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August 28, 2019

Sarah Code, MCIP RPP
Senior Planner, GSP Group
72 Victoria Street South, Suite 201
Kitchener, ON · N2G 4Y9

Re: Transportation Assessment
Proposed Whistle Bare Campgroup Expansion

Dear Sarah,

This Transportation Assessment has been prepared in support of an application to expand the Whistle Bare Campground. An application for a change in the zoning for the site is required for the expansion. Township staff have asked for a Transportation Assessment to provide more information about the Transportation elements of the site. Regional staff have not asked for a Transportation Impact Study.

In consultation with Township staff, a terms of reference for this assessment was developed to look at whether the additional campground traffic will have any impact on the classification of Whistle Bare Road and whether or not any improvements to the road would be needed. The analysis is summarized below.

Whistle Bare Campground

Whistle Bare Campground is located at 1898 Whistle Bare Road in the Township of North Dumfries (see attached Site Location Plan). The campground currently has 85 campsites along with 170 storage spaces for trailers. The campground is open from the third week in April until the first week of November.

Amenities at the campground include a swimming pond and separate fishing pond along with a beach and play area. A pavilion and picnic area are available for day rental. Day rentals occur throughout the season.

Access to the site is provided from a single gravel driveway to Whistle Bare Road. The current layout of the site includes a small parking area and a house near the entrance to the site. The owner lives in the house. There is an adjacent house to the east of the site that is connected to the campground from the rear of the adjacent house, however, a gate prevents travel between Whistle Bare Road and the campground through the adjacent house driveway.

There is a gate to access the campground adjacent to the main house. All seasonal campers, storage clients and overnight campers have a card to access the campground through the gate

and they are logged by the campground. This data was used as part of the analysis and is discussed later in this letter.

In addition to the people who enter the campground with a card and are logged, there are people who access the site that either don't enter the campground or are granted access by the campground operator, which is not logged in their system. These people would include delivery drivers, staff, the owners, and day rental visitors.

The storage area and the campsites are generally located to the rear of the site.

Existing Transportation Context

Whistle Bare Road is a local Township of North Dumfries Road connecting between Roseville Road and Dickie Settlement Road, which are both under the jurisdiction of the Region of Waterloo. Whistle Bare Road meets Roseville Road in a T-intersection that is stop controlled on the Whistle Bare Road approach; it continues to the east of Dickie Settlement Road where it is a two-way stop controlled intersection on the Whistle Bare Road approaches.

The speed limit on Whistle Bare Road is 80 kph and the rural cross-section includes a single lane in both directions. Whistle Bare Road is paved.

Traffic data was collected on Whistle Bare Road both near the Roseville Road and Dickie Settlement Road intersections for a period of one week in August 2019 to determine average daily traffic volumes on the road in the summer. The dates for the survey were Friday, August 16th through Thursday, August 22nd. The land uses abutting and accessing Whistle Bare Road include not only the campground, but also a number of extraction operations, all of which tend to generate peak traffic volumes in the summer. At other times in the year, in particular in the winter when the campground is closed and traffic related to the extraction sites would be lower, traffic volumes on Whistle Bare Road are lower. The data from the one-week traffic counts is summarized in the table below.

Table 1: Whistle Bare Road Data - August 16-22, 2019

Description	Near Roseville Road		Near Dickie Settlement Road	
	NB	SB	EB	WB
Average Daily Traffic	141	161	237	225
	302		462	
average speed	89 kph	82 kph	73 kph	72 kph
85 th percentile speed	105 kph	98 kph	88 kph	87 kph
Passenger vehicles	81%	79%	86%	81%

The data indicates average daily traffic volumes of 302 near Roseville Road and 462 near Dickie Settlement Road. Passenger vehicles make up between 79% and 86% of the traffic, confirming



that there is a substantial proportion of the traffic that is trucks and longer vehicles (between 14% and 21%).

A visit to the site and the surrounding area suggests that the sight distance for traffic exiting Whistle Bare Road at both Roseville Road and Dickie Settlement Road is tight. At Roseville Road, traffic travelling eastbound over Highway 401 is difficult to see, impacting the southbound left turn movement from Whistle Bare Road. At Dickie Settlement Road, traffic travelling southbound around the curve on Dickie Settlement Road is difficult to see, impacting all the movements exiting the west leg of Whistle Bare Road. On the eastbound approach to the Roseville Road intersection and the southbound approach to the Dickie Settlement Road intersection, there are intersection ahead warning signs to let drivers on the main road know that there may be turning traffic ahead.

The five-year collision history for the two intersections between January 1, 2013 and December 31, 2017 was reviewed and there were no collisions during that time at the Roseville Road intersection and the three collisions at the Dickie Settlement Road intersection were not related to sight distance. The sight distance review was discussed with Traffic Engineering staff at the Region of Waterloo and they will be undertaking an assessment of the sight distance to determine if any additional measures are needed to meet current Regional standards.

Proposed Campground Expansion

The proposed expansion of the campground is predominantly to provide more seasonal campsites with a small increase in the storage area and overnight camping. A Concept Plan is attached. The proposed changes to the site are as follows:

- Increase campsites from 85 to 373
- Increase storage spaces from 170 to 200
- Add 10 cabins for rental

The changes introduced within the campground include additional amenities for campers that provide more options for activities on-site. There are not any amenities within close walking distance of the campground and Whistle Bare Road is not an attractive active transportation route given the number of trucks that travel the road. The intention with the expansion of the site is to provide all of the amenities that campers would want to walk or bicycle to within the site including attractive active transportation trails.

In addition to the changes in the number of sites in the campground, the owner would like to extend the season for the campground. Currently the season runs from April through October and the proposal is to open in March and close in December. The campground will not be designed to be open when there is snow on the roads. The extended season would not increase



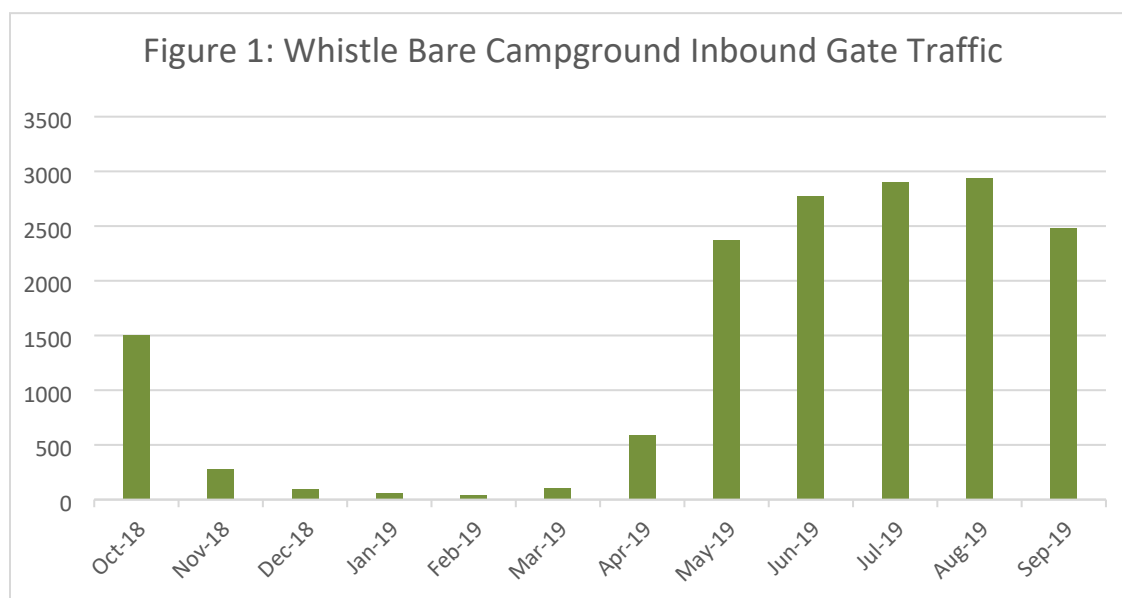
traffic during the summer months, but is likely to result in higher traffic volumes in the shoulder months of March, April, November and December.

The day rental operations are expected to remain similar to existing – no additional area is planned to be provided for day rentals of the pavilion.

Traffic Generation

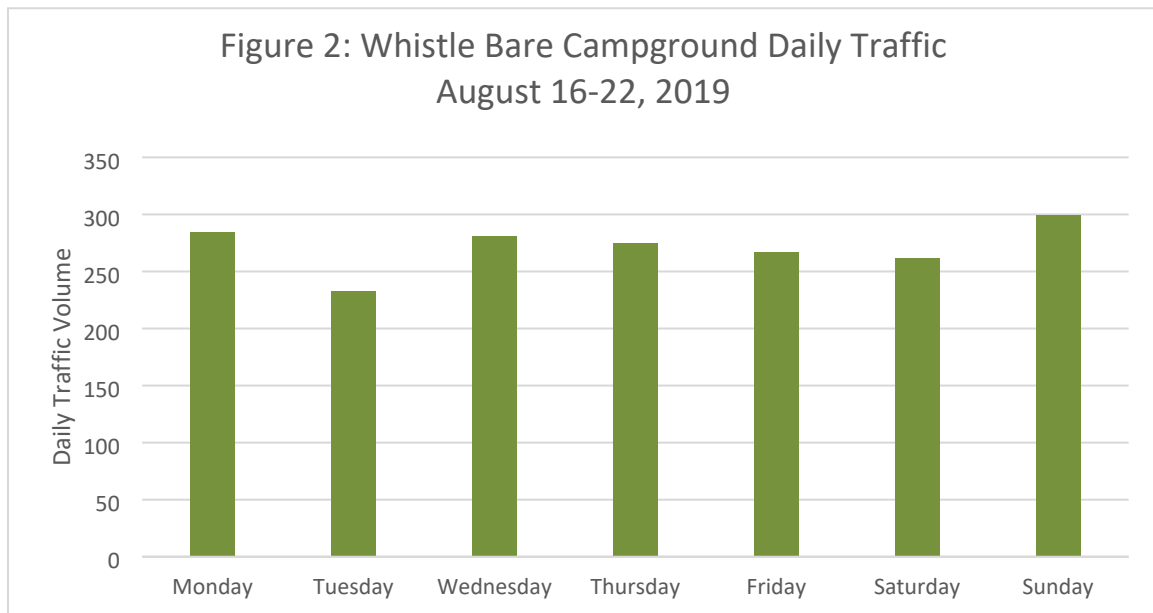
A number of data sources were accessed to assist in determining the traffic generation of the proposed campground expansion. First, the data from the campground's entry system for seasonal campers, storage clients and overnight campers was reviewed for the last year providing both an overview of general trends and also details about who enters the campground through the automated gate.

A graph showing the monthly entries through the gate is included below in Figure 1. The data confirms the monthly traffic patterns including the summer months as the busiest months for campground traffic.

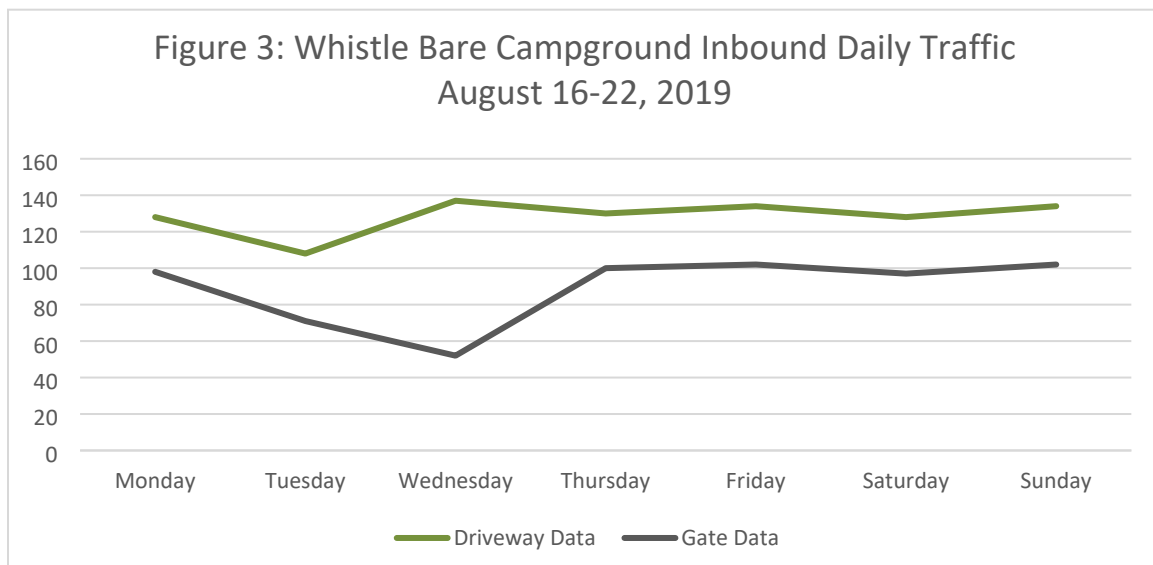


In addition to the logged gate transactions, inbound and outbound traffic on the Whistle Bare Campground driveway was counted the week of August 16th to 22nd, 2019. The average daily traffic volumes over the course of the week were 272 vehicles (two-way traffic). The daily patterns are illustrated in Figure 2 below. The daily traffic varied between a low of 233 and a high of 299.





The inbound gate traffic was compared to the inbound driveway traffic to assist in determining how much of the inbound site traffic is captured at the gate. Over the course of the week, 69% of the inbound site traffic was captured at the gate as illustrated in Figure 3 below.



The gate captures seasonal and overnight campers along with storage clients, but does not include delivery drivers, staff, the owners, and day rental visitors. Traffic that is not captured at the gate is not expected to increase with the expansion of the campground.

The daily variation of traffic at the driveway during the August surveys is illustrated in the following three figures for inbound, outbound and total traffic.



Figure 4: Whistle Bare Campground Inbound Hourly Traffic
August 16-22, 2019

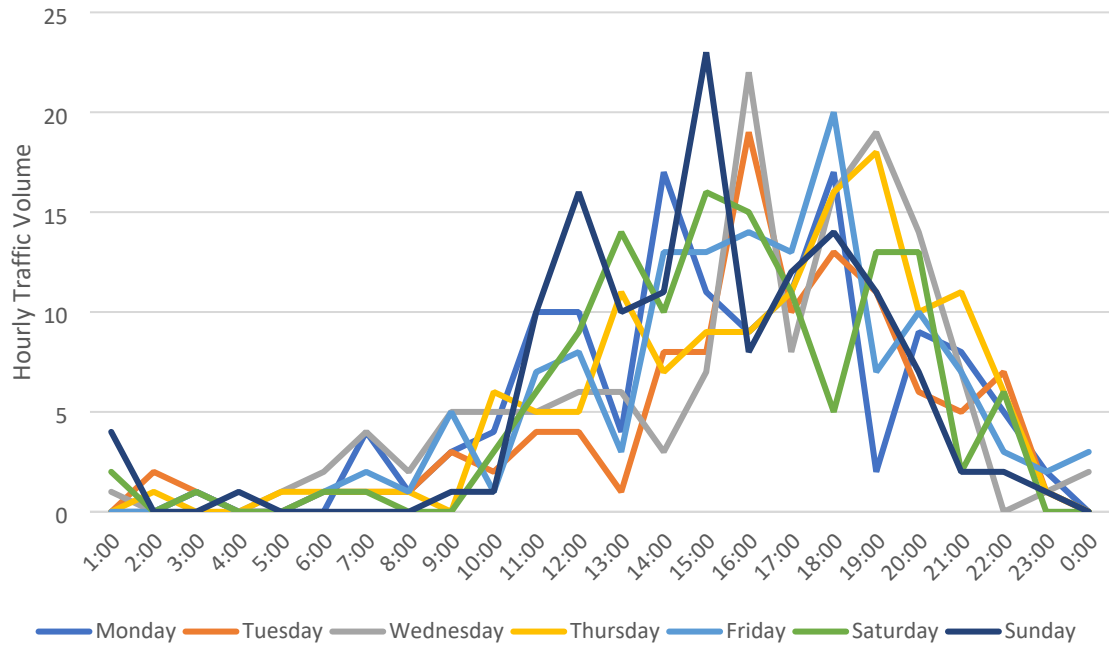
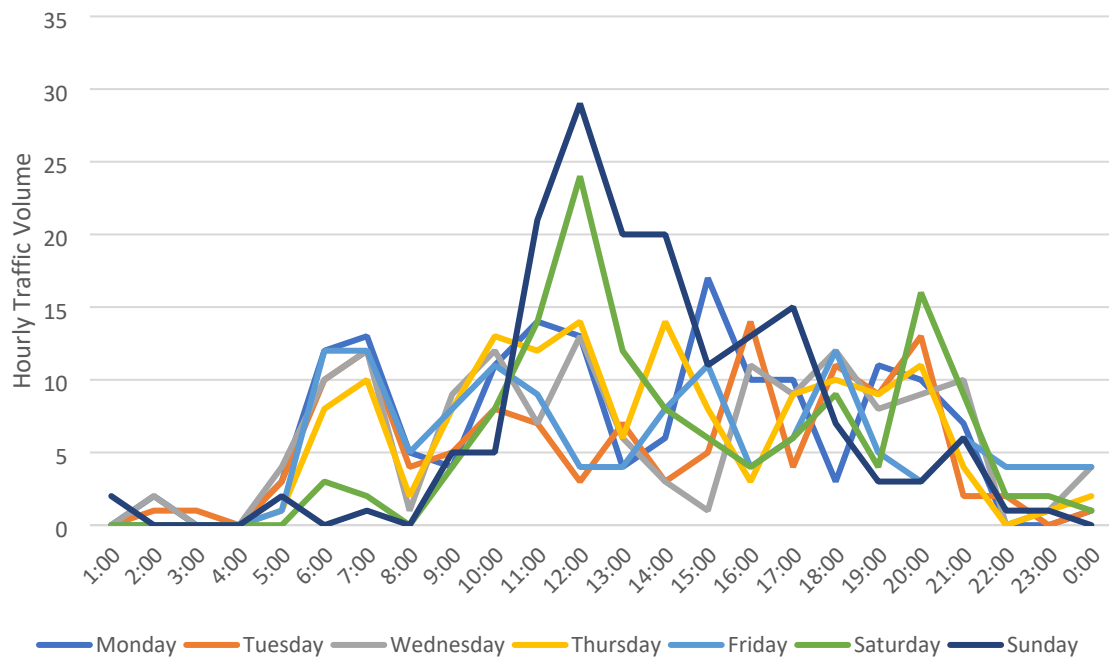
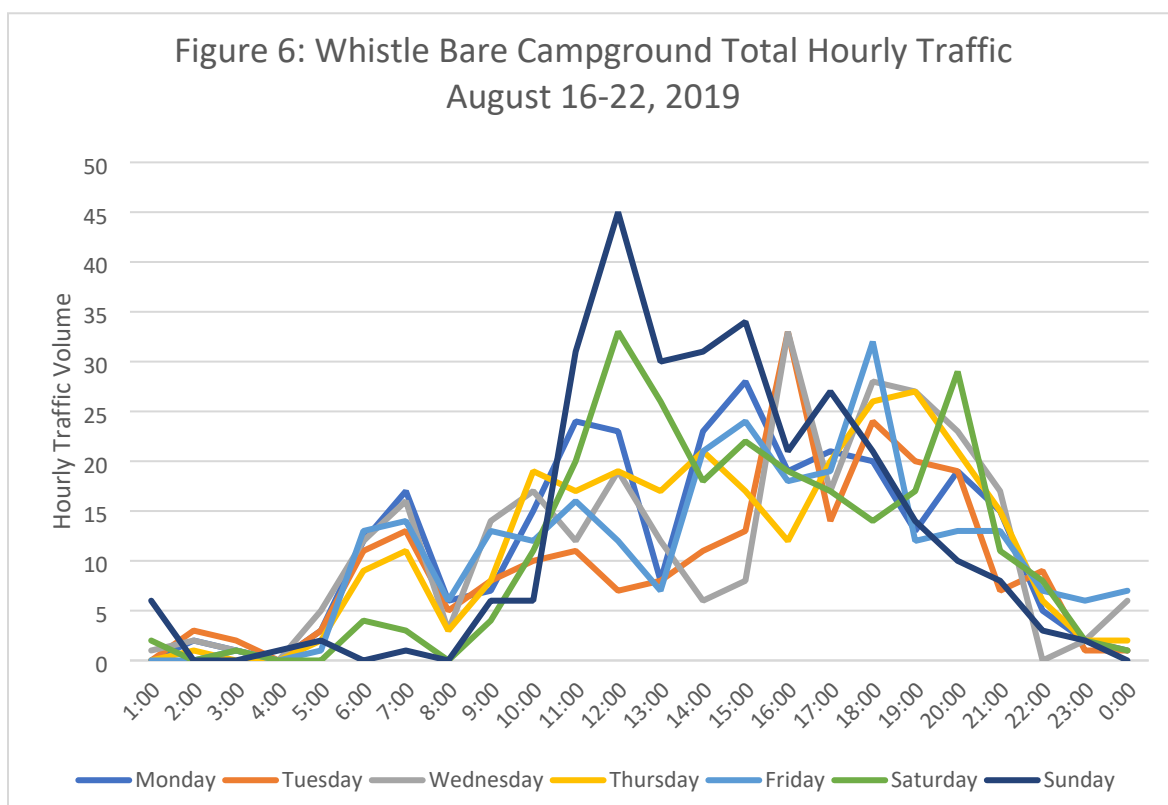


Figure 5: Whistle Bare Campground Outbound Hourly Traffic
August 16-22, 2019





A review of the data indicates the following:

- Peak hourly campground traffic occurs at noon on Sunday (45 vehicles) when there is a peak in both inbound (16 vehicles) and outbound (29 vehicles) traffic. The same peak occurs on a Saturday (33 vehicles with nine entering and 24 exiting), but at a lower level.
- In the typical weekday morning peak period between 7 and 9, the peak hourly total campground traffic is 14 vehicles (five inbound and nine outbound).
- In the typical weekday afternoon peak period between 4 and 6, the peak hourly total campground traffic is 32 vehicles on the Friday (20 inbound and 12 outbound).
- Outbound traffic from the campground is generally more uniformly distributed throughout the weekday resulting in lower hourly volumes.

Campground traffic is peaking at a time when traffic on the adjacent road network is lower than peak levels. Outbound traffic in particular is more uniform and lower on an hourly basis throughout the weekday.

In order to estimate how traffic may grow in the future, a week of detailed July data from the gate was reviewed with campground staff. As part of the review, the data was split into seasonal campers, storage clients and overnight campers. Seasonal and overnight campers made up 82 percent of all the traffic entering the campground with the remaining 18 percent of the inbound traffic generated by storage clients.



A forecast of the future daily traffic was generated based on the data gathered from:

- The total traffic counted at the driveway (ADT of 272 in August)
- The amount of traffic captured at the gate (69%)
- The split of campers (82%) and storage clients at the gate from the detailed review of July data
- The proposed number of campsites/cabins (383) and storage spaces (200).

The forecast is summarized in Table 2 below.

Table 2: Forecast Daily Traffic

Description		Existing traffic volumes		Calculated Rate	Forecast
Average Daily Traffic		272		-	821
Gate Traffic	Campers (overnight and seasonal)	188 (69%)	154 (82%)	1.82 trips/site (based on 85 existing sites)	697 (for 383 sites)
	Storage clients		34 (18%)	0.20 trips/space (based on 170 spaces)	40 (for 200 spaces)
Other traffic with no automatic gate access		84 (31%)		-	84

The forecast daily traffic for the proposed expansion, including the existing traffic, is 821 daily trips entering and exiting the site, an increase of 549 daily trips on average in the busiest month of the year. If the traffic patterns throughout the week and each day are consistent with the expansion, peak hour volumes on a Sunday in August would increase from 45 two-way trips to 136 two-way trips. The weekday morning peak hour volumes would increase from 14 to 42 two-way trips and the weekday afternoon peak hour volumes would increase from 32 to 96 two-way trips. The additional traffic would likely travel along Whistle Bare Road in accordance with existing traffic patterns with about 40 percent entering and exiting at Roseville Road and about 60 percent entering and exiting at Dickie Settlement Road.

Whistle Bare Road Classification and Operations

Whistle Bare Road is classified as a local Township Road and currently carries average daily traffic (ADT) in August of 302 near Roseville Road and 462 near Dickie Settlement Road. Given the adjacent land uses on Whistle Bare Road (campground and several extraction sites), the traffic volumes on Whistle Bare Road would be lower during other months of the year – the summer months represent peak traffic conditions.

If 549 new daily vehicular trips were added to Whistle Bare Road with the expansion of the campground, the resulting daily traffic volumes would be 522 ADT near Roseville Road and 791 ADT near Dickie Settlement Road.



The Transportation Association of Canada in their Geometric Design Guide for Canadian Roads provides guidance on the Characteristics of Rural Roads in Table 2.6.4 of the Guide. For rural local roads, typical traffic volumes in vehicles per day are less than 1,000 AADT (average annual daily traffic). The previous analysis indicates that with the expansion of the campground the average daily traffic (ADT) in the summer months could increase to 791 in the busiest section of the road. The average annual daily traffic would be lower than the summer ADT given that summer volumes on Whistle Bare Road are higher than at other times of the year.

The additional traffic from the campground expansion would result in traffic volumes on Whistle Bare Road that are still in keeping with the designation as a local Township road. The increase in traffic is expected to be predominantly passenger vehicles – there is not expected to be an increase in truck traffic related to the campground expansion.

From a transportation capacity perspective, no improvements are required to Whistle Bare Road in the vicinity of the site.

Summary and Conclusions

The analysis in this assessment includes the following summary and conclusions:

- Average daily traffic volumes on Whistle Bare Road in August 2019 were 302 near Roseville Road and 462 near Dickie Settlement Road.
- The sight distance for traffic exiting Whistle Bare Road at Roseville Road and at Dickie Settlement Road appears to be tight. The most recent five-year collision history indicates that there have not been any collisions related to sight distance at either intersection. The sight distance review was discussed with Traffic Engineering staff at the Region of Waterloo and they will be undertaking an assessment of the sight distance to determine if any additional measures are needed to meet current Regional standards.
- The proposed expansion to the campground includes the following:
 - Increasing seasonal campsites from 85 to 373
 - Increasing storage spaces from 170 to 200
 - Adding 10 cabins for rental.
- The owner plans to extend the season to start in March and to end in December. The extended season would not increase traffic during the summer months but is likely to result in higher traffic volumes in the shoulder months of March, April, November and December.
- The campground currently generates 272 average daily trips in August. The peak hour for traffic generation occurs Sunday ending at noon with 45 two-way trips. In the typical weekday morning peak period, the peak hourly total campground traffic is 14 vehicles. In the typical weekday afternoon peak period, the peak hourly total campground traffic is 32 vehicles on Friday.



- The forecast daily traffic for the proposed expansion, including the existing traffic, is 821 daily trips entering and exiting the site, an increase of 549 daily trips on average in the busiest month of the year. If the traffic patterns throughout the week and each day are consistent with the expansion, peak hour volumes on a Sunday in August would increase to 136 two-way trips, weekday morning peak hour volumes would increase to 42 two-way trips and weekday afternoon peak hour volumes would increase to 96 two-way trips.
- The additional traffic from the campground expansion would result in traffic volumes on Whistle Bare Road that are still in keeping with the designation as a local Township road. The increase in traffic is expected to be predominantly passenger vehicles – there is not expected to be an increase in truck traffic.
- From a transportation capacity perspective, no improvements are required to Whistle Bare Road in the vicinity of the site.

Please feel free to contact me if you have any questions about the information in this letter.

Sincerely,

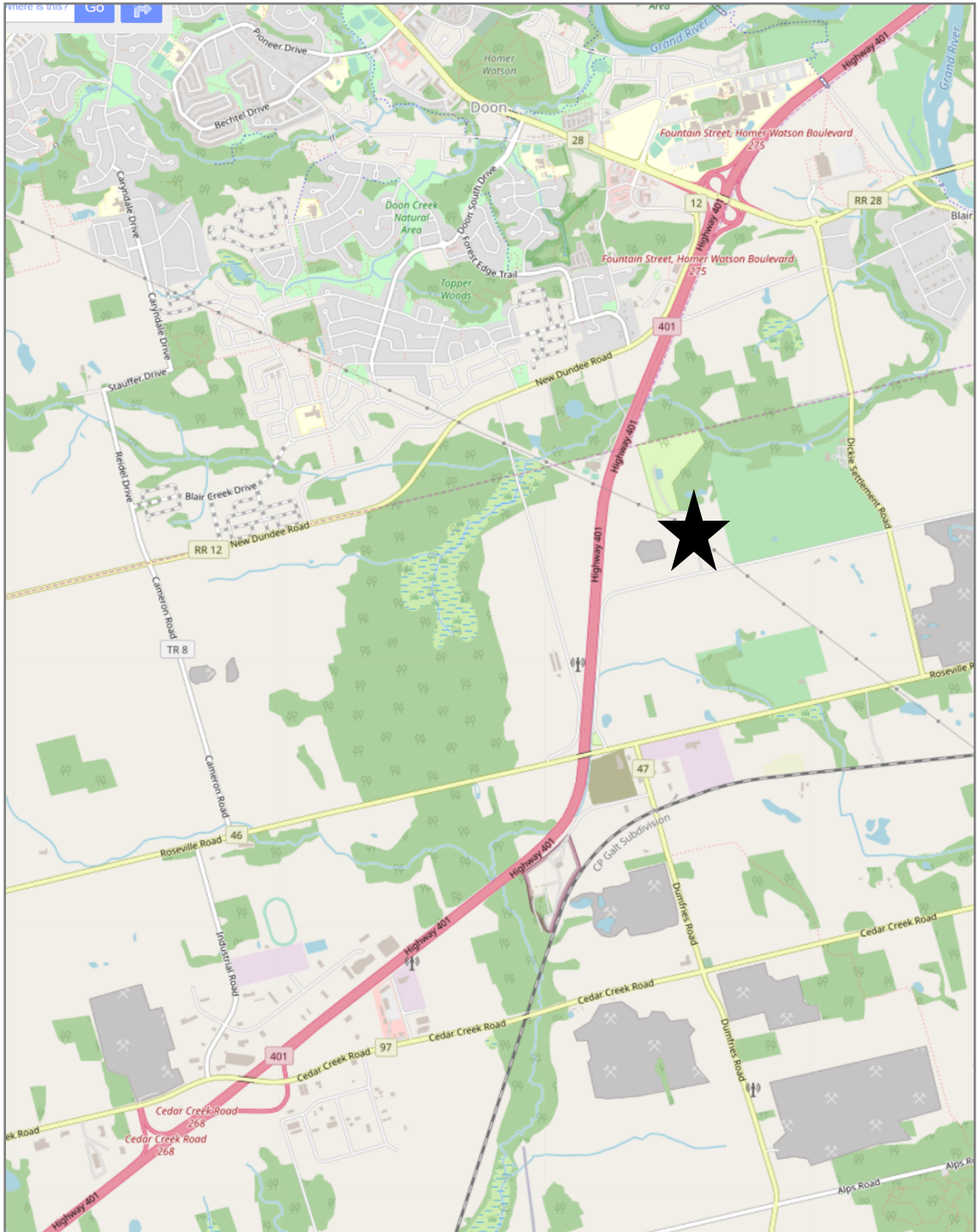


Julia Salvini, MEng, PEng
President

Cc: Peter Bingeman, Whistle Bare Campground
Laura Bingeman, Whistle Bare Campground
Sarah Primmer, GM BluePlan

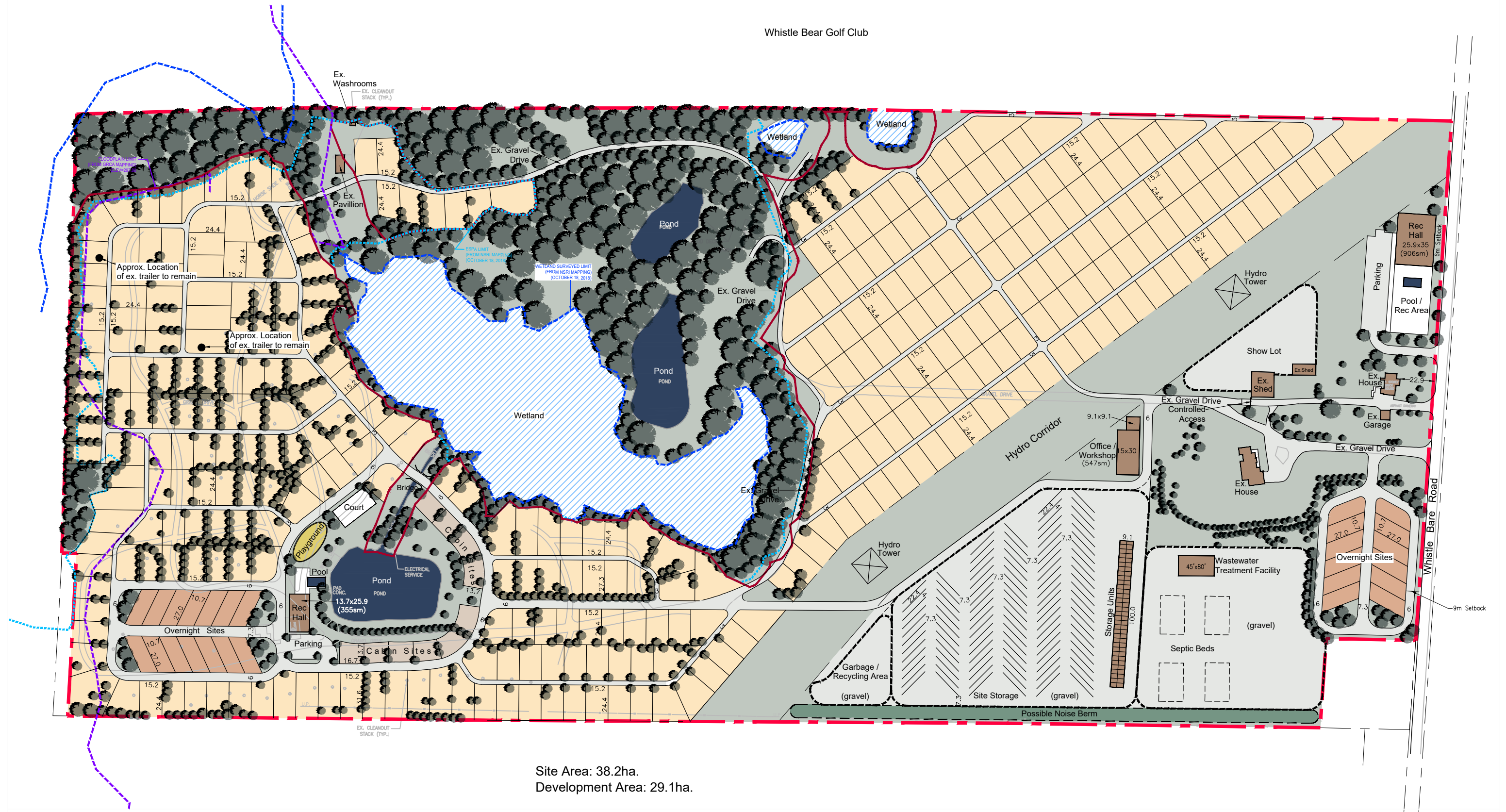
Attach: Site Location Plan
Concept Plan





Site Location Plan

Source: openstreetmap.org



Site Area: 38.2ha.
Development Area: 29.1ha.

Legend

- Floodplain (GRCA)
- ESPA Limit
- Wetland Boundary
- Development Limit

Regular Sites: 347
Cabin Sites: 10
Overnight Sites: 26
Total Sites: 383



NOTE: This concept has been prepared for general feasibility purposes only. Building code requirements and technical / architectural design have not been addressed.
Scale 1:2,500 | April 2, 2019 | Project No.: 18088 | Drawn By: SL



Whistle Bare Campground
DEVELOPMENT CONCEPT
1898 Whistle Bare Road, North Dumfries