

3. DESCRIPTION OF THE OPTIMIZED VNSL SUBWAY EXTENSION

3.1 SUBWAY ALIGNMENT AND RUNNING STRUCTURE

This section describes the characteristics and elements of the undertaking developed in meeting the Conditions of Approval for the Region's Highway 7 and Vaughan North-South Link Environmental Assessment.

The Undertaking comprises the construction, operation and maintenance of the Vaughan North-South Link (VNSL) portion of the Spadina Subway Extension, from the Steeles West Station on the Toronto municipal boundary to Highway 7 and Millway Avenue intersection in the future Vaughan Corporate Centre (VCC) as illustrated in Figure 3-1.

The Vaughan North-South Link (VNSL) Subway alignment starts just north of the Steeles West Station at the northern limit of the recommended alignment developed in the City of Toronto/TTC EA of the Downsview to Steeles Avenue Spadina Subway Extension. The alignment follows a 405 m long tangent section of track in a northwesterly direction across the northeastern corner of the UPS property.

The twin tunnel subway alignment continues along an 80km/h, 460m radius horizontal curve traversing the Hydro One corridor and passing under one transmission tower. The twin tunnels then swing north under the CN Rail Halton Subdivision tracks, Jane Street and Black Creek. Immediately after the creek crossing, the tunnels enter the 407 Station located mostly within ORC land. The southern limit of the 407 Station, to be constructed underground by the cut & cover method, coincides with the western boundary of the Black Creek fill regulation area. Because of the proximity to the fill regulation limit, there may be a small amount of temporary excavation and backfill required within the fill regulation limits (i.e. for the southeast corner of the station). The detailed design and construction method for this portion will be submitted to Toronto and Region Conservation Authority (TRCA) for approval.

The alignment then continues north in tunnels under the 407ETR interchange facility and aligns with the 23 metre easement set out in the City of Vaughan Official Plan Amendment 529. The VCC Station is located on the tangent section where the alignment crosses Highway 7.

A double cross-over is located just south of the VCC Station to allow trains to enter either platform track at this terminal station. Double tail tracks, with storage capacity for one 6-car train per track, are included north of the VCC

Station. The double tail track structure at the end of line follows a tangent alignment north of the VCC Station.

The total length of the VNSL subway alignment is 2.8 km.

3.1.1 Geometric Characteristics

The alignment geometry meets the TTC's horizontal and vertical design standards defined by the criteria shown in Section 2.

Figure 3-1 illustrates the preferred alignment.

Figures 3-2 to 3-6 illustrate the recommended horizontal and vertical alignment while the typical cross-sections proposed for the tunnelled running structure and stations are shown in Figure 3-7.

3.1.2 Running Structure Construction

The deep tunnel portion of the running structure will be constructed by boring two tubes using an earth pressure balanced tunnel boring machine which avoid the need for dewatering and eliminate or minimize settlement at ground level during and after the tunnel construction. The shallower sections where crossover tracks are required will be constructed using cut-and-cover methods.

3.1.3 Track Technology

The track support system will be an assembly of running rails fastened directly to floating concrete slabs supported on elastomeric pads mounted on the tunnel invert slab to minimize the noise and vibration effects of subway operations. The Sheppard Subway and sections of the existing Spadina line were built using this technology and have achieved the desired results.

3.1.4 Stations

The two stations located on the preferred alignment comprise:

- Hwy 407 station, located west of Jane Street and south of Highway 407.
- Highway 7/Millway (VCC) station, oriented in a north-south direction at the Millway Avenue and Highway 7 intersection.

The facilities comprising the undertaking at each station are described in more detail in Section 3.2 below.

3.2 RAPID TRANSIT INTERFACE

As indicated in the Highway 7 VNSL EA Report, York Region plans to provide transit service to York University by operating Bus Rapid Transit service (BRT) on Jane Street until the Spadina Subway Extension to Vaughan is opened to the public. The BRT service will be discontinued when the subway service is provided to Highway 7. The Viva Purple line will continue to operate on Jane Street to the Highway 407 Station allowing students to get to the University using the subway as described in Sections 3.3 and 3.4.

3.3 HIGHWAY 407/JANE STREET STATION

3.3.1 Operational and Physical Requirements

The Highway 407/Jane Street Station is located approximately midway along the VNSL alignment immediately south of the 407ETR Jane Street interchange. This location will provide convenient park-and-ride access for passengers originating from north of Highway 407 and east or west along the 407 ETR. Consequently, the station parking is planned to accommodate a large number of vehicles through incremental expansion to fulfil the role of a primary transfer station for commuters. In addition it will become an important intermodal station for passengers transferring from the future MTO transitway as well as from other regional bus services such as Viva, YRT, GO Transit, and Brampton Transit. For the purpose of this environmental assessment it is assumed that a 600 space at-grade park and ride lot will meet the combined needs of the transitway and subway.

As noted, the Highway 407 Station is configured to provide operational integration with the planned MTO 407 Transitway station (southwest corner of the Jane St. and Hwy 407 Interchange) while protecting ORC property allocated for the future MTO 407 Transitway facilities based on currently available plans and conceptual layouts.

The station bus transfer facilities include the anticipated capacity to accommodate the requirements of the MTO Transitway, YRT, GO Transit and Brampton Transit. The facilities provide pick-up/drop-off and layover space for the corresponding transit Authorities.

Access to the station will be provided from Jane street with an acceptable level of service (Note: the Region of York is proposing to widen Jane Street to 6 lanes). The access road from the Station to Jane Street will have to cross Black Creek. The bridge crossing will be designed to meet TRCA requirements and recommendations. The intersection at Jane Street will be

integrated with Beechwood Cemetery entrance into a single signalized intersection.

3.3.2 Assessment of Station Location Options

There are several physical constraints that limit the choice of alternatives for the 407 Station location/orientation in the area designated for the 407/Jane Station. The general location of the station on the west side of Jane Street and South of Highway 407 was determined in the York Region VNSL EA. The location zone boundaries are defined by the following:

- Highway 407 to the **north**
- Black Creek Fill Regulation Limit to the **south**
- MTO Transitway limits to the **west** – as defined in the 407 Transitway Corridor Protection Study
- Jane Street, Black Creek Fill Regulation Limits, and Beechwood Cemetery to the **east**.

In parallel with the York Region VNSL EA, the City of Vaughan negotiated a 23 m easement for the subway alignment north of Highway 407 and set out this easement in OPA 529. The station alternatives must be consistent with this easement.

The constraints identified above, limit the 407 station to only one feasible station location on the preferred alignment as illustrated in Figure 3-8.

3.3.3 Subway Platform

This station has a centre platform configuration in which passengers board and alight trains via a single platform between the two tracks. Centre platforms provide greater utilization of vertical circulation, convenient cross-platform transfer where required and greater capacity to accommodate surges in traffic flow, especially during service interruptions. Some rooms, such as ancillary rooms, signal rooms and service rooms are provided at the platform level.

3.3.4 Station Concourse

The concourse level is located directly above the platform and is connected to the platform through stairs, escalators and an elevator. The concourse permits transfers between the entrances and bus platforms at ground level and subway platforms below. There will also be direct access from the MTO Transitway Station that will be located above the subway station, but below surface (as shown in Figure 3-9). Other rooms, such as staff rooms, electrical rooms, and service rooms are also housed at this level located at both ends of the platform.

3.3.5 Station Entrances

Station entrances are provided for access to / egress from the station. The following two entrances have been proposed for the 407 Station. Entrance locations and requirements will be reviewed to confirm functionality during the design phase:

- 1) Main Entrance – located on an island to the east of the commuter parking and southwest of the PPUDO facility. The main entrance will be equipped with stairs, escalators and an elevator in order to accommodate higher pedestrian volumes. The station entrance will be enclosed with the collector's booth located at the concourse level.
- 2) Bus Platform Entrance – located towards the west end of the bus terminal platform. The entrance will be equipped with stairs, escalators and an elevator. The station entrance will be enclosed.

3.3.5.1 Paid/Unpaid Access

It is assumed that all transit agencies accessing/serving the station (bus and subway) will be participating in the Regional Fare Collection / Smart Card Program and that the program will be operational prior to the VNSL subway extension being complete. Therefore, once the station is in operation, any existing fare agreements/transfers/discounts between agencies will be accommodated by installing fare card transaction processors at the turnstiles located at the bus platform entrance. The main entrance will be to an "unpaid" zone. Payment can be made at a collector's booth or at turnstiles. It is possible that the main entrance will be automatic (i.e. an unstaffed station entrance, which is equipped with token vending equipment and high turnstiles to allow passengers to pay their fare before entering the subway station). If this assumption is not correct adjustments to the location of the entrances and pedestrian accesses will be revised.

3.3.6 Ventilation Shafts

Ventilation shafts are incorporated into the subway station in order to balance air pressure within the tunnels and stations and to provide for emergency exhaust and fresh air supply in case of an underground fire. Ventilation fans can also be used to alleviate high summer temperatures in the underground stations. The ventilation shafts will be equipped with high capacity emergency fan systems to remove smoke in the event of a fire in the station or on a train. To mitigate the safety and legal issues, the ventilation system will be designed such that the shafts emerge outside of the 407 ROW. This will be achieved through the utilization of underground ducts as shown in Figure 3-9.

3.3.7 Feeder Transit Facilities

Passenger transfers between buses and the subway are expected to represent a large proportion of passenger movement at this station. The Station will provide transfer service to the following bus authorities:

- MTO / Hwy 407 Transitway
- YRT and Viva
- GO Transit
- Brampton Transit

A central platform bus terminal has been provided at the north end of the 407 station. Direct access to the subway and the MTO transitway platforms will be provided from the bus loading/unloading platform. 18 bus-bays have been identified to accommodate both regular and articulated buses. The bus driveway provides for one-way (clockwise) circulation around the platform.

MTO 407 Transitway

In 1998 MTO undertook a corridor protection study for a transitway running parallel to Highway 407 from Highway 403 to Markham Road. The Study includes a station in the same quadrant where the Subway 407/Jane Station is planned (ORC lands north of the Hydro Corridor, east of Highway 400, south of Highway 407 and west of Jane Street).

The 407 transitway will use BRT technology initially but may eventually be converted to LRT when the demand requires. The 407/Jane Street Station Facility was developed considering an integrated facility responding to the needs of the Subway, the MTO Transitway, the other transit authorities and the commuter's requirements as shown in Figure 3-8. The Transitway Corridor Protection Study Report identifies the conceptual alignment for the 407 Transitway. MTO began the 407 Transitway planning and preliminary in early 2007. Slight adjustments to the conceptual alignment of the MTO 407 Transitway may be done to optimize a functional arrangement for the multi-modal facility.

GO Transit Bus Services

For GO Transit the 407/Jane Station will be a primary transfer facility to the Subway, to the 407 Transitway and to local and regional bus services such as VIVA, YRT and Brampton Transit. GO Transit passenger loading/unloading and layover operations will occur in the proposed bus-facility. A bus layover location will be identified and will be integrated with the adjacent transitway storage and maintenance facility.

The Highway 407/Jane Street station will serve as the hub for GO's 407 BRT service. It is anticipated that, while new markets will take advantage of the transit network connections to be provided, the core market of the BRT service at this location will continue to be York University students. As such, the viability of GO's operations at this location depends on the development of a fare concession that allows students to transfer between the bus and subway and travel to/from the York campus at a reduced cost.

It is recognized that a comprehensive and integrated fare management system will have to be developed that addresses the needs of commuters and Transit agencies at this multi-modal transit facility. A Regional Fare Collection and/or SMART card program, which is anticipated to be in operation at the time of the subway opening, will facilitate this fare management integration.

Brampton Transit

Brampton Transit runs route 77 which currently interlines services with YRT. Their intention is to connect to YRT local and VIVA buses, the Subway, GO Transit Services and MTO 407 Transitway at the 407/Jane Station.

YRT

YRT anticipates re-routing their local routes 20 and 360 and VIVA Purple Line to connect to the other transit services at the 407/Jane Station. YRT buses access and circulation path at the 407/Jane Station is illustrated in Figure 3-10.

3.3.8 Park-and-Ride Facilities

Based on the preliminary results obtained from the demand model, and considering the importance of this multi-modal facility and the multiple use planned by MTO in the ORC land west of Jane Street for their transitway (station parking, maintenance/ storage yard and other facilities), MTO and York Region agreed on the following parking strategic plan.

For the purpose of this environmental assessment it is assumed that a 600 space at-grade park and ride lot will meet the combined needs of the transitway and subway. The need for additional parking will be determined through the 407 Transitway environmental assessment/preliminary design study based on the transitway site requirements including operations/control centre and maintenance and storage yard requirements. During the design phases of both subway and transitway projects, adjustments to the proposed parking layouts maybe carried out.

3.3.8.1 Access Roads

In this study, two access roads to the facility are being proposed, both from Jane Street. MTO and Region of York are considering undertaking further studies to evaluate the feasibility of providing other access means to this facility.

The most northerly access will be a right-in/right-out from southbound Jane Street immediately south of the Highway 407 Eastbound exit ramp. This entrance does not impact on Black Creek. This access does not cross Black Creek flood plain. The intersection will be controlled by signage/paving marking only.

The second access will also be from Jane Street through a four leg-all movement signalized intersection which will be integrated to the Beechwood Cemetery entrance. This access will cross Black Creek with a bridge. The exact location, size and type of bridge will be defined during the design phase. The bridge will be designed in accordance with TRCA requirements and recommendations. The location of piers will be based on hydraulic analysis, erosion control evaluation and physical considerations. The structure span will be confirmed by a meander belt/100-year erosion limit analysis during the design phase.

3.3.9 Passenger Pick-Up/Drop Off (PPUDO) Facility

A 20 - 30 space PPUDO will be provided. The size has been estimated based on preliminary travel demand requirements considering and comparing with the potential demand of the PPUDO facilities at both adjacent stations and traffic conditions in the area. The size of this facility will be reviewed during the environmental assessment/preliminary design of the 407 Transitway to assure enough capacity for users of both transit modes. Passengers from the PPUDO will access the station via the entrance located approximately 20 metres southwest of the PPUDO site.

3.3.9.1 Bicycle Facilities

Facilities for cyclists (i.e. bicycle lock-ups) will be provided at this station. The final location and configuration will be determined during the detailed design.

3.3.9.2 Taxi Facilities

It is intended that designated taxi stands be provided at this station. The final location and configuration will be determined during the detailed design.

3.3.10 Stormwater Management Facility

The development of the site from its current greenfield condition will result in increased volume and degraded quality of runoff during storm events. A permanent wet pond facility or equivalent method of treatment will be provided to attenuate flows to predevelopment levels, protect the Black Creek from increased erosional forces and provide enhanced quality treatment for the runoff release.

MTO anticipates an important stormwater management facility to be located in the same quadrant (south of HWY 407, west of Jane Street, north of the Hydro Corridor, east of HWY 400) and an integrated solution of both facilities is recommended.

The design of the wet pond facility, including the location and approximate capacity, will be defined during detail design, after the MTO Transitway Study has defined their facility in the area and assessed their own requirements. The detailed design of the Spadina Subway Extension will also take into consideration the recommendations obtained from the stormwater management plan study being undertaken by the City of Vaughan, which will re-examine stormwater management and flooding conditions in the Black Creek Corridor. The runoff management strategy will also incorporate recommendations of a water balance study for the EA study area, to be carried out at the detailed designed phase. Note: there are a number of options available to achieve a water balance on site including the installation of green roofs, bio-swales, infiltration systems/basins, rain water harvesting techniques, porous paving, perforated pipes, wet ponds, etc.

3.4 VCC (HIGHWAY 7/MILLWAY) STATION

3.4.1 Operational and Physical Requirements

The Highway 7/Millway (VCC) station is the northern terminus of the proposed Spadina line extension. It serves the Vaughan Corporate Centre (VCC) and the rapidly growing northern developments of Vaughan. The station is conveniently located to serve local YRT and VIVA routes. It is expected that this will become the primary station for local feeder bus service.

In addition to walk-in ridership from development at the VCC, the VCC Station will mainly serve transit users transferring from VIVA and local YRT routes, users being picked-up and dropped-off by private vehicles and people coming from Toronto to the future VCC. This Station zone must incorporate facilities for pick-up/drop-off operations by YRT services connecting to the subway, as well as layover parking for routes terminating

at VCC. These facilities are to be designed respecting the VCC Streetscape and Open Space Master Plan Study recommendations.

The station will include a passenger pick-up/drop-off facility and ideally, a limited parking facility, recognizing the City of Vaughan vision set out in the VCC Official Plan.

3.4.2 Assessment of Location Options

The east-west location is defined by the easement previously negotiated by the City of Vaughan and the Developers of the area. The extension of Millway Avenue south of Highway 7 will be aligned to coincide with the subway alignment.

In terms of the north-south location, there is more flexibility; however, in order to respond best to operational requirements, it should be located under Highway 7, as convenient as possible for people using the pick-up/drop-off bus and car facilities.

3.4.3 Platform

This station has a centre platform configuration in which passengers board and alight trains via a single platform between the two tracks. Some rooms, such as the ancillary room, signal room and service room will be provided at the platform level.

3.4.4 Concourse

The concourse level is located directly above the platform and is connected to the platform through stairs, escalators and an elevator. The concourse permits transfers between the bus platforms and parking areas at ground level and subway platforms. The staff room, electrical room, and service room will be housed at this level.

3.4.5 Station Entrances

At least three station entrances are proposed for this station to provide adequate ingress/ egress from/to the station. These are summarized below. Note, entrance locations and requirements will be reviewed and optimized within the surrounding built environment during the design phase:

1) Highway 7 Entrances – Two entrances will be provided from Highway 7 – one at the northeast corner and one at the southwest corner. Both these entrances will be equipped with stairs, escalators and an elevator in order to accommodate high pedestrian volumes. The station entrances will be enclosed – opportunities to provide integrated entrances that are located

within existing buildings will be pursued. It is expected that the collector's booth will be located at the concourse level.

2) PPUDO Entrance – This entrance is located towards the north end of the station and is intended to serve mainly PPUDO customers and customers from the north half of the VCC. The entrance will be equipped with stairs, escalators and an elevator. The station entrance will be enclosed.

3.4.6 Feeder Bus Facilities

This station will serve the following bus services:

- YRT local routes (10, 20, 35, 77, 360)
- YRT VIVA service (Purple, Orange)

The schemes proposed for the transit connections to the VCC station are based on the ultimate road network scenario for the area, as presented in the City of Vaughan's Streetscape and Open Space Draft Report and the intended bus routing provided by YRT. These schemes will work if the following roads of the Official Plan are built by the time the Subway opens operation:

- Millway Avenue from Doughton Road to AppleMill Road.
- Applemill Road extended to Jane Street as a minimum -Route 10 could turn south at Jane Street unless ring road is extended to Highway 7.
- East-West local road between Highway 7 and Applemill Road from Edgeley Boulevard to Jane Street.

The two VIVA routes will pick-up/drop-off passengers at their median stations. The Orange Line is scheduled to terminate the route at the VCC Station, while the Purple Line at the 407/Jane Station. The HWY 7/Millway signal must provide an advance left for the eastbound Orange Line to allow a safe operation.

Far-side bus stops will be provided for the local YRT routes at the corners of Highway 7, and Millway Avenue. The MobilityPlus service will have layby stops on the corners opposite those stops for the local YRT buses on Highway 7.

A 4 bus layby stop is being provided for short lay-overs during peak periods on the south side of the future local road parallel to Highway 7, east of Millway Avenue. Peak period buses which are not used during off-peak periods are sent back to their respective divisional garages, as per current practice.

Figure 3-11 illustrates the proposed bus facility arrangement at the VCC Station. Figure 3-12 illustrates the proposed YRT bus routing in the area. .

In case none of the VCC road network is built before the subway extension is operating, an interim feasible arrangement is included and illustrated in Figure 3-13.

3.4.7 Park-and-Ride Facilities

As indicated in Chapter 9 of the Highway 7 and VNSL EA Report, York Region is committed to undertake a strategic study of parking for transit users. This study will assess opportunities for commuter parking in a highly developed area as VCC is expected to be and will be reflected in development plans for the VCC. This study will explore the potential for additional commuter parking opportunities. This will be investigated further during detailed design and reviewed when a transit parking policy is developed during the above-mentioned transit parking study.

3.4.8 Passenger Pick-Up/Drop Off Parking

As part of this station a 20-24 space PPUDO will be provided. This size has been estimated based on preliminary travel demand projections. The proposed PPUDO location was developed considering the City of Vaughan's development plans as included in the Streetscape and Open Space Draft Report. The PPUDO facility will utilize part of the triangle formed by Applemill Road (ring road), the existing and the future Millway Avenue. The PPUDO layout will be defined during the design phase in coordination with the City's streetscape design of the Transit Square and possible participation of the developers.

3.4.8.1 Bicycle Facilities

Facilities for cyclists (i.e. bicycle lock-ups) will be provided at this station. The final location and configuration will be determined during the detailed design.

3.4.8.2 Paid/Unpaid Access

The general criteria assumed is described in Section 3.3.5.1. All entrances will be to the "unpaid" zone. Payment will be made at a collector's booth or at turnstiles prior to entering the fare zone. Passengers transferring from a bus and destined to a free station on the subway will be able to use fare card transaction processor equipped turnstiles to take advantage of transfer fares.

3.4.9 Ventilation Shafts

Ventilation shafts are incorporated into the subway station in order to balance air pressure within the tunnels and stations and to provide for emergency exhaust and fresh air supply in case of an underground fire. Ventilation fans can also be used to alleviate high summer temperatures in the underground stations. The ventilation shafts will be equipped with high capacity emergency fan systems to remove smoke in the event of a fire in the station or on a train. These are shown in Figure 3-14.

3.5 ANCILLARY FACILITIES

3.5.1 Electrical Power

The subway will obtain traction power through electrical substations fed by high voltage connections from the Hydro One Regional Distribution. The substations are equipped with transformers, switches and circuit panels to support the different systems (traction power, lights, equipment and safety).

Based on TTC traction power requirements, substations are typically 2.0 kilometres apart but cannot exceed 2.5 km in spacing. Since subway stations require power for lights and equipment, TTC usually locates the electrical substations near subway stations. Following this criteria the only proposed substation along the Vaughan Link will be located at Millway Avenue just south of Avenue 7, near the VCC Station, north of the substation proposed by TTC near the Steeles West Station.

Although conceptually the substation is identified in Figure 3-6, the final location and configuration of the electrical substation will be refined during the design phase.

3.5.2 Emergency Exit Buildings

Emergency exit buildings are structures that extend from the underground tunnels to above grade and are designed to provide an emergency exit for passengers and an emergency access for fire fighting crews. They can also provide emergency ventilation and secondary power sources.

The below grade portion of the structures includes a central vertical access/egress shaft with a spiral ramp or walkway leading from the tunnel to the surface. At grade, the typical structure is one-storey building about 10 square metres in area and 3 metres in height.

NFPA130 stipulates that the maximum walking distance in case of fire should not exceed 381 m, which equates to a maximum distance from emergency exit to emergency exit or emergency exit to station of 762 m.

Although conceptually the emergency exit buildings are identified in Figure 3-1, the final location and configuration of the emergency exits will be refined during the design phase.

3.6 SUBWAY VEHICLE REQUIREMENTS

The subway cars will have the following characteristics:

- Train consists of 6 cars
- Car length = 22.8 m.
- Car width = 3.1 m.
- Car rated capacity = 250 passengers
- Electric motors utilizing 600VDC.
- Trains manually controlled.

In support of the VNSL subway extension, additional subway fleet will be required. TTC is contemplating an expansion of the Wilson Yard to provide maintenance and storage to the additional fleet. The EA approvals for these works were secured in 1994 through the New Subway Storage and Maintenance Facility EA.

3.7 ASSOCIATED ROAD IMPROVEMENTS

Aiming to provide additional capacity to the transportation network in the area, in addition to the capacity that by the Vaughan Link Subway Extension will provide, improvements to the road network are in various stages of the approval process as indicated below.

1. Widening Jane Street to three lanes per direction. York Region. – EA Approved.
2. East-West Collector Road, from proposed Street “C” (West Gate Road north extension) to Jane Street. York Region. - EA approved as part of the Highway 7 & VNSL study.
3. East-West Collector Road, from Keele Street to proposed Street “C” (West Gate Road north extension). City of Vaughan – Approved by Municipal Councils and under appeal at the OMB.
4. Millway Avenue from Doughton Road to AppleMill Road. City of Vaughan – status unknown at this time.
5. Applemill Road from Millway Avenue to Jane Street. City of Vaughan – status unknown at this time.

6. East-West local road between Highway 7 and Applemill Road from Edgeley Boulevard to Jane Street. – City of Vaughan – status unknown at this time.

3.8 FUTURE ALIGNMENT REFINEMENTS

The functional details presented in this report illustrate the intended concept of the undertaking for EA purposes; however changes to these concepts may be required during design and construction. The Steeles West station, the southern origin of the Vaughan North South Link, is included in the TTC/Toronto Spadina Subway Extension EA. Section 9.10 of the TTC EA describes the process for EA Amendments. The TTC EA provides an amending boundary around the station. Should there be modifications to the station location or layout, the VNSL tie-in alignment will need to be altered accordingly. Figure 3-1 exhibit provides a shaded area that delineates the TTC amending boundary, within which alignment modifications can be made without necessitating an EA amendment.

As part of the Subway Alignment Optimization Report, an amending boundary has also been identified as shown on Figure 3-1.

This amending boundary is required to provide during the future design phase, the opportunity to allow for alignment adjustments/refinements. These adjustments may be recommended to optimize the design and/or minimize the impact to third parties, to address the following issues:

- The exact arrangement and location of the triple track structure.
- A detail assessment of the hydro towers sub-structure and the sub-soils conditions at the hydro corridor crossing.
- A review of the operational and physical integration of the Highway 407 Station with The Highway 407 MTO facility, once their needs are defined.
- Impacts to Black Creek.

Alignment variations within the amending boundary limits identified during the following design phase, would be handled without a formal approval requested from the MOE EA Branch. These minor adjustments will be addressed on the site plan approval, following the required permits and approvals of the affected agencies and landowners.