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Re: #910 County Road #3 / Wannamaker Lane, Prince Edward County

Subject: Residential Entrance / Traffic Brief

Project Number: 2136526

Having reviewed the available information, the following is provided in support of the development application process.

Existing Conditions

A snapshot from the Prince Edward County GIS viewer showing approximate property lines, 911 address numbers and aerial image is provided below.

(Note: The location of the aerial image relative to the property lines is approximate and not necessarily representative of actual legal lot boundaries / building locations. It appears in this image below that the aerial image may be offset slightly to the west of the lot lines – for instance the location of Wannamaker Lane is not consistent with the property lines and various buildings are shown over top of property lines.)

The subject area is comprised of the following properties:

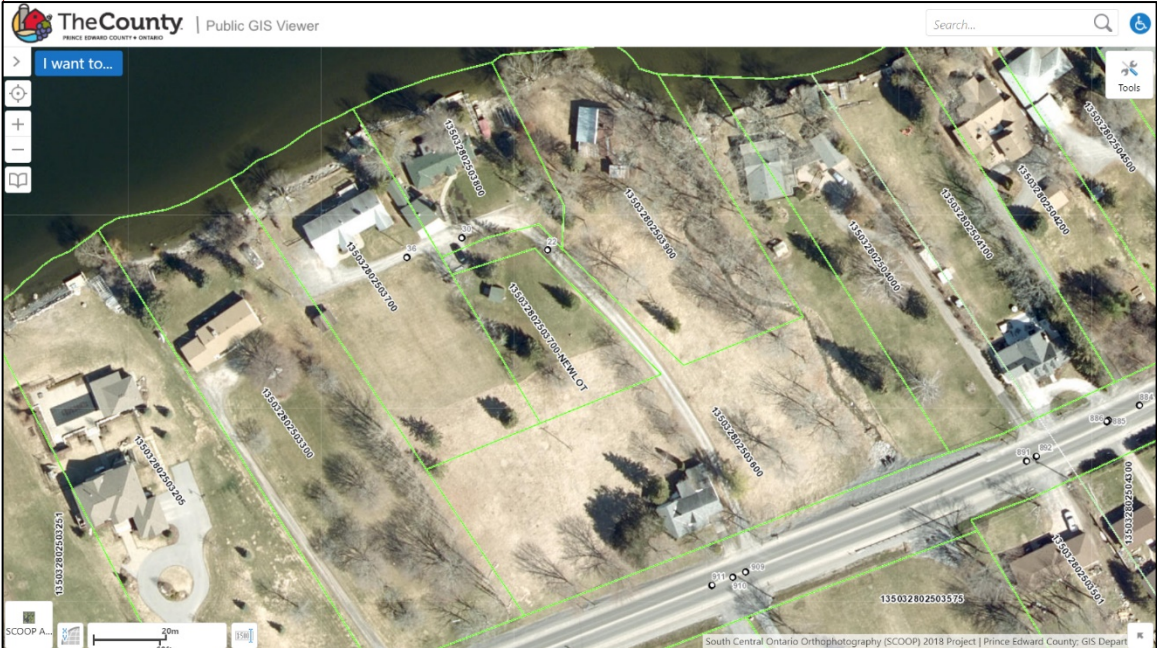
- #910 County Road 3 (fronting onto County Road 3)
- #22 Wannamaker Lane (east waterfront lot)
- #30 Wannamaker Lane (centre waterfront lot)
- #36 Wannamaker Lane (westmost waterfront lot)

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County Road 3 is a rural, two-lane highway that runs east to west from Highway 62 (Belleville / Rossmore) to Loyalist Parkway (Trenton / Carrying Place). The road has been recently reconstructed with wide shoulders for bike use. The legal speed limit on County Road 3 is generally 80 km/h though the limit changes to 60 km/h about 550m west of Wannamaker Lane.



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Traffic activity is a mixture of local, agricultural and tourist traffic.

Crossing under County Road 3 and towards the Bay of Quinte, a small drainage outlet runs parallel to the eastern limit of the property. Guiderail is installed on both sides of County Road 3 at this crossing.

To the east, County Road 3 curves slightly north and has a flat grade. To the west, the road is relatively straight and has a flat grade.

There are currently two entrances to County Road 3 that service the existing properties. Wannamaker Lane is shared by 3 of the developed properties. There is also a private driveway for #910 County Road 3.

A Google Street View image (2019) of the two existing entrances is shown below. (Note: The white house in the image has been recently removed.)



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Proposed Development

A preliminary development plan was provided. Consistent with other properties on this stretch of highway, all lots are proposed to be zoned to RR1 and reflect full depth lots from County Road 3 to the Bay of Quinte.

In summary, the following is being proposed:

- Update lot fabric from four irregular lots to three full depth lots.
- The home closest to County Road 3 has recently been removed leaving 3 residences to reflect the 3 proposed lots.
- Provide three private driveway entrances to County Road 3.
- Remove the privately owned shared Wannamaker Lane and associated confusion with a municipal road and / or waterfront access.
- Provide a lot layout and residence access consistent with others along County Road 3.

In this document, the current Wannamaker Lane property addresses are used to reference the properties but it's noted their addresses would be updated to reflect the County Road 3 frontage and access.

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Key elements of the proposed entrance configuration are outlined below.

22 Wannamaker Lane (East Property): Use Wannamaker Lane Entrance

- Wannamaker Lane’s entrance to County Road 3 will physically remain and become the new driveway for 22 Wannamaker.
- The named street “Wannamaker Lane” will no longer exist as it will become a private driveway for a single residence.

30 Wannamaker Lane (Middle Property): Relocate Existing Driveway

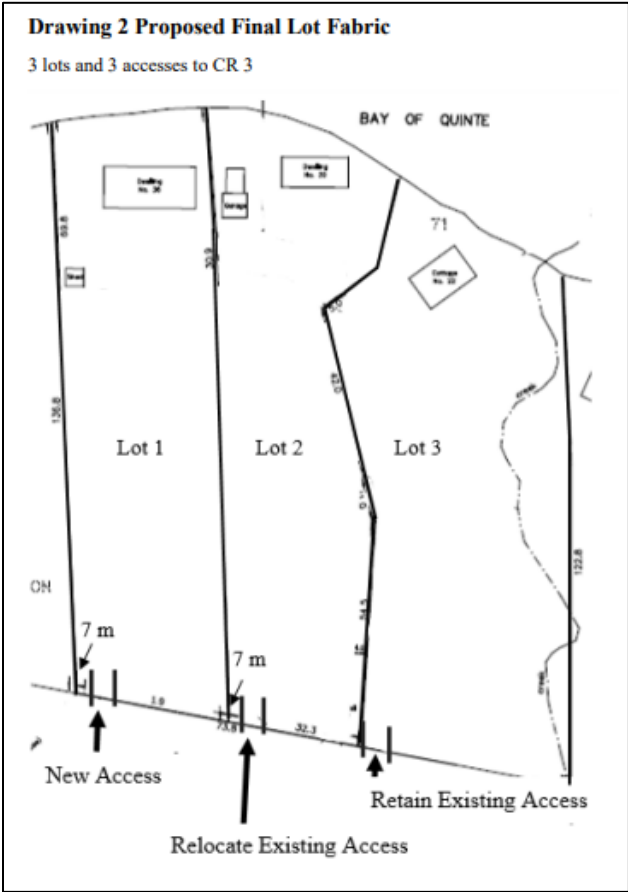
- The driveway at #910 County Road 3 will be relocated.
- A new driveway will be constructed west of the former building footprint.
- Improved spacing between access will be provided.

36 Wannamaker Lane (West Property): New Driveway

- A new driveway will be constructed.
- The driveway will be located on the west side of the lot consistent with the other 2 proposed lots as well as the existing lot to the west.

(Note: It is reasonable to anticipate some minor changes in the development plans as the approval process runs its course. Only changes that are felt to be significant and directly relevant to entrance traffic may warrant a revision to this document.)

See below for excerpts of the proposed development plan.





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Trip Generation

Referencing the ITE Trip Generation documentation, the following can be provided:

- Land Use 210: Single Family Detached Housing
- Weekday AM Peak Hour Average Rate: 0.76 trips / home
- Weekday PM Peak Hour Average Rate: 1.00 trips / home
- Saturday Peak Hour Average Rate: 0.93 trips / home
- Sunday Peak Hour Average Rate: 0.85 trips / home
- These trips are distributed between trips leaving and trips arriving at different rates depending on the condition considered.

Based on this information, it appears that something in the order of single trip per house is reasonable. To be conservative, we will assume that during a theoretical peak hour, each home will generate a single trip in and a single trip out.

This would suggest that the 4 homes (including the recently removed home at #910 CR2) would have generated a total of 8 trips and the proposed reduction to 3 homes would result in a total of 6 trips.

It would appear reasonable to suggest that the proposed lot modifications may result in a reduction in traffic activity.

Traffic Volumes / Entrance Level of Service

County traffic counts are provided below.

COUNTY ROADS	DESCRIPTION	RSU	TRAFFIC VOLUME (24h)	POSTED SPEED	Date of Counts
COUNTY ROAD 3	200 metres West from County Rd 28	1	3787	50	June 19, 2012
		1	3915	50	July 10, 2018
COUNTY ROAD 3	445 metres East of Loyalist Parkway	4	1921	80	June 27, 2012
		1	1968	60	July 4, 2018
COUNTY ROAD 3	135 metres East from Barley Rd	3	2553	60	June 29, 2012
		6	4000	60	July 4, 2018
COUNTY ROAD 3	140 metres West from Weese Rd	4	1960	80	June 29, 2012
		7	2012	80	July 4, 2018
COUNTY ROAD 3	700 metres East of Old Orchard (west end)	2	1721	80	June 29, 2012
		3	2102	80	July 4, 2018
COUNTY ROAD 23	100 metres from County Rd 3	8	554	50	June 19, 2012
		2	479	50	June 19, 2017
COUNTY ROAD 23	300 metres from County Rd 19	1	1073	80	June 19, 2012
		6	956	80	June 19, 2017

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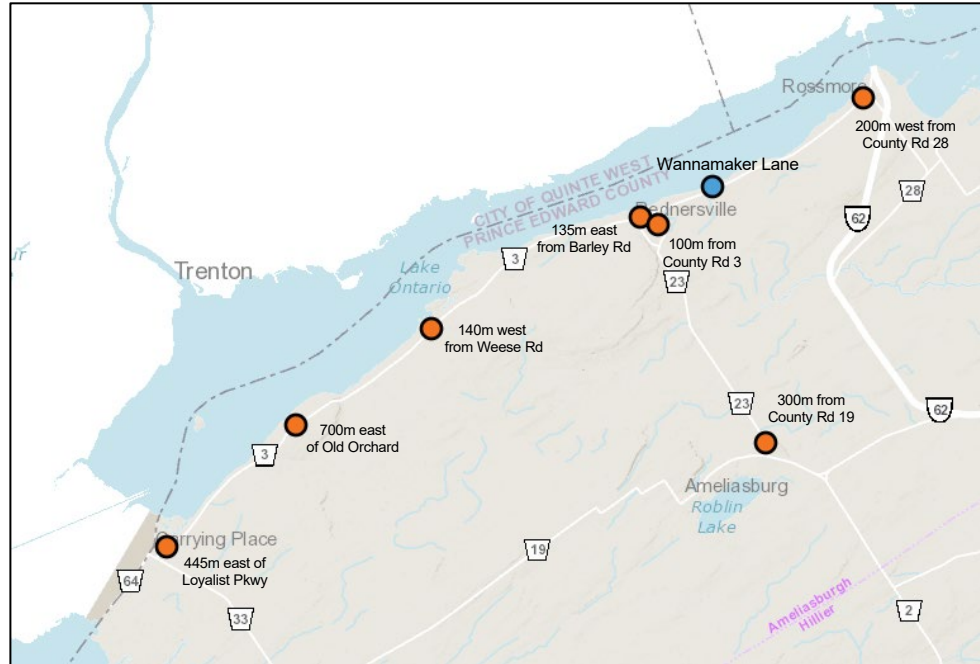
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The following map shows approximate traffic count locations.



Counts on County Road 3, 200m west of County Road 28 are in Rossmore (east of Wannamaker Lane).

County Road 3 counts 135m east of Barley Road are in Rednersville (west of Wannamaker Lane).

County Road 23 meets County Road 3 in Rednersville; the third nearby count location.

The other locations are further west on County Road 3 (between Rednersville and Carrying Place). The final count location is in Ameliastburg, south on County Road 28 near County Road 19. These count sites are further away from the subject properties and will not be used, other than for observing trends.

Traffic activity across the County has been increasing largely due to increased tourist activity. Looking at the two County Road 3 locations in Rossmore and Rednersville (on either side of Wannamaker Lane), 2018 traffic volumes are very similar (3915 vs. 4000). Between 2012 and 2018, traffic in Rossmore only grew 0.5% annually, whereas annual traffic in Rednersville grew by almost 8%.

Wannamaker Lane is closer to Rednersville than Rossmore. Therefore, the Rednersville traffic count location (County Road 3, 135m east of Barley Road) can be used to estimate traffic at Wannamaker Lane.

Based on an 8% *increase* in traffic the traffic counts can be projected to estimate current traffic activity. We estimate current traffic volume of roughly 5006 vehicles per day.

The Ontario Good Roads Association provides a procedure for relating shorter duration counts to average annual daily traffic, or AADT. (We will assume the daily count is roughly equivalent to the AADT.) If a current AADT of roughly 5006 vehicles is presumed; approximately 30% (1293 vehicles) of that daily volume can

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be assumed to occur during the 4 hours between 2-6 pm; leaving approximately 323 vehicles for the peak pm hour on County Road 3.

Allowing for a total of 323 vehicles on County Road 3; split 50/50 directionally; 6 vehicle trips for the combined residences (one round-trip each); and three entrance points; a rough model using HCS7 software was created, confirming a level of service of 'A' and that a negligible volume / capacity ratio resulted.

It is reasonable to expect there are no concerns associated with the provision of 3 separate driveways from a traffic volume / level of service perspective.

Entrance Sight Lines

We are not aware of any existing concerns or history of accidents associated with either of the existing subject entrances.

With one new entrance and one relocated entrance, appropriate lines of sight should be confirmed.

1. *Ministry of Transportation Highway Access Management Guideline*

The MTO Highway Access Management Guideline has been used as a line-of-sight standard in other instances in the County and is assumed to be the applicable standard in this case.

Stopping sight distance is from the point of view of a motorist travelling on the road. It is the distance that a motorist should be able to see to stop safely. This is the minimum standard that should be met.

Stopping Sight Distance (Table 9)

- Posted speed of 80 km/h.
- Design speed allowance of an additional 20 km/h.
- Roughly flat approach grade.
- Distance Required = 185m

The entering sight distance is from the point of view of a motorist waiting to enter or cross the highway. It is the distance a motorist should be able to see to safely enter the road and accelerate to the posted speed without being overtaken by an approaching vehicle.

Entering Sight Distance for 2 Lane Highways (Table 7)

- Posted speed of 80 km/h.
- Residential access.
- Design speed allowance of an additional 20 km/h.
- Roughly flat approach grade.
- Distance Required = 210m

2. *Transportation Association of Canada Geometric Design Guide (TAC)*

It is noted that similar line of sight requirements are stated in the TAC and are provided below for additional reference.

Stopping Sight Distance (Table 2.5.2)

- Posted speed of 80 km/h (design speed of 100 km/h).
- Level roadway.

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- Design speed allowance of an additional 20 km/h.
- Distance Required = 185m (similar to MTO)

Intersection Sight Distance: Right Turn (Table 9.9.6)

- Distance Required = 185m

Intersection Sight Distance: Left Turn (Table 9.9.4)

- Distance Required = 210m (similar to MTO)

Sightline Verification

To verify sightlines, distance measurements were taken from the Prince Edward County GIS viewer and paired with Google Street View images. (As this document is being written in the winter, these Street View images with full foliage provide a more representative illustration of potential line of sight obstructions than visible during a site visit.)

Sightlines for each of the three proposed entrances should be considered. Both standards specify 185m for stopping and 210m turning distances. The attached StreetView images show sightlines for each of the proposed entrance works.

22 Wannamaker Lane: Re-Use Existing Entrance

This entrance will not change. Under clause 5.5.2 “Grandfathering,” this entrance will remain even though the slight curve in the road to the east may reduce the full 185m of stopping sight distance. The travelled portion of the road does however appear clear as bike lanes extend the paved surface of the road to the shoulder.

Sightlines from the west are clear.

This is an existing entrance that to the best of our knowledge has been operating in a safe manner to date. As it services three properties, the entrance today would reasonably experience more use than after development changes.

Continuing to maximize the available line of sight through minimizing roadside obstructions is recommended.

30 Wannamaker Lane: remove and relocate entrance to west

This entrance will be relocated to the west side of the existing house at #910 County Road 3 (the house near the road that is to be removed).

Sightlines from the west are clear.

Sightlines from the east may again be limited by the slight bend, roadside vegetation and roadside features (guardrail, telephone poles, mailboxes, etc.).

The travelled portion of roadway appears to have sufficient stopping sight visibility.

36 Wannamaker Lane: new entrance on west side

This (new) entrance will be located along the western edge of the combined properties.

Sightlines from the west are clear.

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January 17th, 2022



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Minimum stopping distances to the east are satisfied. The gentle curve is located beyond the minimum stopping distance and no longer impacts visibility.

Entrance Geometry

Where possible and consistent with Ontario Ministry of Transportation standards, we recommend the new private residential entrances reflect OPSD 301.010 "Rural Entrances to Roads on Fill" including 5m width, 5m corner radii and 6% maximum slope.

Conclusion

Based on our observations; applicable standards; a lack of previous safety concerns; and our understanding that the proposed development expansion will maintain or reduce existing traffic activity, we believe the proposed entrance configuration will be acceptable for the proposed development.

If there are any questions or comments, please contact the undersigned.

Sincerely,

**THE GREER GALLOWAY GROUP INC.
CONSULTING ENGINEERS**



Matthew McIntosh, P. Eng.
Senior Engineer / Project Manager

Attachments:
County Road 3 – Google Street View x4

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Photo 1: Location – 185m east of the property; looking west towards the property, from the view of an approaching vehicle (note: gentle curve).



Photo 2: Location – 185m west of the property; looking east towards the property, from the view of an approaching vehicle.



Photo 3: Location – Existing Wannamaker Lane entrance / east property boundary looking east from the view of a vehicle leaving the driveway (note: gentle curve).



Photo 4: Location – Approximate location of proposed westerly driveway / west property boundary looking west from the view of a vehicle leaving the driveway.

