections) into LOS using the thresholds from the HCM:

LOS	average density (veh/km/lane)
A	≤ 6.2
B	> 6.2 and ≤ 11.2
C	> 11.2 and ≤ 16.2
D	> 16.2 and ≤ 21.8
E	> 21.8 and ≤ 28.0
F	> 28.0

- The graph should be labelled appropriately or a scaled and labelled schematic or aerial photograph of the section of highway represented is provided for reference.

Ensure that the calculation and measurement of delay as obtained from the simulation model are compatible with delay as defined by HCM.

8-5	
Applicable if:	• *As required to effectively illustrate results or key factors affecting results.*

Requirement(s):	• Other, not necessarily stock, outputs that should be considered for inclusion along with appropriate analysis and discussion:
	  • Lane changes – number of lane changes per unit distance/section;
	  • Number of vehicles unable to enter network during the simulation period and/or the number of vehicles unable to complete their trip during the simulation period;
	  • Throughput – proportion of demand able to pass through a section of highway;
	  • Virtual queue – queue reach "outside" the network as an extension of queues within the network;
	  • Queue reach – average, maximum and/or 95%ile queue lengths – care must be taken to properly interpret queues extending beyond sections and/or storage lanes, queues that extend beyond the micro pocket in a hybrid model, etc.
	  • Video animations – typically produced at 2-4x speed and facilities/time period/scenario should be added as labels if possible.

Figure 8.1 – *Sample speed contour plot*

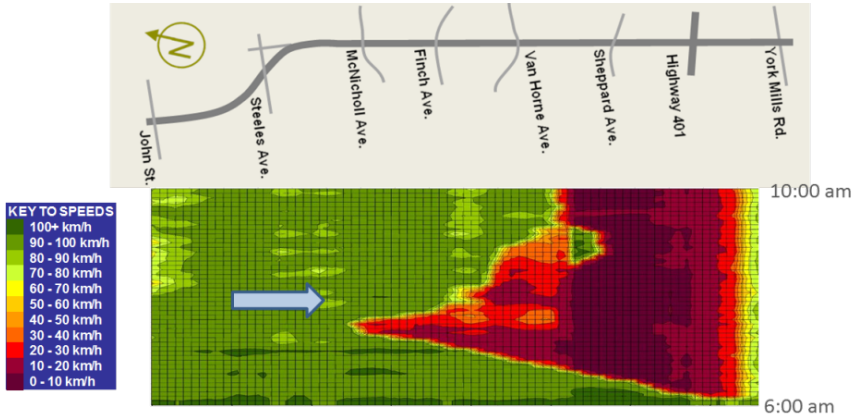


Figure 8.2 – *Sample speed profile based on disaggregate data*

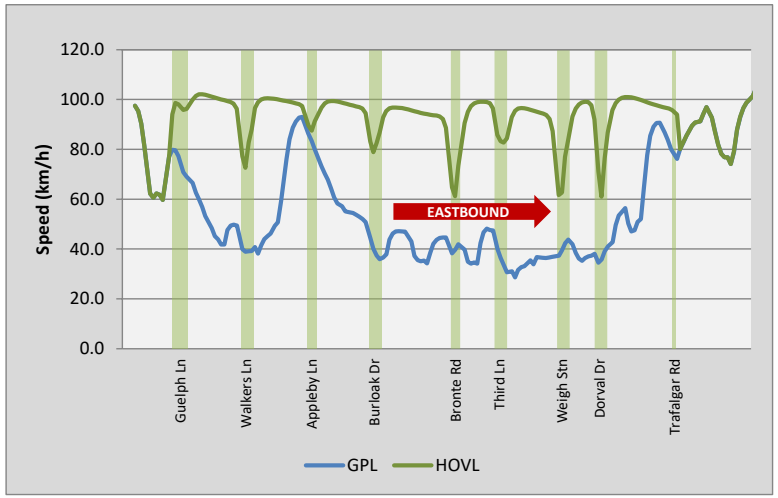
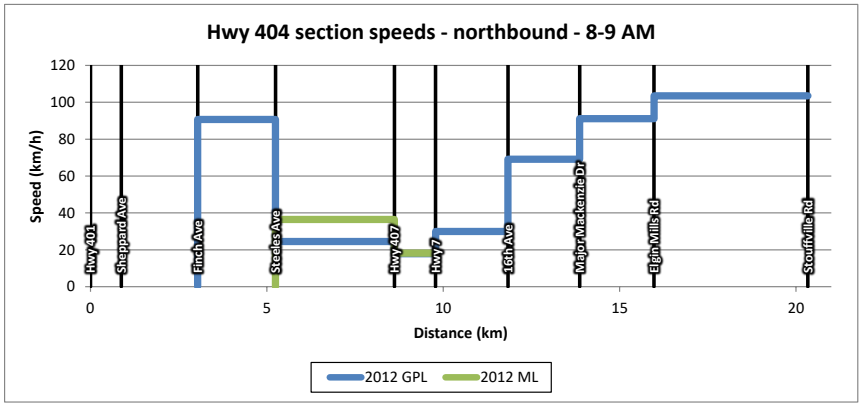


Figure 8.3 – *Sample speed profile based on aggregate (section) data*



Ontario

Figure 8.4 – *Sample lane-by-lane speed plot*

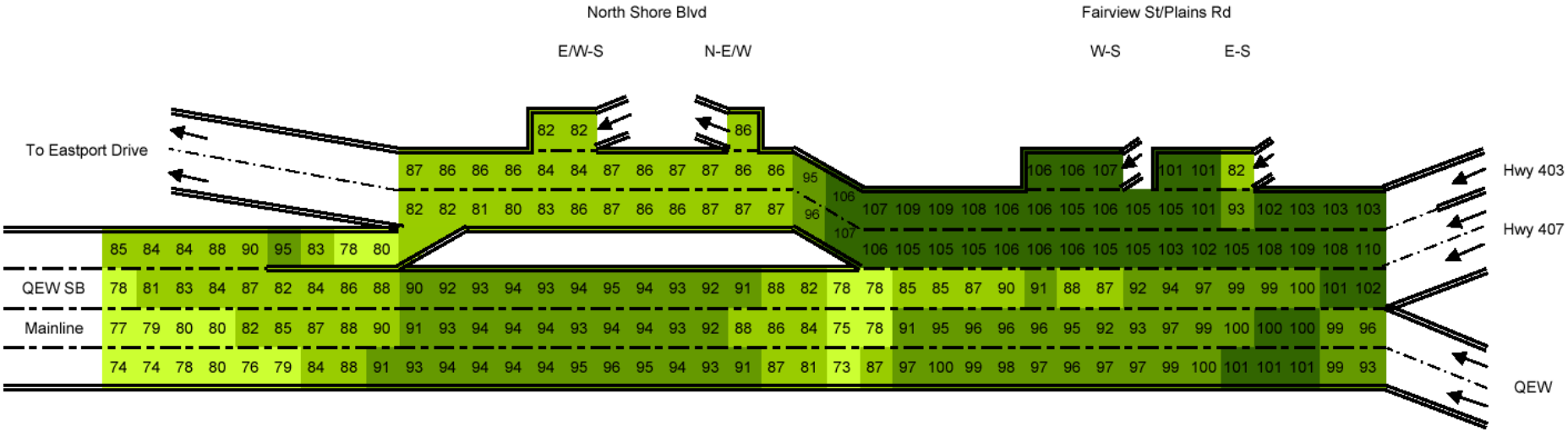
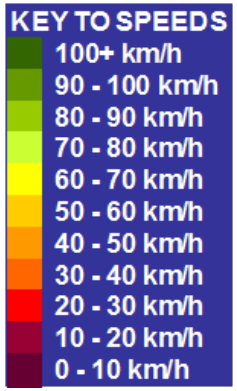


Figure 8.5 – *Sample legend for speed information*



9 Traffic simulation software

It is necessary that traffic simulation undertaken for MTO assignments or assignments for others where the results will be reviewed by MTO utilizes traffic simulation software that is available and familiar to MTO.

Experience suggests that different versions of the same traffic simulation software package may yield different results.

	• The traffic simulation in question:
	  • is being undertaken for an MTO assignment **OR**
	  • is being undertaken for others but requires review by MTO **OR**
	  • Evaluates traffic implications for MTO's highways and/or permit control areas

	• The Aimsun or VISSIM traffic simulation software packages shall be used unless an alternative is approved by MTO.

	• The latest version of the Aimsun or VISSIM traffic simulation software packages generally available when the traffic simulation work is initiated shall be used unless an alternative is approved by MTO. • For a particular assignment, the same version of the traffic simulation software package must be used for model calibration and validation and for all scenarios modelled and reported. • The version of the traffic simulation software package used shall be identified in the model documentation.

10 Model calibration and validation report

As indicated in the introduction to this protocol (requirement **1-1**), a Model Calibration and Validation Report (MCVR) must be prepared and submitted to MTO for review. Approval of this report by MTO is necessary before any deliverables that depend on the results of the traffic simulation model in question can be reviewed or accepted by MTO.

This section summarizes the minimum required contents of the MCVR. Cross-referencing to requirements in previous sections is provided. Model validation and reporting for all critical analysis periods (see requirement

10-1	
Requirement(s): **refer to 2-1 through 2-9**	• Identify the focus area and the model network on a suitable map, aerial photograph, or schematic. • If the focus area for the model has not been pre-specified for the assignment, or the focus area for the model as used varies from that specified for the assignment, rationalize the focus area used. • Identify areas of recurring congestion affecting traffic operations in the focus area and discuss how the effects of these have been represented in the context of requirements **2-5** through **2-9**.

10-2	
Requirement(s): **refer to 3-1 through 3-5, 6-2**	• Document the planning horizon(s) and the analysis period(s) modelled. • Document the year for which model calibration was undertaken. • Model validation shall include the peak-hour conditions associated with the required/critical analysis periods (see requirement **6-2**).

10-3	

Requirement(s):	• Documentation of model calibration and validation shall be undertaken:
	  • for all highways, roads, interchanges, and intersections within the focus area;
	  • separately for express and collector lanes;
	  • separately for general-purpose and managed lanes (eg. HOV lanes), where managed lanes are present.

10-4	

Requirement(s):
 	
refer to 4-1 through 4-7
	• Document the number of replications, simulation step size, and the definition of the warm-up period and provide rationalization for each.
	• Document the values used for global simulation parameters that affect capacity, including:
	  • (in VISSIM) – CC parameters, bx_mult, bx_add;
	  • (in Aimsun) – reaction time, reaction time at a traffic signal, reaction time when stopped.
	If the values of these simulation parameters have been modified such that the values used are not within 10% of either the default values in the software or values recommended in documentation supplied by the software vendor that is relevant to the situation being modelled, document and rationalize such modifications.

10-5	
Requirement(s): **refer to 6-2 through 6-4**	• Document all control locations on a schematic of the model network and identify those locations where control volumes were adjusted through the application of a balancing process. • Describe the process used to balance counted traffic volumes for use as control locations. • Include a table showing unbalanced and balanced (if relevant) traffic volumes, and the per cent difference between these, for all control location traffic volumes. • Describe the vehicle classes modelled and the process used to develop volumes/proportions for each class. Summarize the vehicle class proportions.

10-6	

Requirement(s):
 	
refer to 6-5
	• Provide a schematic of the model network with the control locations shown and colour-coded by the GEH value obtained following the calibration/validation process (GEH ≤ 5, 5 < GEH ≤ 10, and GEH > 10):
	• Provide a table showing signed (+/-) GEH values relative to both unbalanced observed control volumes and balanced observed control volumes, as obtained following the calibration/validation process, for all control locations within the focus area, grouped as follows:
	  • controlled-access highway mainline;
	  • ramps entering and exiting from controlled-access highways;
	  • ramp terminal turning movements;
	  • other intersection turning movements; and
	  • surface street road sections.
	• Include in the table from the previous point a summary showing the percentage of control locations in each of the bulleted groups with GEH ≤ 5, 5 < GEH ≤ 10, and GEH > 10.
	• Provide a summary showing the percentage of all control locations with GEH ≤ 5, 5 < GEH ≤ 10, and GEH > 10.
	• Discuss the potential factors leading to individual GEH values >5 after calibration and describe steps taken to improve the GEH values for these control locations.

10-7	
Requirement(s): **refer to 6-6**	• Provide a scatterplot showing calibrated simulated flows (represented on the vertical axis) vs. observed (balanced) flows (represented on the horizontal axis). • Show on the scatterplot the linear regression line with its equation, slope and R^2 value. • Show the envelope defined by GEH=5 on the scatterplot.

10-8	

Requirement(s):
 	
refer to 6-7 through 6-9
	• Provide graphical speed profiles for the corridors of interest for the simulated results (average of 5 replications) vs. the observed data (average) at the most disaggregate level permitted by the control data. When showing speeds for more aggregate sections, this will typically be a "stepped" profile. Where relevant, provide separate profiles for express and collector lanes and for general purpose and managed lanes (eg. HOV lanes)
	• Provide, in tabular or graphical form, simulated travel time (average of 5 replications), observed travel time (average over a comparable time frame), and per cent difference for:
	  • the entire length (within the focus area) of corridors of interest;
	  • highway and/or road sections for all corridors of interest. This may be summarized from interchange to interchange, intersection to intersection, or as otherwise determined by the available control data.
	  • Where relevant, express and collector lanes and/or general purpose and managed lanes (e.g. HOV lanes) should be summarized separately

10-9	
Requirement(s): **refer to 6-10**	• Document the saturation flows by movement type used in the model and the source/rationale for these. • Document the values used for the simulation parameters that govern saturation flow. Demonstrate that these values are consistent with the intended saturation flows from the previous point.

10-10	

Requirement(s):
 	
refer to 6-11
	• Confirm that the simulation model has been reviewed as follows:
	  • Network checking to ensure the configuration is consistent with the situation/scenario being modelled;
	  • Path/route checking to ensure that unreasonable paths/routings are not being used (eg. looping);
	  • Visual check of the model in operation under a range of conditions appropriate to the requirements of the assignment to ensure that driver behaviour and vehicle operation is realistic and representative of the conditions being modelled.

11 Future changes in simulation procedures/protocol

The April 2021 version of the simulation protocol represents the first attempt to specify such a protocol. As such, it must be considered a "living document" and subject to review and revision.

It is anticipated that this protocol will be updated although no schedule is set for such updates. Some of the triggers that could prompt updates include:

- Experience gained by MTO and their service providers and related input to the process;
- Changes in simulation software capabilities;
- International initiatives such as the current and ongoing development of a simulation manual by the Transportation Research Board.

Appendix A

Sample of references documenting traffic simulation guidelines/requirements

The following references were consulted in the preparation of this protocol:

1. Design Manual for Roads and Bridges (UK)
   Volume 12: Traffic Appraisal of Road Schemes; Section 2: Traffic Appraisal Advice.

2. Federal Highway Administration (USA)
   Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software

3. Federal Highway Administration (USA)
   Guidance on the Level of Effort required to Conduct Traffic Analysis using Microsimulation

4. Transport for London (UK)
   Traffic Modelling Guidelines – TfL Traffic Manager and Network Performance Best Practice

5. New Zealand Transport Agency (NZ)
   Transport model development guidelines

6. California Department of Transportation (USA)
   Guidelines for Applying Traffic Microsimulation Modelling Software

7. Oregon Department of Transportation (USA)
   Protocol for VISSIM Simulation

8. Virginia Transportation Research Council (USA)
   Microscopic Simulation Model Calibration and Validation Handbook

9. Wisconsin Department of Transportation (USA)
   Traffic Engineering, Operations & Safety Manual
   – Chapter 16: Traffic Analysis and Modeling
   – Section 20: Microscopic Simulation traffic Analysis
   (replaces the earlier and oft-quoted WisDOT Microsimulation Guidelines)

Measures / Checks	Target
Demand Input: Percentage of input volumes within 5% of Model / Observed	85%
Screenline:	
Percentage of links with GEH <= 5	85%
Percentage of links with GEH <= 10	95%
Percentage of links with GEH > 10	5%
% of links with volumes > 2700 veh/h within 400 vehicles of Observed	85%
% of links with volumes between 700 and 2700 veh/h within 15% Model / Observed	85%
% of links with volumes < 700 veh/h within 100 vehicles of Observed	85%
Sum of All Link Flows	Within 5% of sum of all link counts GEH < 4 for sum of all link counts
Ramp:	
Percentage of ramps with GEH <= 5	85%
Percentage of ramps with GEH <= 10	95%
Percentage of ramps with GEH > 10	5%
% of ramps with volumes > 700 veh/h within 5% Model / Observed	85%
% of ramps with volumes < 700 veh/h within 100 vehicles of Observed	85%
Turning Movement:	
Percentage of tuning movements with GEH <= 5	85%
Percentage of tuning movements with GEH <= 10	95%
Percentage of tuning movements s with GEH > 10	5%
Travel Time:	
Percentage of freeway segments within 15% Model / Observed or within 60 seconds	85%