

5.0 CORRIDOR OPERATIONS

5.1 Rail Corridor Opportunities for Bus or Truck Service

Figure 8 presents the existing rail schedule broken out on an hourly basis throughout the day. The figure outlines potential times that the corridor could be in use for either a commuter bus route or truck route.

Based on information provided by HRM, it is understood that the current truck volumes operating to and from the Ocean Terminals and Halterm port facilities are on the order of approximately 240 to 350 vehicles per day. Assuming a 30-second headway between trucks and an average operating speed of 40 kilometres per hour, the corridor could accommodate 96 trucks per hour one-way. The total travel time for this many vehicles (350 vehicles) to travel through the 8-kilometre rail cut would be 220 minutes (or approximately 3.6 hours). That would leave approximately 650 minutes per day free for use by commuter buses or other vehicles (570 minutes are required for trains). This adds to the indication that use of the corridor for both types of traffic is feasible. This may be an optimistic estimation, as it is based on the assumption that the trains are regularly on time.

Option 1

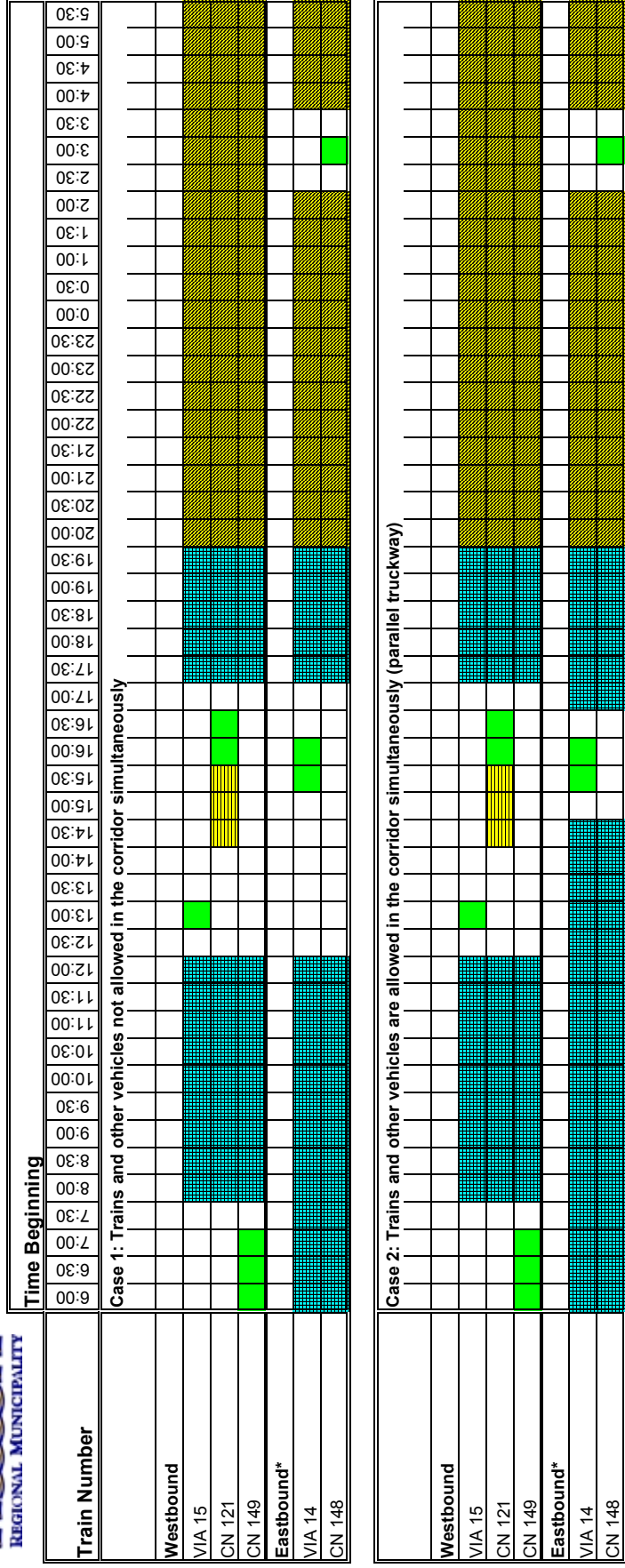
With the implementation of Option 1, the roadway could operate eastbound (downtown) during the morning peak period for trucks and commuter buses when demand is heavy going into downtown. In the afternoon and evening when demand would increase for westbound (leaving downtown) commuter buses and/or trucks, the corridor could operate westbound. Depending on the directional demand for trucks in the evening and overnight, the corridor could switch operations frequently between eastbound and westbound.

Option 4A

With the implementation of Option 4A, the corridor could be operational for trucks 24 hours a day in at least one direction. The project would likely require the existing track to be switched to the opposite side of the corridor, so that when there is a train in the corridor only westbound truck and/or bus traffic (away from the port facilities) could be permitted. Additional excavation would be required as well.

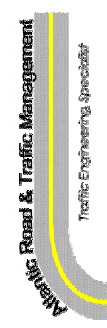
A two-way commuter bus route could be operational in the corridor during the morning peak period between 8:00 a.m. and 12:30 p.m. The corridor could provide westbound bus traffic from 6:00 a.m. (or earlier) to 2:30 p.m. Two-way commuter bus traffic could be provided in the evening from 5:30 p.m. to 8:00 p.m. (or later if demand justifies it).

Figure 8 - Existing Rail Schedule



- Train arrival/departure time at Halifax and Rockingham
- Light power to/from diesel servicing facility
- Potential time slot for trucks (no interference from trains)**
- Potential time slot for commuter buses and trucks (no interference from trains)**

*Eastbound trains are more commonly late because they are at the end of their run.



The corridor could be used as a TruckWay for the port facilities in the South End to effectively move goods to and from the freeway network. There would be sufficient capacity in the corridor for trucks to operate in conjunction with commuter buses. Trucks would occupy the corridor most likely later into the evening and earlier in the morning than buses would operate.

It has been brought to our attention that persistent delays in the eastbound Via Train # 14 may affect windows of availability for commuter buses and trucks in the railcut. The train normally arrives Halifax at 4:10 p.m., and it is understood that the train may be late by an hour or two. Even that, there is still 60 to 90 minutes of potential time for commuter buses and trucks, without interference from trains. While the time slot for commuter buses is expected to be constant, based on the need of a consistent for departure and arrival time, the time slot for trucks can be managed by the signal system, based on the arrival time of the Via Train.

It is noted that the rail corridor opportunity time slots were preliminary, based on the existing rail schedule, not taking into account future changes of rail schedules. Therefore it is recommended that the Municipality should discuss rail schedules with CN, in order to reach a mutually convenient, flexible and cost-effective time-sharing schedule.

5.2 Truck and Bus Terminal Connections

5.2.1 Ocean Terminals and Halterm Port Facilities

Connections to the corridor in the South End would be accommodated through the Ocean Terminals and Halterm port facilities. There is believed to be sufficient land in the Ocean Terminals and Halterm port facilities to accommodate an entry control point that would prevent unauthorized vehicle access and alert drivers to any potential hazards in the corridor such as vehicle breakdowns or provide an update on train schedules in the corridor. Special signal systems would be required at this connection point to ensure safe and efficient operation of the corridor. With implementation of Option 4A, signal systems and traffic control gates would be required to prevent trucks or buses from accessing the corridor when a train is present. With Option 1, signal systems and traffic control would be required to ensure that no vehicles could access the corridor when the road is not operating in the required direction.

A truck staging area would need to be provided to queue trucks that are loaded and waiting to gain access into the corridor. With Option 4A, truck storage would be required while a train is in the corridor. Under Option 1, truck storage would be required while the corridor is operating in the eastbound direction (into the Ocean Terminals and Halterm).

The port area would also be the logical location to provide a connection into the corridor for commuter buses. An express bus service(s) could operate from the ferry terminal in downtown Halifax to Clayton Park, Bedford and Sackville. Access to Barrington Street could be provided via Marginal Road in the Ocean Terminals and Halterm port facilities. There would be a need to restrict access from the local road to the port facilities to only buses and/or trucks that are authorized for use in the corridor.

Figure 9 illustrates the potential operational requirements of the Ocean Terminals and Halterm connection area.

5.2.2 North End

In the North End of the rail cut a firm terminus point has not been defined by HRM. An ideal connection to the corridor is via the at-grade rail crossing on Joseph Howe Drive. This would provide convenient access and egress to Highway 102 via a short drive along Joseph Howe Drive to the Bi-Centennial Drive ramp connections.

Truck staging facilities would also be required at this location with the implementation of Option 1, to provide truck storage for time periods when the roadway is operating in the northbound direction. When the roadway is operating in the southbound direction, authorized trucks could proceed directly into the corridor. Special signal systems and traffic control would be required to control access and egress at this location.

For commuter buses, gateway access and egress at the north end of the corridor could be established via the Bayers Road bus terminal. The Bayers Road bus terminal is located adjacent to the Bayers Road Shopping Centre and access to the Rail Cut corridor could easily be made just north of the Shopping Centre.

Figure 10 illustrates the potential operational requirements of the North End connection area.

5.3 Potential Robie Street TruckWay Connection

The feasibility of a TruckWay connection into the corridor via the south end of Robie Street was also assessed as part of our investigation.

The purpose of this assessment was to examine the feasibility of providing an alternate truck route to the Ocean Terminals and Halterm port facilities that would remove trucks from Water and Hollis Streets in the downtown core, without constructing a new roadway through the remainder of the rail corridor to the Fairview Cove area. This alternate connection could be potentially be viewed as an interim Phase 1 stage that could be implemented within the



Source: MapArt, 2000



■ CN Rail Corridor

⊕ Traffic Signals

■ Bayers Road bus terminal

FIGURE 10
North Corridor Connections

next few years, with Phase 2 involving continuation of the roadway in the rail corridor to the North End.

Robie Street is one of the main north/south arterial roadways north of South Street with direct connections to Highway 111 via the MacKay Bridge and reasonable connections to Highway 102 and Highway 103. Robie Street is designated as a Truck Route from Inglis Street north to the MacKay Bridge, leaving only about 300 metres of local street south of the Inglis Street intersection. However, Robie Street provides access for many residential properties, and is also adjacent to hospital and university lands. This could be a concern in terms of ease of implementation.

The Robie Street TruckWay Connection can be viewed as an inexpensive, short-term first phase of the TruckWay. Phase 1 would involve about 0.9 km of the overall TruckWay, leaving about 5.7 km to be constructed as Phase 2, to connect to Joseph Howe Drive at the railway crossing. If the Robie Street connection is to be Phase 1, the bridge should be aligned perpendicular to the tracks, to facilitate access to both directions of the overall TruckWay. When Phase 2 is completed, truck use of Robie Street could be prohibited or restricted to local service and the Robie Street connection could be used by buses rather than trucks. The Robie Street connection will provide a valuable future busway connection for buses traveling from the west and north to access both St. Marys and Dalhousie Universities, as well as the various hospitals in the area.

Two main options were assessed, which include a direct at-grade connection to the corridor and a fly-over connection that would ramp down once over the existing rail tracks.

5.3.1 Direct Connection

The direct connection to the corridor from Robie Street was assessed in terms of three potential alignment alternatives. These alternatives are shown in **Appendix B**. Our assessment assumes that the road would ramp down from Robie Street and consist of an at-grade crossing of the rail line, with the road continuing beside the tracks into the Ocean Terminals and Halterm port facilities. The assessment was undertaken for two-way operation of the roadway connection that would not impact the existing rail line or rail operations, except at the at-grade intersection. Signals would be required at this intersection and possibly on Robie Street, to stop traffic from proceeding down into the connection when there is a train in the corridor.

The resulting profiles for each alignment alternative were then evaluated. A 40-km/h design speed was assumed for this connection, along with a six percent maximum grade for the roadway.

Alternative 1 consists of a connection to the corridor via a curved alignment west of Robie Street. This alternative would require a profile change on Robie Street approximately 70 metres back from the existing edge of pavement to accommodate a six percent grade.

Alternative 2 consists of a straight alignment from Robie Street to an at-grade connection in the corridor. This alternative would require a profile change on Robie Street approximately 185 metres back from the existing edge of pavement.

Alignment 3 consists of a curved alignment east of Robie Street. This alternative would require a profile change on Robie Street approximately 45 metres back from the existing edge of pavement.

All of the alignment alternatives assessed for an at-grade connection to the corridor are feasible but would require significant changes to the existing elevation of Robie Street and would also require significant property acquisition in the area. This would also have significant impacts on property access. The direct connection would also require a significant amount of rock cut to accommodate a six percent road grade from Robie Street.

A detailed cost estimate has been prepared for Alternative 2, which is the direct connection to the corridor with an at-grade crossing the rail line. This detailed cost estimate is presented in **Table 3**.

TABLE 3
ROBIE STREET TRUCKWAY WITH AT-GRADE CONNECTION
COST ESTIMATE – ALTERNATIVE 2 (VERSION 4)

Item	Cost
Services	\$2,500,000
Capital	
Truck Road	\$4,850,000
Robie Street Connection	\$3,600,000
Special Systems	\$1,100,000
Property (Allowance)	\$5,100,000
Total Cost	\$17,200,000

5.3.2 Fly-Over Connections

Two fly-over connections to the corridor were also assessed in terms of their feasibility. The potential alignment and profile of these options is presented in **Figure 11** in Appendix B. These options would not require a crossing of the existing rail line, which would improve traffic operations of the roadway by removing any potential conflict with rail traffic.

The fly-over options would require the construction of a new bridge structure over the existing rail line and then a ramp connection to the corridor. Option 1 Version 3 includes a 90-metre radius grade separated ramp. Option 2 Version 3 is similar to Option 1, with a 190-metre radius grade separated ramp. The property requirements of the fly-over options would be minimized, as there would be no profile change requirements on Robie Street. There would also be a cost savings, with the removal of the rock-cut cost that is required with the direct connection option. However, there would be a large structure and ramp cost associated with the fly-over option, and a high ongoing maintenance cost for this structure. The cost estimates for the fly-over options are summarized in **Table 4**.

TABLE 4
ROBIE STREET TRUCKWAY WITH GRADE-SEPARATED CONNECTION
COST ESTIMATE –VERSION 3

Item	Option 1	Option 2
Services	\$1,460,000	\$1,570,000
Capital		
Road	\$3,600,000	\$3,600,000
Robie Street Ramp to Base of Cut	\$3,910,000	\$4,810,000
Property (Allowance)	\$300,000	\$300,000
Total Cost	\$9,300,000	\$10,300,000

The concept of a truck road extending only from the Ocean Terminals to Robie Street would have a lower cost than the total TruckWay, but also fewer benefits. This connection would remove trucks from the narrow and congested sections of Hollis Street and Lower and Upper Water Street, such as the Historic Properties area, but it would not be useful for express bus service. It would also have only very limited utility as an emergency services route. The impact of large trucks on the residential and university communities adjacent to Robie Street should also be noted as a potential issue for this concept.