

December 14, 2021  
04-21-0485

Rick Gregory  
Project Director, Brivia Group  
1318-1030 W Georgia Street  
Vancouver, BC V6C 2L1

Dear Rick:

**Re: Wentworth Avenue Residential Development, West Vancouver, BC  
Traffic Impact Study – Report Update Version 3**

As requested, Bunt & Associates (Bunt) has completed a Traffic Impact Study (TIS) Update for Brivia Group's proposed single family subdivision application on Wentworth Avenue in West Vancouver, BC. Bunt previously completed a TIS in 2017 for a 29 lot subdivision plan and addressed concerns by the District of West Vancouver at the time.

This update accounts for a revised subdivision plan with 32 lots and incorporates new traffic counts conducted in 2020 (pre-COVID) from a recent rezoning study for the site.

We trust that this information will assist with the Subdivision Application. Please do not hesitate to contact us should you have any questions about this report.

Yours truly,  
**Bunt & Associates**



Tyler Thomson, MCIP RPP PTP  
Associate | Senior Transportation Planner



Omar El Masri, MASc., EIT  
Transportation Analyst

## 1. BACKGROUND

Brivia Group (Brivia) is proposing a residential subdivision with 32 lot for single family housing at the eastern end of Wentworth Avenue in West Vancouver, BC. These lands are presently zoned RS7 (Single Family Dwellings), consistent with other neighbouring residential developments in the area.

Wentworth Avenue is planned as the access route for the new subdivision which will be extended eastward towards and into the site. Wentworth Avenue extends west to connect with Chairlift Road and connects to the south to Skilift Road which provides access to the regional road network and Highway 1. Chairlift Road also connects to Cypress Bowl Road to the north and the British Properties.

Wentworth Avenue is also the primary inbound access route for the Wentworth Campus of Collingwood School (Junior Campus). Traffic activity associated with Collingwood School is significant during the weekday morning and early afternoon periods on Chairlift Road and Wentworth Avenue, and the school has previously assessed its operations and implemented traffic management measures to help mitigate the impacts. The potential for overlap between the development traffic, and school traffic would be mainly in the morning (which is the lesser peak for site traffic), as the afternoon peak for the development would occur well after that for the school.

The District of West Vancouver has advised that a traffic impact assessment of the proposed residential development will be required to assist with their consideration of the Subdivision Application.

**Exhibit 1** illustrates the site location and area context within West Vancouver. **Exhibit 2** illustrates the proposed subdivision plan, showing lot layouts and internal roads.

All exhibits are located at the end of this report.

## 2. DATA COLLECTION

As part of a separate Rezoning Application, Bunt & Associates staff previously conducted peak period traffic counts and supplemental spot counts on Tuesday January 21, 2020, from 7:00am-9:00am and 3:00pm-6:00pm. These counts captured the peak activity at the following study intersections:

- Chairlift Road & Wentworth Avenue
- School Access & Wentworth Avenue
- Chairlift and Cypress Bowl Road
- Skilift Road and Folkestone Way

The observed peak hour during the AM counts was 8:00am – 9:00am, which includes the volumes associated with the peak 20 minute drop-off period for Collingwood School, from 8:10am – 8:30am. The observed PM peak hour volumes occurred between 3:00pm – 4:00pm, and partially include the peak after school pick-up volumes (which occurs between 2:30pm – 3:10pm). The peak hour traffic volumes are illustrated in **Exhibit 3**.

### 3. CAPACITY ANALYSIS

#### 3.1 Introduction

Capacity analysis of existing and future traffic conditions was carried out using Synchro Software version 10, and the results are summarized in a series of tables provided in the following section. The summary tables report the calculated Volume to Capacity (V/C) ratio and a corresponding delay-based traffic Level of Service (LOS) indicator ranging from ideal LOS A conditions with minimal delay through to LOS E ‘near capacity’ conditions and LOS F ‘over-saturated’ conditions when drivers may have to wait through several signal cycles to perform their desired movements through the intersection. The 95<sup>th</sup> percentile predicted average queue length for each lane group is also summarized, measured in metres.

In our summary tables, we have assumed the following performance thresholds:

- V/C = 0.90 or greater for the overall intersection operations;
- V/C = 0.95 or greater for individual movements;
- Levels of Service at E or F;
- 95th percentile queue length of greater than the existing available storage length. When this occurs for left or right turn movements, it is likely turn bays occasionally overflow during the analyzed time period, possibly blocking through traffic on the approach and causing excessive delays and/or queuing. When this occurs for through movements, it is likely queues are backing up to adjacent intersection and causing blockages to side street movements.

All situations where these performance thresholds were exceeded have been identified by **bold** in the summary tables.

#### 3.2 2020 Conditions (Existing)

The results of the capacity analysis are summarized in **Table 3.1** using the most recently collected volumes for each intersection.

**Table 3.1 – Capacity Analysis –2020 Traffic Conditions**

INTERSECTION	MOVEMENT	2020 AM			2020 PM		
		V/C	LOS	95 <sup>th</sup> Percentile Queue (M)	V/C	LOS	95 <sup>th</sup> Percentile Queue (M)
Wentworth Avenue / Chairlift Road	WBLR	0.05	C	1.3	0.2	B	5.8
	NBTR	0.22	A	0.0	0.13	A	0.0
	SBTL	0.07	A	1.9	0.02	A	0.4
Chippendale Road / Cypress Bowl Road	EB	0.12	A	3.3	0.15	A	4.1
	WB	0.02	A	0.4	0.18	B	5.1
	NBL	0.01	A	0.3	0.00	A	0.2
Skilift Road / Folkestone Way	EBT	0.21	A	0.0	0.19	A	0.2
	WBT	0.32	A	0.0	0.25	A	0.0
	SB	0.60	D	29.0	0.32	C	11.0

Notes: NBLR – Northbound Left & Right Lane, WBTL – Westbound Thru & Left Lane, Etc.  
 V/C – Volume to Capacity Ratio where 1.00 represents at capacity.  
 LOS – Level of Service Indicator, A-best/min delay, to E/F-worst/saturated conditions.  
 Q – 95<sup>th</sup> percentile vehicle queue length in metres, where one vehicle is approximately 6-7 metres.

As shown, there are no capacity constraints at the Wentworth Avenue & Chairlift Road intersection, and the Synchro analysis does not indicate any significant delays or queues. Some delays are noted for the westbound traffic on Wentworth during the AM peak hour, and this is attributed to the high volume of southbound vehicles on Chairlift Road, which are predominantly school related trips that have left the school via the north access after student drop-off. This condition only occurs for approximately 15-20 minutes (8:10am-8:30am), and southbound volumes are considerably lower outside of this peak period. These peaks have been observed as well as confirmed by Collingwood School.

Although not noted in the Synchro queuing reports, the site observations recorded long queues on Wentworth Avenue backing onto Chairlift Road (northbound) toward Skilift Road during the peak drop-off and pick-up times. The Synchro models have been calibrated to include the observed Peak Hour Factors (PHF), but even considering this the resulting queues are less than what was observed. It is anticipated that this could be attributed to the delay of queued vehicles on the site waiting to reach the front door for drop-off which cannot be accurately modelled in Synchro. This queuing was only recorded for a 15-20 minute period during the AM peak hour (8:10am-8:30am) and 10 minutes during the afternoon pick-up period (3:10pm-3:20pm), with little or no queuing outside of these time periods.

There are no existing capacity concerns at the intersections of Chippendale Road and Cypress Bowl Roads, as well as Skilift Road and Folkestone Way. All of the movements are operating at an acceptable level of service at this time, and only the southbound movement on Folkestone Way experiences any sort of noticeable delay (LOS D in the AM peak hour, and LOS C in the PM peak hour) and queuing (29m in the AM peak hour, and 11m in the PM peak hour).

In summary, the existing conditions analysis indicates that all the study intersections are currently operating with reserve capacity. The only notable exception is at the Wentworth Avenue & Chairlift Road intersection; where while there appears not to be capacity issues in the Synchro results, there were observed two short periods of extensive queuing (one in the morning, and one in the afternoon) associated with school pick-up & drop-off. Bunt understands this is a daily occurrence associated with the school, and it is an existing ongoing issue, and which Bunt has worked with the school in the past to help mitigate the effects of this queuing. The school informs Bunt that the queuing issue has improved significantly with continued on-site traffic management measures and with staggering school end times.

### 3.3 Site Traffic Generation

The estimated site generated traffic volumes associated with this development are summarized in **Table 3.2**. As shown, the site is expected to generate up to approximately 23 trips (6 In, 17 Out) during the AM peak hour and approximately 30 trips (19 In, 11 Out) during the PM peak hour, which translates to roughly 1 trip in or out every 2-3 minutes during peak periods, a very minimal level of traffic generation.

**Table 3.2 – Estimated Site Generated Traffic Volumes**

SCENARIO	LAND USE	UNITS	ITE LAND USE CODE	TRIP RATE*	VEHICLE TRIPS		
					In	Out	Total
Weekday AM Peak Hour	Single Family Home	32	210	0.7	6	17	23
Weekday PM Peak Hour				0.94	19	11	30

\* Trip rate expressed as # trips/home

The site traffic distribution is based on existing travel patterns in the area and assumes that most vehicles would be travelling to/from the south on Chairlift Road (95%) and 5% travelling to/from the north on Chairlift Road. From the 95% of vehicles Travelling south on Chairlift Road it was assumed that 25% would access the highway via the on-ramp on Skilift Road, and the remaining 70% would continue east through to the Skilift Road and Folkestone Way intersection. The estimated peak hour site generated traffic volumes are illustrated in **Exhibit 4**.

### 3.4 Site Traffic Sensitivity Review

The District provided comments on the Subdivision Application on Friday July 15<sup>th</sup>, 2016. Regarding the Traffic Impact Study, item g) iii Traffic Impact Study states:

*Bunt’s study did not address the issues of peak AM and PM traffic congestion (commenting that residents will simply avoid these times). Please have Bunt address the peak traffic hours and proposed mitigation measures.*

To address this, and to help better understand the potential implications of the future site traffic during the school peak periods for pick-up, and drop-off activity (and whether it warrants the need for mitigation measures), the site traffic was broken down to the 15-20 minute peak period for the morning (8:10-8:30am), and the 10-minute peak period for the afternoon (3:10pm – 3:20pm).

#### 3.4.1 Morning Peak

During the 15-20 minute peak morning school drop-off period, this would amount to around 1-2 inbound vehicles (arriving in the school drop-off queue from northbound on Chairlift Road) and around 4-5 outbound vehicles (leaving westbound on Wentworth Avenue primarily to southbound on Chairlift Road).

The added 1-2 vehicles in the inbound direction are within the daily fluctuations of inbound school traffic and wouldn’t be noticed over existing conditions. However, to help mitigate the school’s existing queuing issues, Brivia Group is currently proposing a design option that would create a 70m northbound right-turn lane on Chairlift Road, as well as a left-turn bay into the school driveway with a through lane to bypass this traffic on the south side of Wentworth Avenue leading to the Kindergarten parking drop-off, and proposed subdivision (refer to Creus’ plans for detail on this design). This would allow some vehicles travelling northbound the opportunity to pass around vehicles queuing to turn onto Wentworth Avenue, and subsequently for eastbound vehicles to pass around vehicles queuing to turn into the school driveway, which may help alleviate some of the queuing pressures on Wentworth Avenue and on Chairlift Road.

Outbound vehicles from the development would have to compete with southbound traffic on Chairlift leaving the school drop off area; however, this traffic arrives at the intersection in spurts which allows gaps for vehicles turning left from Wentworth Avenue onto Chairlift Road southbound, and the addition of 4-5 vehicles over a 15-20 minute period amounts to only 1 vehicle every 3-4 minutes. There are expected to be sufficient gaps in the southbound traffic to allow cars to leave Wentworth Avenue every three minutes and therefore would not result in queuing on Wentworth or any blockage of the school driveway, and therefore no mitigation measures are recommended for the outbound vehicle movements.

**3.4.2 Afternoon Peak**

The school’s peak hour traffic period is around 2:30pm to 3:30pm with its peak pick-up period being 3:10pm – 3:20pm, while the peak hour for the development site traffic would be around 4:45pm – 5:45pm. During the school’s afternoon peak hour, it is estimated that site traffic would conservatively be about two thirds of its afternoon peak volumes, and therefore during the peak 10-minute pick-up period this would amount to less than 2 inbound vehicles (arriving in the school pick-up queue from northbound on Chairlift Road), and 1 outbound vehicle (leaving westbound on Wentworth Avenue primarily to southbound on Chairlift Road).

These volumes are negligible and would fall within typical daily variations in school traffic, and therefore would not be noticed during the very brief afternoon school pick-up period. No mitigation measures are recommended for the afternoon traffic conditions.

**3.5 Background Traffic Volumes**

For the purpose of this study, opening day for the development, or completion of the development, was assumed to occur in 2024. The analysis has also considered a future horizon year of 10 years after opening day, or 2034. To estimate the future volumes, it was assumed that background growth for the study network would occur at a 1% per year linear rate, with no growth assumed on Wentworth Avenue or the trips to/from Collingwood School. This growth was applied to the existing volumes to determine the background volumes, not including the proposed development. The total traffic volumes were then calculated by adding the estimated site generated traffic to the background volumes.

The future background 2024 and Total 2024 as well as background 2034 and Total 2034 peak hour traffic volumes are illustrated in **Exhibit 5**.

**4. CAPACITY ANALYSIS – FUTURE CONDITIONS**

**4.1 Opening Day 2024**

The opening day 2024 conditions capacity analysis findings are summarized in **Tables 4.1** and **4.2**. As shown, there are no identified operational constraints at the Wentworth Avenue & Chairlift Road intersection, which is expected to operate at well under capacity during both the AM and PM peak hour periods.

However, the potential impact on the proposed development is most evident during the AM peak hour for outbound westbound traffic, which is a pressured movement during the 15-20 minute school morning drop-off period, when these left turns would be waiting for gaps in southbound school traffic on Chairlift Road that have exited from the north school access after student drop-off. Outside of the peak 15- 20 minute drop-off period in the morning, this delay would be considerably less, or non-existent given the low volumes at the intersection. As described in section 3.4, it is expected that vehicles exiting the site would have sufficient gaps and not creating any queuing issues on Wentworth Avenue.

The southbound movement at the intersection of Skilift Road and Folkestone Way experiences moderate delays and queuing during both peak hours, however this is an existing condition, and the site volumes have a marginal effect on the delay and queuing. Overall, the development is estimated to increase traffic by only 2% overall at this intersection in the AM, and 3% in the PM which is within the typical daily variation in traffic at an intersection.

**Table 4.1 – Capacity Analysis – 2024 AM Peak Hour**

INTERSECTION	MOVEMENT	BACKGROUND 2024 AM			TOTAL 2024 AM		
		V/C	LOS	95 <sup>th</sup> Percentile Queue (M)	V/C	LOS	95 <sup>th</sup> Percentile Queue (M)
Wentworth Avenue / Chairlift Road	WBLR	0.05	C	1.3	0.11	C	3.0
	NBTR	0.22	A	0.0	0.23	A	0.0
	SBTL	0.07	A	1.9	0.07	A	1.9
Chippendale Road / Cypress Bowl Road	EB	0.12	A	3.4	0.12	A	3.4
	WB	0.02	A	0.4	0.02	A	0.5
	NBL	0.01	A	0.3	0.01	A	0.3
Skilift Road / Folkestone Way	EBT	0.22	A	0.1	0.23	A	0.1
	WBT	0.34	A	0.0	0.34	A	0.0
	SB	0.66	E	34.8	0.68	E	37.1

**Table 4.2 – Capacity Analysis – 2024 PM Peak Hour**

INTERSECTION	MOVEMENT	BACKGROUND 2024 PM			TOTAL 2024 PM		
		V/C	LOS	95 <sup>th</sup> Percentile Queue (M)	V/C	LOS	95 <sup>th</sup> Percentile Queue (M)
Wentworth Avenue / Chairlift Road	WBLR	0.20	B	5.9	0.24	B	7.6
	NBTR	0.13	A	0.0	0.15	A	0.0
	SBTL	0.02	A	0.4	0.02	A	0.5
Chippendale Road / Cypress Bowl Road	EB	0.15	A	4.3	0.15	A	4.3
	WB	0.18	B	5.3	0.18	B	5.3
	NBL	0.01	A	0.3	0.01	A	0.3
Skilift Road / Folkestone Way	EBT	0.20	A	0.2	0.20	A	0.2
	WBT	0.26	A	0.0	0.27	A	0.0
	SB	0.35	C	12.5	0.37	C	13.3

Notes: NBLR – Northbound Left & Right Lane, WBTL – Westbound Thru & Left Lane, Etc.  
 V/C – Volume to Capacity Ratio where 1.00 represents at capacity.  
 LOS – Level of Service Indicator, A-best/min delay, to E/F-worst/saturated conditions.  
 Q – 95<sup>th</sup> percentile vehicle queue length in metres, where one vehicle is approximately 6-7 metres.

In summary, the opening day 2024 conditions analysis indicates that the Wentworth Avenue & Chairlift Road intersection would be expected to continue to operate with reserve capacity, and that the existing road network could accommodate the proposed residential development, with no changes to laning or intersection control. With the exception of two short periods of consistent daily queuing associated with school pick-up & drop-off, no operational concerns are identified.

**4.2 Future Horizon Year 2034**

The future horizon year 2034 conditions capacity analysis findings are summarized in **Tables 4.3** and **4.4**. As shown, there are no identified operational constraints at the Wentworth Avenue & Chairlift Road intersection, which is expected to operate well under capacity during both the AM and PM peak hour periods. Similar to the 2024 analysis, impact on the proposed development traffic again is most evident during the AM peak hour for outbound westbound traffic, which is a short-lived occurrence related to school traffic.

At the Skilift Road and Folkestone Way intersection, background traffic growth has resulted in increased amounts of delay for southbound traffic during both the AM (LOS F) and PM peak hour periods. As East-West through traffic at the intersection grows, the number of available gaps for southbound left and right turning vehicles is reduced. The differences between the background and total scenarios are relatively minor, and as such the additional site traffic is not the primary reason for the increase southbound delay and queue lengths.

**Table 4.3 – Capacity Analysis – 2034 AM Peak Hour**

INTERSECTION	MOVEMENT	BACKGROUND 2034 AM			TOTAL 2034 AM		
		V/C	LOS	95 <sup>th</sup> Percentile Queue (M)	V/C	LOS	95 <sup>th</sup> Percentile Queue (M)
Wentworth Avenue / Chairlift Road	WBLR	0.05	C	1.3	0.12	C	3.1
	NBTR	0.22	A	0.0	0.23	A	0.0
	SBTL	0.07	A	1.9	0.07	A	1.9
Chippendale Road / Cypress Bowl Road	EB	0.14	A	3.8	0.14	A	3.8
	WB	0.02	A	0.5	0.02	A	0.5
	NBL	0.01	A	0.4	0.01	A	0.4
Skilift Road / Folkestone Way	EBT	0.24	A	0.1	0.25	A	0.1
	WBT	0.37	A	0.0	0.37	A	0.0
	SB	0.85	F	55.3	0.88	F	58.9

**Table 4.4 – Capacity Analysis– 2034 PM Peak Hour**

INTERSECTION	MOVEMENT	BACKGROUND 2034 PM			TOTAL 2034 PM		
		V/C	LOS	95 <sup>th</sup> Percentile Queue (M)	V/C	LOS	95 <sup>th</sup> Percentile Queue (M)
Wentworth Avenue / Chairlift Road	WBLR	0.21	B	6.4	0.26	C	8.1
	NBTR	0.14	A	0.0	0.15	A	0.0
	SBTL	0.02	A	0.4	0.02	A	0.5
Chippendale Road / Cypress Bowl Road	EB	0.17	A	4.8	0.17	A	4.8
	WB	0.20	B	6.0	0.20	B	6.0
	NBL	0.01	A	0.3	0.01	A	0.3
Skilift Road / Folkestone Way	EBT	0.22	A	0.2	0.22	A	0.3
	WBT	0.28	A	0.0	0.30	A	0.0
	SB	0.43	C	16.7	0.45	C	17.9

In summary, by 2034, the analysis indicates that the Wentworth Avenue and Chairlift Road intersection would be expected to continue to operate with significant reserve capacity, and that the existing road network could accommodate the proposed residential development, with no changes to laning or intersection control. Again, with the exception of two short periods of queuing associated with school pick-up & drop-off, no operational concerns are identified. It should be noted however, that Brivia Group is proposing to develop a northbound right turn lane on Chairlift Road as well as a bypass lane on Wentworth Avenue (with left-turn lane into the school) to allow vehicles traveling northbound to bypass some of the school traffic queue, as well as for vehicles travelling to the kindergarten parking lot and to the subdivision to pass around vehicles waiting to turn into the school to help ease some of the existing queuing on Wentworth Avenue and Chairlift relative to school traffic.

The Cypress Bowl Road and Chippendale Road intersection operates well during both the AM and PM periods in both the background and total future traffic scenarios. This is because the majority of

the traffic from the proposed development site is anticipated to travel south on Chairlift Road and not typically use this intersection.

The Skilift Road and Folkestone Way intersection is expected to operate sufficiently throughout all periods and scenarios. There is currently some delay and queuing for the southbound movement, and this is anticipated to increase with the growth in background traffic. However, as shown in the above tables, the difference between the background and total scenarios is minimal and the development is not anticipated to notably impact this intersection.

## 5. SITE CIRCULATION

**Exhibit 6** illustrates the circulation path for a West Vancouver Ladder Truck Fire Truck and indicates that a fire truck could navigate through the proposed development, and turnaround in the three proposed cul-de-sacs on-site without issue.

## 6. CONCLUSIONS

Brivia Group is proposing to develop a 32-unit single family residential subdivision off Wentworth Avenue in West Vancouver, BC adjacent to the Collingwood Junior School.

The existing conditions analysis indicates that all the study intersections are currently operating with reserve capacity. One notable exception is at the Wentworth Avenue & Chairlift Road intersection; where while there appears not to be capacity issues in the Synchro modelling results, there were observed two short periods of extensive queuing (one in the morning, and one in the afternoon) associated with school pick-up & drop-off. Another exception is the southbound movement on Folkestone Way which experiences noticeable delays (LOS D in the AM peak hour, and LOS C in the PM peak hour) and queuing (29m in the AM peak hour, and 11m in the PM peak hour) resulting from the high East-West traffic on Skilift Road.

The proposed residential development is expected to generate a nominal amount of traffic during the peak hour periods, approximately 23 trips (6 In, 17 Out) during the AM peak hour in the opposite direction of school traffic flow, and 30 trips (19 In, 11 Out) during the PM peak hour which does not occur at the same time as the school peak hour.

Traffic impact of the proposed development is minimal, and the analysis indicates that the study intersections can accommodate the site traffic with no required road network improvements, laning or intersection control changes. The only operational concern on the network which is an existing condition occurs at the intersection of Wentworth Avenue and Chairlift Road where queuing results from school drop-off activity onto Chairlift Road (northbound) in the morning peak hour. However, this lasts only for about a 15-20 minute period (8:10am – 8:30am) and it would be expected that residents in the area, and at the development would adjust their travel patterns in order to avoid this period.

Most of the site traffic during this time will be outbound and will have sufficient gaps in the southbound traffic to exit Wentworth, while the added 1-2 vehicles in the inbound direction (during the morning peak) are within the daily fluctuations of inbound school traffic and wouldn't be noticed over existing conditions. However, to help mitigate the school's existing queuing issues, Brivia Group is proposing to develop a 70m northbound right turn lane on Chairlift Road as well as a bypass lane on Wentworth Avenue (with left-turn lane into the school) to allow vehicles traveling northbound to bypass some of the school traffic queue, as well as for vehicles travelling to the kindergarten parking lot and to the subdivision to pass around vehicles waiting to turn into the school to help ease some of the existing queuing on Wentworth Avenue and Chairlift relative to school traffic, which should help alleviate some of the queuing pressures on Wentworth Avenue and on Chairlift Road.

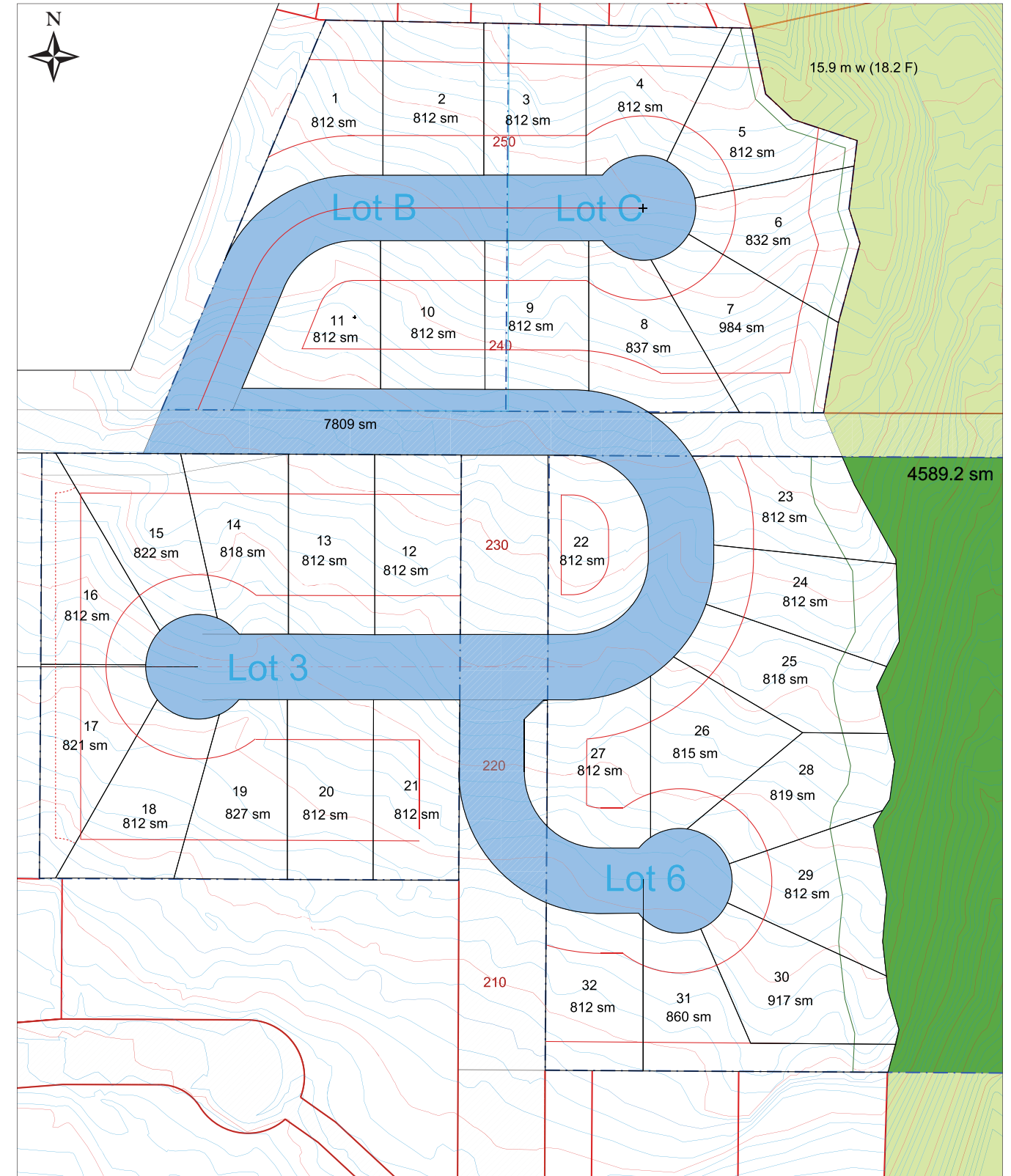
A similar queuing condition occurs in the afternoon during school pick-up but occurs at around 3:10pm to 3:20pm and does not coincide with the expected PM peak times for the development. During the afternoon peak pick-up period, development traffic would be around two thirds of its normal peak and would not impact operations at the intersection. During the peak 10-minute pick-up period this would amount to less than 2 inbound vehicles (arriving in the school pick-up queue from northbound on Chairlift Road), and 1 outbound vehicle (leaving westbound on Wentworth Avenue primarily to southbound on Chairlift Road). These volumes are negligible and would fall within typical daily variations in school traffic, and therefore would not be noticed during the very brief afternoon school pick-up period. No mitigation measures are recommended for the afternoon traffic conditions.

The proposed road layout is anticipated to accommodate the residential development associated traffic volumes, and Fire Trucks are expected to be able to navigate through the development, with the ability to turnaround in each of the three cul-de-sacs.



**Exhibit 1**  
Site Location

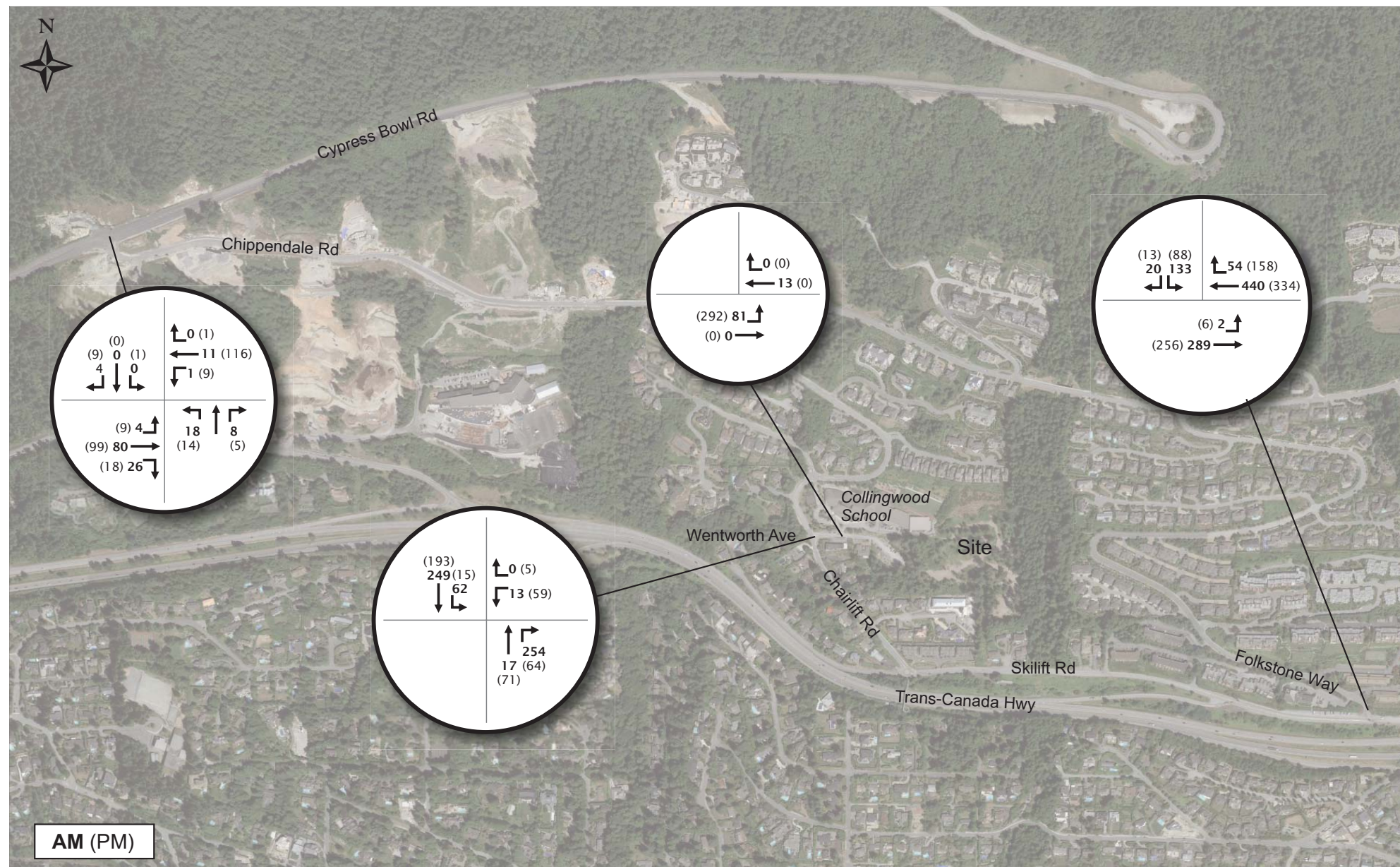
Wentworth Avenue Residential Development  
04-21-0485 December 2021 Scale NTS



**Exhibit 2**  
Site Plan

Wentworth Avenue Residential Development  
04-21-0485 December 2021 Scale NTS





### Exhibit 3 Existing Volumes (2020)

Wentworth Avenue Residential Development  
04-21-0485 December 2021 Scale NTS



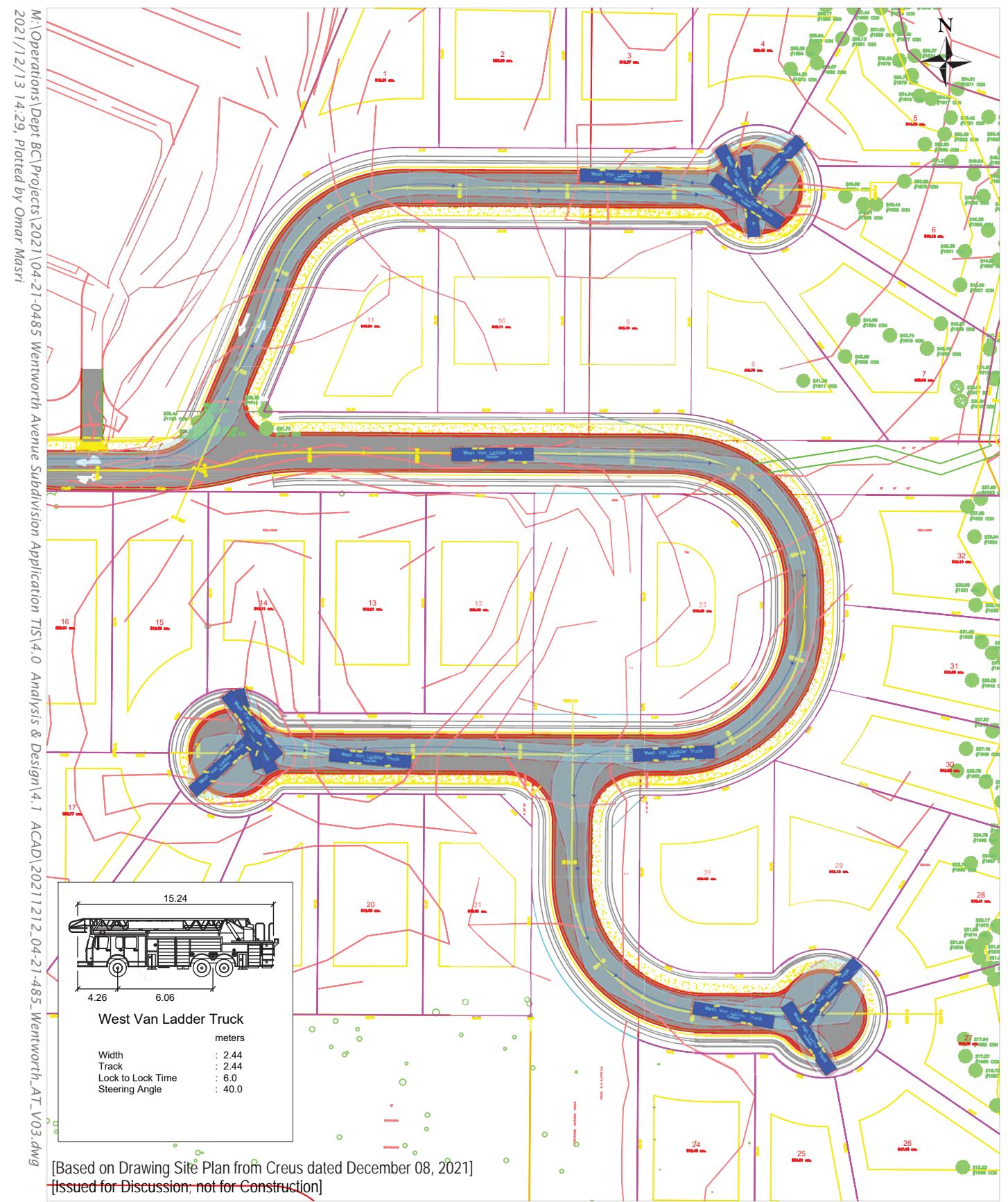
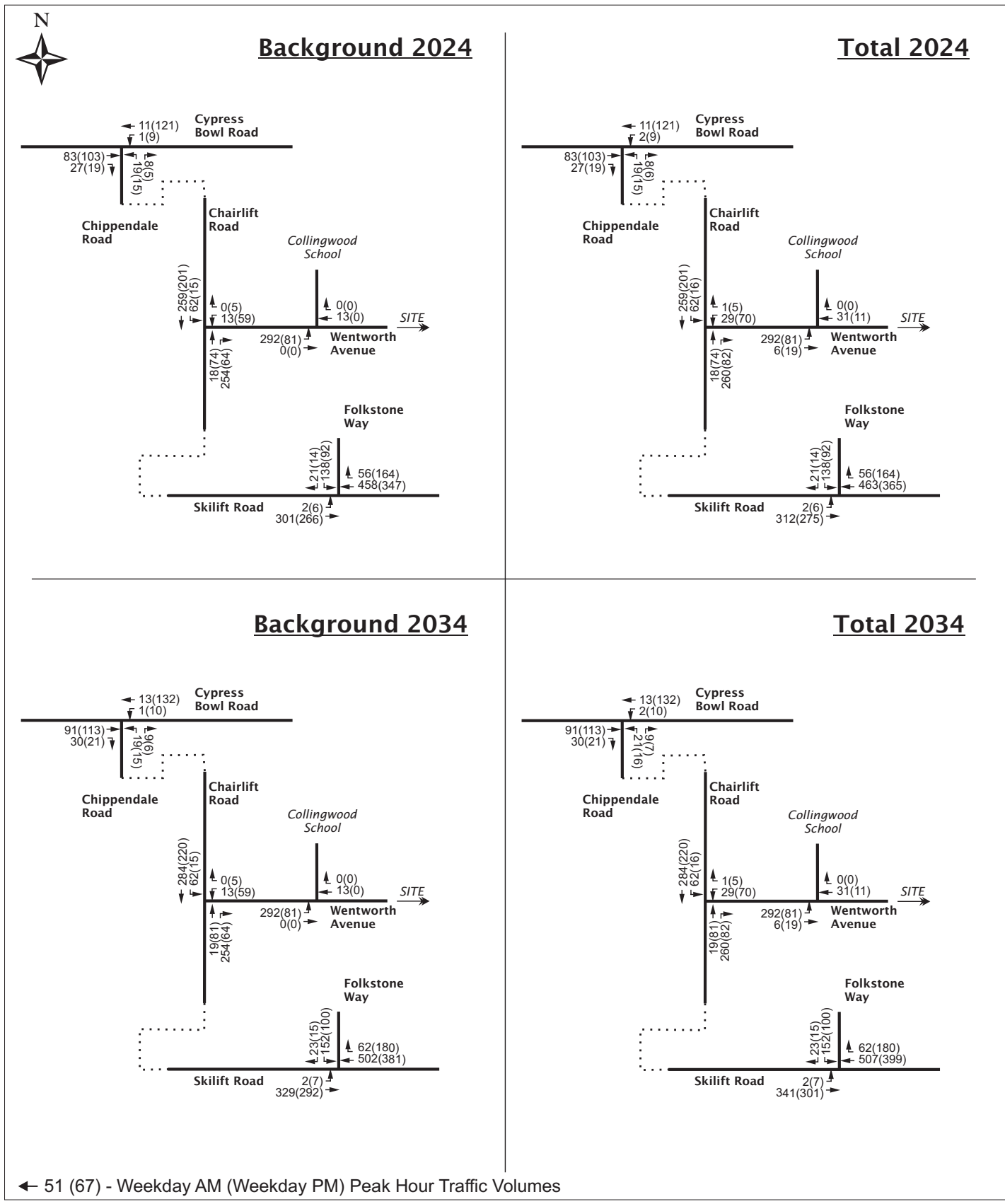




**Exhibit 4**  
**Estimated Site Generated Peak Hour Traffic Volumes**

Wentworth Avenue Residential Development  
 04-21-0485 December 2021 Scale NTS





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2021/12/13 14:29, Plotted by Omar Masri

**Exhibit 5**  
Forecasted Future Peak Hour Traffic Volumes

**Exhibit 6**  
Fire Truck Turning Path Analysis