

May 2, 2023

Dan Tomarchio
184 CR28, Ameliasburgh Township
Prince Edward County, ON

RE: 184 County Road 28 Traffic Brief
Jewell Engineering File No. 230-5324

Mr. Tomarchio,

Jewell Engineering Inc. (Jewell) has prepared this Traffic Brief to inform interest groups and all levels of decision-makers the impact of the proposed development at 184 County Road (CR) 28 in Ameliasburgh Township, Prince Edward County.

Site Location

The development site at 184 CR28 has an area of 0.85ha, and is located 6km south of downtown Belleville.



Figure 1: Surrounding Area (Google, Maxar Tech, May 2018)

County Road 28 has a posted speed limit of 60km/h, so Jewell conservatively assumed a design speed of 80km/h for sight-distance calculations.

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Existing Conditions

The existing site consists of a 1-storey brick-wood building (the storefront for a previous party rental store), a 1 ½ -storey metal barn, and several greenhouses. The property is accessed by an existing entrance on CR28, approx. 45m southwest of an adjacent residential access.

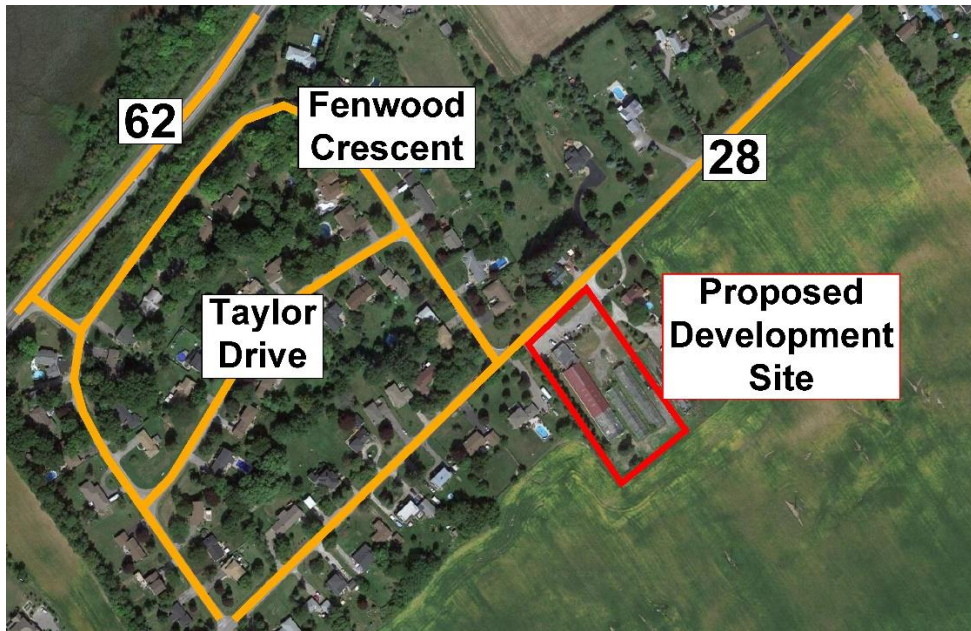


Figure 2: Existing Conditions (Google, Maxar Tech, May 2018)

CR28 is a relatively-flat, hard-surfaced road at the subject site, with 3.0m lanes and narrow gravel shoulders that transition to grass on either side.

Proposed Conditions

The owner is proposing to convert the party rental store to a single-family dwelling, with an attached 1-bedroom rental (bed and breakfast) unit. In addition, the proposed site will be used for a market garden/nursery, with 1-3 staff. A portion of the existing barn will be removed (as shown on the attached site plan).

Access to the proposed development site will be provided via the existing entrance, which will be modified to meet Prince Edward County and OPSD standards.

Lines of Sight

The stopping sight distance for an 80km/h road is 136m (conservatively assuming a 3% downgrade) according to TAC's 2017 Geometric Design Guide for Canadian Roads. In addition, the TAC manual lists the left turn intersection sight distance at 167m, and the right turn

intersection sight distance at 145m. The desired intersection sight distance (LT/RT ISD) is the sight distance required for a vehicle to accelerate from a stop, and complete a left/right turn without causing through traffic to slow below 70% of the initial travel speed (TAC 2017). The stopping sight distance (SSD) is the distance required for a driver to register a hazard and bring their vehicle to a stop.



Figure 3: Proposed Site Access, Facing Northeast



Figure 4: Proposed Site Access, Facing Southwest

The measured lines of sight at the site access are as follows:

Table 1: Lines of Sight

From Entrance, Facing	Measured Sight Distance (m)	Sight Distance Required (m)			Meets Requirements?
		Stopping, 3% Downgrade	Left Turn	Right Turn	
East	375	136	167	145	✓
West	240				✓

The measured sight distances exceed the minimum required sight distances, for intersection design and stopping sight distance. Therefore, safe access is provided.

Vegetation was not a significant factor in line-of-sight measurements, however the municipality should ensure that the vegetation within the municipal right-of-way is sufficiently maintained to ensure that lines of sight remain unobstructed.

Traffic Impacts

To determine trips generated by the proposed development, Jewell made the following assumptions about pre- and post-development conditions with input from the Owner:

Pre-Development

- Party Rental Store
- Nursery – Garden Center (ITE Code 817) – 5 Employees

Post-Development

- Single-Family Detached Dwelling (ITE Code 210) – 1 unit
- Motel (ITE Code 320) – 1 unit
- Nursery – Garden Center (ITE Code 817) – 3 Employees

The proposed nursery will operate on weekends, with private pickups during the week.

Jewell categorized the bed-and-breakfast unit as ITE Code 320 as the other short-term accommodation land uses (Hotel, Business Hotel, etc.) included on-site amenities, such as meeting spaces and restaurants.

The owner provided information about the previous party rental store to estimate the total number of vehicle trips, as Jewell found no equivalent land-use code in the ITE Trip Generation Manual. The party rental store employed a staff of 1-2 people, operating during regular

business hours (9 AM to 6 PM on Friday, and 9 AM to 5PM Saturday and Sunday). A total of 3-5 vehicles per peak hour could be expected during a typical peak-hour period.

Subsequently, the pre- and post-development peak-hour trips are as follows:

Table 2: Pre-Development Peak Period Trips

ITE Code	Description	Trips Per	Peak Period			
			AM	PM	Sat	Sun
N/A	Party Rental Store	(N/A)	4	4	4	4
817	Nursery (Garden Center)	5 Employees	11.3	12.75	28.35	26.5
		TOTAL	15	17	32	31

Table 3: Post-Development Peak Period Trips

ITE Code	Description	Trips Per	Peak Period			
			AM	PM	Sat	Sun
210	Single-Family Detached	1 Dwelling	0.76	1.00	0.93	0.85
320	Motel	1 Occupied Room	0.53	0.51	0.74	0.63
817	Nursery (Garden Center)	3 Employees	6.78	7.65	17.01	15.90
		TOTAL	8	9	19	17

In all four peak periods analyzed, the post-development trip totals were lower than pre-development conditions. As such, **the proposed development poses no negative impact on traffic operations in the area.**

Site Entrance Design

The owner confirmed that the proposed site is under Zoning RU1-55. Prince Edward County's Zoning By-Law, Section 5.1.7, indicates that "Entrance driveways shall be constructed and located so as to provide for safe ingress/egress from the property."

The Site Plan produced by IBW includes OPSD 301.020 as the entrance design for the site. The drawing indicates a minimum driveway surface width of 5.0m for a Rural Entrance, with no maximum width. Jewell referenced OPSD 350.010 for an Urban Commercial entrance, which lists a minimum entrance width for a two-way site access at 7.2m, and a maximum width of 12.0m. As a greenhouse / garden center is the proposed use of the site, it is likely that trucks or other large vehicles will access the site. For this reason, it is preferable to have a larger site access width. In addition, the site access has a grade that will provide acceptable drainage from the hardened surface, while remaining below the maximum 6-8% for residential and commercial site accesses.

It is Jewell’s opinion that the site access proposed by IBW’s site plan, dated May 2, 2023, is in general conformance both OPSD 301.020 and Prince Edward County’s zoning requirements.

Conclusions

The Owner of the subject property at 184 County Road 28 in Ameliasburgh Township, Prince Edward County is proposing to reinstate a small greenhouse (garden center) business, and add a single-family dwelling with bed-and-breakfast unit in place of an existing party rental store. The proposed development is expected to result in no increase to vehicular traffic on local roads.

Sufficient sight distance is available at the proposed entrance location, therefore safe ingress/egress is provided.

The entrance design proposed by IBW meets Prince Edward County’s design standards, and is in general conformance with OPSD 301.020. Jewell concludes that the site entrance meets safe design standards, and there are no negative impacts to the road network as a result of the proposed development.

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