
**STATEMENT
of
KASSEL PRINCE, P.Eng., PMP**

**In Relation to:
105 Wells Hill Avenue, City of Toronto
Committee of Adjustment Minor Variance Hearing
File No. A1156/18TEY)**

PREPARED ON BEHALF OF:

**Nicholas Saint-Martin and Danielle Gutstein
(Also referred to herein as “the Clients”)**

February 12, 2019

PROJECT NUMBER 19111

1 INTRODUCTION

- 1.1 This statement, dated February 12, 2019, to be presented to the City of Toronto Committee of Adjustment has been prepared by Kassel Prince P.Eng., PMP, and provides my preliminary transportation planning opinions with respect to the minor variance application for 105 Wells Hills Avenue, located in the City of Toronto.
- 1.2 This statement will refer primarily to the *Proposed Day Nursery at 105 Wells Hill Avenue Toronto Parking Needs and Traffic Assessment* Study prepared by Tedesco Engineering dated February 6, 2019.

2 Basis of Opinion

- 2.1 In providing my statement I will reference, where appropriate, the study prepared in support of the development, other documents provided as part of the minor variance submission and my experience.
- 2.2 I will provide my transportation opinion with respect to transportation related aspects of the Minor Variance application made to permit a proposed day nursery use at 105 Wells Hills Avenue.
- 2.3 These opinion statements are regarding the transportation assessments undertaken, and the findings, conclusions and recommendations proposed, as contained in the report submitted on behalf of the Applicant.

3 Transportation Opinion

Study Area Network

- 3.1 The subject site is 105 Wells Hill Avenue, which is situated approximately 40m south of the St. Clair Avenue West and Wells Hill Avenue intersection.
- 3.2 The subject site is located in a developed residential area with direct driveway frontage along Wells Hill Avenue. The site driveway provides access to Wells Hill Avenue and the report indicates no plans for revision or relocation of the access. It is noted that driveway access is located completely on the City boulevard and that Wells Hill Avenue accommodates both northbound and southbound traffic flows.
- 3.3 Due to the alignment of Wells Hill Avenue the existing site access is located on a tight horizontal reverse curve with challenging northbound approach sight lines and tight radii. It is also quite close to the St. Clair Avenue intersection. Indeed, the Study identifies the importance of vehicles exiting the site in a forward motion due to safety concerns of sight line impacts. Reference has also been made to improvements on Wells Hill Avenue to provide a side walk which would improve sight lines, but it is not clear how this potential sidewalk might affect vehicular sight distance.

The Study does not provide a sight line analysis using engineering guidelines to demonstrate that safe sight lines are present at the access to accommodate the increase in site-related vehicle traffic under existing conditions, or post implementation of the planned sidewalk on the east side of Wells Hill Avenue.

Pick-Up and Drop-off Activity (PUDO)

3.4 The Tedesco Engineering Study forecasts “between 5 and 9 vehicles during the AM and between 5 and 8 vehicles during the PM peak 30 minutes”. The study references the proposed Sackville daycare study in Cabbage Town and “**assumes**” dwell times of:

- 3.5 to 4.5 minutes AM Typical
- 3.5 to 6.5 minutes AM Worst Case
- 4 to 8 minutes PM Typical; and
- 4 to 10 minutes AM Worst Case

The PUDO dwell times used for the Sackville study have been challenged at the Toronto Local Appeal Body (TLAB) as being understated. It is noted that the proposed PUDO arrangement for the Sackville study requires parents and daycare students to cross the street to complete both pick-up and drop-off (PUDO).

3.5 The Study further asserts that dwell times were validated via simulations of PUDO activity at the Wells Hill site using a pre-school child. It is unclear however if the staged simulations of PUDO operation were used to match a predetermined assumption and whether the captured a full range of likely conditions.

3.6 It is further noted that Tedesco’s subject site Study (and his Sackville study), used “assumed” PUDO dwell times and were not derived solely from any observations / surveys of any existing daycare facility. Since the PUDO dwell times are critical in determining the effective impacts of vehicular volumes, this is a major weakness in the Tedesco Study, and should be further investigated before any development approvals are granted.

3.7 As part of TMIG’s work supporting the City of Toronto’s opposition to the proposed Sackville daycare facility, PUDO dwell times were recorded at the Mighty Kids Day Care (14 Verral Avenue, Toronto) and Matthew John Day Care (135 First Avenue, Toronto). Observations on a typical day revealed dwell times of up to 10 minutes in both the AM and PM for Mighty Kids and up to 10 minutes in the AM and 15 minutes in the PM at Matthew John.

Based on observed dwell times at the existing daycares, it is my opinion that dwell times assumed for the proposed Wells Hill Avenue site are not consistent with typical day to day operation for a similarly sized and situated daycare and are not reflective of actual conditions; as observations exceeded even the worst case assumptions made in the Tedesco study.

3.8 The Tedesco Study assumes that dwell times for summer and winter will be the same and does not seek to adjust dwell times for seasonality. No data has been provided to substantiate the rationale for this assumption.

3.9 It is my opinion that dwell time surveys should be conducted at a minimum of two functioning daycares (proxy sites) and that the Tedesco Engineering Study should be updated to reflect actual data for PUDO activity.

3.10 Given the likelihood that PUDO dwell times have been understated, it is my opinion that the worst case scenario should be relied upon for the minimum PUDO parking requirement for the site. Simulations in Section 4.3 of the Tedesco Engineering Study shows a parking demand of four or more cars occurs on 13

of the 20 AM (65%) simulations and 14 of the 20 PM (70%) period simulations. The average of all 20 simulations shows a demand of approximately four vehicles.

Based on the Tedesco analysis, the site should provide five parking spaces to accommodate established demand; at a minimum four parking spaces for PUDO should be provided. TMIG reserves the right to comment on PUDO requirements for the site, pending revised analysis that incorporates observed dwell times from operational daycares.

Parking

- 3.11** A zoning notice for the site dated November 30, 2018 based on Zoning By-law 569-2013 stated:

The required minimum number of parking spaces for the introduction of a day nursery within the residential building is 2 parking spaces. 1 parking space is required for the dwelling unit. A total of 3 parking spaces are required for the residential building.

The proposal will have existing 1 parking space maintained on the lot.

[200.5.10.1.(1) Parking Space Rates]

Parking spaces must be provided at a minimum rate of 1.0 for each 100 square metres of gross floor area, for a day nursery.

- 3.12** The Tedesco study proposes up to three parking spaces be provided on-site to accommodate PUDO. The parking plan proposes either three parking spaces be located in the City owned boulevard to the north of the site or two spaces on the site's driveway.

The lands to north of the site are not owned by the applicant, and City authorization is needed for implementation of the parking plan. Transportation Services have stated that provision of two parking spaces in the driveway is not feasible since it interferes with access to/from the existing on-site garage, thus the proposed parking arrangement does not work for this site.

- 3.13** No dedicated parking spaces are proposed on-site for daycare staff. Although the site is close to a transit station it is anticipated that at least one member of potential 6 / 7 staff members would drive to the site requiring a parking space. Given that staff arrive before students, the use of one of the three PUDO parking spaces for staff would reduce the site's capacity to accommodate the (we believe understated) PUDO demand and will adversely impact site operation. Furthermore the study claims the demographic of early childhood educators are often young and non-car owning, but there is no data to substantiate this claim, just more assumptions.

- 3.14** The boulevard to the north of the site contains a very large tree located adjacent to the site driveway, that has an estimated diameter of approximately 44 to 48 inches (111 to 122cm) measured at a height of 4 feet from the ground. Based on the City of Toronto's tree protection policy, the tree would have a protection zone of approximately 6.6 to 7.32 metres. A portion of the boulevard is subject to the Ravine Protection bylaw and should the tree reside within ravine protection by-law boundary the protection zone would be even larger.

The tree protection policy prohibits the access, parking or movement of vehicles, equipment or pedestrians. The Study provides no assessment of the tree protection zone and its impacts / limitations on proposed on-site parking. This assessment must be conducted to confirm the viability of the parking plan proposed for the site.

- 3.15** Considering the combined AM and PM parking demand analysis conducted by Tedesco Engineering in Section 4.3 (see **Attachment A**) assuming each of the simulations represents a school day in a typical month (i.e. 20 days), even the potentially understated PUDO parking demand proffered in the report would

exceed the proposed on-site supply (3 spaces) approximately 4 days out of a 5 day school week during either the morning or evening period, irrespective of the duration of the overlap. This overflow demand is likely to promote:

- vehicles stopping on the driveway blocking other vehicles from exiting, requiring the vehicle stopped on the driveway to reverse onto Wells Hill Avenue to clear the blockage (unsafe due to geometry of the roadway and limited sight lines),
- on-street parking by parents along Wells Hills Avenue, which may impact traffic flow, sight lines and general safety in the vicinity of the site access, or
- vehicles waiting in the travel lane to enter the driveway and PUDO area, whilst allowing on-site vehicles to clear thereby causing congestion / blockage of the travel lane. Queues created due to this blockage may also impact the operation of the St. Clair West and Wells Hill Avenue intersection.

Traffic Assessment

- 3.16** Section 2.3 of the Study provides a review of traffic volumes obtained from the City for the intersection of St. Clair Avenue West and Wells Hill Avenue (see **Attachment B**). Two-way peak period traffic volumes along Wells Hill Avenue of 50 vph 8:15 to 9:15 AM and 165 vph 4:30 to 5:30 PM were reported.

A review of the City's traffic volume by TMIG resulted in 174 AM two-way trips and 195 PM two-way trips at the site access during the hours of 8:15 to 9:15 AM and 4:30 to 5:30 PM respectively. Explanation of the traffic volume discrepancy between these two data sets as quoted in the Tedesco Engineering Study is required to ascertain the reliability of the Study's conclusion.

- 3.17** No operational analysis of the site driveway access or the St. Clair Avenue West and Wells Hill Avenue intersection was conducted. As previously stated the site driveway is located just 40 metres south of the St. Clair Avenue intersection and without an operational analysis it is unclear if existing or future queues are / may spill back from the intersection and interfere / block the site access. Blockage even for a short period would impact both the site operation (inbound and outbound) and traffic flow on Wells Hill Avenue as vehicles may block through traffic as they queue to access the site or stop / park on Wells Hill Avenue.

The Tedesco Study estimates that the proposed daycare will generate 18 AM and 16 PM two-way site trips during a peak 30-minute period, but no material analysis was provided assessing the impacts of these additional vehicles or their turning patterns. While the quantum is not a large number, combined with the deficiencies noted previously, it is unclear how such traffic can be accommodated off or on-site.

It is my opinion that traffic impacts to the site access and proximate intersection must be more thoroughly assessed.

Sight lines

- 3.18** The impacts to sight lines with future narrowing of Wells Hill Avenue with the introduction of sidewalks is unknown. Given the site can only accommodate 3 spaces based on the proposed parking plan, occasions when 4 or 5 cars may need to park (such as in poor weather, or if dwell times are indeed understated in the Study) would result in drivers having to use other means besides the designated spaces to park, such as on-street (currently illegal along Wells Hill Avenue).

It is my opinion that sight line impacts should be thoroughly assessed for existing and future conditions at the site driveway.

- 3.19** Given the tight horizontal reverse curve near the site access and short intersection spacing to St. Clair Avenue West and Wells Hill Avenue, conducting of collision analysis should be considered as part of a safety review for increased operations at the site access.

Traffic Calming

- 3.20** TMIG has been advised by the City that speed bumps have been considered for Wells Hill Avenue, implementation however is to be confirmed. The Tedesco Engineering Study recommends the use of rumble strips. It is noted that the Transportation Associating of Canada (TAC) Canadian Guide to Traffic Calming summarizes disadvantages of rumble strips which include “*negative impact on cyclist and should not be used in areas with high traffic volumes of cyclists*” and it increases noise levels by 3 to 4 dB (see **Attachment C**). The guideline also states rumble strips should be used *only* when standard warning or regulatory signs have been shown to be ineffective. Common practice notes that the use of rumble strips are discouraged in residential areas due to noise generated by cars passing over them.

Wells Hill Avenue is classified as a “Quiet Street” cycling route in the City’s cycling network as shown in **Attachment D**. Given the residential nature of the neighbourhood and the roadway designation, it is my opinion that use of rumble strips would not be appropriate for the area.

4 Summary Opinion

- 4.1** It is my opinion an assessment of the tree protection zone for the large tree located on the north side of the site adjacent to the driveway be conducted. The assessment must be used to confirm the viability of the parking plan proposed for the site and a determination made on whether the PUDO parking demand can be accommodated on-site.
- 4.2** It is my opinion that dwell time surveys should be conducted at a minimum of two proxy sites to derive actual dwell times for PUDO activity at the proposed site. PUDO parking demand should be re-evaluated.
- 4.3** It is my opinion that a thorough sight line assessment that reviews all conditions identified must be provided to confirm safe operation of the site access can be accommodated. This should also include a collision analysis.
- 4.4** It is my opinion that there is a need to more thoroughly and appropriately assess the traffic operations of the proposed day nursery given the proximity of the adjacent intersection and the potential for blockage to the site access.
- 4.5** It is my opinion that provision should be made to accommodate the vehicular accumulation levels identified within the Tedesco report reflected for the “Worst Case” conditions. This means that 5 parking spaces should be provided to accommodate an acknowledged level of PUDO activity.
- 4.6** It is my opinion that one space should be provided for staff parking on-site in addition to PUDO parking.
- 4.7** In my opinion the proposed parking plan will not fully accommodate the operation of the proposed daycare at this location given the potential for challenging ingress/egress from the site, potential congestion on

Wells Hills Avenue due to on-street stopping or parking, and the potential overburden of the proposed parking supply.

- 4.8** It is my opinion that traffic increases should be fully assessed in terms of defining traffic volume changes and operational impacts. Insufficient work has been presented to date to allow for a reasonable assessment of impacts.
- 4.9** It is my opinion that although the Zoning By-law 569-2013 has a minimum parking requirement of two spaces for the daycare, appropriate PUDO facilities should not be sacrificed for the purpose of satisfying a minimum requirement, given that it potentially creates an unsafe environment.
- 4.10** It is my overall opinion that the transportation and parking assessment done to date does not support the approval, from a transportation perspective, of the day nursery application at this location and that further transportation related assessments should be undertaken and duly considered prior to any approval to permit the development of a daycare on the site.



Kassel Prince, P.Eng., PMP
Project Engineer

ATTACHMENT A

Parking Demand Analysis (Worst Case) – Tedesco Engineering

Proposed Day Nursery at 105 Wells Hill Avenue, Toronto

Parking Needs and Traffic Assessment

Tedesco
Engineering



Prepared for:
Blackgate Capital Inc

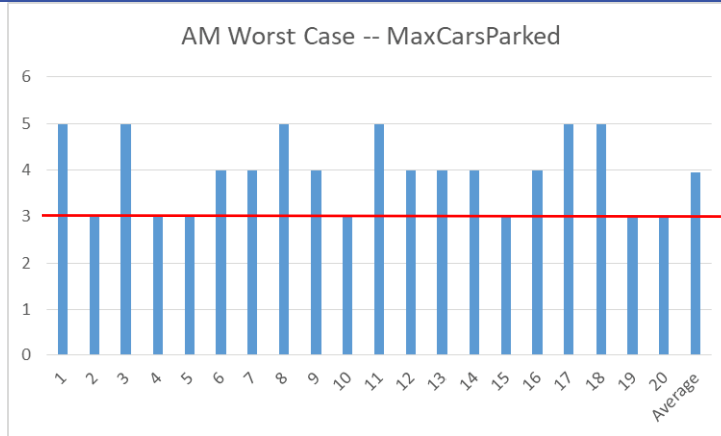
February 2019

Tedesco Engineering

(Tedesco Ventures Inc.)

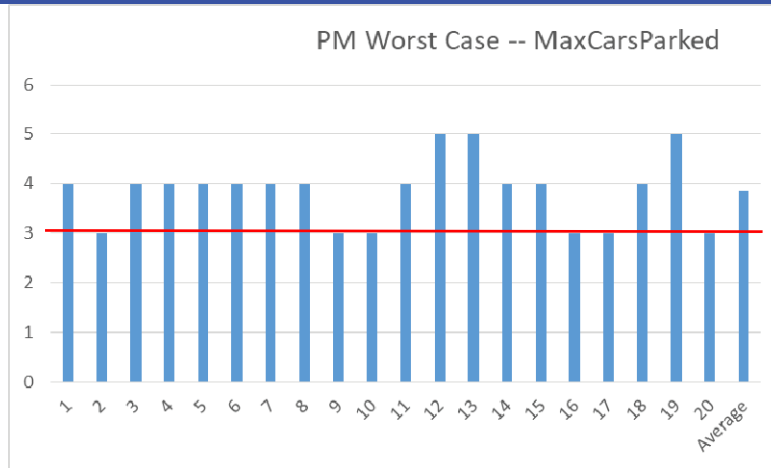
Worst Case AM							Average
# parked	zero	1	2	3	4	5	3.95
% time	23%	37%	23%	12%	4%	1%	
	23%	59%	82%	94%	99%	100%	
	94%			6%			

Demand beyond proposed supply →



Worst Case PM							Average
# parked	zero	1	2	3	4	5	3.85
% time	13%	34%	30%	18%	5%	1%	
	13%	47%	77%	95%	99%	100%	
	95%			5%			

Demand beyond proposed supply →



Results – Worst Case conditions

The above results show that under worst case conditions parent-generated parking demand in excess of three (3) stalls is forecast to occur on average 6 percent of the time during AM peak 30 minute period and 5 percent of the time during the PM peak.

ATTACHMENT B

**Turning Movement Count Data
(St. Clair Ave. W & Wells Hill Ave.)**



City of Toronto - Traffic Safety Unit

Turning Movement Count Summary Report

ST CLAIR AVE AT WELLS HILL AVE (PX 1336) Survey Date: 2018-Mar-20 (Tuesday)
Survey Type: Routine Hours

Time Period	Vehicle Type	NORTHBOUND						EASTBOUND						SOUTHBOUND						WESTBOUND											
		Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Exits	Left	Thru	Right	Total	Peds	Bike	Other		
08:15-09:15	CAR	25	19	8	97	124	888	0	773	12	785	46	18	4	30	52	485	30	436	17	483	N	439	0	0	0	0	0	0	0	0
	TRK	1	0	0	0	0	21	0	20	2	22	4	1	0	0	1	17	2	17	1	20	S	124	2	0	0	0	0	0	0	
	BUS	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	3	0	3	0	3	E	50	6	0	0	0	0	0	0	
	TOTAL:	26	19	8	97	124	910	0	794	14	808	50	19	4	30	53	505	32	456	18	506										
16:30-17:30	CAR	32	13	7	39	59	626	2	515	9	526	132	72	20	86	178	678	103	579	23	705	N	452	1	0	0	0	0	0	0	
	TRK	0	3	0	0	3	2	0	2	0	2	1	0	0	0	0	11	1	8	0	9	S	252	3	0	0	0	0	0	0	
	BUS	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	E	94	10	0	0	0	0	0	0	
	TOTAL:	32	16	7	39	62	629	2	518	9	529	133	72	20	86	178	689	104	587	23	714										
OFF HR AVG	CAR	26	10	8	42	60	539	0	425	5	430	55	72	11	63	146	504	39	431	18	488	N	269	0	0	0	0	0	0	0	
	TRK	1	1	0	2	3	27	0	24	0	24	1	1	0	2	3	19	1	16	1	18	S	95	0	0	0	0	0	0	0	
	BUS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	E	57	4	0	0	0	0	0	0	
	TOTAL:	27	11	8	44	63	566	0	449	5	454	56	73	11	65	149	523	40	447	19	506										
07:30-09:30	CAR	37	40	12	164	216	1,656	1	1,465	14	1,480	77	27	7	56	90	921	56	825	24	905	N	756	1	0	0	0	0	0	0	
	TRK	3	0	0	0	0	37	0	35	2	37	4	2	0	0	2	35	2	35	3	40	S	240	4	0	0	0	0	0	0	
	BUS	0	0	0	0	0	2	0	2	0	2	0	0	0	0	0	6	0	6	0	6	E	82	9	0	0	0	0	0	0	
	TOTAL:	40	40	12	164	216	1,695	1	1,502	16	1,519	81	29	7	56	92	962	58	866	27	951										
16:00-18:00	CAR	60	23	14	76	113	1,168	2	930	16	948	223	162	32	185	379	1,362	175	1,154	44	1,373	N	968	2	0	0	0	0	0	0	
	TRK	0	4	0	0	4	12	0	11	0	11	3	1	0	0	1	20	3	16	0	19	S	478	4	0	0	0	0	0	0	
	BUS	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	E	173	24	0	0	0	0	0	0	
	TOTAL:	60	27	14	76	117	1,181	2	942	16	960	226	163	32	185	380	1,382	178	1,170	44	1,392										
07:30-18:00	CAR	201	102	56	409	567	4,978	4	4,094	51	4,149	521	475	84	491	1,050	4,297	386	3,704	141	4,231	N	2,799	4	0	0	0	0	0	0	
	TRK	8	6	1	6	13	152	1	141	3	145	11	5	0	9	14	129	8	114	6	128	S	1,097	9	0	0	0	0	0	0	
	BUS	0	0	0	0	0	3	0	3	0	3	0	0	0	0	0	6	0	6	0	6	E	484	47	0	0	0	0	0	0	
	TOTAL:	209	108	57	415	580	5,133	5	4,238	54	4,297	532	480	84	500	1,064	4,432	394	3,824	147	4,365										

Total 8 Hour Vehicle Volume: 10,306 Total 8 Hour Bicycle Volume: 83
Total 8 Hour Intersection Volume: 10,389

ATTACHMENT C

Canadian Guide to Traffic Calming (Rumble Strips)



Canadian Guide to Traffic Calming

Second Edition

February 2018

3.5.3 TRANSVERSE RUMBLE STRIPS



Description and Purpose:

Transverse rumble strips are raised buttons, bars or grooves closely spaced at regular intervals on the roadway that create both noise and vibration in a moving vehicle.

The purpose of a rumble strip is to alert motorists to a traffic control device which is associated with unusual or changing conditions ahead. Rumble strips are sometimes incorrectly used in a standalone mode as a speed control device.

With rumble strips, motorists are alerted by minor vertical deflection of vehicle wheels, and audible warning created as vehicle wheels pass over.

Design Details: Not Available

Advantages:

- ▶ Vehicle Speeds: Reduction in 85th percentile speed between 3 and 8 km/h^{10,52,65}
- ▶ Other:
 - Milled rumble strips typically require little to no maintenance
 - Rumble strips have no effect on resident access, on-street parking, street sweeping and police enforcement

Disadvantages:

- ▶ Active Transportation and Transit: Negative impact on cyclists and should not be used in areas with high volumes of cyclists
- ▶ Maintenance:
 - Raised rumble strips or buttons have a negative effect on snow plowing operations
- ▶ Other:
 - Increased noise levels by 3 to 4 dB in the immediate vicinity⁵²
 - May detract from appearance of street

Limited or No Data Available (Further Research Encouraged):

- ▶ Traffic volume reduction
- ▶ Conflict reduction
- ▶ Environmental impacts

Applicability:

- ▶ Road Classification: Local, collector and arterial streets
- ▶ Traffic Conditions: All traffic volumes
- ▶ Roadway: Urban and rural cross-section; usually two traffic lanes (one each direction)
- ▶ Locations to Avoid: Within 200 m radius of residential areas⁶⁵

Elements to Consider:

- ▶ Rumble strips are intended for changing conditions ahead and should not be incorrectly used as a stand-alone speed control device
- ▶ Use only when standard warning or regulatory signing has been shown to be ineffective

ATTACHMENT D

City of Toronto Cycle Network

Cycling Network District Toronto and East York District

Legend

- Cycling Network and Trails Plan**
- Bike Lane | Cycle Tracks
 - Trails | Boulevard Trails
 - Quiet Street Routes
 - Tunnels and Bridges
 - Major Corridor Studies
- Note: Initiation of a Major Corridor Study on Danforth Avenue subject to Council direction in Fall 2017*
- Corridors where future study may be considered as part of the Cycling Network Plan 2 Year Review Report*
- Existing Cycling Network**
- Bike Lane | Cycle Tracks
 - Trails | Boulevard Trails
 - Quiet Street Routes
 - Rail Lines
 - Freeways
 - Major Roads
 - Arterial Road Network
 - Green Spaces

