



TDK Logistics PER Application

Traffic Impact Assessment

January 2023

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Mott MacDonald
Suite 1888
Bentall 5
550 Burrard Street
Vancouver BC V6C 2B5
Canada

T +1 604 681 4400
mottmac.com

TDK Logistics PER Application

Traffic Impact Assessment

January 2023

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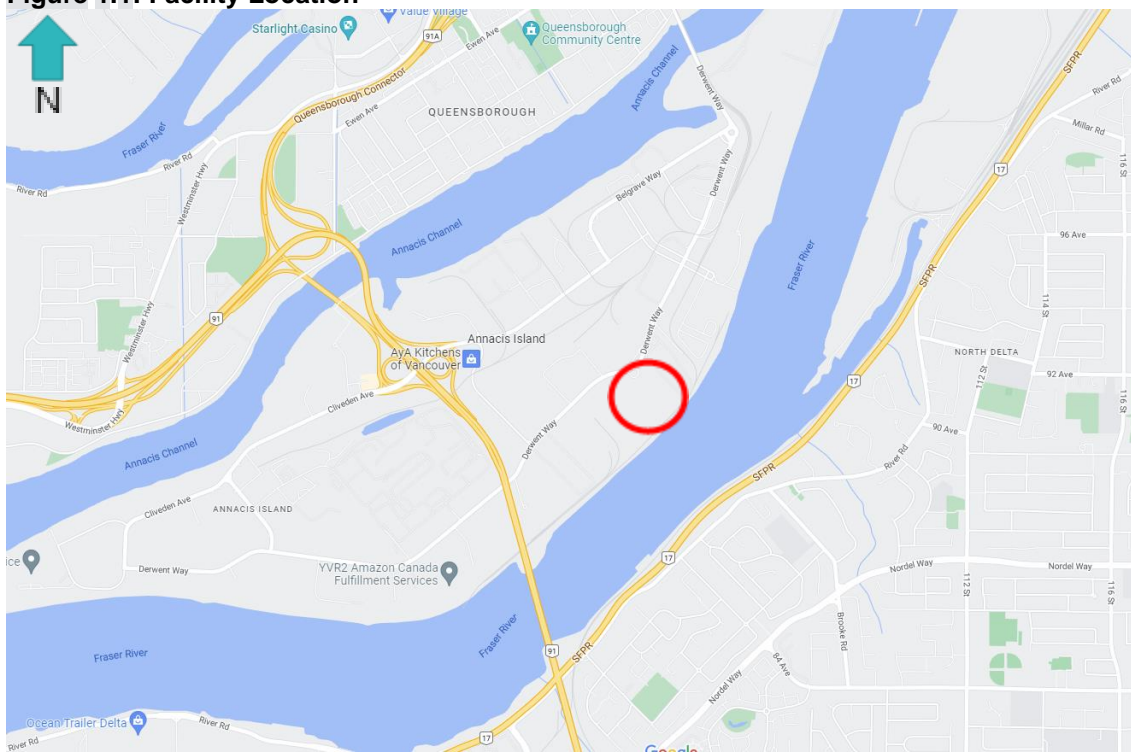
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1 Introduction

TDK Logistics Inc. (TDK) Metro Terminals is proposing to redevelop their existing site located at 480 Audley Blvd in Delta, British Columbia (Figure 1.1). The TDK Metro Terminal Expansion (the Project) features a redevelopment that will expand the existing container yard operations and introduce a rail service into the facility. The Project site is located on federal lands managed by the Vancouver Fraser Port Authority (VFPA).

The Project is subject to a full application under the VFPA Project & Environmental Review process. This Traffic Impact Assessment, completed on behalf of the applicant: TDK Logistics, has been completed to support the PER Application Submission (PER 21-098).

Figure 1.1: Facility Location



2 Background

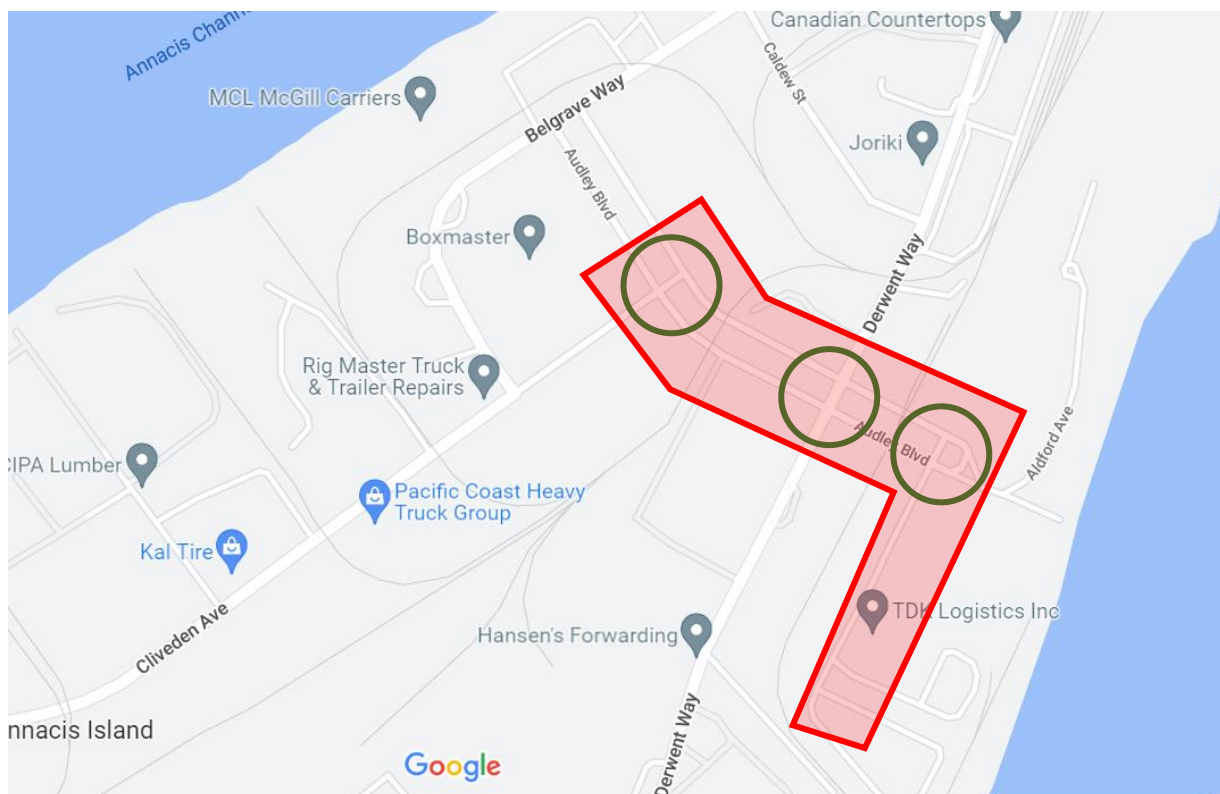
2.1 Study Area

The study area for the Traffic Impact Assessment is illustrated in Figure 2.1. It includes the road network surrounding the Project location, focusing on the Audley Boulevard corridor between Cundy Avenue and Cliveden Avenue. All roads in the study area have single lanes in each direction. Audley Boulevard has a significant median strip down the middle of the boulevard. The road network falls under the jurisdiction of the City of Delta.

The road network within the study area is controlled by stop signs. There is an unsignalized rail crossing on Audley Blvd between Cundy Ave and Derwent Way.

The area is highly industrial and there is a high proportion of heavy vehicles. There is a public transit service on Derwent Way within the study area. Pedestrian and cycling facilities are limited and see limited usage due to the industrial nature of the area.

Figure 2.1: Study Area



Study Area in red and surveyed intersections in green

2.2 Proposed Development

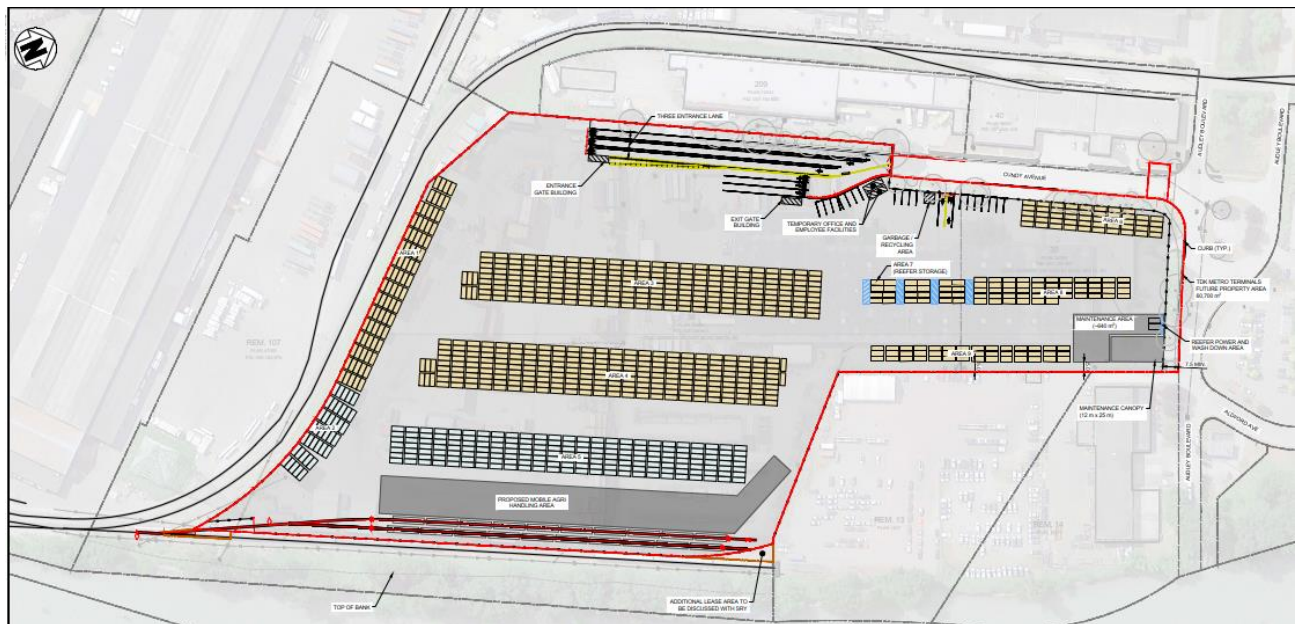
A conceptual layout of the Project is shown in Figure 2.2.

The key elements of the project are:

1. Trackwork: two (2) new rail siding tracks accessed via an SRY spur track. Each stacked track can accommodate 10 cars (for a total of 20).
2. Reconfiguration of the existing container yard:
 - Demolition of one (1) existing warehouse building at 480 Audley Blvd.,
 - Reconfigured truck gate: three (3) new truck queuing lanes to accommodate up to thirteen (13) trucks outside the gate,
 - New separate entrance for private vehicles and emergency vehicle access,
 - New modular buildings for entry processing, exit processing and administration,
 - Fifteen (15) private vehicle parking spaces,
 - New lighting poles,
 - New fire hydrants,
 - New maintenance facility for on-site container transportation equipment
3. Grain transload operation: Commodity will arrive via rail in grain hoppers, mobile conveyors will slide under rail cars that will then dump grain directly onto belt to then be conveyed into a tipped container. Containers will be moved off site via truck.

The Project is not anticipated to generate any additional truck traffic relating directly from the expansion. The growth in throughput associated with the expansion will arise primarily from the introduction of rail inbound and outbound volumes.

Figure 2.2: Proposed Development in Project



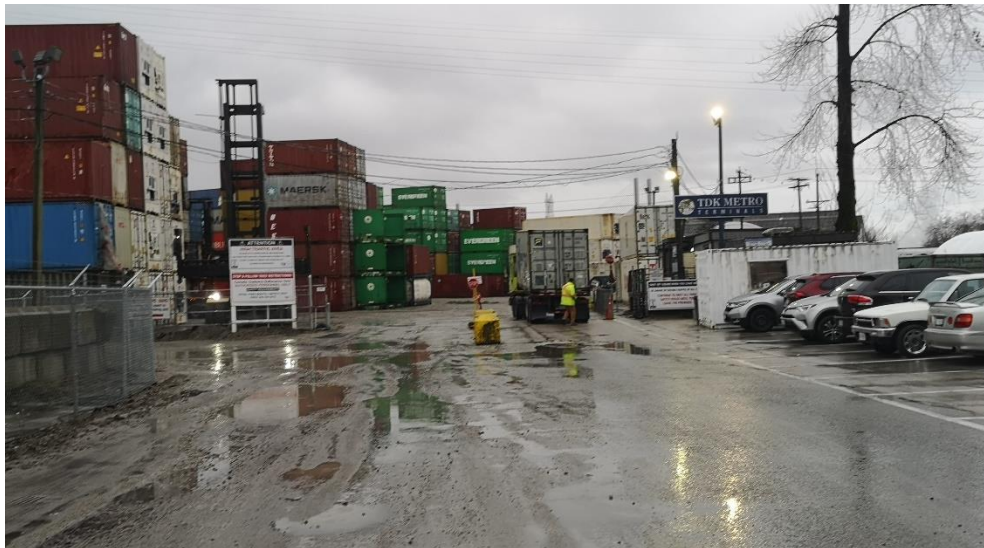
3 Container Gate

A significant element of the Project, in relation to its impact on traffic and the performance of the road network is the reconfiguration of the truck access into the Container Yard.

3.1 Existing In/Out Conditions

Currently, the container entrance gate is located approximately 275m south-west of the Cundy Ave/Audley Blvd intersection. The entrance has a single inbound gate and single queuing lane. Vehicle parking for the container yard staff is directly adjacent to the gate entrance building. Trucks are processed by gate staff who perform a visual inspection of the containers and direct drivers where in the yard to proceed. On average trucks will take two-to-three minutes for processing (2 - 3 min) before heading into the yard.

Figure 3.1: Existing Conditions



Outbound traffic from the yard departs through the exit onto Cundy Ave. Processing times for departing trucks are five (5) minutes per truck for staff and drivers to perform a more detailed visual inspection prior to departure.

The queue backing up means that on occasion, traffic destined for the TDK Warehouse or the CCTF Pipe Fitting breakbulk yard may be delayed due to the gate operations.

Prior to 2018, there were instances of queuing being generated by the TDK container yard entrance gate which resulted in queues blocking traffic along Derwent Way. To alleviate the traffic, TDK implemented an action plan for trucks arriving to site in order to minimize the effects of yard entry on the local road network. The plan included active traffic management of truck flow, designated truck routes, container yard procedural changes and staffing increases, amongst other measures. The container yard traffic action plan can be read in full in Appendix A. After implementation of the plan, queuing build ups were no longer an active issue.

However, when SRY block the Audley Boulevard crossing for an extended period of time when switching their Annacis Island yard, queues of trucks destined for TDK can build up, in spite of the changes implemented by TDK. The train events are outside of their sphere of influence.

3.1.1 Peak Times

The container yard gate is open from 7am to 11pm, Monday through Friday. The extended hours were a direct result of the implementation of the traffic action plan to spread out truck traffic throughout the day, to minimize the impact on the road network. Notwithstanding, there are peak times for arriving truck traffic.

The terminals see four daily peaks for inbound truck traffic at approximately:

- 7:00 am, when the terminal opens
- 11:00 am
- 3:30 pm
- 7:00 pm

3.1.2 Trucking Numbers

TDK has a current annual throughput capacity of 120,000 TEU. For the purposes of this assessment, 2021, was selected as the baseline year. 2021 is considered representative of pre-Project operations as confirmed by TDK.

Table 3.1: Annual Gate Transactions

Year	Gate Transactions
2018	53,018
2019	54,643
2020	61,597
2021	65,153
2022*	49,331*

*Year to date as of mid-December 2022 and prorated to end of the year.

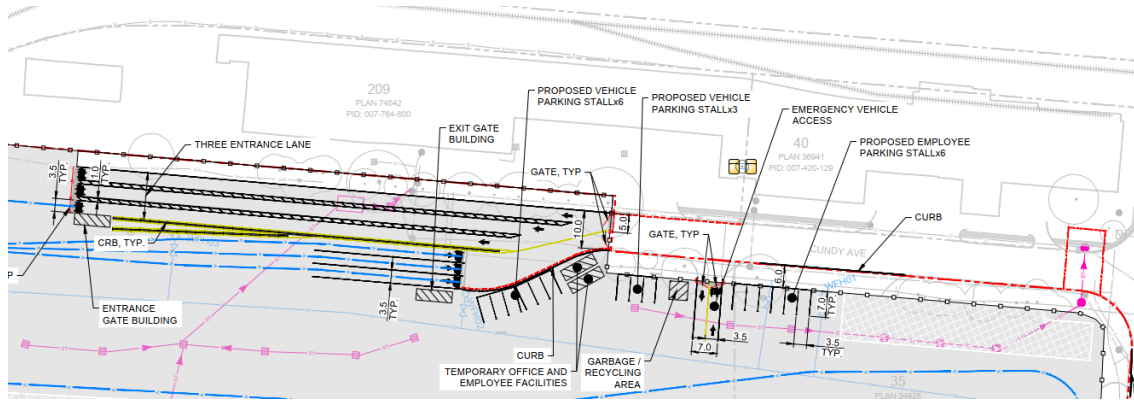
Through discussions with TDK staff, it was determined that approximately 65% of their truck traffic was sized for 40' containers and 35% for 20'. Additionally in order to establish the proportion of double movements it was determined that 60-75% of trucks were arriving and leaving the site laden, whereas 25-40% of truck traffic on a given day would only be laden for one leg of their journey (either arrival or departure)

In 2021, an average weekly peak of 250 inbound trucks a day was observed. The peak could be any day from Monday to Friday, no discernable pattern was determined. 250 inbound trucks in a day, based on observed patterns would result in a peak hour of approximately 35 inbound trucks. That number is carried through the analysis.

3.2 Future In/Out Conditions

The post-Project layout for the TDK container yard will consist of three (3) inbound traffic gates and truck lanes, with the capacity to hold up to 13 WB-20 tractor trailers. Additionally, there will be three (3) outbound lanes from the container yard. Processing times per vehicle will stay as existing. However, when the trucking volumes warrant faster processing times, the introduction of automated gates and card readers is anticipated.

Figure 3.2: Proposed Container Gate Layout



Gate transactions are predicted to rise eventually to 80,000 a year. The growth is anticipated to be organic. For the purposes of this simulation, we have assumed a growth rate of 2% a year, in keeping with background traffic growth. This will equate to roughly 43 trucks per hour when the terminal is operating at peak capacity.

4 Analysis Approach

4.1 Scenario Generation

Six scenarios were evaluated as part of this study:

1. 2023 Existing Conditions
2. 2023 With Project
3. 2026 Substantial Completion Date No Project
4. 2026 Substantial Completion Date With Project
5. 2031 Future Conditions No Project
6. 2031 Future Conditions With Project

The 2023 Existing Conditions scenario reflects existing background traffic and road network conditions, with a conservative gate operation. The 2023 With Project scenario overlays the proposed gate operation and layout and adds a small volume of traffic between the TDK container yard and the newly located TDK Warehouse Facility. The 2026 and 2031 scenarios follow the 2023 scenarios but with additional traffic growth.

Background traffic numbers were obtained by conducting an intersection count survey, at the three study intersections (see Section 4.2) on Wednesday 4th January 2023 between 06:30 and 11:30 in the morning, and between 15:00 and 17:00 in the afternoon. On the day, TDK saw a lower-than-average amount of truck traffic entering and leaving the container yard. The decision was made to add additional TDK destined and originating truck traffic to the traffic numbers to better simulate a “worse case scenario”, where there was significant TDK traffic in order to fully test the limits of the proposed container gate operation.

Where new truck traffic was introduced on top of the counts, the new trips were assigned to the following routes.

Table 4.1: Proposed Trip Assignment

New Inbound route	Percentage of new TDK traffic
Hwy 91 along Derwent Way	90%
Hwy 91 along Cliveden Ave	10%
Queensborough along Derwent Way	10%

New Outbound route	Percentage of new TDK traffic
Hwy 91 along Derwent Way	30%
Hwy 91 along Cliveden Ave	55%
Queensborough along Derwent Way	15%

4.2 Analysis Methodology

In addition to analysing the local network for traffic performance, the assessment needed to focus on the potential for queues of trucks generating from the TDK container gate entrance and how the back up could affect the flow of traffic within the Study Area.

The decision was taken by the assessment team to use SimTraffic to analyse the network. Due to the limitations of Synchro with regards to analysing queuing building up over multiple intersections, it was agreed that a more dynamic simulation would be required above the static results that Synchro generate. Specifically, SimTraffic is ideal for planning-level microsimulation analysis of complex field situations that involve closely spaced intersections, various types of controls, multiple time periods, and multiple scenarios or project alternatives. SimTraffic can provide reliable microsimulation and visual rendering of peak hour traffic operating conditions that involve routine vehicular traffic modes such as autos and trucks in most urban, suburban, and rural roadway contexts.

A full microsimulation model was deemed excessive for the level of detail required for the assessment.

The following intersections within the Study Area were analysed in the assessment:

- Cliveden Avenue / Audley Boulevard
- Derwent Way / Audley Boulevard
- Cundy Avenue / Audley Boulevard

Due to the significant median on Audley Blvd (approx. 30m), each intersection has been analysed as two separate intersections

In this report, intersection turning movements have been abbreviated so for example NBT = northbound through movement, WBL = westbound left turn movement, SBR = southbound right turn movement, EBU = eastbound U-turn movement etc.

The focus of the queuing assessment was to understand how queues generated by the container gates may build up from Cundy Ave, onto Audley Blvd and then Derwent Way, south of the intersection, as had been the case prior to implementation of the Traffic Action Plan. The Plan was not modelled in any of the scenarios, in order to best understand the worst-case scenario. The movements that are being analysed for queue build up are:

- Truck Gate - SB movements
- Audley Blvd and Cundy Ave - EB movements
- Derwent Way and Audley Blvd – NB movements

As queuing analyses focus on the queuing building up per lane, as opposed to by direction of travel, the turning movement is not analysed specifically.

4.3 Performance Indicators

Intersection traffic operations were assessed for the AM and PM peak hours using the SimTraffic software and then reported in terms of the following performance indicators:

- **Level of service (LOS)** – the LOS for a movement or an intersection overall is an indication of the delays due to the intersection controls. The LOS is derived by calculating the intersection or approach control delay and converting it to a letter between A and F. LOS A represents minimal delays and LOS F represents lengthy delays. SimTraffic does not directly

generate LOS values per intersection or movement but determines average delays which were then converted to LOS values based on the table below. An LOS of D or under is desirable.

Table 4.2: Level of Service Scoring

Unsignalized Intersection	
Control Delay per Vehicle (s)	LOS
≤10	A
>10 and ≤15	B
>15 and ≤25	C
>25 and ≤35	D
>35 and ≤50	E
>50	F

- **Average and 95th percentile Queues** - For non-signalized intersections, turning bay storage and driveway spacing sufficient to contain the 95th percentile queue lengths during the peak hour are seen as a minimum requirement to be accommodated. The primary focus for this metric in this assessment is to see the difference in queuing build up when comparing the No Project and With Project scenarios.

4.4 Gate Simulation Methodology

SimTraffic does not currently have a function to code delays generated by entrance gates processing times or anything akin, such as tollbooths. The traffic simulators were able to create a workaround using sets of traffic signals to mimic the delay caused by the gate processing times. Upon arriving at the intersection/entry gate, trucks would be met by a 180s red cycle designed to mimic the delay caused by gate processing; and then have a six-second green to proceed, good for only one truck at a time. In the With Project scenarios, the process was repeated for all three entrance lanes. The result being that each truck would have to wait a minimum of three (3) minutes before being able to proceed onwards.

The result is a more conservative approach than what is happening in the field where process times are between two (2) and 3 minutes. The decision to use 3 minutes as a base, as opposed to 2.5 was in keeping with the decision to use a high peak volume of trucks in order for the assessment to determine how effective the three gates and lanes would be at preventing excessive queuing even on the busiest of days.

4.5 Additional Analysis Assumptions

Additional assumptions included in the traffic analysis are documented below:

- It has been estimated that 100 trucks travel between the container yard and warehouse on a daily basis, split 50-50 in each direction. For the with project scenarios, 4 vehicles per hour were added originating from the truck gate on Cundy Ave and turning right onto Audley Blvd to progress eastwards. 4 vehicles per hour were also added in the opposing direction.
- A growth factor of 2% annual increase has been used to generate future growth numbers.
- 10 runs were undertaken for each scenario with 3 minutes of seeding time and 1 hour of simulation time.

5 2023 Existing Conditions

The inputs and findings for the 2023 Existing Conditions scenario are as follows:

5.1 Road Network and Traffic Volumes

The 2023 road network reflects the existing road alignments, intersections and laning configurations.

The traffic volumes were based on the 2023 surveyed traffic counts with volumes adjusted up to reflect TDK generated peak traffic volumes.

5.2 Intersection Performance

Operational issues were observed at the following intersections.

- Cundy Ave and Audley Blvd S
 - AM and PM Intersection LOS of F
- Derwent Way and Audley Blvd S
 - AM Intersection LOS of F
 - PM Intersection LOS of E

The poor performance of these intersections is due to the exaggerated queuing being generated by the TDK Container Gate. It is worth reiterating that high volumes were used for the simulation and that the traffic action plan currently in place was not modelled.

5.3 Truck Gate Queuing

Truck gate queuing was significant with the average queue length exceeding the length of Cundy Ave. This meant that the queue backed up onto Audley Blvd and then onto Derwent Way, resulting in gridlock along those links during the peak hour simulated.

6 2023 with Project

The inputs and findings for the 2023 With Project scenario are as follows:

6.1 Road Network and Traffic Volumes

The 2023 With Project road network reflects the network modelled in the 2023 Existing Conditions scenario with the addition of the reconfigured TDK container yard truck gate and three queuing lanes

The traffic volumes were based on the 2023 surveyed traffic counts with volumes adjusted up to reflect TDK generated peak traffic volumes. Additionally, 8 trips were added to reflect traffic generated by the relocation of the TDK warehouse.

6.2 Intersection Performance

All intersections were performing with an LOS of A.

6.3 Truck Gate Queuing

The 95th percentile queue will exceed the length of the queuing lanes, but will not build up past the end of Cundy Ave. However, the average queue will be contained within the queuing lanes within the TDK property boundaries.

Queuing is significantly less impactful than in the No Project equivalent scenario, with queuing not affecting any of the study intersections.

7 2026 No Project

The inputs and findings for the 2026 No Project scenario are as follows:

7.1 Road Network and Traffic Volumes

The 2023 With Project road network reflects the network modelled in the 2023 Existing Conditions scenario.

The traffic volumes were based on the 2023 surveyed traffic counts with volumes adjusted up to reflect TDK generated peak traffic volumes. A growth factor of 2% annual increase was applied to all volumes over the period of 3 years.

7.2 Intersection Performance

Operational issues were observed at the following intersections.

- Cundy Ave and Audley Blvd S
 - AM and PM Intersection LOS of F
- Derwent Way and Audley Blvd S
 - AM and PM Intersection LOS of F
- Derwent Way and Audley Blvd N
 - AM Intersection LOS of E

The poor performance of these intersections is due to the exaggerated queuing being generated by the TDK Container Gate. It is worth reiterating that high volumes were used for the simulation and that the traffic action plan currently in place was not modelled.

7.3 Truck Gate Queuing

Truck gate queuing was significant with the average queue length exceeding the length of Cundy Ave. This meant that the queue backed up onto Audley Blvd and then onto Derwent Way, resulting in gridlock along those links during the peak hour simulated.

8 2026 With Project

The inputs and findings for the 2026 With Project scenario are as follows:

8.1 Road Network and Traffic Volumes

The 2023 With Project road network reflects the network modelled in the 2023 Existing Conditions scenario with the addition of the reconfigured TDK container yard truck gate and three queuing lanes

The traffic volumes were based on the 2023 surveyed traffic counts with volumes adjusted up to reflect TDK generated peak traffic volumes. Additionally, 8 trips were added to reflect traffic generated by the relocation of the TDK warehouse. A growth factor of 2% annual increase was applied to all volumes over the period of 3 years.

8.2 Intersection Performance

All intersections were performing with an LOS of A

8.3 Truck Gate Queuing

The 95th percentile queue will exceed the length of the queuing lanes, but will not build up past the end of Cundy Ave. However, the average queue will be contained within the queuing lanes within the TDK property boundaries.

Queuing is significantly less impactful than in the No Project equivalent scenario, with queuing not affecting any of the study intersections.

9 2031 No Project

The inputs and findings for the 2031 No Project scenario are as follows:

9.1 Road Network and Traffic Volumes

The 2023 With Project road network reflects the network modelled in the 2023 Existing Conditions scenario.

The traffic volumes were based on the 2023 surveyed traffic counts with volumes adjusted up to reflect TDK generated peak traffic volumes. A growth factor of 2% annual increase was applied to all volumes over the period of 8 years.

9.2 Intersection Performance

Operational issues were observed at the following intersections.

- Cundy Ave and Audley Blvd S
 - AM and PM Intersection LOS of F
- Derwent Way and Audley Blvd S
 - AM Intersection LOS of F
 - PM Intersection LOS of D
- Derwent Way and Audley Blvd N
 - AM Intersection LOS of E
- Cliveden Ave and Audley Blvd S
 - AM Intersection LOS of D

The poor performance of these intersections is due to the exaggerated queuing being generated by the TDK Container Gate. It is worth reiterating that high volumes were used for the simulation and that the traffic action plan currently in place was not modelled.

9.3 Truck Gate Queuing

Truck gate queuing was significant with the average queue length exceeding the length of Cundy Ave. This meant that the queue backed up onto Audley Blvd and then onto Derwent Way, resulting in gridlock along those links during the peak hour simulated.

10 2031 With Project

The inputs and findings for the 2031 With Project scenario are as follows:

10.1 Road Network and Traffic Volumes

The 2023 With Project road network reflects the network modelled in the 2023 Existing Conditions scenario with the addition of the reconfigured TDK container yard truck gate and three queuing lanes

The traffic volumes were based on the 2023 surveyed traffic counts with volumes adjusted up to reflect TDK generated peak traffic volumes. Additionally, 8 trips were added to reflect traffic generated by the relocation of the TDK warehouse. A growth factor of 2% annual increase was applied to all volumes over the period of 3 years.

10.2 Intersection Performance

All intersections were performing with an LOS of A

10.3 Truck Gate Queuing

The 95th percentile queue will exceed the length of the queuing lanes, but will not build up past the end of Cundy Ave. However, the average queue will be contained within the queuing lanes within the TDK property boundaries.

Queuing is significantly less impactful than in the No Project equivalent scenario, with queuing not affecting any of the study intersections.

11 Recommendations and Conclusions

Network performance is considerably improved in the With Project scenarios compared to the No Project equivalents. While the three container lanes do not fully eliminate queuing of any kind, they are able to limit the build up of queues past the end of Cundy Ave and bleeding into the rest of the network. Furthermore, as discussed previously, the simulation did look at the worst-case scenarios in terms of slow processing times and excessive volumes.

Average queue lengths from the container gate were reduced by 80% in all scenarios except for 2031 AM and queuing at the other intersections was largely eliminated.

Table 11.1: Queuing Performance by Scenario

		Peak Volume	At Gate		EBR at Cundy/Audley		NBR at Derwent/Audley	
			95th Queue	Average Queue	95th Queue	Average Queue	95th Queue	Average Queue
AM	2023	36	552	332	419	143	627	139
	2023 w/ Project	36	141	64	11	1	7	0
	2026	38	564	329	454	168	793	216
	2026 w/ Project	38	145	68	6	0	7	0
	2031	42	546	346	501	206	1057	339
	2031 w/ Project	42	165	87	8	0	4	0
PM	2023	35	552	299	416	141	501	100
	2023 w/ Project	35	138	60	9	1	6	0
	2026	37	574	339	455	182	791	206
	2026 w/ Project	37	122	52	4	0	8	1
	2031	41	559	310	399	136	474	99
	2031 w/ Project	41	158	75	9	1	5	0

Without the implementation of the container gate afforded by the Project, the model runs noted significant queuing generated by the container gate affecting:

- Audley Blvd / Cundy Ave S
- Derwent Way / Audley Blvd S
- Derwent Way / Audley Blvd N

The proposed development will generate minimal additional traffic and will improve network performance by minimizing the likelihood of queues developing from the container gate operation. The Project is expected to improve traffic operations throughout the study area with significant improvements noted at the Cundy Ave / Audley Blvd and Derwent Way/Audley Blvd intersections.

A. Existing Container Yard Traffic Action Plan

CONTAINER YARD TRAFFIC ACTION PLAN *UPDATED

TDK CONTAINER YARD TRAFFIC ACTION PLAN

(Proactive/Preventative)

Updated May 14th 2019

- 1)** TDK office staff will communicate to customers, partners, vendors of possible traffic congestion and provide options to assist in preventing congestion. TDK will work trucking companies and TDK customers to:
 - i. Send out pre-emptive messages to advise trucking companies to spread out drivers when picking up large bookings
 - ii. Send out bulletin emails to trucking industry when yard traffic becomes busy
 - iii. Work with Damco to limit loaded inbound during the day shift and book most deliveries for evening shift.
- 2)** TDK will have available staff trained and certified in traffic control compliance.
- 3)** TDK will have available staff to control inner yard traffic by placing trained staff at corner 1 to assist in moving congestion.
- 4)** TDK will have available staff on standby to control traffic on Cundy drive if there are more than 6 trucks on the above street.
- 5)** TDK will have available staff on standby to control traffic on the corner of Cundy Ave and Audley Blvd if the number of trucks on Cundy Ave are greater than 6. TDK will have available staff on standby to stop truck traffic on Cundy Ave and Audley Blvd (between Cundy Ave and Derwent Way) and

have traffic control person advising truck not to line up on Derwent Way and to return when traffic congestion has alleviated.

*** DRIVERS WILL NOT BE ALLOWED TO LINE-UP ON DERWENT WAY***

6) Effective June 1st, 2019, TDK will be extending yard hours to 23:00, to assist in spreading out trucker traffic.

7) TDK will be hiring an additional gate attendant and have a 2-man gate system for heavy traffic days. This individual will be clearing truck congestions from Audley Blvd and advising drivers not to line-up on Derwent and to return when yard congestion alleviates.

8) TDK will provide handouts to drivers advising them of revised yard and traffic plan. Most importantly, not to line-up on Derwent Way.

9) TDK will open a 2nd lane in CY when truck traffic is busy. This will allow more trucks to line up in the yard and keep them off the street.

10) TDK is in the process of hiring/training additional machine operators and office admin to assist in processing trucks quicker during all shifts.

11) TDK will have graveyard shift operators grooming the yard to ensure efficient start to the next day.

- cyops@tdklogistics.com / mr@tdklogistics.com

To all concerned,

In collaboration with Delta By-law enforcement and co-operation with neighboring businesses on Annacis Island, TDK METRO Terminals has designed a traffic control plan to assist in alleviating street congestion and to improve traffic safety, for vehicles going to and around TDK METRO Terminals.

This plan will be broadcasted to customers, partners, and vendors using TDK's services. Trial implementation will begin early May 2019, and mandatory compliance will be enforced starting June 1st, 2019.

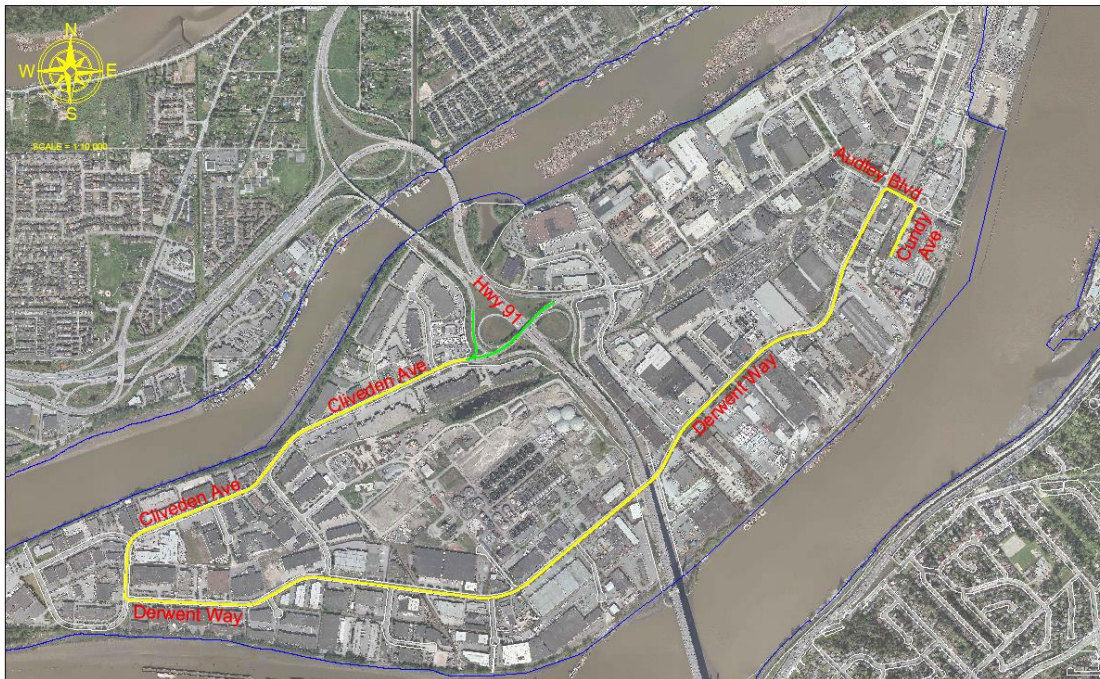
By-law and enforcement partners will be monitoring the traffic plan and will ticketing parties that are found to be in non-compliance. By-law will also be notifying TDK of companies and drivers that are in non-compliance. Parties found to be violating TDK traffic plan requirements may be subject to:

- 1) Verbal /written warning
- 2) Return to back of line / Gate refusal
- 3) Driver ban (hourly / day / week / lifetime)

TDK staff will implement a “3 strike” policy with individual drivers that are found to be non-compliant with TDK protocols and procedures. These will be documented and provided to driver’s employer.

TDK Container Yard Driver Traffic Requirements

- 2) Drivers will be required to take designated route on Annacis Island as per map below. Enforcement officers will be in place to monitor.



B) Drivers are not to block any neighboring driveways and must be clear or either side by a minimum of 2 meters (6 feet). It is suggested to have clearance of 3 meters (9 feet) on either side of driveways.

C) No drivers destined to TDK Container Yard is to be lined up / idling on Audley Blvd between Derwent Way and Cundy Ave.

D) Drivers going to TDK must obey instruction from TDK traffic control officer that will be located on either:

- i) TDK gate house
- ii) Corner of Cundy Ave and Audley Blvd
- iii) Corner of Audley Blvd and Derwent way

E) Any drivers without proper booking or release information are not permitted to entire line-up area.

F) **DRIVERS WILL NOT BE ALLOWED TO LINE-UP ON DERWENT WAY. TDK STAFF WILL ADVISE DRIVERS TO RETURN WHEN YARD TRAFFIC HAS ALLEVIATED. DRIVERS WILL HAVE OPTIONS TO RETURN OR P/U EMPTY CONTAINERS AT OTHER OFF-SITE LOCATIONS

B. Intersection Performances

Analysis – Performance Summary

Cliveden Ave & Audley Blvd S

Peak Hour	Case	Intersection LOS	Int. Delay (sec/veh)
AM	2023	A	3
	2023 w/ Project	A	3.1
	2026	A	3.1
	2026 w/ Project	A	3.2
	2031	D	33.4
	2031 w/ Project	A	3.2
PM	2023	A	2
	2023 w/ Project	A	1.9
	2026	A	1.9
	2026 w/ Project	A	2
	2031	A	2.1
	2031 w/ Project	A	2.1

Analysis - Performance Summary

Cliveden Ave & Audley Blvd N

Peak Hour	Case	Intersection LOS	Int. Delay (sec/veh)
AM	2023	A	2.3
	2023 w/ Project	A	2.4
	2026	A	2.3
	2026 w/ Project	A	2
	2031	A	4.3
	2031 w/ Project	A	2
PM	2023	A	1.8
	2023 w/ Project	A	1.7
	2026	A	1.7
	2026 w/ Project	A	1.7
	2031	A	1.8
	2031 w/ Project	A	1.9

Analysis - Performance Summary

Derwent Way & Audley Blvd S

Peak Hour	Case	Intersection LOS	Int. Delay (sec/veh)
AM	2023	F	83.1
	2023 w/ Project	A	1.7
	2026	F	102.7
	2026 w/ Project	A	1.7
	2031	F	165.8
	2031 w/ Project	A	1.8
PM	2023	E	43.3
	2023 w/ Project	A	1.2
	2026	F	80
	2026 w/ Project	A	1.3
	2031	D	31.6
	2031 w/ Project	A	1.4

Analysis - Performance Summary

Derwent Way & Audley Blvd N

Peak Hour	Case	Intersection LOS	Int. Delay (sec/veh)
AM	2023	A	3
	2023 w/ Project	A	1.7
	2026	E	39.7
	2026 w/ Project	A	1.6
	2031	E	48.2
	2031 w/ Project	A	1.7
PM	2023	A	6.8
	2023 w/ Project	A	2
	2026	B	12.4
	2026 w/ Project	A	2.2
	2031	C	23.7
	2031 w/ Project	A	2.4

Analysis - Performance Summary

Cundy Ave & Audley Blvd S

Peak Hour	Case	Intersection LOS	Int. Delay (sec/veh)
AM	2023	F	121.4
	2023 w/ Project	A	2.5
	2026	F	132.8
	2026 w/ Project	A	2.3
	2031	F	171.5
	2031 w/ Project	A	2.4
PM	2023	F	106.3
	2023 w/ Project	A	1.7
	2026	F	143
	2026 w/ Project	A	1.6
	2031	F	94.9
	2031 w/ Project	A	1.5

Analysis - Performance Summary

Cundy Ave & Audley Blvd N

Peak Hour	Case	Intersection LOS	Int. Delay (sec/veh)
AM	2023	A	0.1
	2023 w/ Project	A	0.1
	2026	A	2.4
	2026 w/ Project	A	0.1
	2031	A	3.7
	2031 w/ Project	A	0.1
PM	2023	A	0.1
	2023 w/ Project	A	0.1
	2026	A	0.5
	2026 w/ Project	A	0.2
	2031	A	1.4
	2031 w/ Project	A	0.1

