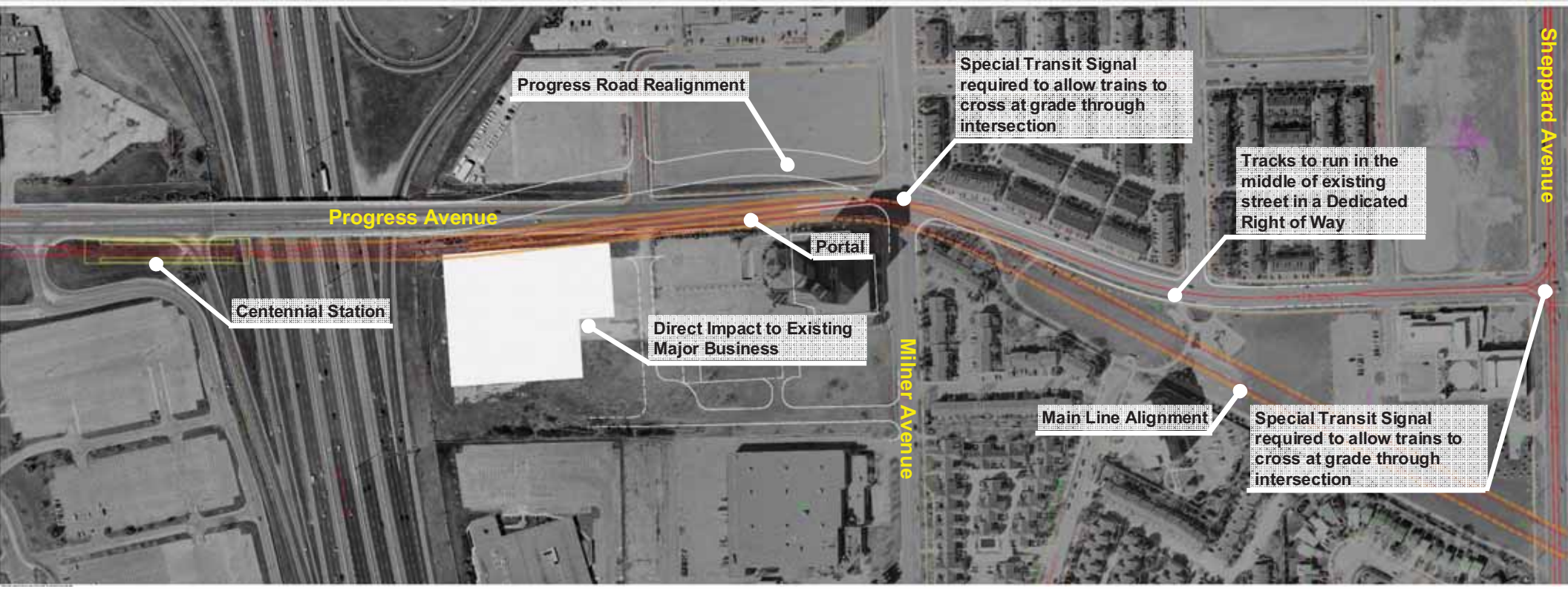
# Analysis for Service Tracks

| Objectives | McCowan | Progress at Grade | Markham | Direct Connection at Sheppard | SUMMARY |
|---|---|---|---|---|---|
| | Sheppard/McCowan connection, along McCowan Rd, down to Ellesmere and connect to existing yard via Ellesmere. | Sheppard/Progress down Progress ave until Milner, cross over at 401 Bridge going above grade. | Sheppard/Markham down Markham, along Milner, into Milner business Court, cross over at 401 Bridge going above grade. | Connects to Mainline north of Sheppard Station | |
| A) Minimze Adverse Environmental Effects | ◕ | ◑ | ◕ | ● | The direct connection at Sheppard is the most preferred as it has the lowest overall impact to the residents of the area due to its underground nature. Its impacts at Highland Creek bridge can be mitigated as improvements to the existing Sheppard bridge are also required for the Sheppard LRT. The Progress option is the least preferred due to its impacts to the local residential community. |
| B) Support Population and Employment Growth | ● | ◕ | ◕ | ◕ | Only the McCowan corridor has the potential to be upgraded for revenue service to meet an Official Plan objective. |
| C) Technical Issues | ◔ | ◕ | ◑ | ● | McCowan has the highest impacts to both transit and traffic operations and therefore is least preferred. From a transit operations issue, the direct connection at Sheppard or Progress provides the most flexibility without affecting the mainline operations. |
| D) Cost | ◔ | ● | ◑ | ◕ | Due to its length, the McCowan connection has the highest capital cost and requires the most ongoing opertation and maintenance cost. The Progress option has a significantly lower capital cost in comparison to all other options. |
| Overall Summary | ◔ | ◕ | ◑ | ● | |
| | | Carried Forward | | Carried Forward | |

# Progress Option




In order to mitigate impacts to the major business, alternatives including a reconstruction of the Progress Avenue bridge over the 401 or reverting back to the west side of Progress Avenue is being considered.

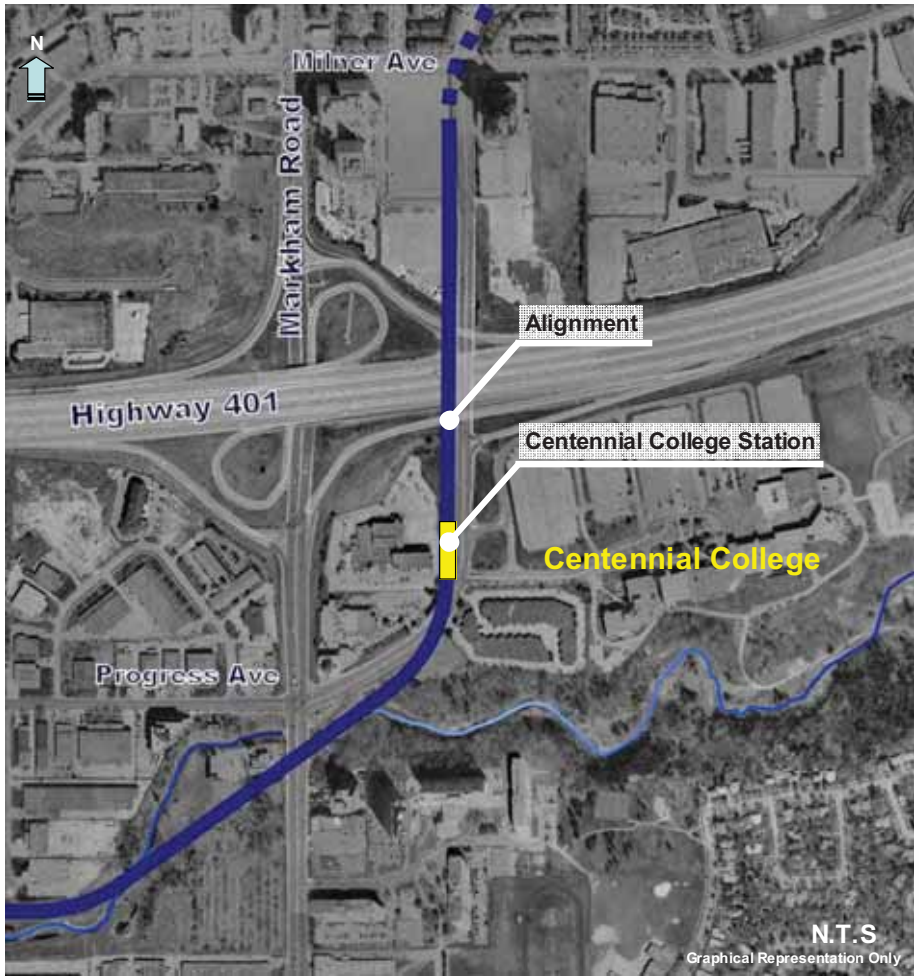
The service track will be used prior to start of service (before 6am) and after the end of service (12am – 2am) and occasionally through the middle of the day during normal service operations.

# Underground Connection to Sheppard

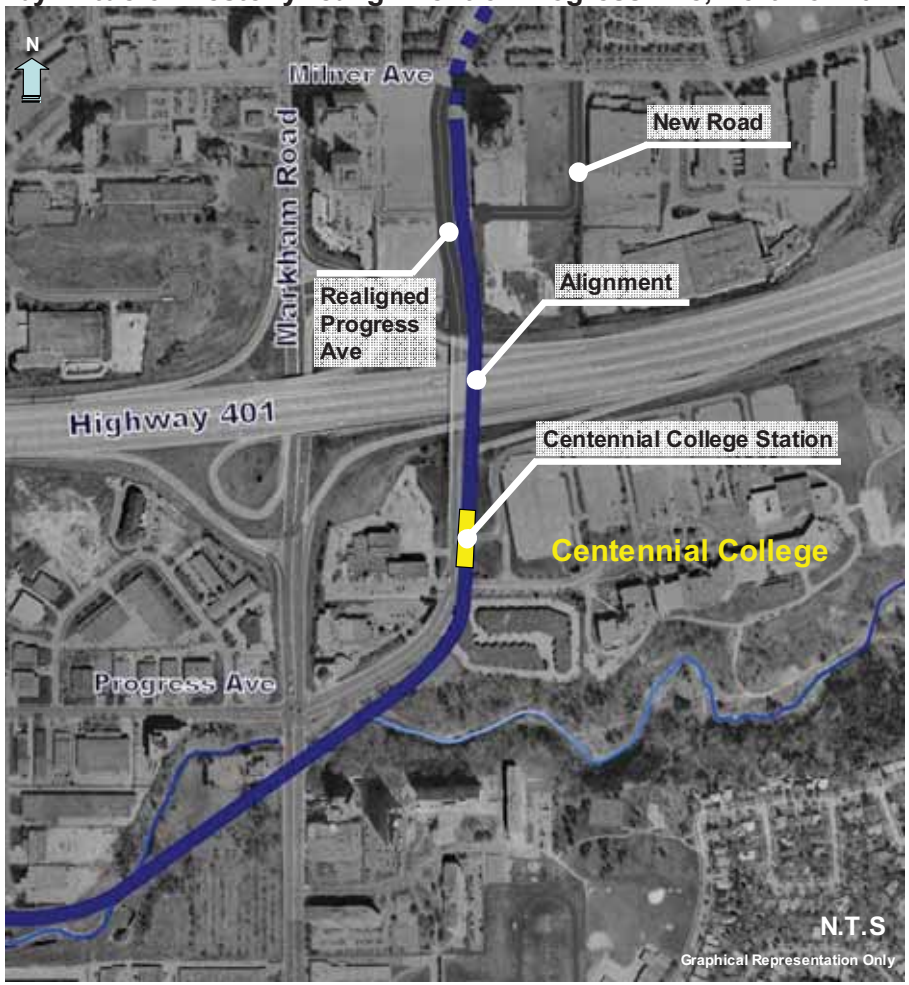

The service track will be used prior to start of service (before 6am) and after the end of service (12am – 2am) and occasionally through the middle of the day during normal service operations

# Centennial College Station

June 2009 – Centennial College Station on west side of Progress



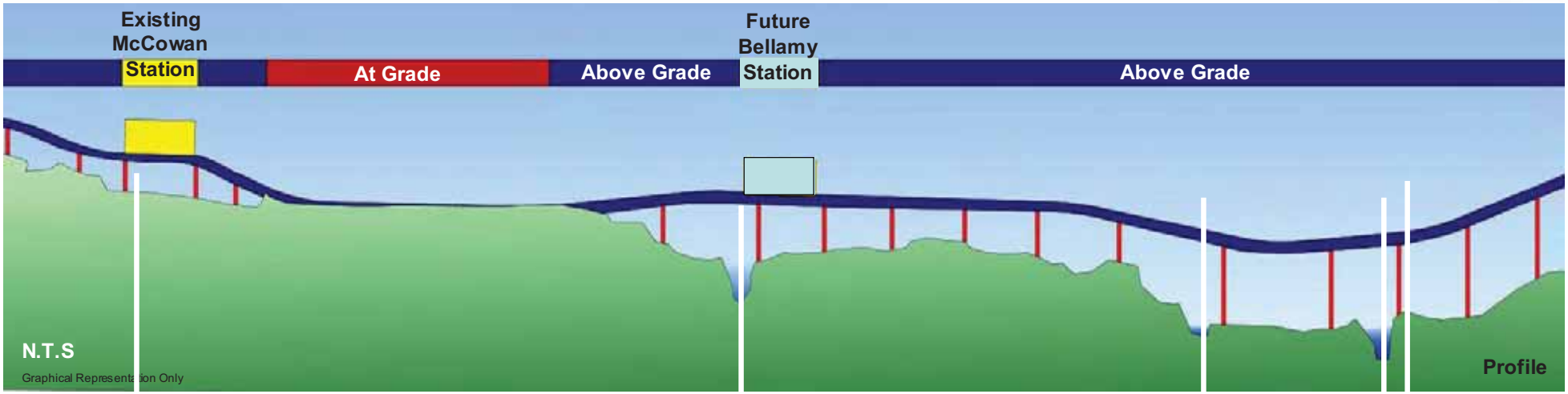

Current – Centennial College Station on east side of Progress by virtue of westerly realignment of Progress Ave, north of 401

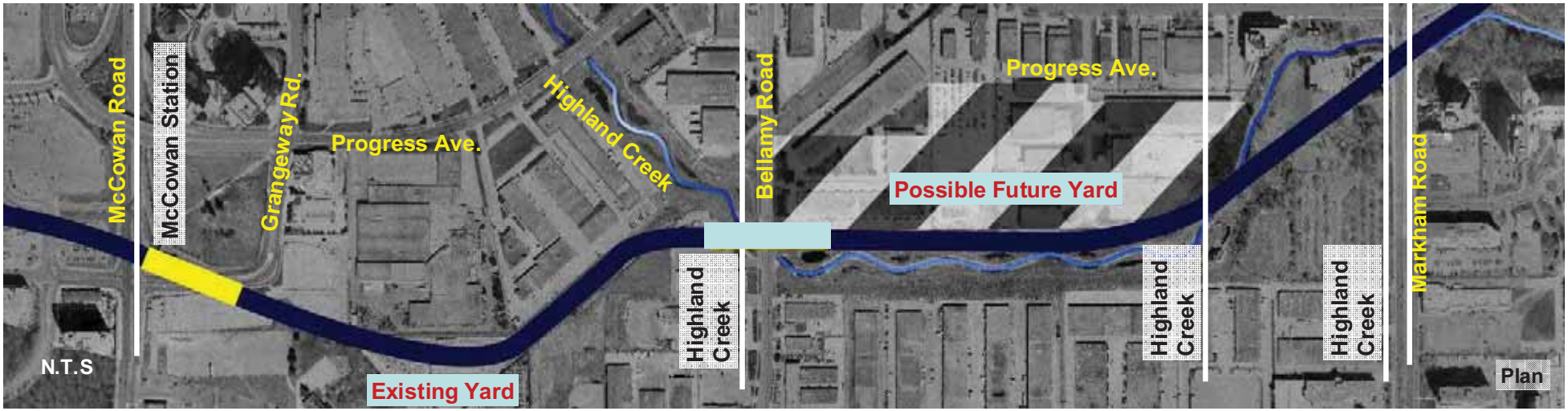



* Subject to Preferred Service Connection

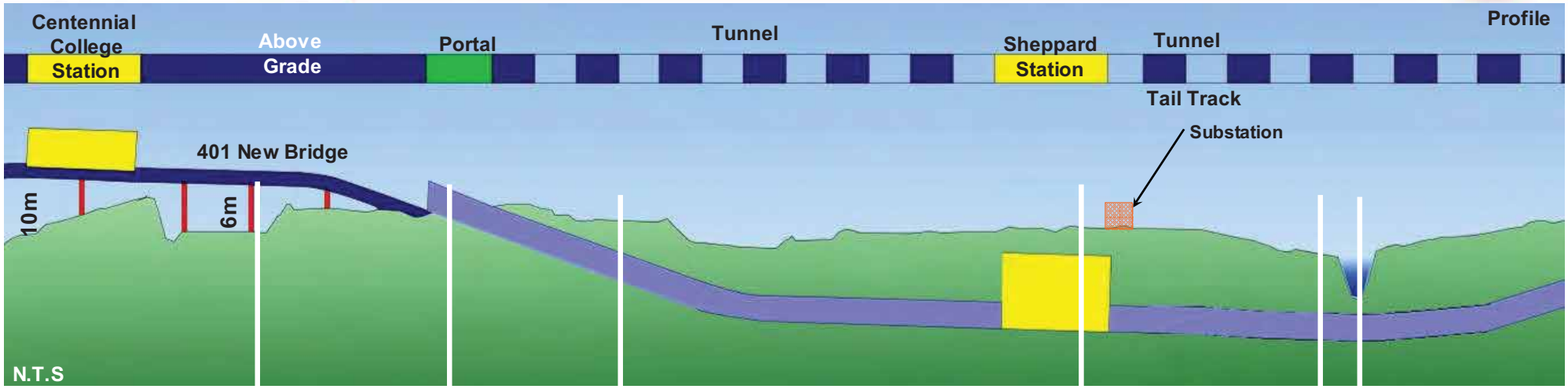
# Centennial College Station

# New Preferred Alignment



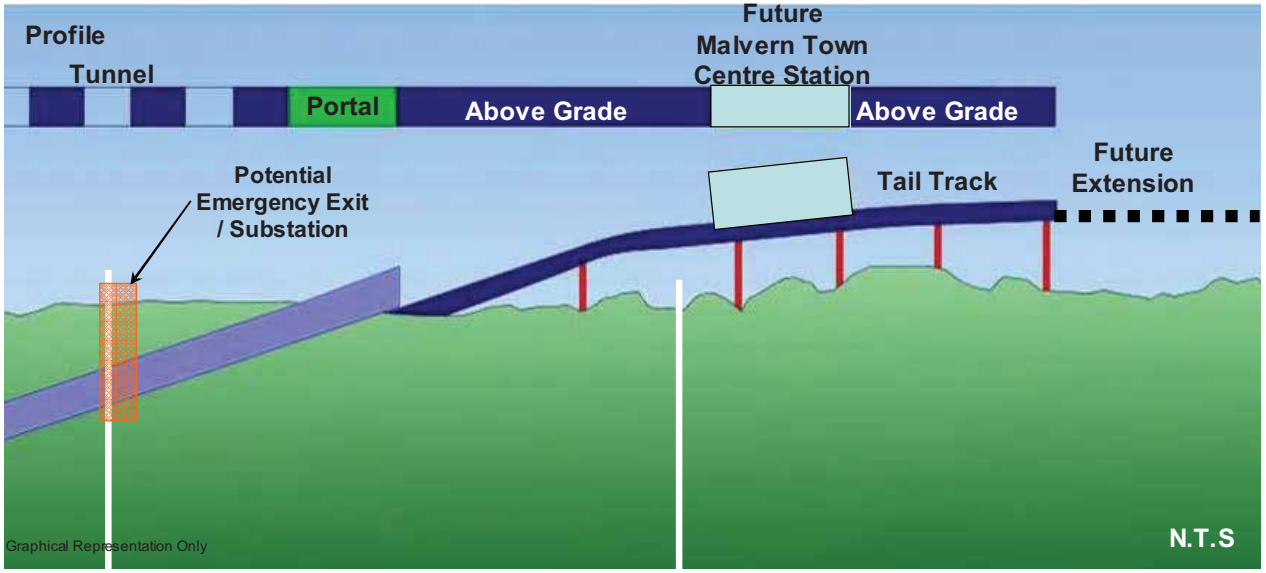



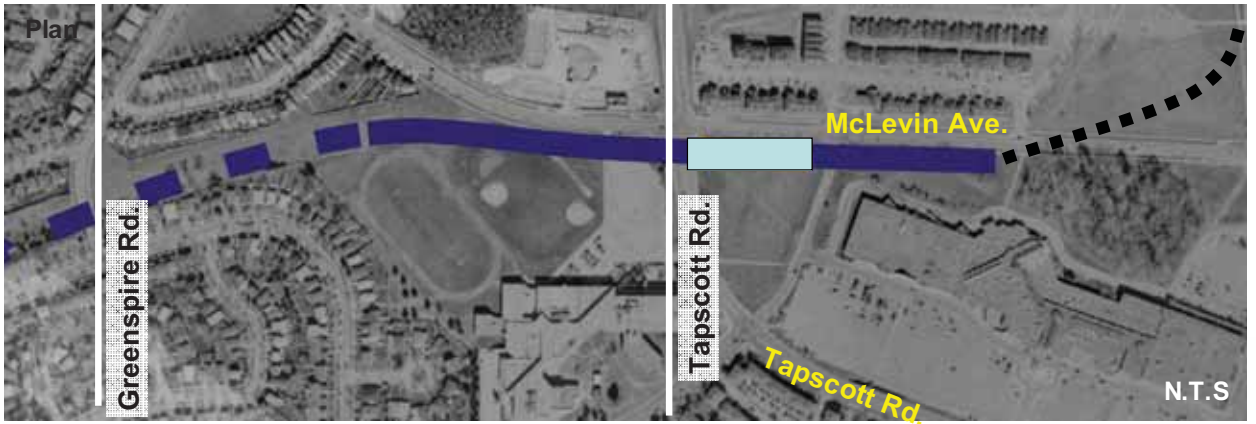
# New Preferred Alignment




Graphical Representation Only

# New Preferred Alignment



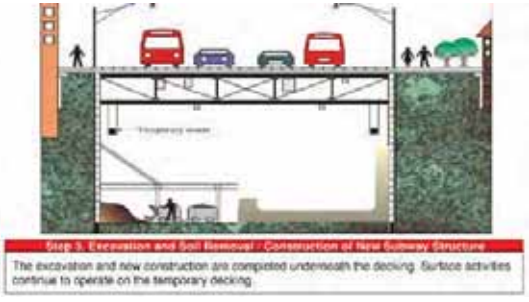



# Terminology

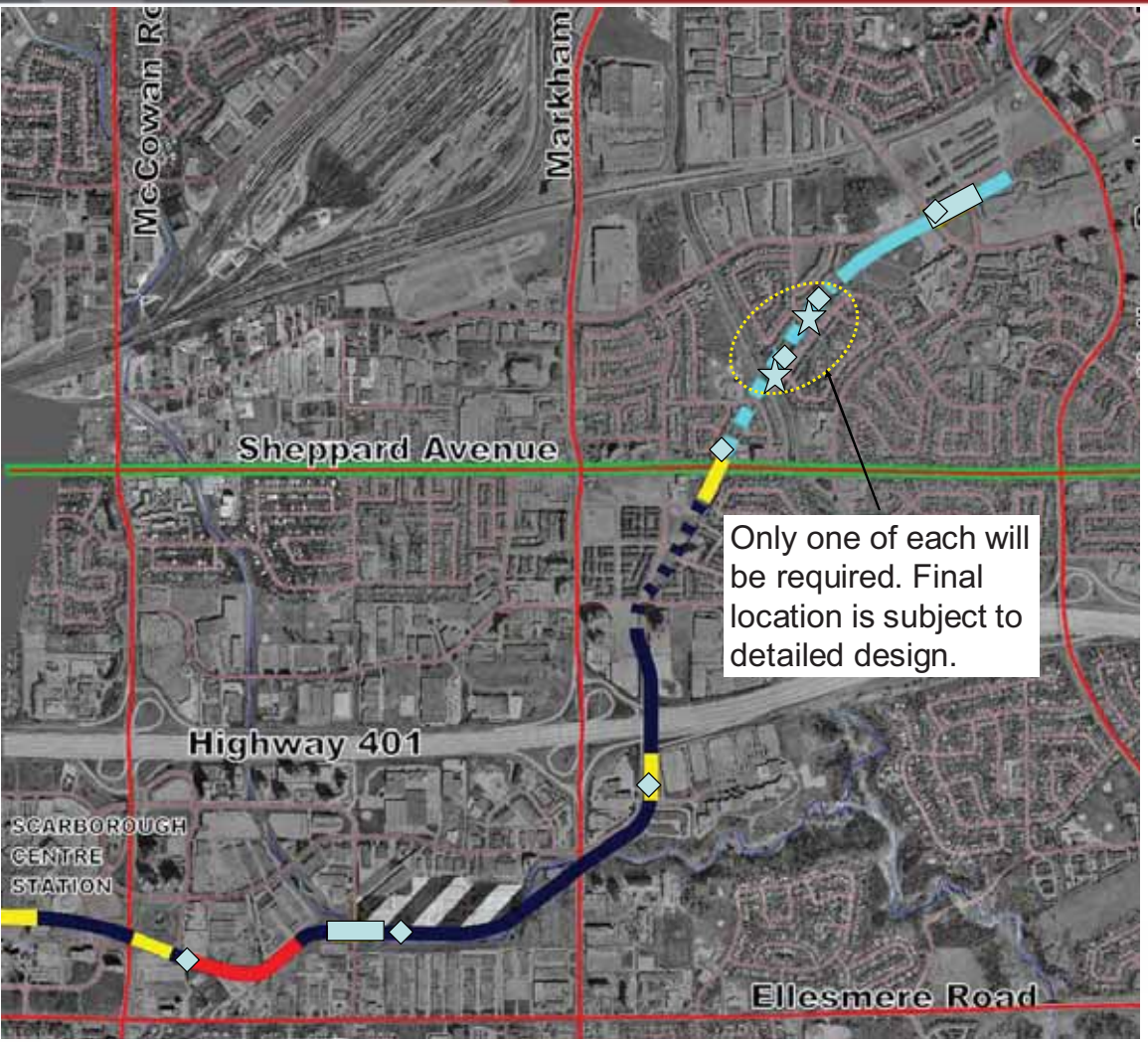
## Portals

## Cut and Cover Construction






# Supporting Structures

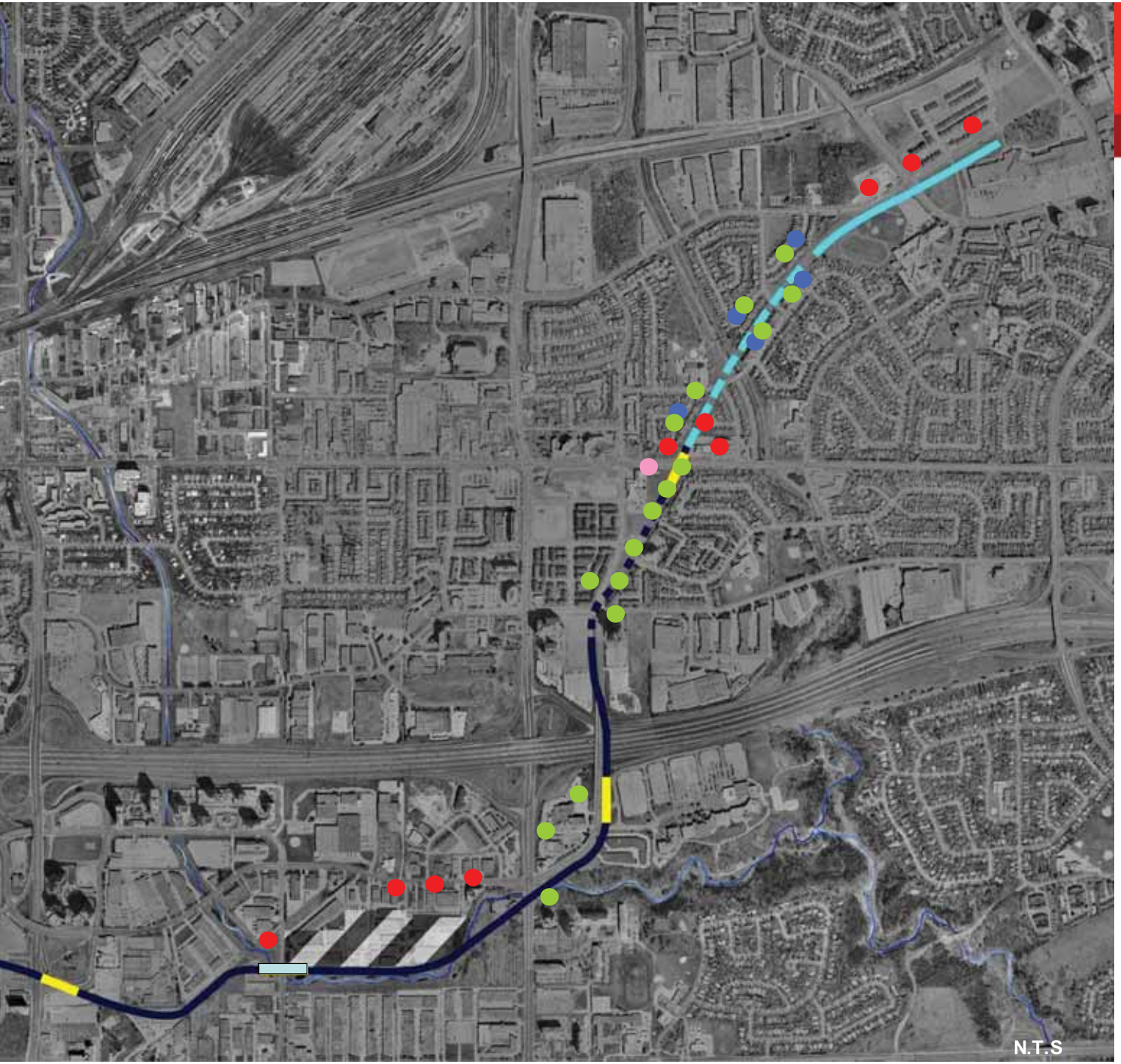



**LEGEND**

- Possible emergency exit building/pumping station
- Possible electrical substation
- SRT station locations
- Future SRT station locations
- Elevated
- At grade
- Below grade
- Potential Future Yard
- Possible future extension

Typical Emergency Exit Building – Sheppard Subway

Typical Electrical Substation




# Noise & Vibration

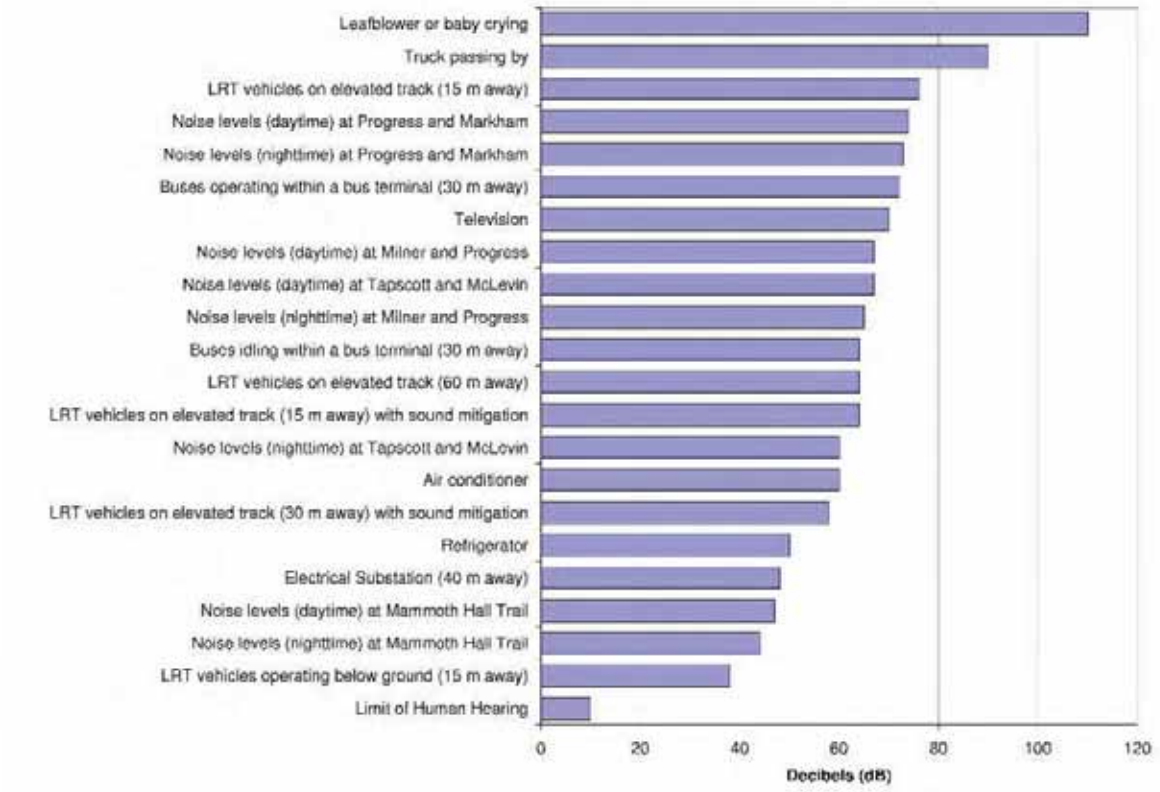
## LEGEND

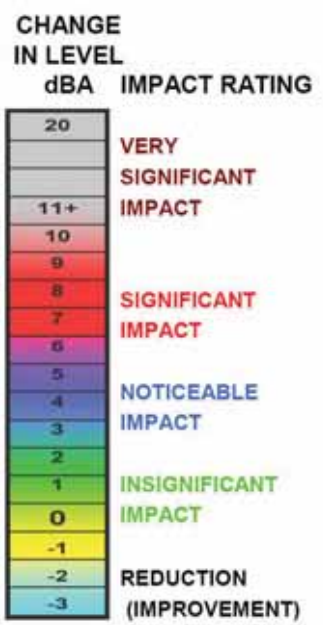
- SRT station locations
- Future SRT station locations
- Elevated
- At grade
- Below grade
- Potential Future Yard

- Locations where field measurements taken for ambient noise
- Location of possible noise exceedances where mitigation may be required
- Location of possible vibration exceedances where mitigation may be required
- Modeled receptors with no impacts identified

# Mitigating Noise

As part of a commitment to mitigate noise in accordance with the Ministry of the Environment protocol, TTC will determine the location and requirements for mitigation as part of the design.



# Mitigating Vibration

At distances beyond 12 m from the track, the vibration levels are considered as not detectable. As most receptors are greater than 15 metres from the track, vibration will not be an issue along the majority of the corridor.

To minimize the impact of vibration, TTC uses:

- Rubber pads in structures that reduce the transmission of vibrations to the ground
- Continuously welded rail
- Ongoing maintenance of tracks and vehicles.

# Air Quality

The extension of the SRT will have an overall positive impact on air quality on a regional scale.

As part of this study, an investigation of potential impacts on air quality in the local area surrounding the proposed bus terminals has been conducted for the preferred design. This analysis has concluded that the proposed bus terminals will not have a significant impact on air quality at the local level.

For construction related air quality, Toronto Transit Commission requires that contractors submit a comprehensive Environmental Control and Methods Plan to address, among other elements, dust control.

# Highlights

## Line Length

| | | |
|---|---|---|
| Existing | Kennedy to McCowan | 6.5 km |
| Phase 1 Extension | McCowan to Sheppard | 3.4 km |
| Phase 2 Extension | Sheppard to Malvern Town Centre | 1.7 km |
| TOTAL | | 11.6 km |

## Travel Time

| | | | |
|---|---|---|---|
| Existing | SRT | Scarborough Centre to Kennedy | 8min |
| | Bus | Malvern TC to Scarborough Centre | 23min |
| **TOTAL** | | | **31 min** |
| Extension | SRT | Scarborough Centre to Kennedy | 8min |
| | SRT | Malvern TC to Scarborough Centre | 8min |
| **TOTAL** | | | **16 min** |

## Ridership

| | Per Hour in Peak Direction (pphpd) | Daily Total | Year |
|---|---|---|---|
| Existing Capacity | 3,800 | | |
| Existing Demand - South to Kennedy | 5,000 | 45,000 | 2010 |
| | | | |
| Future Demand - South to Kennedy | 10,000 | 90,000 | 2031 |
| | | | |
| Future Demand - South to McCowan Station | 4,500 | 40,000 | 2031 |