

3. Alternatives to the Undertaking

Alternatives to the Undertaking are fundamentally different ways of addressing the purpose of / rationale for the undertaking. This chapter describes the identification of a long list of Alternatives to the Undertaking for this IEA, the screening of Alternatives to the Undertaking to select a short-list of potential alternatives, and the assessment and comparative evaluation of the short-listed alternatives to identify a preferred Alternative to the Undertaking.

3.1 Overview of the Alternatives to the Undertaking Stage

The Minister-approved ToR for the Western Vaughan Transportation Improvements IEA identified six Alternatives to the Undertaking to improve transportation mobility in the Study Area and to address population and employment growth to the year 2031. These alternatives, which according to the ToR were to be considered % ã } á ã ç ã ã ~ æ | | ^ Á æ } á Á ã } , á & [{ à ã } æ c ã [} Á ã } Á c @ ^ Á Ò È

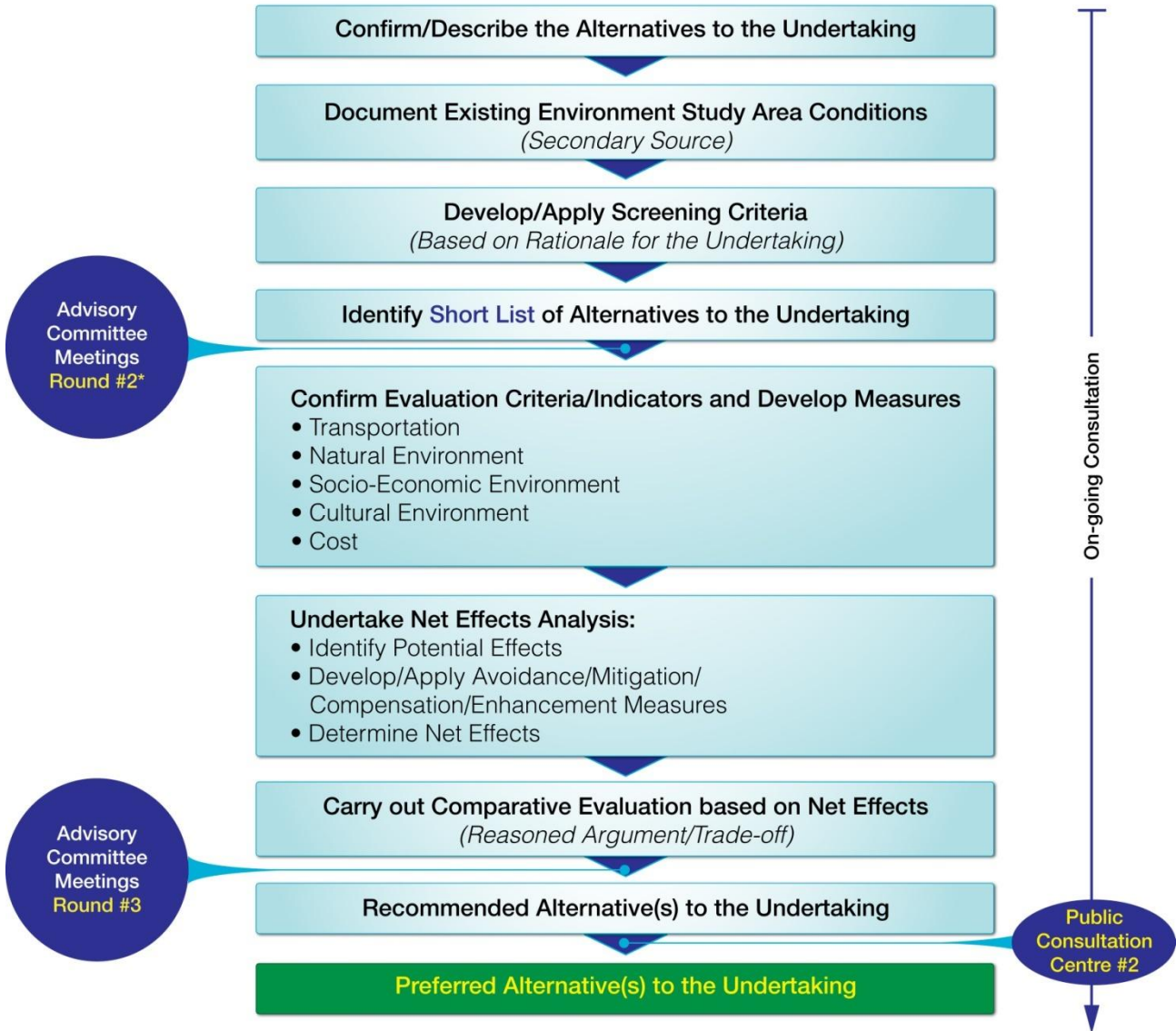
1. Do Nothing;
2. Planned Road and Transit Improvements, other than those on Pine Valley Drive¹;
3. Travel Demand Management (TDM) Measures;
4. Transportation System Management (TSM) Measures;
5. Other Public Transit Initiatives; and,
6. Other Additional Area Road Improvements.

The methodology followed in the IEA for identifying, screening, and evaluating the Alternatives to the Undertaking in accordance with the ToR is shown in **Figure 3-1** (please note the following acronym used in Figure 3-1: **PCC** . Public Consultation Centre). The steps involved in this methodology are described in detail in the following sections.

The six alternatives listed above from the ToR were examined individually and in combination, as described in **Section 3.2**. The rationale for the alternatives, and the various improvements included in each alternative, is also provided below.

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Approved Screening/Evaluation Methodology for the Alternatives to the Undertaking



*Advisory Committee Meeting Round #1 occurred during the Purpose/Rationale for the Undertaking Stage.

Figure 3-1 Approved Screening / Evaluation Methodology for the Alternatives To the Undertaking

3.2 Description, Rationale, and Confirmation of the Alternatives To The Undertaking

As shown in Chapter 2, most of the regional roads within the Study Area will be congested by the year 2031. There are numerous ways of addressing this congestion, including improving the road network through widenings or new roads, improving transit service, improving the efficiency of the existing transportation network, or encouraging drivers to use the roads less frequently. Within such an expansive area as Western Vaughan, there are virtually an unlimited number of combinations of these options that could be implemented to improve transportation mobility.

Fortunately, previous studies such as the York Region Transportation Master Plan (TMP) have considered how to improve the transportation network in Western Vaughan. The TMP is a long-term blueprint for the Region that sets the framework for future transportation improvements. It is reviewed every five years to ensure that it remains up-to-date with respect to population and employment growth and any changes in traffic conditions. In 2002, York Region prepared a TMP that recommended road and transit improvements within the Study Area, as shown in **Figures 3-2** and **3-3** respectively, in order to address the anticipated rapid population and employment growth occurring by 2031. The 2002 TMP followed the *Master Planning Process* as set out in the Municipal Engineers Association's *Municipal Class Environmental Assessment*, and therefore met the requirements of the Ontario *Environmental Assessment Act (EA Act)*.

Building on these improvements is York Region's 2009 TMP, which was updated to reflect growth projections consistent with the provincial Growth Plan for the GTA and neighbouring areas. Like its predecessor, the update addressed Phases 1 and 2 of the Municipal Class EA process. The 2009 TMP contains key differences from the 2002 TMP that include:

- An upgraded transit designation to *Rapid Transit Corridor* for Major Mackenzie Drive east of Weston Road;
- An extended *Transit Priority Network* with supportive road improvements on Highway 27 from Rutherford Road to Major Mackenzie Drive, along Major Mackenzie Drive from Highway 50 to Weston Road, and along Rutherford Road from Highway 50 to Highway 27; and,
- The addition of 4th and 5th stations on the Bolton GO Rail line at Major Mackenzie Drive and at Highway 407.

The additional road and transit improvements identified in the approved 2009 TMP are the basis for the last two components of the alternatives that were considered, as shown in **Figure 3-4**. It should be noted that these two components go beyond what was recommended in the 2009 TMP, based on the results of the transportation modelling that was conducted for this EA (refer to **Chapter 2**).

The six components described above were considered independently and as combinations to develop the nine Alternatives to the Undertaking shown in **Figure 3-5** below and further described in **Section 3.2.1**.

Each of the nine alternatives is described in greater detail in the following subsections. **Appendix 3A** provides a detailed description of the improvements included in each alternative

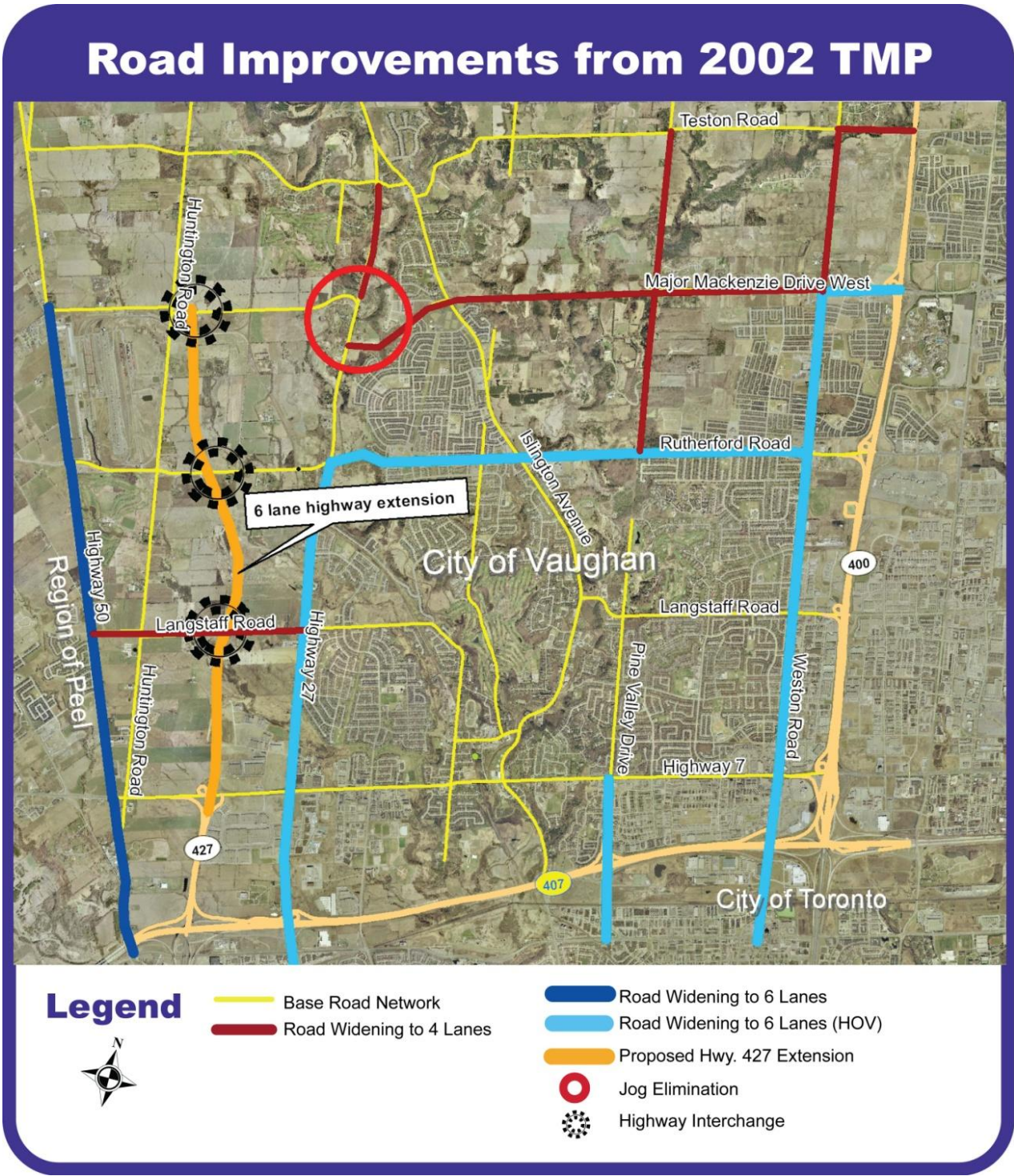


Figure 3-2 2002 TMP Road Improvements

Transit Improvements from 2002 TMP

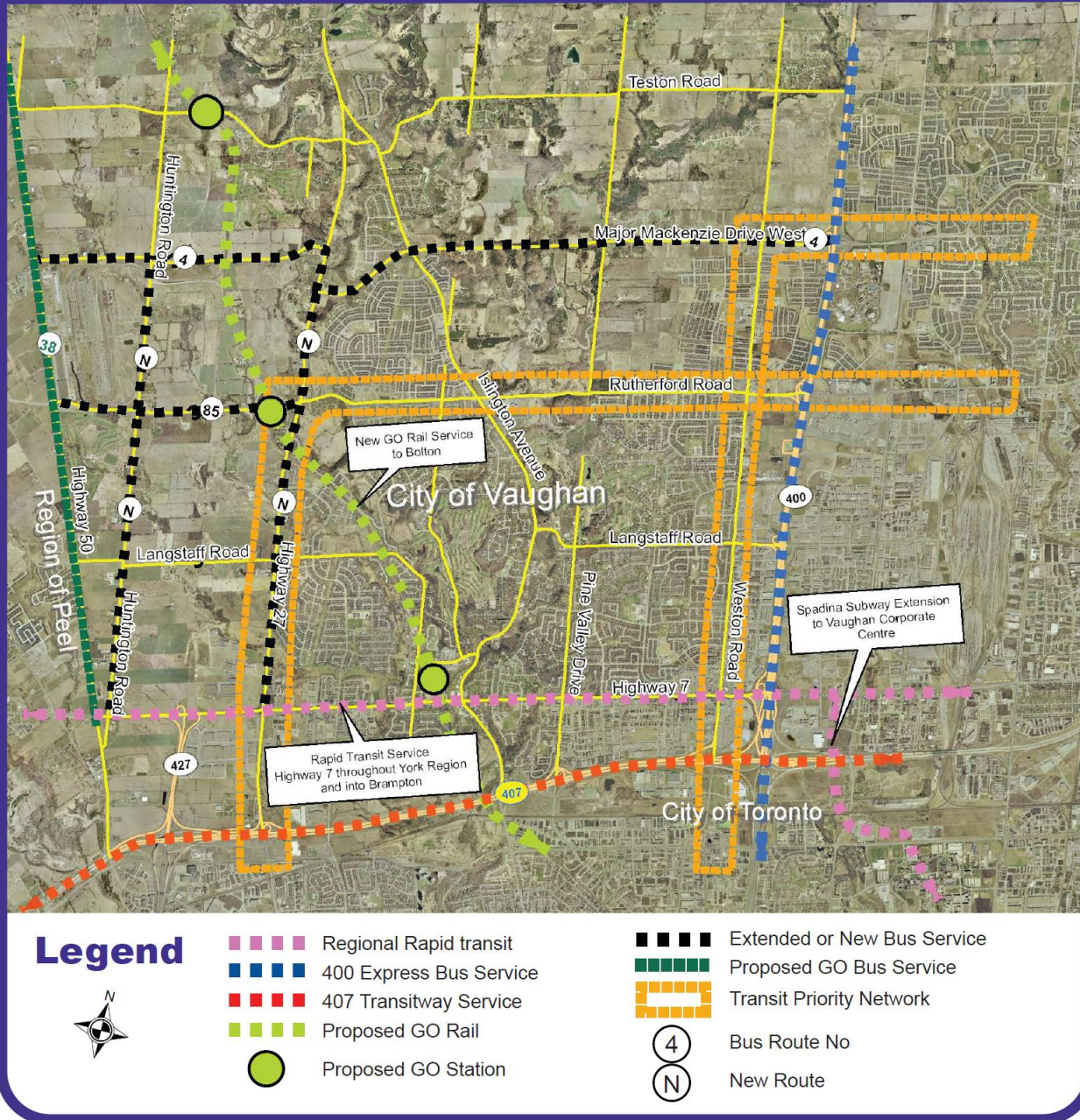


Figure 3-3 2002 TMP Transit Improvements

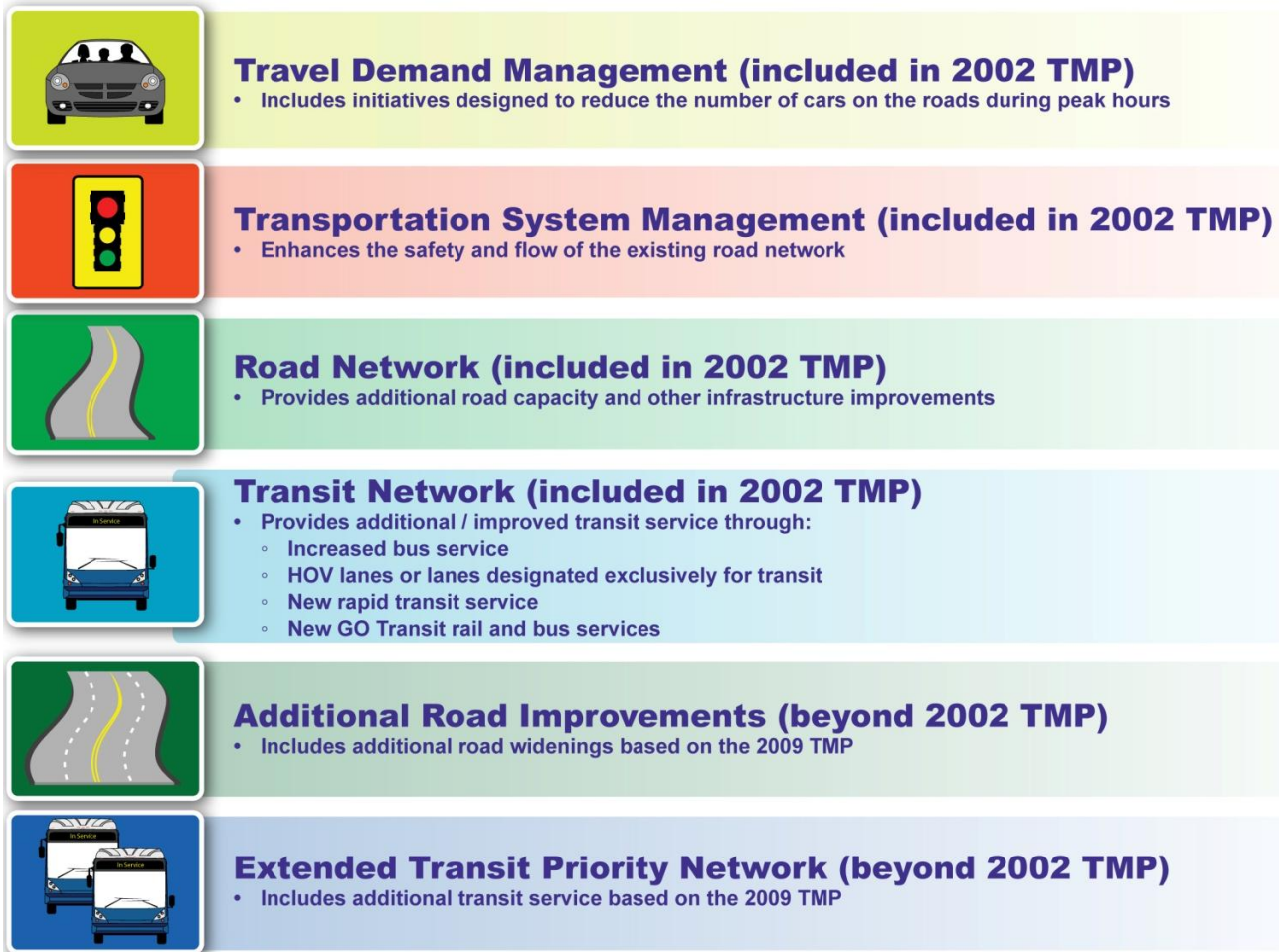


Figure 3-4 Components of the Alternatives to the Undertaking

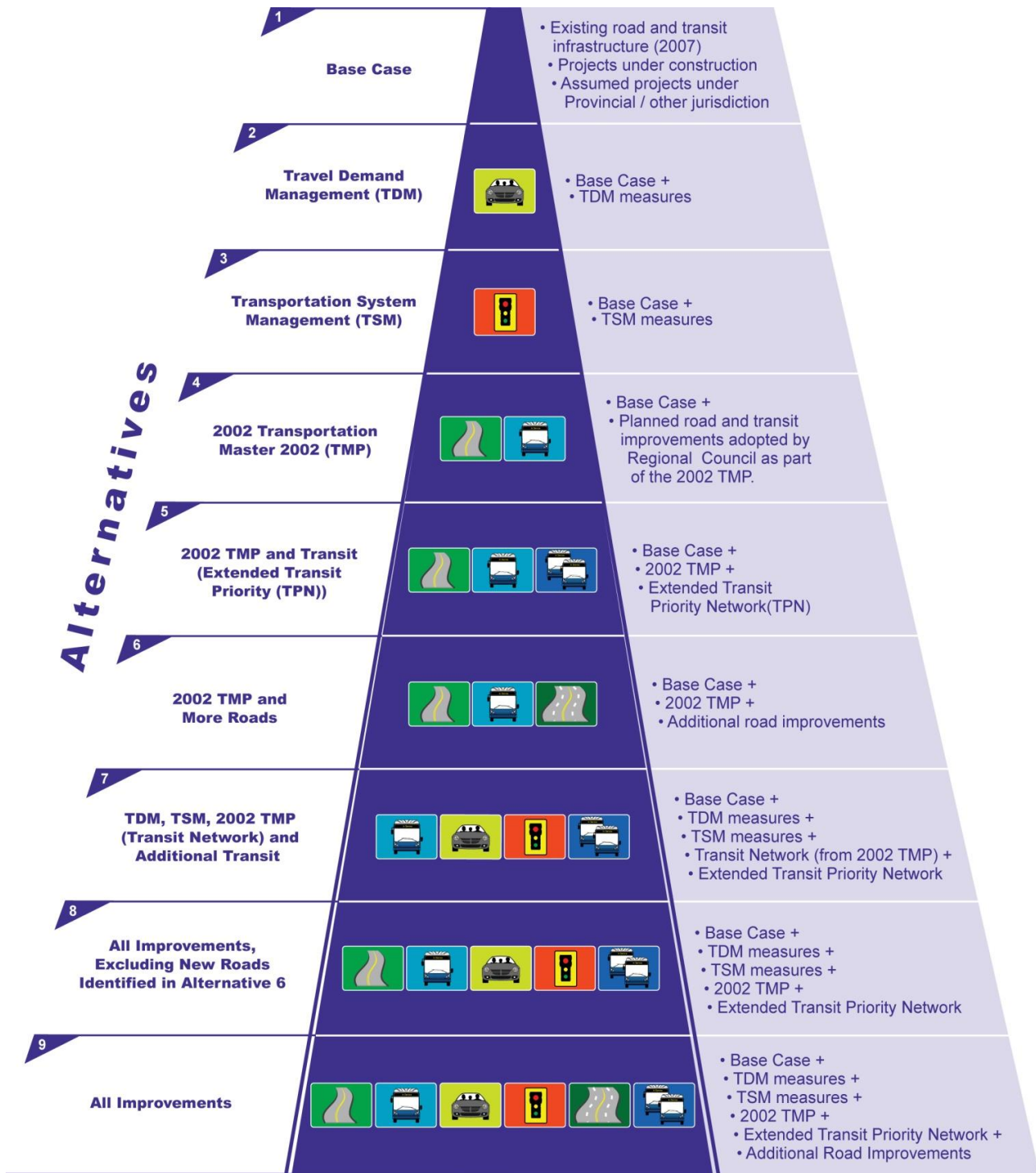


Figure 3-5 Alternatives to the Undertaking²

2. At the time that the Alternatives to the Undertaking were being developed and later assessed, York Region had not yet approved its updated TMP, which was adopted by Council in November, 2009. For this reason, the 2002 TMP was used as the basis for Alternative 4 in the IEA.

3.2.1 Alternatives from the ToR

Alternatives 1 to 6 considered for the Western Vaughan IEA were derived from Section 4.1 of the ToR.

3.2.1.1 Alternative 1 Base Case

The Base Case alternative, also described as the "Do Nothing" scenario in the ToR, is required for consideration under the Ontario *Environmental Assessment Act*. It reflects the existing road and transit network (as of 2007) and projects that were under construction at that time. In addition, it includes (a) the extension of the University / Spadina subway to the City of Vaughan Metropolitan Centre and (b) rapid transit service along Highway 7 for the full width of York Region and extending into Brampton. The Base Case also assumes the following improvements under Provincial jurisdiction:

- Widenings of Highways 400 and 407 to their ultimate configuration of ten lanes;
- The extension of Highway 427 to Major Mackenzie Drive with new interchanges at Langstaff Road, Rutherford Road and Major Mackenzie Drive. The Highway 427 Extension was assumed to be two lanes in each direction;
- New commuter rail service to Bolton operated by GO Transit with local stations at Highway 7 and Nashville Road;
- A new Highway 407 Transitway; and,
- Enhanced express bus service along Highway 400.

3.2.1.2 Alternative 2 Travel Demand Management (TDM)

This alternative includes all road and transit infrastructure as part of the Base Case (Alternative 1) and incorporates TDM measures, which are designed to reduce travel demand on local roadways. TDM measures are supported by Regional Council through its various TMPs and can be easily implemented at a relatively low cost, and therefore were carried forward for consideration.

TDM measures for the Study Area could include the following:

- **Trip reduction measures** . including telecommuting or compressed work-weeks and adjusted work hours.
- **Mode change measures** . including ride-matching, employer trip reduction programs, transit subsidies, enhanced bicycle facilities and/or voluntary travel behaviour programs.

Research undertaken by Halcrow Consulting for this EA suggests that the combination of the TDM measures identified as being applicable to Western Vaughan could be expected to reduce total a.m. peak period volumes between 1% and 3%, or by 1,035 to 2,960 vehicles (refer to **Appendix 3B**).

3.2.1.3 Alternative 3 Transportation System Management (TSM)

This alternative includes all road and transit infrastructure as part of the Base Case (Alternative 1) and incorporates TSM measures, which are designed to enhance the management and operation of the existing transportation system. Like TDM, TSM measures are supported by Regional Council through its various TMPs and can be easily implemented at a relatively low cost, and therefore were carried forward for consideration.

While no specific improvements were identified as part of this alternative, TSM measures could include improvements at signalized intersections (e.g., signal timing and phasing or the addition of exclusive turn lanes), signal progression and network optimization strategies (e.g., transit signal priority or far-side stops for transit), or improved access management initiatives. For the purposes of the Western Vaughan IEA, TSM measures were assumed to increase roadway capacities by 3%.

3.2.1.4 Alternative 4 (2002 Transportation Master Plan) (TMP)

This alternative reflects the 2002 York Region TMP³, also described as the "planned road and transit improvements, other than those on Pine Valley Drive" alternative in the ToR (Section 4.1.2 of ToR). As described previously, the TMP represents the blueprint for all transportation improvements throughout the Region, including within Western Vaughan. As this plan was approved by Council at the time that this EA was initiated, this alternative was tested to verify how it would address the updated growth projections within the Study Area.

In addition to the rapid transit and highway improvements assumed in the Base Case (Alternative 1), it includes the planned road and transit improvements adopted by Regional Council as part of the 2002 TMP, which are as follows (refer to **Figure 3-3**):

- Transit Priority Network (TPN) with a separate HOV lane for transit and carpoolers along Weston Road (from Steeles Avenue to Major Mackenzie Drive), Rutherford Road (from Highway 400 to Highway 27) and Highway 27 (from Steeles Avenue to Rutherford Road);
- Extended / new York Region Transit bus service within the Study Area;
- Road widening from 2 to 4 lanes, including along Major Mackenzie Drive between Weston Road and Highway 27, Pine Valley Drive between Teston Road and Rutherford Road, Weston Road between Teston Road and Major Mackenzie Drive, and Highway 27 between Nashville Road and Major Mackenzie Drive; and
- The elimination of a jog at Major Mackenzie Drive and Highway 27.

These improvements were recommended in the 2002 TMP as they represented the best opportunities for increasing capacity within the Study Area. One of the technical reports prepared for the 2002 TMP (Assessment of the Existing Transportation System) noted that there were deficiencies in the east / west capacity of the existing transportation network across the southern tier municipalities, specifically in the Highway 7 / Highway 407 corridor, and more broadly across the southern tier from Major Mackenzie Drive to Steeles Avenue. The report also noted that in these areas, there is little remaining capacity in the peak direction during peak periods, and furthermore, there are no opportunities to introduce new Regional roads in this area (MMM, 2001). Furthermore, the 2002 TMP specifically refers to the need to eliminate the jog at Major Mackenzie Drive and Highway 27, and to implement east/west transit priority lanes on Rutherford Road from Highway 27 across the Study Area.

Alternative 4 also includes the following improvements that would be under Provincial jurisdiction:

- Extension of Highway 427 between Highway 7 and Major Mackenzie Drive to accommodate six lanes (refer to **Figure 3-2**);

3. At the time that the Alternatives to the Undertaking were being developed and later assessed, York Region had not yet approved its updated TMP, which was adopted by Council in November, 2009. For this reason, the 2002 TMP was used as the basis for Alternative 4 in the IEA.

- A third station on the proposed GO Rail service to Bolton was assumed at Rutherford Road, along with improved service on the line;
- Enhanced Express Bus Routes . GO Route 38 from Bolton to Milton GO Station via Highway 50 and Highway 407 Transitway with an additional stop at Highway 427.

Although TDM and TSM are part of the 2002 TMP, for the purposes of this EA, Alternative 4 does not include TDM or TSM measures.

3.2.1.5 Alternative 5 (2002 TMP and More Transit) (Extended Transit Priority Network (TPN))

Alternative 5 builds upon the transit component of the 2002 TMP by including additional transit improvements. It was developed to identify and test additional transit opportunities along major corridors in Western Vaughan that would complement planned transit network improvements. This alternative would enable greater transit connectivity and result in increased inter-regional and intra-regional ridership.

In addition to the road and transit network from 2002 TMP, Alternative 5 adds a TPN along the following corridors, which would be widened to 6 lanes to accommodate the HOV lanes for transit and carpoolers (refer to **Figure 3-6** and **Figure 3-7**):

- Major Mackenzie Drive from Weston Road to Highway 50;
- Rutherford Road from Highway 27 to Highway 50; and,
- Highway 27 from Rutherford Road to Major Mackenzie Drive.

The extended TPN is consistent with the recommendations of the 2009 TMP, which justifies widening the roads mentioned above based on the need to support transit improvements (MMM, 2009).

3.2.1.6 Alternative 6 (2002 TMP and More Roads)

This alternative is comprised of road and transit improvements (Alternative 4), plus additional road improvements designed to support future local and regional mobility based on population and employment growth anticipated by 2031, as well as to provide enhanced access to future development areas (refer to **Figure 3-8** and **Figure 3-9**). The reason for including this alternative is to determine whether there is any benefit to managing congestion from a roads-focused approach.

Unlike the road improvements included in Alternative 5, these additional road improvements would only support general purpose traffic and would not include a separate HOV lane for transit and carpoolers. These additional road improvements include:

- Widening the following roads to four lanes: Teston Road from Weston Road to Pine Valley Drive and Nashville Road from Huntington Road to Highway 50 (the latter improvements go beyond what is proposed in the 2009 TMP);
- Widening the following roads to six lanes: Highway 50 from Major Mackenzie Drive to Nashville Road; Weston Road from Major Mackenzie Drive to Teston Road; Major Mackenzie Drive from Weston Road to Highway 50; Rutherford Road from Highway 27 to Highway 50; and Highway 27 from Rutherford Road to Nashville Road.

Figure 3-6 Road Improvements Proposed for Alternative 5

