

Long Combination Vehicle Program

GUIDELINES

Nova Scotia Department of
Transportation and Infrastructure Renewal
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Table of Contents

1	Long Combination Vehicle Pilot Project	3
2	Submission of application	3
3	Permissible LCV configurations and operating routes	4
4	General Conditions.....	4
5	Operational Conditions	5
6	Equipment Conditions.....	6
7	Driver Qualifications.....	7
8	Weather conditions.....	8
9	Freight conditions.....	9
10	The LCV Driver’s Certificate.....	10
11	Collision reporting procedures.....	10
	Appendix 1: Information requirement to support application	11
	Appendix 2: Vehicle configurations.....	14
	Appendix 3: Example of LCV Driver’s Certificate.....	18
	Appendix 4: List of LCV refuge areas	19
	Appendix 5: Change Log	

Long Combination Vehicle Program

The Department of Transportation and Infrastructure Renewal is accepting applications for its Long Combination Vehicle (LCV) program on four lane, divided highways in Nova Scotia. In order to be considered for this program, a carrier must submit an application and conform to the requirements set forth in this document.

Submission of application

The application must be submitted electronically in PDF format and can be emailed to gary.holmes@novascotia.ca . If emailed, please follow up to verify receipt by calling 902-860-5634.

Alternatively, a CD or USB thumb drive may be mailed to.

*Vehicle Standards Engineer
Nova Scotia Department of Transportation and Infrastructure Renewal
107C Perrin Drive
Fall River, Nova Scotia, B2T 1J6*

Annual Permit

The annual permit fee for the Long Combination Vehicle (LCV) Pilot Project can be found on the Service Nova Scotia and Municipal Relations website. A permit is required for each tractor. The fee is to be made payable to the Nova Scotia Minister of Finance upon approval of the application.

Application Contents

A list of contents required for the application is provided in Appendix 1. All information in this list must be provided in an application for participation in the LCV Pilot Project.

Permissible LCV configurations and operating routes

Long Combination Vehicles (LCVs) are units with a tractor and two trailers. The lengths and weights of the various trailer combinations are as listed in Appendix 2.

Applications for A-trains and B-trains will be accepted, and must conform to the specifications in appendix 1.

Applications for container chassis configuration will be considered, provided they meet all other specifications.

Applications for routes will be accepted for any four-lane divided highway route in Nova Scotia, to be proposed by the applicant. However, approval of these routes is subject to evaluation by Department staff.

Travel on municipal roads will only be permitted if approval is granted by both the appropriate municipality and the Nova Scotia Department of Transportation and Infrastructure Renewal (NSTIR).

General Conditions

- Permits will be valid for one year. (Note: Service Nova Scotia and Municipal Relations (SNSMR) may cancel a permit at any time for permit violations by the carrier or for safety reasons).
- The operating permit will be valid for the specific operation of an LCV unit configured as an A-Train or B-Train meeting the length and weight requirements of Appendix 2.
- The carrier will be required to provide specific information, as listed in Appendix 1, regarding each tractor at the time of permit application.
- The total length of an LCV must not exceed 40 metres and the gross vehicle weight must not exceed 62,500kg.
- Dollies will be permitted to be moved to staging areas/terminals provided the dolly does not increase the length of the LCV beyond the maximum length of 40 m. and it is equipped with all required lights and markings. An empty dolly at the rear must be registered and inspected. Carriers from out

of province need only comply with their provincial regulations for dolly registration. A trailer converter dolly, which is not equipped with an anti-lock braking system (ABS) when being operated on a highway without carrying a trailer may have its service brake system disabled to prevent wheel lock-up

- Carriers must supply detailed information on all routes from origin to destination including staging areas. Plan surveys with vehicle turning templates will be required for each interchange/intersection to show that the LCV configuration will not off-track from its proper lane of travel. Permission for limited travel into areas under municipal jurisdictions will require the approval of the municipal jurisdiction and NSTIR.

Operational Conditions

- Maximum speed of a LCV configuration will be 90 km/h or the posted speed limit.
- The LCV configuration must not exit from the specified route except for emergencies.
- The LCV configuration must travel in the right lane only except for emergencies.
- The sum of weights of drive axles plus lead trailer axles (A) must be greater than sum of weights of dolly axles plus second trailer axles (B). $(A) > (B)$
- If a trailer is not fully loaded, it must be loaded such that the front of the trailer is heavier.
- Time of day restrictions for travel in and near urban areas will be set relative to morning and evening peak hour traffic flows.
- The LCV configuration may travel with both trailers empty or with the rear trailer empty and the front trailer partially or fully loaded, provided heavy cross winds are not part of weather conditions along the route during the particular trip.
- When speed of the LCV configuration travelling on the arterial network drops to 70 km/h or less the driver must manually turn on 4-way flashing lights. (Carriers should plan to have their new power units incorporate automatic speed related flasher units).
- LCV's must not run in a convoy mode, that is, less than 500 m apart.

Equipment Conditions

- The tractors used to move LCV trailers must have a minimum horsepower of 460 hp., must develop a minimum torque of 1650 ft-lb and have 6x4 axle configuration.
- The tractor on an LCV combination must be equipped with a functioning and accurate electronic on-board device that records speed, time and date at regular intervals not exceeding 5 minutes in length. The speed recording device must be a Global Position Satellite (GPS) or similar tracking system and must display in a legible table, including rows and columns. Tachograph and tachograph charts are not acceptable speed recording devices. Data from this device must be retained for at least 90 days.
- The reflectorized placard as specified below must be attached to the rear trailer of each LCV such that it does not cover reflectorized markings or lights.

LCV Pictorial image placard specifications

- **Background of the sign:** type III or superior yellow retroreflective sheeting complying with the Standard Specification for Retroreflective Sheeting for Traffic Control (D 4956) of the American Society for Testing and Materials
- **Pictogram:** black
- **Lettering:** black, Highway Gothic, E-series modified, 50 mm high
- **Position:** At the rear of the last semitrailer mounted so that it is clearly visible by following drivers, and must not obstruct lights or other safety devices. The sign must be removed when not in use.
- **Sign size:** 30 cm by 230-245 cm



- Retro-reflective tape must meet Transport Canada standard CMVSS 108.

- Enhanced intensity lighting must be present at the rear and along the sides of all trailers and power units. The lighting must meet or exceed Transport Canada standard CMVSS 108.
- Anti-sail (rigid) mud flaps/splash guards must be placed on the rear axle of the tractor and all axle groups of the trailers and convertor dollies. They must remain in a rigid downward position at all times. The mud flaps are to be at least as wide as the tires and within 350 mm of the ground when the vehicle is empty.
- All conspicuity devices must be kept clean at all times.
- The trailers in an A-train LCV configuration must be coupled by means of no-slack pintle hook(s), equipped with a secondary locking device. The air or hydraulic ram is to be incorporated in either the pintle hook or the pintle hook eye of the coupling apparatus.
 - Note: See Appendix 2 for schematics of vehicle configurations

Driver Qualifications

The Atlantic Provinces Trucking Association (APTA) is the sole coordinating body for all LCV driver training in NS.

The APTA is responsible to issue an annual LCV Driver's Certificate to all drivers operating LCV units in Nova Scotia. The Driver's Certificate is to be valid for a period of 12 months after the date of issue and must be in the possession of the driver at all times when operating an LCV. The certificate must be presented when requested by a peace officer.

The Driver's Certificate will be issued after confirmation has been received that the driver has:

- A valid class 1 driver's license or equivalent with air endorsement.
- A minimum of five (5) years of tractor trailer driving experience. (Experience on multi-trailer units would be an asset).
- Passed the Atlantic Provinces Trucking Association's (APTA) Longer Combination Vehicles Driver Training Course.
- A driver's abstract dated not more than one month prior to the issue date of the Drivers Certificate that shows no driving related criminal code convictions in the prior 36 months, no more than 2 moving violations in the prior 12 months, and no more than 3 moving violations in the past 36 months.

- Notes:

The driver instructor must be certified as a Driver Trainer and be qualified to instruct the APTA Longer Combination Vehicle Driver Training Course.

The date of conviction and the date of assessment will be the dates used to determine time periods.

The APTA will keep a list of all drivers holding valid LCV Driving Certificates and must make it available to NBDTI when requested.

The carrier must be able to produce to TIR all documents to support driver's qualifications, upon request

A driver-in-training who meets: the driver's license requirements; driving experience; and abstract requirements may operate an LCV vehicle while accompanied by a driver who holds a valid LCV Driver's Certificate.

Note: See Appendix 3 for example of LCV Driver's Certificate

- APTA / NSTIR will accept those LCV drivers with Quebec Drivers Licenses containing "T" Endorsements, without additional requirements. All Ontario LCV drivers operating in Nova Scotia must hold a valid APTA Driver Certificate. An OTA trained and certified LCV driver is eligible for an APTA certificate without further training or testing.

Weather conditions

The current road report for the Province should be noted, but final operational decisions should not be based entirely on that report. It will be necessary for carriers to provide their drivers with specific weather restriction data.

In general the LCV configurations should not operate when weather conditions include:

- a) freezing rain, sleet, hail, fog;
- b) heavy snowfall accumulations resulting over short time periods
- c) highway surface is snow covered ;
- d) visibility is less than 500 m (due to blowing snow, rain, or other conditions);
- e) blizzard like conditions exist;
- f) slippery road conditions exist such as ice or snow covered;
- g) heavy cross winds are present throughout the haul route or at specific sections of the haul route. (This factor is especially important if empty trailers form part of the LCV configuration).

LCV configurations must not be dispatched when adverse weather conditions are expected or known to be present on the route during the hours of travel.

The carrier, at time of application for the permit, is to provide NSTIR with a copy of its instructions to drivers relative to weather conditions and vehicle operations.

NOTE:

In cases where a driver commences a run under acceptable weather conditions and encounters inclement weather, the unit should exit the highway at the first designated refuge area. It may be necessary for the driver to reduce speed to the nearest refuge area. (List of refuge areas are presented in Appendix 4).

Freight conditions

- The carrier should indicate on the permit application the freight to be transported.
- Dangerous goods as regulated by the Dangerous Goods Transportation Act and regulations are to be limited to non-placard able amounts in LCV loads.
- Livestock must not be transported in LCV combinations.
- Where product is subject to movement anti-skid mats may be required.
- The load on the LCV should be assembled to prevent cargo movement. All goods transported by an LCV are to be secured according to the Securing of Loads on Vehicles Regulations.

The LCV Driver's Certificate

The LCV Driver's Certificate is to be issued by the APTA and will be carrier-specific. If a driver holding an LCV Driver's Certificate ceases to be employed by that carrier, the carrier shall inform NSTIR to ensure that the driver's name is removed from the list of current LCV drivers on their permit. The LCV Driver's Certificate must show the following information:

- Driver's name;
- Company's name;
- Date of issue and expiry date;
- Signature and printed name of the person issuing certificate.

An example of a Driver's Certificate is presented in Appendix 3.

Collision reporting procedures

NSTIR will use the information provided on Service Nova Scotia collision reporting form as completed by the appropriate police officer. However, to complete a full analysis of a LCV collision, additional data must be provided to the Vehicle Weights and Dimensions Policy Branch of the NSTIR by the carrier within 48 hours of the incident. This information will be subject to the same confidentiality agreements as the form completed by the police. The data to be provided include:

1. Description of LCV unit (e.g. A-train configuration)
2. GVW of unit at time of collision
3. Cargo type
4. Description of load and placement of load on each trailer of the LCV unit
5. Copy of on-board speed record at time of accident
6. Copy of LCV Driver's Certificate
7. Description of vehicle trip (e.g. origin and time of trip start, route to destination)
8. Copy of driver's log book for this trip
9. Tractor and trailers registration numbers
10. Driver's description of weather along route and at collision site
11. Driver's experience on LCVs. Estimate LCV trips and total distance driven.

Appendix 1: Information requirement to support application

The following information must be included in the application for a LCV operating permit.

Operation details

- Registered owner of the tractor(s) and trailers
- Carrier name
- Contact person
- Telephone
- Fax
- E-Mail Address
- Street Address
- City
- Postal Code
- Province or State
- Insurance Company
- Policy Number

Vehicle data

Vehicles (Number of vehicle type to register)
Power Units (Tractors)
Trailers (A-train configuration)

Tractor details (Include information for each tractor to register)

Power Unit (#) of (#)
Year
Make
License Plate Number
Province or State
Full Serial Number
Horsepower
Torque
Speed recording device
Vehicle Length (ft or m)

General route details

Details
Origin
Destination
One-way or return trip
Highway numbers of desired routing
Highway Exit number (leaving from origin)
Highway Exit number (arriving at destination)
Frequency (Daily, weekly, etc)
Number of LCV's on route
Arrival and departure times (Approx)

Specific operating details

- 1 Origin terminal
 - Describe route from origin terminal to entrance ramp of four-lane divided highway
 - Include street names and intersections.
 - If travelling within a municipality, evidence of municipal approval of the route must be provided.
 - Each turning movement required for LCV operation must be fully described in the permit application and include turning templates.
 - Any modifications required to accommodate LCV operation at intersections are the responsibility of applicant carriers, including arranging permissions from local authorities. Evidence of these endorsements must be provided at time of application.

- 2 Destination terminal
 - Describe route from exit ramp of four-lane divided highway to destination terminal
 - Include street names and intersections.
 - If travelling within a municipality, a letter of municipal approval of the route must be provided.
 - Each turning movement required for LCV operation must be fully described in the permit application and include turning templates.
 - Any modifications required to accommodate LCV operation at intersections are the responsibility of applicant carriers, including arranging permissions from local authorities. Evidence of this agreement must be provided at time of application.

Note: These details must also be provided for the route from origin to destination for the return trip.

3 Driver Information (Include information for each driver to be registered)

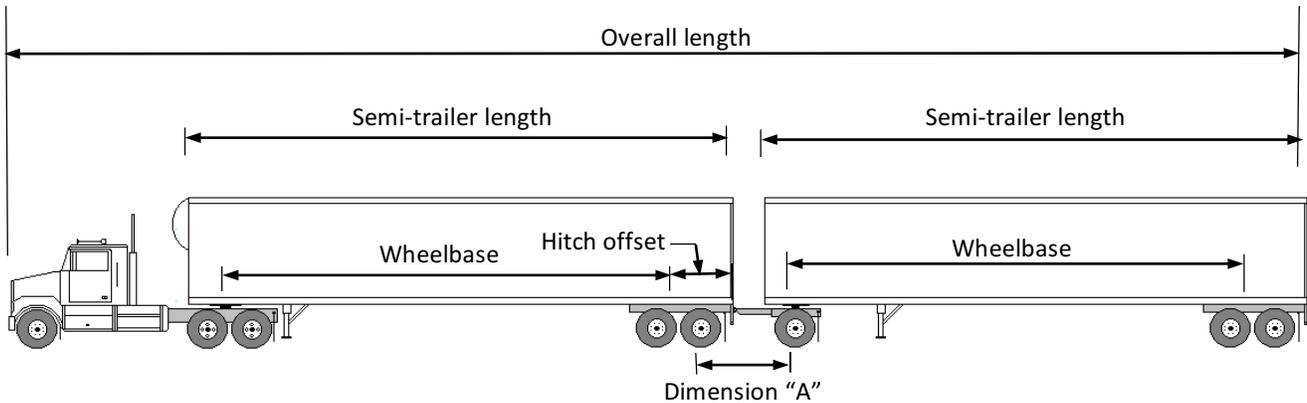
Information
Name
Driver's License Number
Class of License
Endorsements
Restrictions
Driving experience on articulated vehicles (years & km)
Completion date of Professional Drivers Improvement Course (M,D,Y)
Completion date of Longer Combination Vehicles Driver Training Course(M,D,Y)

5 Weather Conditions

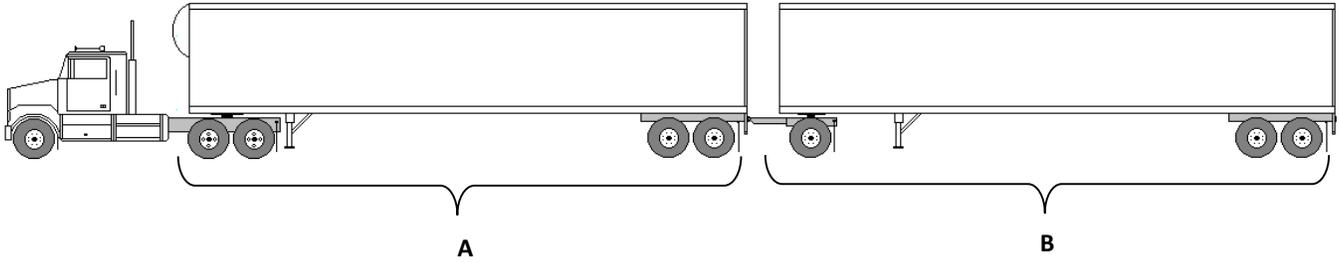
- A copy of instructions to drivers relative to weather conditions and vehicle operations

Appendix 2: Vehicle configurations

A-Train Configuration

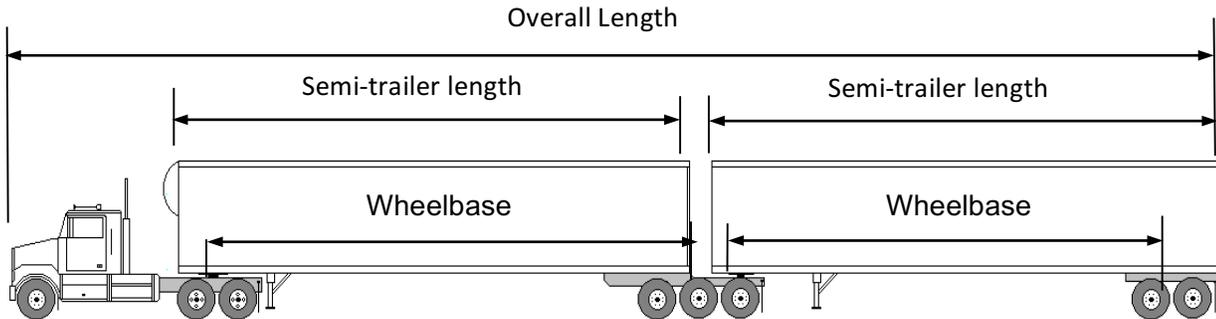


DIMENSION PARAMETERS	A Train
<i>Overall</i>	
Length of combination and load	Maximum 40 m ¹
Width of vehicle and load	Maximum 2.6 m
Height of Vehicle and Load	Maximum 4.15 m
<i>Tractor</i>	
Interaxle Spacing	Minimum 3.5 m
Tandem Axle Spread	1.2 to 1.85 m
Wheelbase	Maximum 6.2 m
<i>Converter Dolly</i>	
Drawbar Length	Max 3.0 m
Max No. of Axles	Not Controlled
Dimension "A"	Minimum 2.7 m
<i>Lead Semi-trailer</i>	
Length	Minimum 12.2 m, Maximum 16.2 m ¹
Wheelbase Tandem	Minimum 10.0 m , Maximum 12.5 m
Wheelbase Tridem	Minimum 9.0 m, Maximum 12.5 m
Hitch Offset Tandem	Max 2.8 m
Hitch Offset Tridem	Max 3.4 m
Track Width	2.5 to 2.6 m ²
<i>Second Semi-trailer</i>	
Length	Minimum 12.2 m, Maximum 16.2 m ¹
Wheelbase	Minimum 9.0 m, Maximum 12.5 m
Interaxle Spacing	Maximum 12.5 m
Track Width	2.5 to 2.6 m ²
Notes 1) measurements exclude aerodynamic devices at rear of trailers	
2) For track width with single tires, see Weights and Dimensions of Vehicle Regulations.	

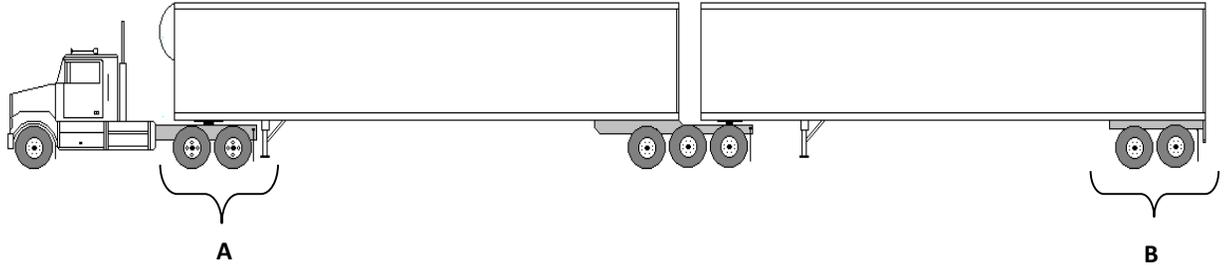


WEIGHT PARAMETERS	A Train
<i>Axle Weight Limits</i>	
<i>Steering Axle</i>	Max 5,500 kg
<i>Single Axle</i>	Max 9,100 kg
<i>Tandem Axle</i>	
Axle spread less than 1.2 m	Max 9,100 kg
Axle spread 1.2 m – 1.85 m	Max 18,000 kg
<i>Tridem Axle</i>	
Axle Spread less than 2.4 m	Max 18,000 kg
Axle Spread 2.4 to less than 3.0 m	Max 21,000 kg
Axle Spread 3.0 to less than 3.6 m	Max 24,000 kg
Axle Spread 3.6 to 3.7 m	Max 26,000 kg
<i>Maximum Gross Vehicle Weight</i>	
5 Axle	41,900 kg
6 Axle	49,800 kg
7 Axle	57,700 kg
8 or more Axles	62,500 kg
Notes:	
1. In all cases, the sum of weights of drive axles plus lead semitrailer must be greater than sum of weights of dolly axles plus second semitrailer axles. (A>B)	
2. For allowable weights with single tires, see Weights and Dimensions of Vehicles Regulations	

B-train configuration



DIMENSION PARAMETERS	B Train
<i>Overall</i>	
Length of combination and load	Maximum 40 m ¹
Width of vehicle and load	Maximum 2.6 m
Height of Vehicle and Load	Maximum 4.15 m
<i>Tractor</i>	
Interaxle Spacing	Minimum 3.5 m
Tandem Axle Spread	1.2 to 1.85 m
Wheelbase	Maximum 6.2 m
<i>Lead Semi-trailer</i>	
Length	Minimum 12.0 m, Maximum 14.65 m
Wheelbase	Maximum 13.5 m
Tridem Spread	2.4 to 3.7 m
Track Width	2.5 to 2.6 m ²
<i>Second Semi-trailer</i>	
Length	Min 12.0 m, Max 16.2 m ¹
Wheelbase	Max 11.5 m
Tandem Spread	1.2 to 1.85 m
Tridem Spread	2.4 to 3.7 m
Effective Rear Overhang	Max 35% of Wheelbase
Track Width	2.5 to 2.6 m ²
Notes:	
<ol style="list-style-type: none"> 1. Measurements exclude aerodynamic devices at rear of trailers. 2. For track width with single tires, see Weights and Dimensions of Vehicle Regulations. 	



MASS PARAMETERS	B Train
<i>Axle Mass Limits</i>	
<i>Steering Axle</i>	Max 5,500 kg
<i>Single Axle</i>	Max 9,100 kg
<i>Tandem Axle</i>	
Axle Spread less than 1.2 m	Max 9,100 kg
Axle Spread 1.2 m – 1.85 m	Max 18,000 kg
Tridem Axle	
Axle Spread less than 2.4 m	Max 18,000 kg
Axle Spread 2.4 to less than 3.0 m	Max 21,000 kg
Axle Spread 3.0 to less than 3.6 m	Max 24,000 kg
Axle Spread 3.6 to 3.7	Max 26,000 kg
LCV number of axles	LCV Maximum Gross Vehicle Weight
<i>5 Axle</i>	41,700 kg
<i>6 Axle</i>	50,600 kg
<i>7 Axle</i>	59,500 kg
<i>8 or more Axles</i>	62,500 kg
Notes:	
<ol style="list-style-type: none"> 1. This configuration may include a tridem axle group on the second semi-trailer 2. In all cases, the sum of weights of drive axles must be greater than the weight of the second semitrailer axles. (A>B) 3. For allowable axle weights with single tires, see Weights and Dimensions of Vehicle Regulations 	

Appendix 3: Example of LCV Driver's Certificate

 apta ATLANTIC PROVINCES TRUCKING ASSOCIATION	LCV Driver Certificate
Certificate #:	
Driver Name:	
Lic #:	
Effective Date: 2015-01-01 Expiry Date: 2015-12-31	
Driver Signature: _____	
Carrier: _____	
LCV Contact Signature: _____	
LCV Contact: _____	

Appendix 4: List of LCV refuge areas

Note: WB = Westbound, EB = Eastbound,

NB = Northbound, SB = Southbound

Highway 104			
Exit	Location	WB Refuge (To NB)	EB Refuge (To Truro)
13	Debert	On ramp	No
10	Station Road	On ramp	On ramp
	Toll Plaza	Yes	Yes
7	Thompson Station	No	On ramp
6	Oxford	On ramp	No
4	So. Albion Street	On ramp	No
	Amherst Compliance Station	Yes	Yes

Highway 102			
Exit	Location	NB Refuge (To Truro)	SB Refuge (To HRM)
6	HI Airport	On ramp	No
7	Enfield Compliance Station	NA	Yes
8	Elmsdale	No	On ramp
10	Shubenacadie	On ramp	No
11	Stewiacke	No	On ramp
	Kelly Lake Compliance Station	Yes	NA

Appendix 5: Change Log

December 13, 2012	Section 7: Drivers Qualification	Added: <i>The Atlantic Provinces Trucking Association may issue the driver's certificate on behalf of the carrier.</i>
February, 2017	General Revision as per the Ontario / Quebec / New Brunswick / Nova Scotia LCV MOU. and driver training reciprocity agreement.	General Revision