

December 5, 2019

Summit Earthworks Inc.
 #109 – 32885 Mission Way
 Mission, BC V2V 6E4

ISSUED FOR USE
 FILE: ENG.VGEO03082-01
 Via Email: myles@summitearthworks.ca.

Attention: Myles Hargrove

Subject: Derwent Way Soil Transfer and Barge Facility
 Traffic Impact Study – Revision 10

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) was retained by Summit Earthworks Inc. to undertake a traffic impact assessment (TIA) for the proposed Derwent Way Transfer Station to be located on a vacant lot adjacent to Derwent Way in New Westminister, British Columbia (BC). The location of site relative to its environs is shown in Figure 1.

This traffic impact assessment considers both the weekday a.m. and p.m. peak hour conditions for the 2018 (assumed opening year) and 2038 horizon years. The analysis covers the impact of site traffic at the intersections of Derwent Way/Ewen Avenue, Derwent Way/Salter Street, Derwent Way/South Dyke Road and Derwent Way/Annacis Parkway. This study examined the potential need for road improvements that may be required to mitigate any adverse impacts associated with the proposed development. Additional issues addressed include a rail crossing safety review of the intersection of Derwent Way/Salter Street and a review of the proposed site access off Salter Street.

2.0 EXISTING CONDITIONS

Existing traffic conditions in the vicinity of the proposed development are described below.

2.1 Road network

The road network in the vicinity of the site is summarized in the table below.

Table 1: Existing Road Network

	Orientation	Classification*	Segment/Stretch	Lanes	Cross Section	Posted Speed	Jurisdiction
Derwent Way	North-South	Major Road Network (New Westminister) /Local (Delta)	Cliveden Avenue – Boyd Street	Two	Rural	50 km/h	New Westminister/ Delta
Ewen Ave	East-West	City Collector	Derwent Way to 130 m east of Derwent Way	Two	Urban (Sidewalks on north side only)	50 km/h	New Westminister
S Dyke Rd	East-West	Local	Fraserwood Way – Derwent Way	Two	Rural	30 km/h	New Westminister
Annacis Pkwy	East-West	Local	Dock Road – Derwent Way	Two	Rural	unknown	Delta

Rural = dirt shoulders, no curb, gutter, or sidewalks; Urban = sidewalks, curb, gutter

It should be noted that the westbound approach of the intersection of Derwent Way/Salter Street intersects rail tracks operated by Southern Railway of British Columbia.

2.2 Intersection Channelization and Controls

The existing laning and traffic controls at the study intersections are summarized in Table 2 and shown in Figure 2.

Table 2: Existing Laning and Traffic Controls

N-S St	E-W St	Eastbound			Westbound			Northbound			Southbound			Traffic Control
		L	T	R	L	T	R	L	T	R	L	T	R	
Derwent Way	Ewen Avenue	>	1	<	1	1	<	>	1	<	1	1	<	Traffic Signal
Derwent Way	Salter Street	--	--	--	1	--	<	--	1	<	>	1	--	WB Stop
Derwent Way	S Dyke Road	--	--	1	--	--	--	--	1	--	--	1	<	EB Stop
Derwent Way	Annacis Pkwy	--	--	--	>	1	<	1	1	<	1	1	<	EB-WB Stop

At the time of the study, access to and from South Dyke Road via Derwent Way was closed in the afternoon for construction. The impact of this closure on traffic patterns is discussed in Sections 2.4 and 3.0 of this report.

2.3 Land Use

The existing developments in the surrounding area are primarily commercial and industrial. Further to the east, west and north, the existing developments are mainly residential.

2.4 Existing Traffic Volumes

New turning movements counts were undertaken specifically for this study at the four study intersections in the weekday a.m. and p.m. peak periods. A summary of the existing link volumes is provided in Table 3.

Table 3: Existing Link Volumes

Road	a.m. Peak Hour		p.m. Peak Hour	
	NB/EB	SB/WB	NB/EB	SB/WB
Derwent Way	210	210	240	290
Ewen Avenue	80	160	130	130
Salter Street	10	10	10	10
S Dyke Road	30	30	0*	0*
Annacis Parkway	10	30	10	0

*Figures rounded to nearest 10; **At the time of the study South Dyke Road was closed in the afternoon for construction

As noted in the above table, the intersection of South Dyke Road and Derwent Way was open for traffic in the morning and closed in the afternoon due to construction. If the intersection was closed in the morning, up to 80 vehicles may have routed through the intersection of Derwent Way/Ewen Avenue (40 eastbound vehicles and 40 southbound vehicles).

2.5 Future Background Traffic Volumes

Future background traffic volumes were established by factoring existing traffic counts at 2% per annum. The 2018 and 2038 background traffic volumes are illustrated in Figures 3 and 4 respectively.

3.0 BACKGROUND TRAFFIC INTERSECTION ANALYSIS

The key intersections were analyzed using the Highway Capacity Manual 2010 methodology as implemented in Synchro 9. For signalized intersections, the operational analysis methodology gives three indicators for the overall performance of an intersection and for the individual turning movements. The first is the volume to capacity ratio (v/c) where the volume is the number of vehicles wishing to make a certain movement, and capacity is the maximum number of vehicles that can be accommodated in an hour. This takes into account the number of lanes available for the movement, whether the movement is protected or permitted, conflicting traffic, the cycle length, and the amount of green time the movement receives. The higher the v/c ratio, the more congested the intersection becomes. When the v/c ratio is greater than 1.00, this indicates that more vehicles wish to make a given movement than are able to, due to the limited capacity. The second measure, the average delay per vehicle, is based on the cycle length, the green time for each movement, and the v/c ratios. The third measure is the level of service which is established from the average delay. The larger the average delay – and the higher the v/c ratio – the worse is the level of service. Table 4 shows the relationship between level of service and delay.

Table 4: Intersection Level of Service (HCM 2010)

Level of Service	Control Delay/Vehicle (Signalized Intersection)	Delay	Control Delay/Vehicle (Unsignalized Intersection)
A	≤ 10	Little or no delay	≤ 10
B	> 10 and ≤ 20	Short traffic delays	> 10 and ≤ 15
C	> 15 and ≤ 35	Average traffic delays	> 15 and ≤ 20
D	> 20 and ≤ 55	Long traffic delays	> 20 and ≤ 35
E	> 35 and ≤ 80	Very long traffic delays	> 35 and ≤ 50
F	> 80	Failure	> 50

The generally accepted guidelines for determining whether or not a signalized intersection needs to be upgraded is that all individual movements should operate with a v/c ratio of 0.90 or less. If this threshold is not achieved, any signal changes required to achieve these levels should be identified. These cover changes to signal timings and phasing, for example adding advanced phases for left turn movements and possible elimination of certain turning movements, but not the provision of additional capacity with extra through or turn lanes. When traffic generated by a development is added to an intersection and the v/c ratio of a specific movement that was less than 0.90 under background conditions is now greater than 0.90, then improvements must be identified to allow the movement to operate at the 0.90 value. If the movement was above 0.90 under background conditions, then the original v/c ratios must not be exceeded, i.e., the operation of the movement must be no worse as a result of the development.

The performance of unsignalized intersections was also reviewed using the methodology for such intersections in the Highway Capacity Manual. While the overall level of service and delay for an unsignalized intersection provide a measure of overall performance, it is commonly turning movements at such intersections which are the primary focus of interest. With only low turning volumes to or from the minor road and high through volumes on the main road, delays to turning vehicles can become excessive. As delays increase, turning vehicles will attempt to turn across unacceptable gaps which can present safety concerns.

The study intersections were analyzed under 2018 and 2038 peak hour traffic conditions using the above approach. The results are summarized in Table 5. The analysis takes into account the high volume of trucks using the network in the vicinity of the site.

Table 5: Background Traffic Analysis

	2018 Background					2038 Background				
	EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
a.m. Peak Hour										
Derwent Way/Ewen Avenue										
LoS	C	B	A	A	A	C	B	A	A	B
v/c	0.32	0.53	0.14	0.17	0.53	0.51	0.62	0.18	0.22	0.62
<i>w/ redistributed Traffic from South Dyke Road</i>										
LoS	--	--	--	--	--	D	B	A	A	B
v/c	--	--	--	--	--	0.69	0.56	0.15	0.26	0.69
Derwent Way/Salter Street										
LoS	--	B	A	A	A	--	B	A	A	A
v/c	--	0.02	0.09	0	0.09	--	0.03	0.12	0	0.12
Derwent Way/S Dyke Road										
LoS	B	--	A	A	A	B	--	A	A	A
v/c	0.06	--	0.7	0.13	0.13	0.09	--	0.09	0.18	0.18
Derwent Way/Annacis Pkwy										
LoS	B	B	A	A	A	B	B	A	A	A
v/c	0	0.01	0.08	0.11	0.11	0	0.01	0.11	0.14	0.14
p.m. Peak Hour										
Derwent Way/Ewen Avenue										
LoS	C	C	B	A	B	C	C	B	A	B
v/c	0.49	0.47	0.43	0.22	0.49	0.64	0.56	0.66	0.31	0.66
Derwent Way/Salter Street										
LoS	--	C	A	A	A	--	C	A	A	A
v/c	--	0.01	0.26	0	0.26	--	0.03	0.35	0	0.35
Derwent Way/S Dyke Road										
LoS	--	--	A	A	A	--	--	A	A	A
v/c	--	--	0.26	0.15	0.26	--	--	0.35	0.19	0.35
Derwent Way/Annacis Pkwy										
LoS	B	C	A	A	A	B	C	A	A	A
v/c	0.04	0.01	0.25	0.14	0.25	0.07	0.02	0.33	0.19	0.33

Note: EB = Eastbound; WB = Westbound; NB = Northbound; and SB = Southbound

In summary, all four intersections are anticipated to operate well through to 2038. No intersection improvements will be necessary to accommodate background traffic.

As noted earlier, at the time of the traffic counts, the intersection of Derwent Way/South Dyke Road was open in the morning and closed due to construction in the afternoon. The City has indicated that access to South Dyke Road via Derwent Way is normally closed for traffic at all times; as such, the a.m. peak hour analysis may not be reflective of typical conditions. Based on the traffic counts, if South Dyke Road was closed, then potentially up to 80 vehicles may have routed through the intersection of Derwent Way/Ewen Avenue. Reanalyzing the intersection

using the reassigned traffic volumes indicates that the intersection will still operate at an overall Level of Service B with a v/c ratio of 0.69. The performance of the westbound approach will deteriorate from Level of Service C with a v/c ratio of 0.51 to a Level of Service D with a v/c ratio of 0.69; however, this is still within acceptable performance thresholds. As such, the intersection would still not require intersection improvements.

It should be noted that the analysis of Derwent Way/Ewen Avenue using the redistributed traffic volumes is considered conservative, given that all southbound right turn vehicles and eastbound vehicles that used South Dyke Road were redistributed to Ewen Avenue. In reality, while the majority of vehicles will route through Ewen Avenue some vehicles may choose alternative routes. New traffic counts can be undertaken if the City feels that the analysis is insufficient; however, the conclusions will likely not change.

4.0 SITE TRAFFIC

4.1 Development Concept

The proposed development will consist of the construction of a new soil transfer station on a vacant lot adjacent to Derwent Way in New Westminster, BC. The site will comprise a weight scale, a scale house, and a wheel wash station. Two site accesses will be provided off the southern extension of Salter Street. The north access will be used for entry/exit while the south access will be used to redirect truck traffic as required. The latest site plan (50% design) is illustrated in Figure 5.

4.2 Trip Generation

There will be a maximum of 60 truck and transfer vehicles approximately, 17.7metres in length with a loaded GVW of 56,000 lbs, per day (120 two-way trips) arriving and departing at random times. The trucks will come from sites throughout the Lower Mainland. Assuming equal distribution over 8 hours, this translates to approximately 8 inbound and 8 outbound trips per hour. There will also be up to three employees on site, operating during typical working hours throughout the year. The assumed peak hour trip generation is summarized in Table 6.

Table 6: Peak Hour Trip Generation

	a.m. Peak Hour		p.m. peak Hour	
	In	Out	In	Out
Employee Trips	3	--	--	3
Truck Trips	8	8	8	8
Total	11	8	8	11

4.3 Trip Distribution and Assignment

The site traffic trip distribution was based on a review of existing traffic patterns. The assumed site traffic trip distribution for the a.m. and p.m. peak hours is provided in Table 7. The distributed site traffic is illustrated graphically in Figure 6.

Table 7: Site Traffic Distribution

Direction	To/From
South via Alex Fraser Bridge	35%
North via Queensborough Bridge	50%
West via Ewen Avenue	15%
Total	100%

The site traffic above considered truck routes. Based on the City’s truck route map, Derwent Way, Boyd Street, and the Alex Fraser Bridge and the Queensborough Bridge are all local truck routes.

5.0 POST DEVELOPMENT TRAFFIC CONDITIONS

5.1 Post Development Traffic Volumes

The post development traffic volumes were established by superimposing the site traffic onto the background traffic volumes at each horizon year.

The post development traffic volumes for the 2018 and 2038 horizon years are illustrated in Figures 7 and 8 respectively.

5.2 Post Development Traffic Analysis

The same intersections analyzed under background conditions were reanalyzed under post development traffic conditions. A summary of the overall intersection performance is provided in Tables 8 and 9. The traffic analysis of post development traffic takes into account the volume of trucks accessing the facility.

Table 8: 2018 Post Development Traffic Analysis

	2018 Background					2018 Post Development				
	EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
a.m. Peak Hour										
Derwent Way/Ewen Avenue										
LoS	C	B	A	A	A	C	B	A	A	A
v/c	0.32	0.53	0.14	0.17	0.53	0.33	0.53	0.15	0.17	0.53
Derwent Way/Salter Street										
LoS	--	B	A	A	A	--	B	A	A	A
v/c	--	0.02	0.09	0	0.09	--	0.03	0.09	0.01	0.09
Derwent Way/S Dyke Road										
LoS	B	--	A	A	A	B	--	A	A	A
v/c	0.06	--	0.7	0.13	0.13	0.06	--	0.07	0.14	0.14
Derwent Way/Annacis Pkwy										
LoS	B	B	A	A	A	B	B	A	A	A
v/c	0	0.01	0.08	0.11	0.11	0	0.01	0.08	0.11	0.11
p.m. Peak Hour										
Derwent Way/Ewen Avenue										
LoS	C	C	A	A	B	C	C	A	A	A
v/c	0.49	0.47	0.43	0.22	0.49	0.49	0.47	0.44	0.23	0.49
Derwent Way/Salter Street										
LoS	--	C	A	A	A	--	C	A	A	A
v/c	--	0.01	0.26	0	0.26	--	0.05	0.26	0.01	0.26
Derwent Way/S Dyke Road										
LoS	--	--	A	A	A	--	--	A	A	A
v/c	--	--	0.26	0.15	0.26	--	--	0.26	0.15	0.26
Derwent Way/Annacis Pkwy										
LoS	B	C	A	A	A	B	C	A	A	A
v/c	0.04	0.01	0.25	0.14	0.25	0.04	0.01	0.26	0.14	0.26

Note: EB = Eastbound; WB = Westbound; NB = Northbound; and SB = Southbound

Table 9: 2038 Post Development Traffic Analysis

	2038 Background					2038 Post Development				
	EB	WB	NB	SB	Overall	EB	WB	NB	SB	Overall
a.m. Peak Hour										
Derwent Way/Ewen Avenue										
LoS	C	B	A	A	B	C	B	A	A	B
v/c	0.51	0.62	0.18	0.22	0.62	0.53	0.62	0.19	0.22	0.62
<i>w/ redistributed Traffic from South Dyke Road</i>										
LoS	D	B	A	A	B	D	B	A	A	B
v/c	0.69	0.56	0.15	0.26	0.69	0.71	0.57	0.15	0.27	0.71
Derwent Way/Salter Street										
LoS	--	B	A	A	A	--	B	A	A	A
v/c	--	0.03	0.12	0	0.12	--	0.04	0.12	0.01	0.12
Derwent Way/S Dyke Road										
LoS	B	--	A	A	A	B	--	A	A	A
v/c	0.09	--	0.09	0.18	0.18	0.19	--	0.09	0.18	0.18
Derwent Way/Annacis Pkwy										
LoS	B	B	A	A	A	B	B	A	A	A
v/c	0	0.01	0.11	0.14	0.14	0	0.01	0.11	0.14	0.14
p.m. Peak Hour										
Derwent Way/Ewen Avenue										
LoS	C	C	B	A	B	C	C	B	A	B
v/c	0.64	0.56	0.66	0.31	0.66	0.64	0.56	0.67	0.31	0.67
Derwent Way/Salter Street										
LoS	--	C	A	A	A	--	C	A	A	A
v/c	--	0.03	0.35	0	0.35	--	0.07	0.35	0	0.35
Derwent Way/S Dyke Road										
LoS	--	--	A	A	A	--	--	A	A	A
v/c	--	--	0.35	0.19	0.35	--	--	0.35	0.19	0.35
Derwent Way/Annacis Pkwy										
LoS	B	C	A	A	A	B	C	A	A	A
v/c	0.07	0.02	0.33	0.19	0.33	0.07	0.02	0.34	0.19	0.34

Note: EB = Eastbound; WB = Westbound; NB = Northbound; and SB = Southbound

As shown in the tables above, the addition of site traffic has minimal impact on the traffic performance of the study intersections. All four intersections are projected to continue to operate well under post development traffic conditions. No improvements are necessary under either 2018 or 2038 post development traffic conditions.

As with the background analysis, the complete closure of access to South Dyke Road via Derwent Way will adversely affect the intersection performance of Derwent Way/Ewen Avenue; however the revised intersection analysis indicates that intersection improvements are still not needed under 2038 post development traffic conditions.

6.0 SITE PLAN REVIEW

Based on a review of the site plan, our recommendations are as follows:

- Given the geometric restrictions both accesses can only accommodate single lane traffic. Appropriate signage should be provided to indicate the direction of flow.
- Based on the turning path analysis using a waste disposal truck 17.7 metres in length, the desired vehicle manoeuvres can be completed without the need for any modifications to the site plan.
- Concrete barriers should be placed along the south access point to prevent vehicles from entering the access road before turning right to ensure the trailer clears the corner of the waste offload structure.

7.0 RAIL CROSSING SAFETY ASSESSMENT

A rail safety assessment was undertaken for the intersection of Derwent Way/Salter Street. As shown in Photos 1 and 2, the westbound leg of the intersection crosses rail tracks operated by Southern Railway of British Columbia (SRY). The tracks are signed by a rail crossing sign placed next to the tracks. No signalization or physical barriers are in place. The frequency of the trains is unknown. During a site visit, the following was noted:

- The intersection is well lit with lamp posts on both sides of Derwent Way;
- The pavement condition on both Salter Street and Derwent Way are satisfactory;
- The stop bar on the westbound approach is not visible. It should be repainted to ensure that vehicles come to a complete stop before approaching the tracks; and
- Overgrown trees and shrubs restrict the visibility of the stop sign and rail crossing sign. They should be trimmed or removed to ensure that all signage is clearly visible.



Photo 1: Looking west from Salter Street



Photo 2: Looking north from Derwent Way

As discussed with SRY Rail, trucks should not be permitted to stop on the railway tracks. No stopping areas should be clearly marked with pavement markings. If queuing is identified as an issue, signals may be required. This should be verified with rail counts and warrants. Signs should be installed to instruct trucks to not stop on the tracks to further improve rail safety.

7.1 Port of Vancouver Comments

The Port of Vancouver has indicated that trains cross Salter Street approximately 10 times a day and may block access to the site for around five minutes every time. As this is a major access to Annacis Island, it is desirable to avoid any significant obstruction of Derwent Way.

Queues on Derwent Way could be mitigated by restricting inbound and outbound site traffic to arrive and depart from the south via Cliveden Avenue and Belgrave Way (i.e. no southbound left-turns from Derwent Way and westbound right-turns from Salter St). While this change will add approximately 5.5 km to the travel distance for vehicles arriving from the north, it will have the added benefit of routing all site traffic through industrial zones. Alternative truck routes from the north would require vehicles to drive through residential areas (Boyd St), which has been identified as a potential concern by residents. The difficulty of implementing such an option is enforcement - drivers may choose to ignore the rules and arrive from the north due to the shorter distance. This can be minimized by implementing operational mechanisms such as identifying access routes during the material approval process and installing signage to notify trucks that left turns are not permitted to access the facility. The attendant on site could also periodically monitor inbound and outbound site traffic to ensure all drivers are complying to the traffic rules. The same attendant should also prevent trucks from exiting onto Salter Street if there is an outbound queue at the intersection. There is sufficient on-site capacity to allow internal queues of four vehicles.

Another option is to direct drivers to the south if trains are observed crossing Salter Street. There is a roundabout located at Belgrave Way 750 metres south of Salter Street which will allow vehicles to circle back and approach Salter Street from the south. The time needed to reach the roundabout and drive back to Salter Street may be sufficient for the trains to clear.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The following is a summary of our findings and recommendations:

- The development will consist of the construction of a new soil transfer station on a vacant lot adjacent to Derwent Way in New Westminster. The site will comprise a weigh scale, a scale house, and a wheel wash station.
- During the traffic counts the intersection of Derwent Way/South Dyke Road was open for traffic in the morning and closed due to construction in the afternoon.
- Under 2038 future background traffic conditions (i.e. no development traffic), the intersections of Derwent Way/Ewen Avenue, Derwent Way/Salter Street, Derwent Way/Salter Street and Derwent Way/Annacis Parkway are all anticipated to operate satisfactorily. No intersection capacity improvements will be necessary.
- While the a.m. peak hour traffic counts were not representative of ‘typical’ conditions, the background traffic analyses using redistributed traffic volumes indicates that the conclusions of the analysis would not change (no additional improvements would be required).
- The site is anticipated to generate 19 vehicle trips in both the a.m. (11 inbound, 8 outbound) and p.m. peak hours (8 inbound, 11 outbound).
- The addition of site traffic has minimal impact on the overall performance of the study intersections. No intersection capacity improvements will be triggered by development traffic.
- Appropriate signage should be provided within the site to indicate the direction of traffic flow.
- Concrete barriers should be placed along the south access point to prevent vehicles from entering the access road before turning right to ensure the trailer clears the corner of the waste offload structure.
- To improve rail safety at the intersection of Derwent Way/Salter Street the missing stop bar should be repainted and overgrown shrubs should be trimmed.
- Trucks should not be permitted to stop on the rail tracks. New paving markings and signs should be installed. If queuing becomes an issue signals may be required.
- The Port of Vancouver has indicated that queuing on Derwent Way is not desirable. Potential solutions include routing all traffic to/from the south (i.e. no access from the north) and routing traffic arriving from the north to the south roundabout if trains are observed crossing Salter Street.
- All staging must occur on-site as required by the Port of Vancouver.

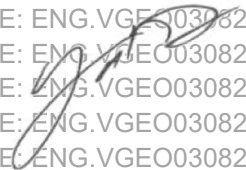
9.0 LIMITATIONS OF REPORT


This report and its contents are intended for the sole use of Summit Earthworks Inc. and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Summit Earthworks Inc., or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in Tetra Tech’s Services Agreement. Tetra Tech’s General Conditions are provided in Appendix A of this report.

10.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully Submitted,
Tetra Tech Canada Inc.

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Attachments: Figures (8)
Appendix A – Tetra Tech’s Limitations on the use of this Document

FIGURES

Figure 1	Site Location
Figure 2	Existing Laning and Controls
Figure 3	2018 Background Traffic Volumes
Figure 4	2038 Background Traffic Volumes
Figure 5	Site Plan
Figure 6	Site Traffic Volumes
Figure 7	2018 Post Development Traffic Volumes
Figure 8	2038 Post Development Traffic Volumes



LEGEND

NOTES
Base data: NTS

CLIENT
Summit Earthworks Inc.

**Derwent Way Soil Transfer and Barge Facility
Traffic Impact Study**

Site Location

STATUS





PROJECT NO. ENG.VGEO03080-01	DWN YT	CKD SG	APVD SG	REV 0
OFFICE EBA-Vancouver	DATE Jan 2017			

Figure 1



LEGEND

-  Traffic Signal
-  Stop Control

NOTES
Base data: NTS

STATUS

CLIENT
Summit Earthworks Inc.

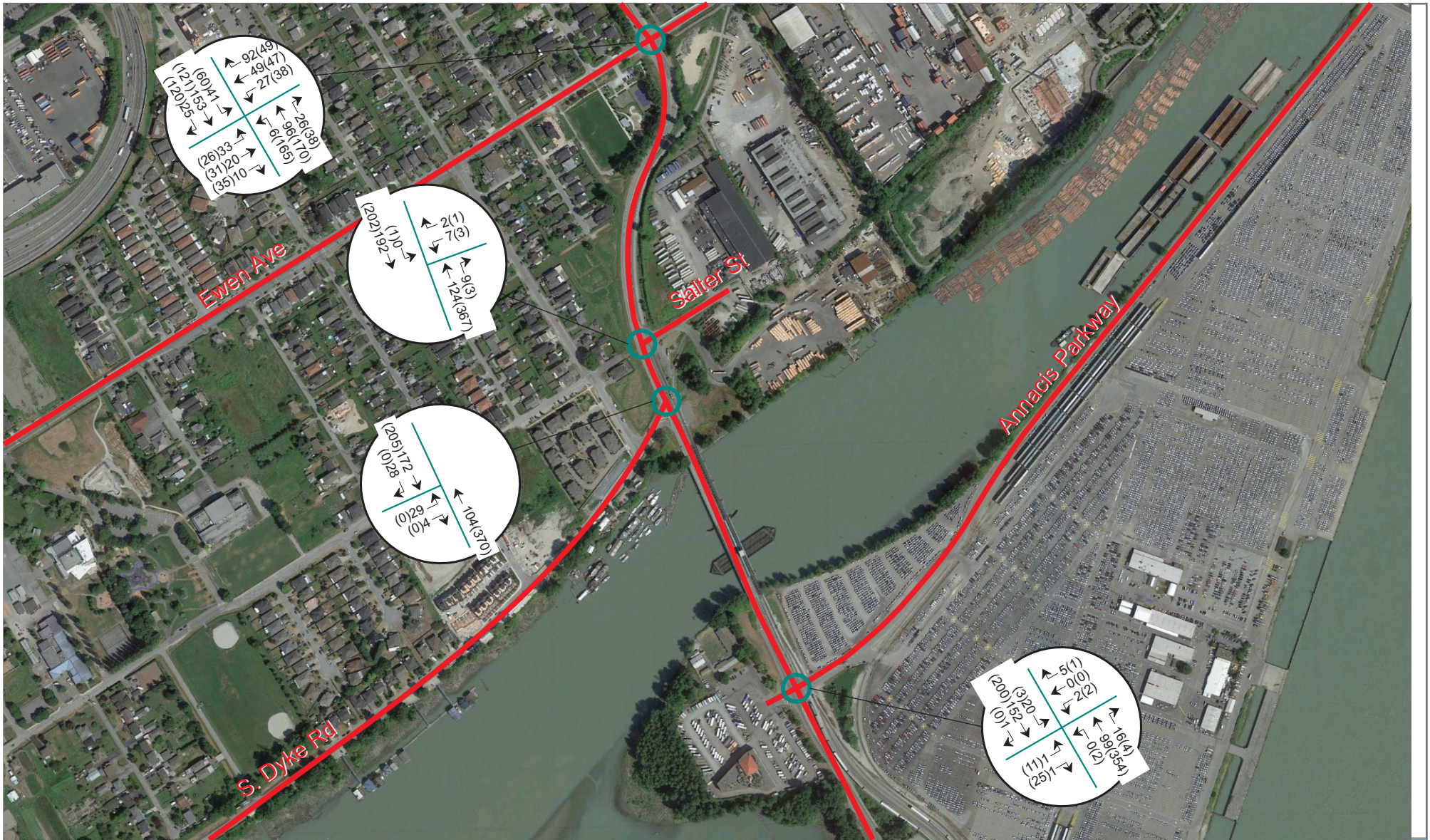


**Derwent Way Soil Transfer and Barge Facility
Traffic Impact Study**

Existing Laning and Controls

PROJECT NO. ENG.VGEO03080-01	DWN YT	CKD SG	APVD SG	REV 0
OFFICE EBA-Vancouver	DATE Jan 2017			

Figure 2



LEGEND

XYZ a.m. Peak Hour Traffic Volumes
 (XYZ) p.m. Peak Hour Traffic Volumes

NOTES
 Base data: NTS

CLIENT
 Summit Earthworks Inc.

Derwent Way Soil Transfer and Barge Facility Traffic Impact Study

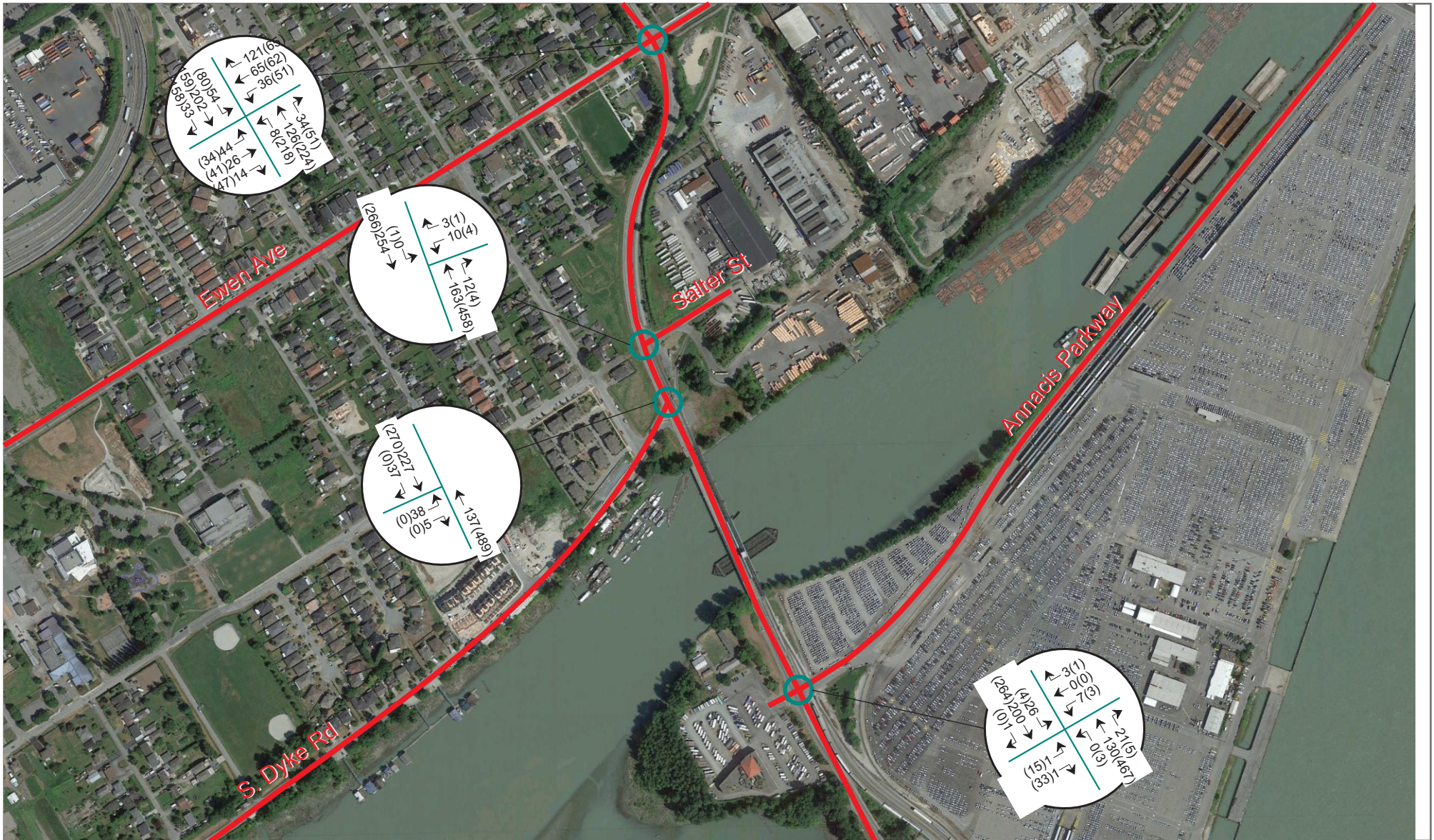
2018 Background Traffic Volumes

STATUS



PROJECT NO. ENG.VGEO03080-01	DWN YT	CKD SG	APVD SG	REV 0
OFFICE EBA-Vancouver	DATE Jan 2017			

Figure 3



LEGEND

XYZ a.m. Peak Hour Traffic Volumes
 (XYZ) p.m. Peak Hour Traffic Volumes

NOTES
 Base data: NTS

CLIENT
 Summit Earthworks Inc.

Derwent Way Soil Transfer and Barge Facility Traffic Impact Study

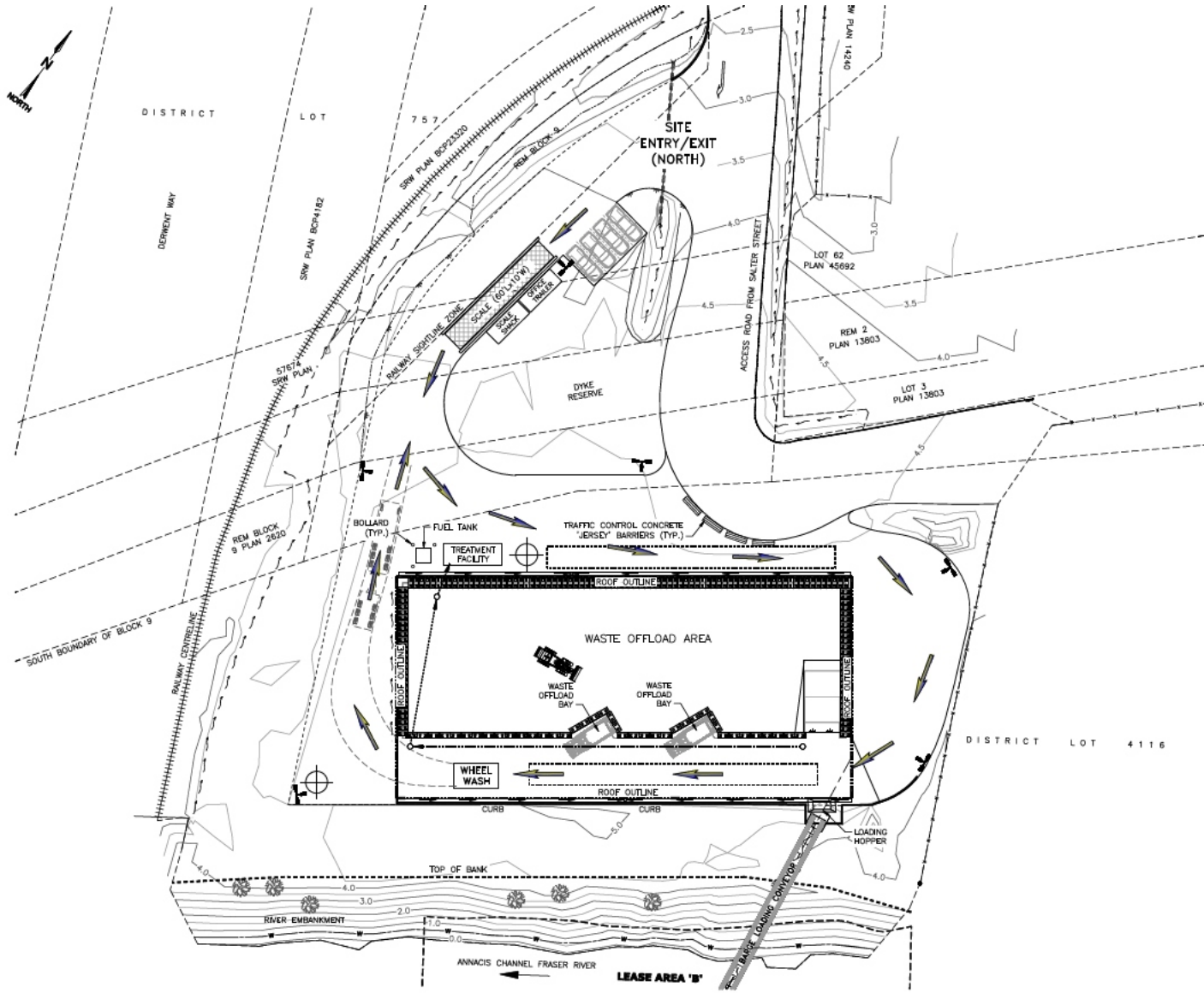
2038 Background Traffic Volumes

STATUS



PROJECT NO. ENG.VGEO03080-01	DWN YT	CKD VT	APVD VT	REV 0
OFFICE EBA-Vancouver	DATE Jan 2017			

Figure 4



LEGEND

NOTES
Base data: NTS

STATUS

CLIENT
Summit Earthworks Inc.



**Derwent Way Soil Transfer and Barge Facility
Traffic Impact Study**

Site Plan

PROJECT NO. ENG.VGEO03082-01	DWN YT	CKD SG	APVD SG	REV 0
OFFICE EBA-Vancouver	DATE July 2019			

Figure 5



LEGEND

XYZ a.m. Peak Hour Traffic Volumes
 (XYZ) p.m. Peak Hour Traffic Volumes

NOTES

Base data: NTS

CLIENT

Summit Earthworks Inc.

**Derwent Way Soil Transfer and Barge Facility
 Traffic Impact Study**

Site Traffic Volumes

STATUS



PROJECT NO. ENG.VGEO03080-01	DWN YT	CKD SG	APVD SG	REV 0
OFFICE EBA-Vancouver	DATE Jan 2017			

Figure 6



LEGEND

XYZ a.m. Peak Hour Traffic Volumes
 (XYZ) p.m. Peak Hour Traffic Volumes

NOTES
 Base data: NTS

CLIENT
 Summit Earthworks Inc.

**Derwent Way Soil Transfer and Barge Facility
 Traffic Impact Study**

2018 Post Development Traffic Volumes

STATUS



PROJECT NO.
 ENG.VGE003080-01

OFFICE
 EBA-Vancouver

DWN YT
CKD SG
APVD SG
REV 0

DATE
 Jan 2017

Figure 7



LEGEND

XYZ a.m. Peak Hour Traffic Volumes
 (XYZ) p.m. Peak Hour Traffic Volumes

NOTES

Base data: NTS

CLIENT

Summit Earthworks Inc.

**Derwent Way Soil Transfer and Barge Facility
 Traffic Impact Study**

2038 Post Development Traffic Volumes

STATUS



PROJECT NO. ENG.VGEO03082-01	DWN YT	CKD SG	APVD SG	REV 0
OFFICE EBA-Vancouver	DATE Jan 2017			

Figure 8

APPENDIX A

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LIMITATIONS ON USE OF THIS DOCUMENT

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