

# Appendix L

## 2021 Deficiency Analysis and Phasing Plan

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## 2021 Deficiency Analysis and Infrastructure Phasing

### 1. 2021 Deficiency Analysis

**Figures L1 to L4** illustrate the level of service for all defined north-south (N-S) and east-west (E-W) corridors within the City of Vaughan in both directions of travel during AM and PM peak periods. In the section below, based on the corridor volume-to-capacity analyses, the capacity deficiencies for each corridor are presented and preferred road improvements are proposed.

#### 1.1 Highway 427 Corridor

As can be seen in **Figure L1** and **Figure L2** even with all assumed road network improvements in the Highway 427 corridor (see **Table L1**), congested conditions are foreseen in the southern portion of the corridor (between Steeles Avenue and Highway 7) in 2021, with volume-to-capacity ratios of greater than 0.90 for the northbound (NB) PM peak hour, along with similar conditions for southbound (SB) in the AM and PM peak hours. **Figure L1** and **Figure L2** also show that this level of congestion is expected to decrease north of Highway 7 as it operates mostly under uncongested conditions (volume-to-capacity ratio of less than 0.8), with the exception of two corridor portions in the NB PM peak hour where a maximum volume-to-capacity ratio of 0.83 is slightly over the acceptable 0.8 level of service standard.

In addition to the widening of Highway 50 from 4 to 6 lanes, widening Highway 27 is another potential road improvement to resolve the congestion problems expected to occur within the portion of the corridor between Steeles Avenue and Highway 7 in 2021.

The capacity analysis showed that for the portion of the corridor between Highway 7 and Langstaff Road, the extension of Highway 427 northerly and the widening of Highway 50 and the Huntington Road extension, along with undertaking the assumed improvements to N-S local roads is expected to help keep the level of congestion within the acceptable range for 2021.

Assuming the completion of the planned Highway 427 extension by 2021, the other assumed road network improvements between Langstaff Road and Major Mackenzie Drive include widening of Highway 50 and two local N-S roads in the corridor between Langstaff Road and Rutherford Road. The volume-to-capacity analysis showed that this portion of the corridor between Langstaff Road and Rutherford Road (with the Highway 427 extension and without any of other assumed road improvements) is expected to operate at uncongested conditions (volume-to-capacity ratio less than 0.8). Also according to the capacity analysis, the corridor between Rutherford Road and Major Mackenzie Drive was found to only require one of the road improvements (other than the Highway 427 extension by 2021), since the volume-to-capacity ratio without all these improvements is predicted to be at 0.83 (slightly over the acceptable level of service). Therefore, the widening of either Highway 50 or one of the two N-S local roads (Huntington Road and McGillivray Road) would likely be needed by 2021, depending on the pace of development in the Highway 427 corridor.



Figure L1. Level of Service for N-S Corridors in the City of Vaughan during AM Peak Period in 2021

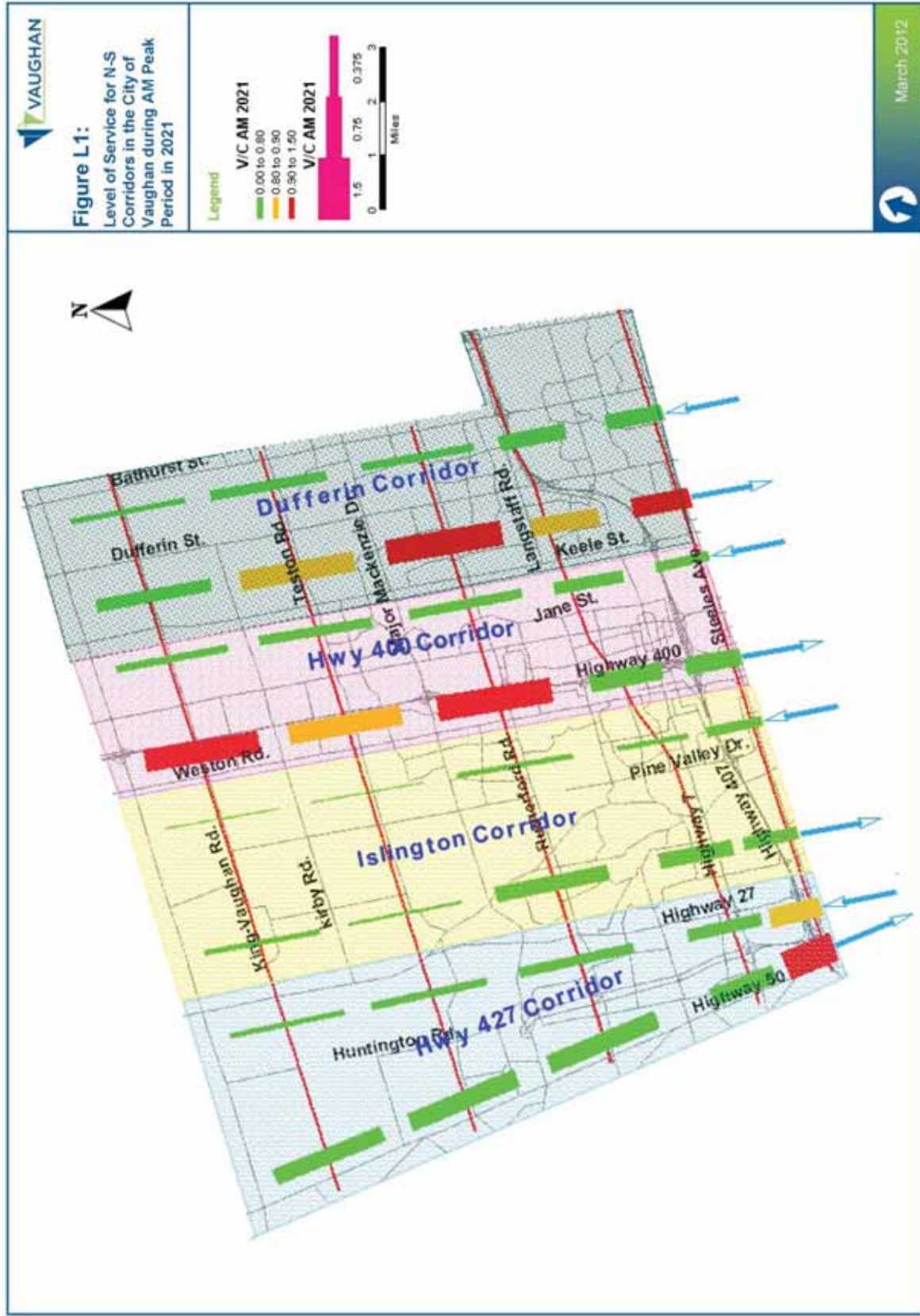




Figure L2. Level of Service for N-S Corridors in the City of Vaughan during PM Peak Period in 2021

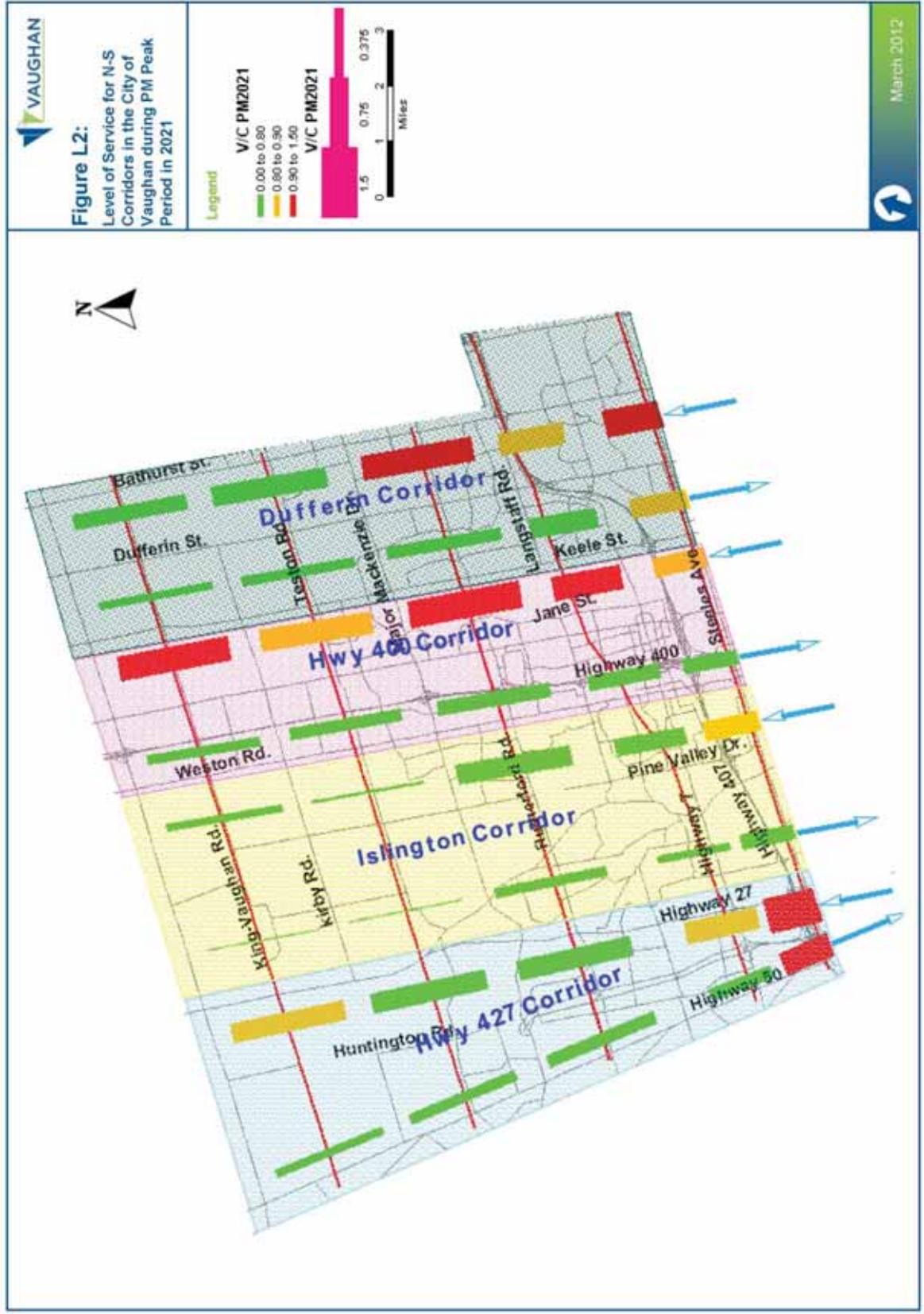




Figure L3. Level of Service for E-W Corridors in the City of Vaughan during AM Peak Period in 2021

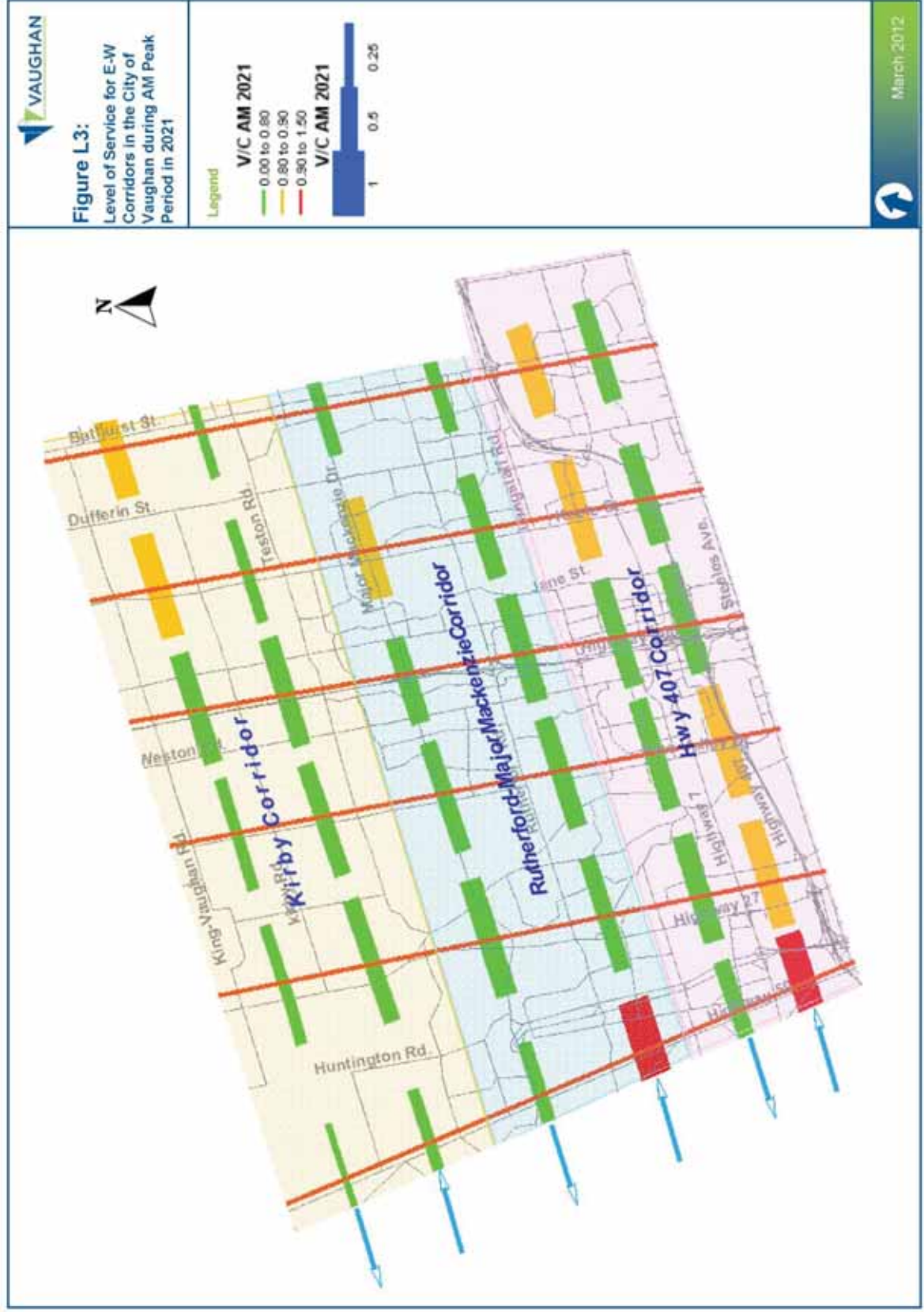
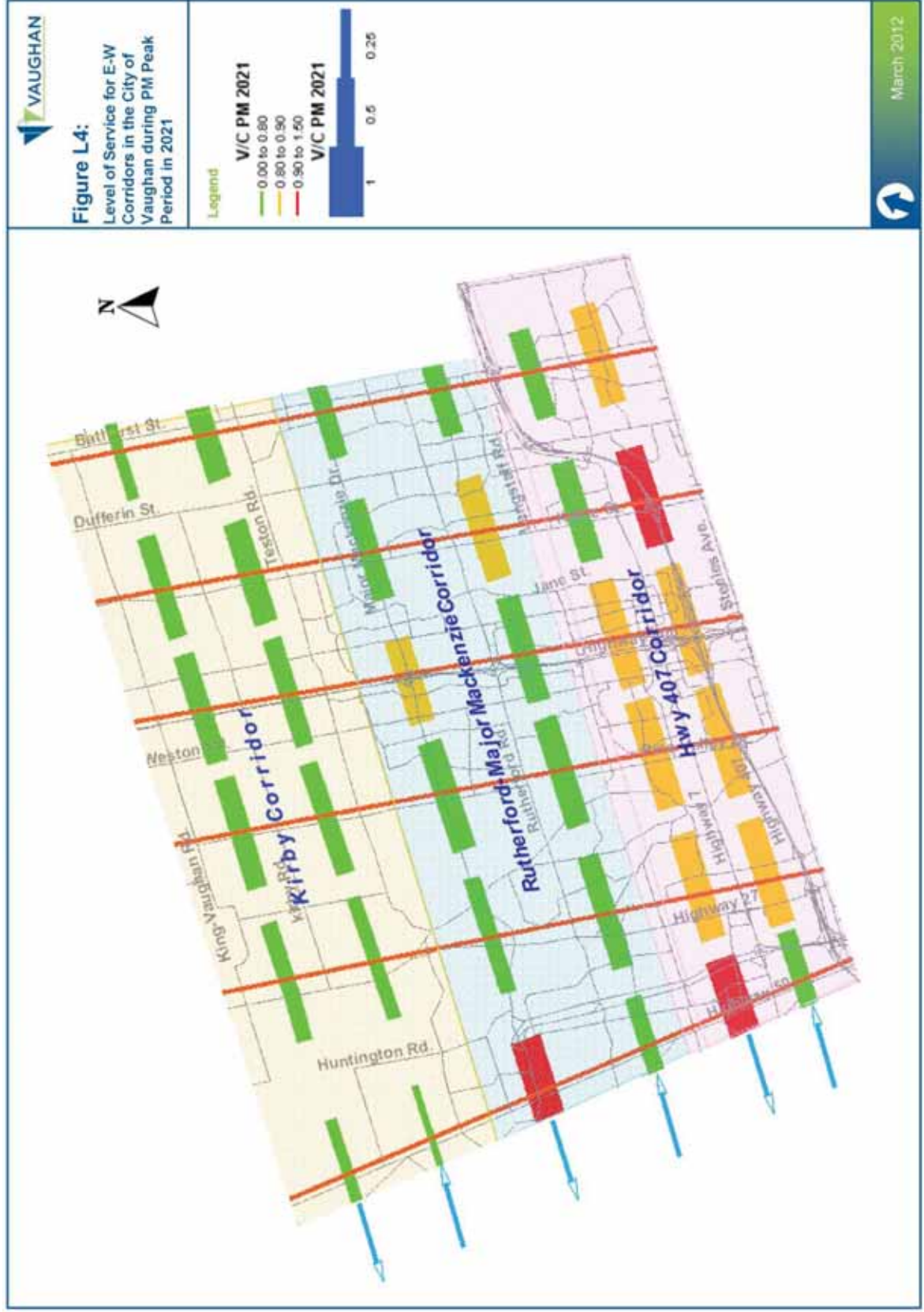




Figure L4. Level of Service for E-W Corridors in the City of Vaughan during PM Peak Period in 2021





**Table L1. Tested Road Improvements in the City of Vaughan for 2021**

Direction	Provincial Roads		Regional Roads		Local Roads	
	Road Improvement	Limits/Location	Road Improvement	Limits/Location	Road Improvement	Limits/Location
East-West Corridors East-West Road Improvements	<ul style="list-style-type: none"> <li>▲ New Interchange</li> <li>▲ Interchange Improvements</li> </ul>	<ul style="list-style-type: none"> <li>▲ Martin Grove / Highway 407</li> <li>▲ Centre Street / Highway 407</li> </ul>	<ul style="list-style-type: none"> <li>▲ Langstaff Road Widening (2 to 4)</li> <li>▲ Langstaff Extension (New 4-lane)</li> <li>▲ Langstaff Road Widening (2 to 4)</li> <li>▲ Steeles Avenue Widening (4 to 6)</li> <li>▲ Steeles Avenue Widening (4 to 6)</li> <li>▲ Highway 7 Widening (4 to 6)</li> </ul>	<ul style="list-style-type: none"> <li>▲ Highway 50 to Highway 27 (Already Constructed)</li> <li>▲ Creditstone Road to Keele Street</li> <li>▲ Keele Street to Dufferin Street</li> <li>▲ West of Pine Valley Drive</li> <li>▲ Weston Road to Jane Street</li> <li>▲ West and East of Islington Avenue</li> </ul>	<ul style="list-style-type: none"> <li>▲ Portage Parkway Extension (4-Lane per VMC Secondary Plan)</li> <li>▲ New E-W 4-Lane Road</li> <li>▲ Colossus Drive Extension (4-Lane)</li> <li>▲ Interchange Way</li> <li>▲ Jane Street to Creditstone Road</li> <li>▲ Link 4 to Highway 400 NB</li> </ul>	<ul style="list-style-type: none"> <li>▲ Jane Street to Creditstone Road</li> <li>▲ North of Steeles between Jane Street and Keele Street</li> <li>▲ Colossus Drive to Interchange Way</li> <li>▲ Jane Street to Creditstone Road</li> <li>▲ Link 4 to Highway 400 NB</li> <li>▲ North of Major Mackenzie Drive (North Maple Community Bridge)</li> <li>▲ South of Rutherford Road between Highway 50 and Highway 27</li> <li>▲ South of Rutherford Road, East of Weston Road to Highway 400</li> <li>▲ South of Rutherford Road, East of Highway 400</li> <li>▲ North of Major Mackenzie Drive between Highway 50 and Huntingdon Road</li> </ul>
			<ul style="list-style-type: none"> <li>▲ Rutherford Road Widening (4 to 6)</li> <li>▲ Major Mackenzie Drive Widening (2 to 6)</li> <li>▲ Major Mackenzie Drive Widening (4 to 6)</li> </ul>	<ul style="list-style-type: none"> <li>▲ Highway 50 to Weston Road</li> <li>▲ Highway 50 to Weston Road</li> <li>▲ Weston Road to Bathurst Street</li> </ul>	<ul style="list-style-type: none"> <li>▲ New Highway 400 Crossing (2-Lane)</li> <li>▲ New E-W 4-Lane Local Road</li> <li>▲ New E-W 4-Lane Local Road</li> <li>▲ New E-W 4-Lane Local Road</li> <li>▲ New E-W 4-Lane Local Road</li> </ul>	<ul style="list-style-type: none"> <li>▲ Highway 400 Crossing</li> <li>▲ King-Vaughan Road Widening (2 to 4)</li> <li>▲ Kirby Road Widening (2 to 4)</li> <li>▲ Kirby Road (New 4-Lane)</li> </ul>
Kirby Corridor	<ul style="list-style-type: none"> <li>▲ Teston Road Widening (2 to 4)</li> <li>▲ Teston Road (New 4 Lane)</li> <li>▲ Teston Road Widening (2 to 4)</li> </ul>	<ul style="list-style-type: none"> <li>▲ Pine Valley Drive to Highway 400</li> <li>▲ Keele Street to Dufferin Street</li> <li>▲ Bathurst Street to Dufferin Street</li> </ul>	<ul style="list-style-type: none"> <li>▲ Pine Valley Drive to Highway 400</li> <li>▲ Keele Street to Dufferin Street</li> <li>▲ Bathurst Street to Dufferin Street</li> </ul>	<ul style="list-style-type: none"> <li>▲ Highway 400 Crossing</li> </ul>	<ul style="list-style-type: none"> <li>▲ North of Kirby Road (Subject to Results of GTA West Corridor EA)</li> <li>▲ Bathurst Street to Pine Valley Drive</li> <li>▲ Keele Street to Dufferin Street</li> <li>▲ Dufferin Street to Bathurst Street</li> </ul>	



**Table L1. Tested Road Improvements in the City of Vaughan for 2021**

Direction	Corridor	Provincial Roads		Regional Roads		Local Roads	
		Road Improvement	Limits/Location	Road Improvement	Limits/Location	Road Improvement	Limits/Location
North-South Corridors	Highway 427 Corridor	▲ Highway 427 Extension Interchange	▲ Highway 7 to Major Mackenzie Drive	▲ Highway 50 Widening (4 to 6)	▲ Steeles Avenue to the South of Kirby Road	▲ Huntington Road Widening (2 to 4)	▲ Langstaff Road Drive to Kirby Road
		▲ New Interchange	▲ Highway 7 / Highway 427	▲ Highway 27 Widening (4 to 6)	▲ Steeles Avenue to Major Mackenzie Drive	▲ 2 New Local N-S 4-Lane Roads	▲ Langstaff Road to Rutherford Road (east of Huntington Rd)
		▲ New Interchange	▲ Langstaff Road / Highway 427	▲ Highway 27 Widening (2 to 4)	▲ Major Mackenzie Drive to King-Vaughan Road	▲ New Huntington Road	▲ Highway 7 to Langstaff Rd
North-South Corridors	Islington Corridor		▲ Rutherford Road / Highway 427	▲ Pine Valley Drive Widening (4 to 6)	▲ Steeles Avenue to Highway 7	▲ 2 New N-S 2-Lane Local Roads	▲ Major Mackenzie to Nashville Road (East and West of Huntington Road)
			▲ Major Mackenzie Drive / Highway 427			▲ McGillivray Road	▲ Rutherford Road to south of Major Mackenzie Dr
		▲ Highway 400 Widening (6 to 8)	▲ Major Mackenzie Drive to King-Vaughan Road	▲ Weston Road Widening (2 to 4)	▲ Major Mackenzie Drive to Kirby Road	▲ Millway Avenue Extension (4 Lanes)	▲ South of Highway 7 to Interchange Way
North-South Corridors	Highway 400 Corridor	▲ Interchange Improvements	▲ Langstaff / Highway 400	▲ Weston Road Widening (4 to 6)	▲ Steeles Avenue to Major Mackenzie Drive	▲ Local Roads (New)	▲ East and West of Weston Road
		▲ Interchange Improvements	▲ Highway 7 / Highway 400	▲ Jane Street Widening (2 to 4)	▲ Teston Road to Kirby Road	▲ Millway Avenue Widening (2 to 4)	▲ North of Highway 7 to Portage Parkway
		▲ New Interchange Improvement	▲ King-Vaughan / Highway 400	▲ Jane Street Widening (4 to 6)	▲ Steeles Avenue to Major Mackenzie Drive	▲ Creditstone Road Widening (2 to 4)	▲ Peeler Road to Langstaff Road
North-South Corridors	Dufferin Corridor			▲ Keele Street Widening (4 to 6)	▲ Steeles Avenue to Major Mackenzie Drive	▲ New Extension of Highway 400 NB off Ramp (Link 4)	▲ Highway 7 to Portage Parkway
				▲ Bathurst Street Widening (4 to 6)	▲ South of Rutherford Road to Teston Road	▲ Local Roads	▲ West of Weston Road, North of Major Mackenzie Drive
				▲ Dufferin Street Widening (2 to 4)	▲ Major Mackenzie Drive to King-Vaughan Road	▲ New N-S 2-Lane Local Road	▲ East of Highway 400 from Teston Road to King-Vaughan Road



For the northern portion of the corridor between Major Mackenzie Drive and Teston Road, according to the analysis, all the assumed road improvements including widening of Highway 50, Highway 27 and Huntington Road are required to be in place by 2021, since the volume-to-capacity ratio with all three of these improvements is estimated to be 0.87. It is noted that the widening of Highway 27 north of Major Mackenzie Drive was not recommended by 2021 in the Western Vaughan IEA study; therefore, the timing on this project will likely need to be advanced and additional north-south capacity provided by the collector road included in the Nashville Heights subdivision.

Also the capacity analysis showed that the portion of the corridor between Teston Road and Kirby Road is predicted to operate under uncongested conditions provided that the widenings of Highway 50, Highway 27, and Huntington Road would be in place by 2021. The analysis assumed that all the proposed developments in the Kleinburg – Nashville area are built by 2021. As an alternative to the widenings of Highway 27 north of Nashville Road, the further extension of Highway 427 north of Major Mackenzie Drive to the planned GTA West corridor can be considered. Should such an extension be committed, there would not be a need to widen Highway 27 north of Nashville Road.

Finally the capacity analysis showed that for the portion of the corridor between Kirby Road and King-Vaughan Road, there is a need for implementation of either of the two assumed road widenings (Highway 50 or Highway 27) further to the north by 2021, or alternatively further extending Highway 427.

## 1.2 Islington Corridor

As was shown in **Figures L1** and **L2**, the Islington corridor almost entirely is predicted to operate under uncongested conditions in both directions of travel (with a volume-to-capacity ratio less than 0.8) for both AM and PM peak hours. This finding was expected as the projected population and employment growth for the Islington corridor between 2006 and 2021 is not significant (see **Appendix F.3**) The only exception is expected to occur just north of Steeles Avenue NB in the PM peak hour with its volume-to-capacity ratio estimated at 0.81, slightly over the acceptable level of service. There were no assumed N-S road improvements within this corridor for 2021, and this analysis confirms that none are required.

## 1.3 Highway 400 Corridor

**Figures L1** and **L2** indicate that even after undertaking all the N-S assumed road network improvements in the Highway 400 corridor (as shown in **Table L1**), the corridor still is expected to operate mostly under congested conditions in 2021 from Steeles Avenue to King Vaughan Road in NB PM peak hour, and between Langstaff Road and King Vaughan Road in SB AM peak hour. However, there is little congestion expected in the AM and PM peak hours in both directions between Steeles Avenue and Highway 7. The most congested location along the corridor is just north of Rutherford Road SB in the AM and NB in the PM peak hours with volume-to capacity ratios of 1.12 and 1.08, respectively.

According to **Table L1**, the major assumed N-S road network improvements along the corridor are the widening of Weston Road between Steeles Avenue and Major Mackenzie Drive, from 4 to 6 lanes and also between Major Mackenzie Drive and Kirby Road, from 2 to 4 lanes; widening Highway 400 from

6 to 8 lanes in the section north of Major Mackenzie Drive; the widening of Creditstone Road between Peeler Road and Langstaff Road from 2 to 4 lanes; the widening of a section of Jane Street between Teston Road and Kirby Road, from 2 to 4 lanes; and the widening of Millway Avenue between Highway 7 and Portage Parkway, from 2 to 4 lanes; and the Millway Avenue extension south of Highway 7 to Interchange Way.

Assuming the completion of the planned Highway 400 widening by 2021, all other assumed road network improvements between Highway 7 and King-Vaughan Road need to be built by 2021 to address the future travel needs along the corridor, as even with implementation of all assumed improvements, the corridor is still predicted to be considerably congested. In order to address the remaining deficiencies in this corridor, the widening of Jane Street from 4 to 6 lanes between Steeles Avenue and Major Mackenzie Drive and the widening of Highway 400 from 6 to 10 lanes (rather than 6 to 8) between Major Mackenzie Drive and Teston Road are recommended for the horizon year of 2021. If the Ministry of Transportation cannot advance the widening of the section of Highway 400 to 10 lanes by 2021, either Weston Road or Jane Street would need to be widened from 4 to 6 lanes between Major Mackenzie Drive and Teston Road. For the portion of the corridor between Teston Road and King-Vaughan Road, either the widening of Highway 400 from 6 to 10 lanes or the widenings of both Weston Road and Jane Street from 2 to 4 lanes are recommended to address the expected capacity deficiencies in that area.

The detailed capacity analysis done for the least congested portion of the corridor, between Steeles Avenue and Highway 7, indicated that widening Weston Road in this area from 4 to 6 lanes might be deferred to 2031, since the volume-to-capacity ratio without the Weston Road widening is predicted to be 0.81 which is only slightly over the acceptable volume-to-capacity level.

## 1.4 Dufferin Corridor

According to **Figures L1** and **L2**, the corridor operates under either fully congested or partly congested conditions between Steeles Avenue and Major Mackenzie Drive in both SB in the AM and NB in the PM peak hours, whereas the northern portion of the corridor between Major Mackenzie Drive and King-Vaughan Road for the most part is uncongested. The most congested location along the corridor is north of Rutherford Road with volume-to-capacity ratios of 1.01 NB in the PM peak hour and 1.07 SB in the AM peak hour.

As **Table L1** illustrates, the associated N-S road network improvements that were assumed for this corridor include the widening of Keele Street between Steeles Avenue and Rutherford Road from 4 to 6 lanes, widening of Dufferin Street from 2 to 4 lanes between Major Mackenzie Drive and King-Vaughan Road, and widening of Bathurst Street from 4 to 6 lanes from south of Rutherford Road to Teston Road.

The high volume-to-capacity ratios for the corridor between Steeles Avenue and Major Mackenzie Drive indicated that all the assumed N-S road network improvements are required to be built by 2021 to avoid any excessive level of congestion along the corridor. It is essential to note that even with implementation of all assumed improvements; the corridor is still predicted to be congested. The widening of Dufferin Street between Langstaff Road and Major Mackenzie Drive from 4 to 6 lanes is therefore also recommended.

The results of the capacity analysis for the slightly congested section of the corridor between Major Mackenzie Drive and Teston Road show that the widenings of Dufferin Street and Bathurst Street in this section need to be complete by 2021 as the volume-to-capacity ratios without widening of those roads are estimated at 0.94 or above (well above the acceptable level).

The northern portion of the corridor between Teston Road and King-Vaughan Road assumed the widening of Dufferin Street to 4 lanes as the only N-S road improvement. With this improvement the corridor is predicted to remain mostly uncongested with a maximum volume-to-capacity ratio of 0.82, SB in the AM peak hour (which is only slightly higher than the acceptable level). Also the analysis showed that, without the implementation of this widening, this portion of the corridor is estimated to operate under congested conditions in 2021 with volume-to-capacity ratios as high as 1.00. This indicated the need for widening Dufferin Street north of Teston Road from 2 to 4 lanes by 2021.

## 1.5 Highway 407 Corridor

**Figures L3** and **L4** indicate that the Highway 407 corridor from Highway 50 to Yonge Street in AM and PM peak hour is expected to operate under fully-congested or partly-congested conditions in both eastbound (EB) and westbound (WB) directions of travel. The most congested locations along the corridor are predicted to be just east of Highway 50 EB in the AM and WB in the PM peak hours, and also east of Keele Street EB in the PM peak hour with volume-to-capacity ratios of 0.93 to 0.94. However there is no congestion expected to occur in AM peak hour from Highway 400 to Bathurst Street EB and from Highway 400 to Highway 50 in the WB direction.

For the 2021 network testing, there were no assumed major E-W road network improvements within the corridor. However, throughout the corridor, there are some possible road improvements including several discrete road widenings. Those include widening of two short sections of Steeles Avenue (west of Pine Valley Drive and between Weston Road and Jane Street), widening a short section of Highway 7 east and west of Islington Avenue, and widening a section of Langstaff Road between Keele Street and Dufferin Street. These together with the Portage Parkway extension between Jane Street and Creditstone Road, a new Highway 400 crossing south of Highway 7 between Colossus Drive and Interchange Way (Colossus Drive extension) and a new local road north of Steeles Avenue between Jane Street and Keele Street, represent the most noticeable E-W road improvements needed in this corridor. A key network improvement needed by 2021 is the extension of Langstaff Road from Keele Street to Creditstone Road, but it is questionable whether such a major undertaking could be completed within this timeframe.

According to the results of the screenline analysis illustrated in **Figures L3** and **L4** the new E-W local road north of Steeles Avenue between Jane Street and Keele Street needs to support planned transit-oriented development between Steeles Avenue and the Hydro corridor. Furthermore, it will provide vehicular access to the planned park-and-ride, and passenger pick-up and drop-off facilities associated with the new Steeles station on the Spadina subway extension.

Also for the purpose of lane continuity, the widening for short stretches of Steeles Avenue and Highway 7 need to be completed by 2021 because those short stretches represent bottlenecks in the only two continuous arterials in this corridor.

Based on the findings of the VMC Transportation Analysis<sup>1</sup>, the Portage Parkway extension from Jane Street to Creditstone Road and the Colossus Drive extension crossing over Highway 400 should be built by 2021 to support development in the City's future downtown.

## 1.6 Major Mackenzie – Rutherford Corridor

As shown in **Figures L3** and **L4**, the Major Mackenzie-Rutherford (Major Mac – Rutherford) corridor, with assumed improvements, for the most part is predicted to operate under uncongested conditions in both directions of travel with the volume-to-capacity ratio less than 0.8 for both AM and PM peak hours. The major exception is the congested section east of Highway 50, EB in the AM and WB in the PM peak hours with unacceptable volume-to-capacity ratios of 1.15 and 1.01 respectively. The section east of Keele Street also is estimated to be approaching congested conditions WB in the AM and EB in the PM peak hours.

As **Table L1** shows, in addition to new E-W local roads north and south of Rutherford Road and north of Major Mackenzie Drive, the major assumed road improvements in the corridor are the widening of Rutherford Road from Highway 50 to Highway 27 and the widening of Major Mackenzie Drive from Weston Road to Bathurst Street, from 4 to 6 lanes, and from Highway 50 to Weston Road, from 2 to 6 lanes.

The screenline analysis results indicate that among the E-W road improvements, the widening of Rutherford Road and Major Mackenzie Drive between Highway 50 and Highway 27, as well as two E-W local roads, one south of Rutherford Road and one north of Major Mackenzie Drive, need to be done by 2021 since this western portion of the corridor is predicted to be overly congested even with the implementation of these improvements.

The detailed capacity analysis done for the Major Mac - Rutherford corridor shows that the section between Highway 27 and Pine Valley Drive is expected to operate at congested conditions with a volume-to-capacity ratio of 0.90 for EB in the PM peak hour (with 4 lanes for Major Mackenzie Drive), whereas the ratio is predicted to be 0.78 with Major Mackenzie Drive at 6 lanes. Therefore, the proposed widening of Major Mackenzie Drive to 6 lanes in this section by 2021 is supported.

The same conditions are expected to occur for the section of the corridor between Pine Valley Drive and Weston Road. The peak direction, peak hour volume-to-capacity ratio on the Major Mack – Rutherford corridor just east of Pine Valley Drive is predicted to improve significantly (from 0.92 WB for the PM peak hour to 0.78) with an assumption of an increase in number of lanes of Major Mackenzie Drive from 4 to 6 lanes. This means the widening of Major Mackenzie Drive from 2 to 6 lanes needs to be continued easterly from Pine Valley Drive to Weston Road with a completion date before 2021.

For the section of the corridor between Weston Road and Jane Street, the capacity analysis indicated that a 6-lane Major Mackenzie Drive is required. With a 6-lane Major Mackenzie Drive and a new 2-lane America Avenue crossing of Highway 400 (as currently planned), in place by 2021, there remains

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1. *Vaughan Metropolitan Centre Transportation Plan Report completed by AECOM (see TMP Appendix A-1).*

an estimated corridor volume-to-capacity ratio of 1.03. This indicates the need for additional capacity which would take the form of a second new crossing of Highway 400, either north or south of Major Mackenzie Drive. In this regard, it should be noted that Vaughan Council has previously taken a position not to support a crossing south of Major Mackenzie Drive that would link Davos Road / Ashberry Boulevard on the west with Springdale Road at Jane Street. It also indicates the importance of the connections from Weston Road to the existing Bass Pro Mills 4-lane overpass in order to maximize its utility. The best case scenario for 2021 would be if in addition to the widening of Major Mackenzie Drive to 6 lanes, a new 4-lane crossing could be achieved, together with a 4-lane America Avenue crossing in which case the volume-to-capacity ratio would be reduced to 0.81. For the section of the corridor east of Jane Street the widening of Major Mackenzie Drive to 6 lanes is recommended to eliminate the capacity deficiencies in this section, since the volume-to-capacity ratio without this widening would be 0.87.

## 1.7 Kirby Corridor

**Figures L3** and **L4** illustrate that the Kirby corridor will operate mostly uncongested (volume-to-capacity ratio of less than 0.8) in both directions of travel during both AM and PM peak hours. However, there is a section of the corridor between Keele Street and Bathurst Street for which the volume-to-capacity ratios WB during the AM peak hour are estimated at 0.84 (east of Keele Street) and 0.88 (west of Bathurst Street).

Apart from the Highway 400 North employment area, there is not so much development planned within the corridor. According to **Table L1**, the assumed road improvements for this corridor are limited to the construction of one Highway 400 crossing north of Kirby Road, widening the King-Vaughan Road between Highway 400 and Bathurst Street, and widening two sections of Teston Road, namely between Pine Valley Drive and Highway 400, and between Keele Street and Bathurst Street including the section west of Dufferin Street where there is currently a missing connection.

The section of the corridor between Highway 50 and Pine Valley Drive entirely operates at uncongested levels. Also according to the screenline analysis results illustrated in **Figures L3** and **L4**, the section between Pine Valley Drive and Highway 400 is predicted to operate under uncongested conditions with a peak direction, peak hour volume-to-capacity ratio of 0.60 EB for the AM peak hour. This ratio is predicted to remain in the acceptable range (0.77) even without any widening (with the assumption of 2 lanes for Teston Road). Therefore, the widening of Teston Road (from 2 to 4 lanes) can be deferred to 2031.

The section of the corridor east of Highway 400 is predicted to operate under uncongested conditions with the peak direction, peak hour volume-to-capacity ratio predicted to be at 0.67 (WB in the AM peak hour) in 2021, with the assumption that widening of the King-Vaughan Road (from 2 to 4 lanes) and building of a Highway 400 crossing can be completed by 2021. The analysis also showed that the ratio would be 0.82 without widening of King-Vaughan Road. Therefore, this road improvement should be in place by 2021 to avoid any future traffic congestion. Also it was found that, the implementation time of the Highway 400 crossing is dependent on the needs of the proposed GTA West corridor and the timing of development within the Highway 400 North employment area, which could be earlier than 2031.

The screenline results also showed the need for completion of the widenings of King-Vaughan Road and Teston Road between Keele Street and Dufferin Street to 4 lanes by 2021 because the peak direction, peak hour volume-to-capacity ratio with both is predicted to be 0.84 (WB in the AM peak hour) and without either of these improvements to be 1.06. To reduce the volume-to-capacity ratio below 0.80, a widening of Kirby Road to 4 lanes would be needed with a resulting corridor volume-to-capacity ratio of 0.70.

Based on the results of the screenline analysis, King-Vaughan Road and Teston Road, between Dufferin Street and Bathurst Street, both need to be widened from 2 to 4 lanes by 2021 as the volume-to-capacity ratio with both is estimated to be at 0.88 (WB in the AM peak hour) and without either of these widenings to be 1.16. This indicates that the Kirby Road missing link is also required by 2021. Built as a 2-lane road, the corridor volume-to-capacity ratio would be reduced to an acceptable 0.70.

## 1.8 Conclusions Regarding Infrastructure Phasing

According to the results of screenline analysis at corridor levels and the detailed capacity analysis which has been discussed earlier, the major improvements that need to be in place by 2021 have been identified. The remaining road improvements identified in this TMP are assumed to be required between 2021 and 2031. Among the road improvements for 2021 - 2031, two major ones have been proposed in the York Region TMP to support transit corridors - widenings to 6 lanes of Highway 27 from Highway 7 to Major Mackenzie Drive and Rutherford Road between Weston Road and Highway 27.

These will supplement rapid transit investments by the Region to upgrade HOV lanes to exclusive transit lanes or at-grade rapid transit facilities, in the Jane, Major Mackenzie, and Dufferin / Bathurst corridors as supported in the Regional TMP.

In addition, corridors are to be protected for two Provincial initiatives – the GTA West corridor and the north-south connection to the GTA West corridor from the Highway 427 extension. These are also shown in the Regional TMP. The location of the easterly terminus of the GTA West corridor at Highway 400 is still uncertain and future decisions in this regard will influence the location and timing of planned local road improvements.

**Figures L5** and **L6** illustrate the road improvements needed by 2021 and between 2021 and 2031 in the City of Vaughan. **Table L2** presents the required road improvements for corridors both N-S and E-W, and indicates the appropriate horizon year when each improvement is needed.



Figure L5. Road Improvements Needed by 2021 (Assuming 12% City-Wide Transit Share)

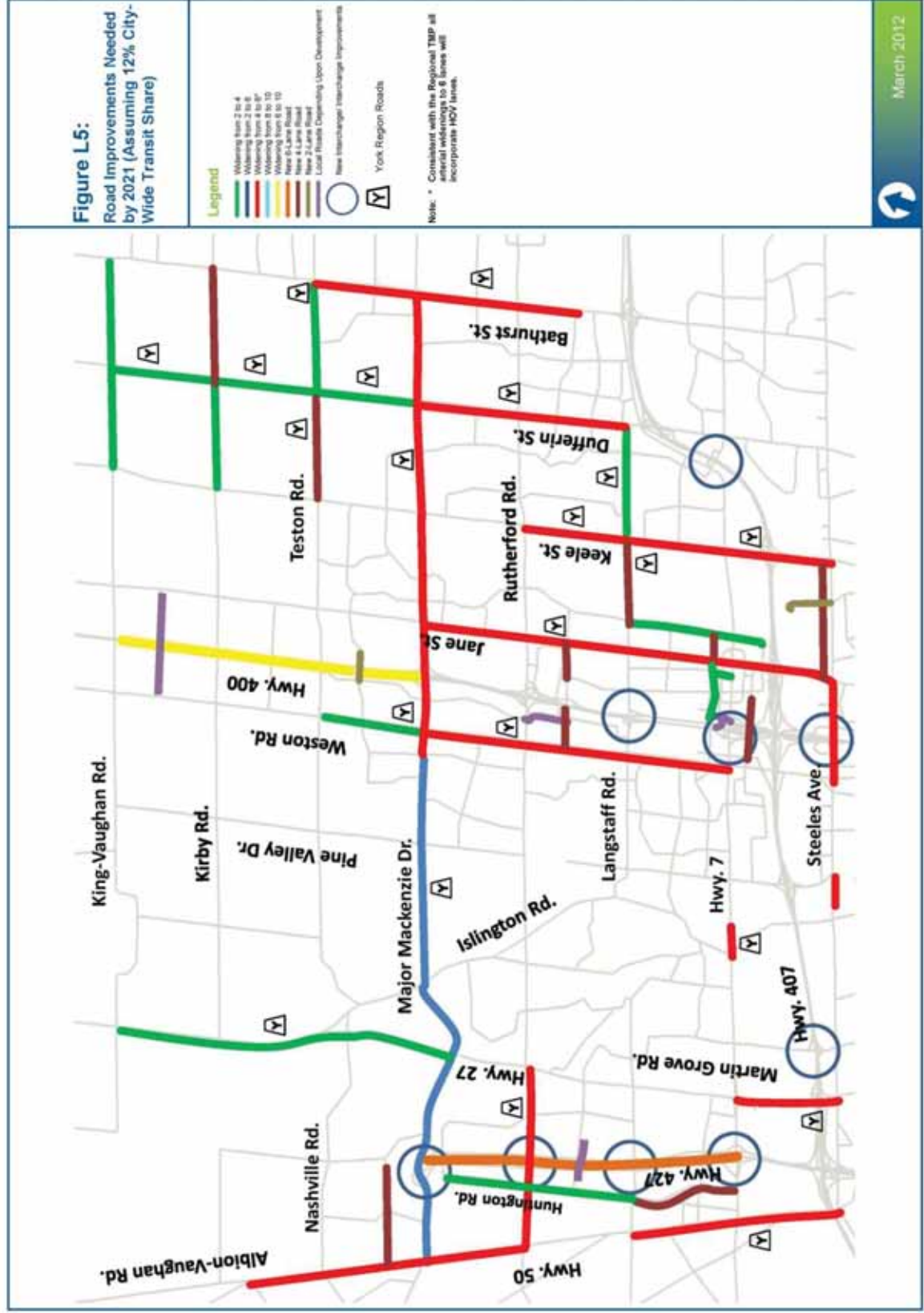




Figure L6. Road Improvements Needed between 2021 and 2031 (Assuming 15% City-Wide Transit Share)

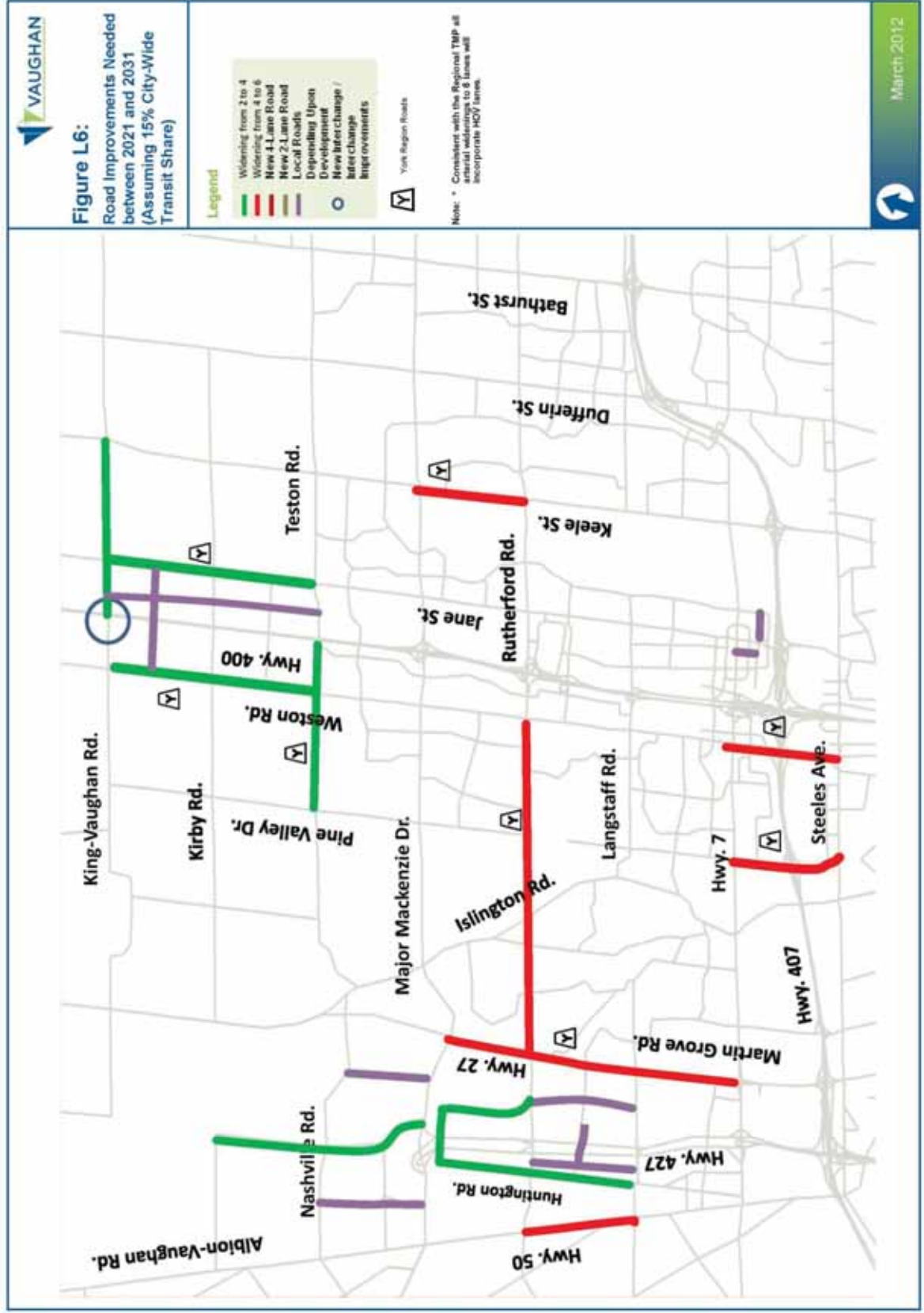






Table L2. Road Improvements in North-South and East-West Corridors

North-South Corridors				
	Widening from 2 to 4	Limits	Year Required	Comments
Highway 427 Corridor	Huntington Road	Langstaff Road to South of Major Mackenzie Dr	2031	
	Huntington Road	Major Mackenzie Drive to Kirby Road	2031	
	McGillivray Road	Rutherford Rd to south of Major Mackenzie Dr	2031	
	Highway 27	Major Mackenzie Drive to Nashville Road	2021	Supported by Western Vaughan Individual Environmental Assessment (WV IEA)
	Highway 27	Nashville Road to King-Vaughan Road	2021	Supported by Western Vaughan Individual Environmental Assessment (WV IEA)
	Highway 50	Steeles Avenue to Langstaff Road	2021	
	Highway 50	Langstaff Road to Rutherford Road	2031	
	Highway 50	Rutherford Road to Major Mackenzie Drive	2021	An Alternative would be to widen either Huntington Road or McGillivray Road from 2 to 4 Lanes
	Highway 50	Major Mackenzie Drive to South of Kirby Road	2021	
	Highway 27	Steeles Avenue to Highway 7	2021	Supported by WV IEA
Highway 27	Highway 7 to Major Mackenzie Drive	2031	Supported by WV IEA	
Islington Corridor	New Roads	Limits	Year Required	Comments
	Highway 427 Extension (6-lane) and Interchanges	Highway 7 to Major Mackenzie Drive	2021	
	New Huntington Road	Highway 7 to Langstaff Road	2021	Partially constructed
	New N-S 2-lane Local Road	Major Mackenzie Drive to Nashville Road (East of Hydro corridor)	2031	To be built in conjunction with Nashville Heights Subdivision
	New N-S 2-Lane Local Road	Major Mackenzie Drive to Nashville Road (West of Hydro Corridor)	2031	Depends upon development of West Vaughan Employment Area
	New N-S 2-lane Local Road	Langstaff Road to Rutherford Road (West of Highway 27)	2031	Depends upon development of West Vaughan Employment Area
	Pine Valley Drive	Limits	Year Required	Comments
	Weston Road	Limits	Year Required	Comments
	Weston Road	Major Mackenzie Drive to Teston Road	2021	Supported by WV IEA
	Weston Road	Teston Road to King-Vaughan Road	2031	Widening to 6 lanes may be required if MTO cannot widen Highway 400 to 10 lanes
Highway 400 Corridor	Jane Street	Teston Road to King-Vaughan Road	2031	Should be advanced to 2021 if Highway 400 is not widened to 10 lanes
	Millway Avenue	Teston Road to King-Vaughan Road	2031	Should be advanced to 2021 if Highway 400 is not widened to 10 lanes
	Creditstone Road	North of Highway 7 to Portage Parkway	2021	Needed to support VMC
		Peeler Road to Langstaff Road	2021	Needed to support VMC



**Table L2. Road Improvements in North-South and East-West Corridors**

	Widening from 4 to 6	Limits	Year Required	Comments	
<b>Highway 400 Corridor (continued)</b>	Weston Road	Steeles Avenue to Highway 7	2031	▲ Supported by WV IEA	
	Weston Road	Highway 7 to Major Mackenzie Drive	2021	▲ Supported by WV IEA	
	Jane Street	Steeles Avenue to Major Mackenzie Drive	2021	▲ Regional R. T. Corridor	
	Widening from 8 to 10 lanes Highway 400 (6 to 10)	Major Mackenzie Drive to Teston Road	Year Required	2021	▲ An Alternative would be to widen Highway 400 from 6 to 8 lanes plus both Weston Road and Jane Street from 4 to 6 lanes
		Teston Road to King-Vaughan Road	Year Required	2021	▲ An Alternative would be to widen Highway 400 from 6 to 8 lanes plus both Weston Road and Jane Street from 2 to 4 lanes
	New Roads Millway Extension (4 Lanes) New Extension of Highway 400 NB off ramp (Link 4) New N-S 2-Lane Local Road	South of Highway 7 to Interchange Way	Year Required	2031	▲ Needed to support VMC
		Highway 7 to Portage Parkway	Year Required	2021	▲ Needed to support VMC; key element of truck strategy
		East of Highway 400 from Teston Road to King-Vaughan Road	Year Required	2031	▲ Depends upon development of Highway 400 North Employment Area and decisions on GTA West Corridor
	<b>Dufferin Corridor</b>	Widening from 2 to 4 Dufferin Street	Limits	Year Required	2021
		Widening from 4 to 6 Keele Street	Limits	Year Required	2021
Keele Street		Rutherford Road to Major Mackenzie Drive	2031		
Dufferin Street		Langstaff Road to Major Mackenzie Drive	2021	▲ Regional R. T. Corridor	
Bathurst Street		South of Rutherford Road to Teston Road	2021	▲ Regional R. T. Corridor	
<b>East-West Corridors</b>					
<b>Highway 407 Corridor</b>	Widening from 2 to 4 Langstaff Road	Limits	Year Required	2021	
	Widening from 4 to 6 Steeles Avenue	Limits	Year Required	2021	
	Steeles Avenue	Short Section West of Pine Valley Drive	2021	▲ This short section needs to be consistent with remaining sections	
	Highway 7	Weston Road to Jane Street	2021	▲ This section needs to be consistent with remaining sections	
	New Roads Portage Parkway Extension Colossus Drive Extension (4- lane) Across Highway 400	East and West of Islington Street	Year Required	2021	▲ This short section needs to be consistent with remaining sections; constrained by C.P. Rail structure (west of Islington)
		Jane Street to Creditstone Road	Year Required	2021	▲ Needed to support VMC
		Colossus Drive to Interchange Way	Year Required	2021	▲ Needed to support VMC



**Table L2. Road Improvements in North-South and East-West Corridors**

	<b>New Roads</b>	<b>Limits</b>	<b>Year Required</b>	<b>Comments</b>	
<b>Highway 407 Corridor</b> <i>(continued)</i>	New Highway 407 ETR Interchange	Martin Grove Road / Highway 407	2021		
	Langstaff Extension (4-lane)	Creditstone Road to Keele Street	2021	▲ Needed to support VMC; although it might not be feasible by 2021	
	New Highway 400 NB on ramp (Link 5)	Link 4 to Highway 400 NB	2021	▲ Key element of Truck Strategy	
	New E-W 4-lane Local Road	North of Steeles Avenue between Jane Street and Keele Street	2021	▲ Needed to support TOD and Subway Station Facilities	
	Interchange Way Extension (Colossus Drive)	Jane Street to Creditstone Road	2031	▲ Needed to support VMC	
	<b>Major Mackenzie – Rutherford Corridor</b>	<b>Widening from 2 to 6</b>	<b>Limits</b>	<b>Year Required</b>	<b>Comments</b>
		Major Mackenzie Drive	Highway 50 to Weston Road	2021	▲ Supported by WV IEA
		<b>Widening from 4 to 6</b>	<b>Limits</b>	<b>Year Required</b>	<b>Comments</b>
		Rutherford Road	Highway 50 to Highway 27	2021	▲ Supported by WV IEA
		Rutherford Road	Highway 27 to Weston Road	2031	▲ Supported by WV IEA
Major Mackenzie Drive		Weston Road to Bathurst Street	2021	▲ Regional R. T. Corridor	
<b>Kirby Corridor</b>	<b>New Roads</b>	<b>Limits</b>	<b>Year Required</b>	<b>Comments</b>	
	Highway 400 Crossing (2-Lane)	North of Major Mackenzie Drive, (North Maple Community Bridge)	2021	▲ Subject of ongoing Class EA Study	
	New E-W 4-Lane Local Road	South of Rutherford Road East of Highway 400	2021		
	New E-W 4-Lane Local Road	South of Rutherford Road East of Weston Road to Highway 400	2021		
	New E-W 4-Lane Local Road	North of Langstaff Road Between Highway 50 and Highway 27	2021	▲ Depends upon development of West Vaughan Employment Area	
	New E-W 4-Lane Local Road	North of Major Mackenzie Drive Between Highway 50 and Hydro Corridor (protect for extension to Huntington Road)	2021	▲ Depends upon development of West Vaughan Employment Area	
	<b>Widening from 2 to 4</b>	<b>Limits</b>	<b>Year Required</b>	<b>Comments</b>	
	Teston Road	Pine Valley Drive to Highway 400	2031	▲ May need to be implemented post 2031	
	Teston Road	Dufferin Street to Bathurst Street	2021		
	Kirby Road	Keele Street to Dufferin Street	2021		
King-Vaughan Road	Highway 400 to Keele Street	2031			
King-Vaughan Road	Keele Street to Bathurst Street	2021			
<b>New Roads</b>	<b>Limits</b>	<b>Year Required</b>	<b>Comments</b>		
	Highway 400 Crossing	North of Kirby Road	2021	▲ Depends upon development of Highway. 400 North employment area and decisions on GTA West Corridor	
	Kirby Road (4-lane)	Dufferin Street to Bathurst Street	2021		
	Teston Road (4-lane)	Keele Street to Dufferin Street	2021		

## 2. Infrastructure Phasing

### 2.1 2021 Road Improvements

#### 2.1.1 North-South Improvements

The Highway 427 extension from Highway 7 to Major Mackenzie Drive, is the most significant and costly N-S improvement. The other important Provincial improvement is the widening of Highway 400 north of Major Mackenzie Drive. Interchange improvements along Highway 400 at Steeles Avenue, Highway 7, and Langstaff Road are also required.

Many widenings of Regional arterials will be required. Four to six lane widenings from west to east include the following:

- ▶ Highway 50 from Steeles Avenue to Langstaff Road and from Rutherford Road to south of Kirby Road;
- ▶ Highway 27 from Steeles Avenue to Highway 7;
- ▶ Weston Road from Highway 7 to Major Mackenzie Drive;
- ▶ Jane Street from Steeles Avenue to Major Mackenzie Drive;
- ▶ Keele Street from Steeles Avenue to Rutherford Road;
- ▶ Dufferin Street from Langstaff Road to Major Mackenzie Drive; and
- ▶ Bathurst Street from south of Rutherford Road to Teston Road.

Consistent with York Region's policy, all of these road improvements would incorporate HOV and on-street bike lanes.

Two to four-lane widenings of Regional roads include:

- ▶ Highway 27 from Major Mackenzie Drive to King-Vaughan Road;
- ▶ Weston Road from Major Mackenzie Drive to Teston Road; and
- ▶ Dufferin Street from Major Mackenzie Drive to King-Vaughan Road.

In addition to the highways and major arterials road improvements, other N-S collectors or local roads need to be built to respond to the trips generated by new development areas and/or to solve expected capacity deficiencies. Huntington Road is the key collector for which improvements are needed between Highway 7 and Langstaff Road by 2021 to meet capacity requirements.

Network analysis done for the VMC focus area has also confirmed the need for the widenings of Creditstone Road from Peeler Road to Langstaff Road, and of Millway Avenue from Highway 7 to Portage Parkway from 2 to 4 lanes by 2021.

## 2.1.2 East-West Improvements

Improvements to 407 ETR include a new partial interchange at Martin Grove Road and an upgrade to the interchange at Centre Street.

In the E-W direction, the most significant Regional improvement is the widening of Major Mackenzie Drive from 2 to 6 lanes west of Weston Road and from 4 to 6 lanes east of Weston Road. The widening of Major Mackenzie Drive will provide for HOV and on-street bike lanes, and also supports the transit corridor included in the York Region TMP. The widening of Rutherford Road between Highway 50 and Highway 27 from 4 to 6 lanes is also needed in conjunction with the new interchange with the Highway 427 extension.

In addition to widenings of Regional arterials, two critical missing links are required by 2021. The Langstaff Road extension between Creditstone Road and Keele Street as a 4-lane road is required for network continuity and capacity requirements. Completing Teston Road from Keele Street to Dufferin Street is also required to support network continuity and capacity requirements by 2021 as a 4-lane road.

Widening of short sections of Steeles Avenue and Highway 7 from 4 to 6 lanes is recommended to eliminate bottlenecks. Two to four-lane widenings are also needed for Teston Road between Dufferin Street and Bathurst Street, Kirby Road between Keele Street and Dufferin Street, King-Vaughan Road between Keele Street and Bathurst Street, and Langstaff Road between Keele Street and Dufferin Street.

Consistent with the new VMC Transportation Plan, the Colossus Drive extension crossing Highway 400, and Portage Parkway extension between Jane Street and Creditstone Road as 4-lane roads are needed by 2021 to support VMC development and network capacity requirements. There is also a key missing connection, on Kirby Road between Dufferin Street and Bathurst Street which needs to be built by 2021 to enhance the connectivity of the road network and help to reduce the overall congestion in E-W direction of travel in the area.

There are two more E-W 4-lane collectors north of Major Mackenzie Drive between Highway 50 and Huntington Road and south of Rutherford Road between Highway 50 and Highway 27 which are needed by 2021 (or at the time of development of these parts of the West Vaughan Employment Area).

Highway 400 crossings north of Major Mackenzie Drive (America Avenue) and north of Kirby Road need to be built by 2021, the latter dependent upon the location of an interchange with the future GTA West corridor.

## 2.2 2031 Road Improvements

While the largest portion of road improvements needs to be built by 2021, several important road improvements will need to be completed by 2031. In assessing 2031 needs, **Tables L3** and **L4** were prepared to summarize specific corridor v/c ratios at selected screenlines for the AM and PM peak hours, respectively. These correspond directly with the graphical level of service displays included in Figures 3 to 6 in Appendix F3.



**Table L3. 2031 AM Peak Hour Corridor/Screenline Analysis**

Direction	Highway 427 Corridor			Islington Corridor			Highway 400 Corridor			Keele/Dufferin Corridor						
	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C
North of King-Vaughan	743	5	4500	0.17	2	1	1000	0.00	2890	6	8600	0.34	1712	6	6000	0.29
South of King-Vaughan	3646	5	4500	0.81	635	1	1000	0.64	9301	6	8600	1.08	4413	6	6000	0.74
North of Teston Rd	1723	7	5600	0.31	42	2	2000	0.02	5365	8	10600	0.51	2217	6	5600	0.40
South of Teston Rd	4892	7	5600	0.87	299	2	2000	0.15	10019	8	10600	0.95	5362	6	5600	0.96
North of Rutherford Road	4300	11	11300	0.38	1032	5	3500	0.29	6828	15	14200	0.48	2930	11	7600	0.39
South of Rutherford Road	10357	11	11300	0.92	3326	6	3900	0.85	17549	15	14200	1.24	9381	11	7600	1.23
North of Highway 7	6728	13	12200	0.55	1021	9	6600	0.15	11026	18	19200	0.57	7897	17	11800	0.67
South of Highway 7	11012	13	12200	0.90	5508	11	7400	0.74	19613	20	24000	0.82	11034	17	11800	0.94
North of North of Steeles	8621	9	10200	0.85	2713	10	7233	0.38	7649	17	18100	0.42	5737	16	9600	0.60
South of North of Steeles	13646	9	10200	1.34	4271	10	7233	0.59	14509	17	18100	0.80	9582	16	9600	1.00

Direction	Teston Corridor			Rutherford Corridor			Highway 407 Corridor					
	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C
West of Hwy 50	1080	2	1400	0.77	2669	8	5600	0.48	10757	15	17800	0.60
East of Hwy 50	1096	2	1400	0.78	7049	8	5600	1.26	17543	15	17800	0.99
West of Hwy 27	2106	4	3400	0.62	5030	9	6400	0.79	12121	11	14300	0.85
East of Hwy 27	2217	4	3400	0.65	3888	9	6400	0.61	12160	11	14300	0.85
West of Hwy 27	1861	4	3600	0.52	3652	7	5200	0.70	13433	17	17900	0.75
East of Hwy 27	2639	4	3600	0.73	4103	7	5200	0.79	15095	17	17900	0.84
West of Hwy 400	3400	6	4900	0.69	5678	11	7800	0.73	15261	19	20200	0.76
East of Hwy 400	3682	6	4900	0.73	6386	11	7800	0.82	15566	19	20200	0.77
West of Hwy 400	4232	5	4500	0.94	4950	9	5000	0.99	15577	16	17400	0.90
East of Hwy 400	2113	5	4500	0.47	3699	9	5000	0.74	14132	16	17400	0.81
West of Hwy 400	3699	5	4500	0.82	3619	9	6600	0.55	16030	17	18600	0.86
East of Hwy 400	1303	5	4500	0.29	4151	9	6600	0.63	12990	17	18600	0.70



**Table L4. 2031 PM Peak Hour Corridor/Screenline Analysis**

Direction	Highway 427 Corridor			Islington Corridor			Highway 400 Corridor			Keele/Dufferin Corridor					
	Total Traffic Volumes	Total Number of Lanes	Total Capacity	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C
North of King-Vaughan	3605	5	4500	630	1	1000	0.63	9422	6	8600	1.10	4646	6	6000	0.77
North of Vaughan	969	5	4500	0	1	1000	0.00	3575	6	8600	0.42	1885	6	6000	0.31
North of Teston Rd	4890	7	5600	287	2	2000	0.14	10298	8	10600	0.97	5465	6	5600	0.98
North of Rutherford Road	1768	7	5600	32	2	2000	0.02	5846	8	10600	0.55	2329	6	5600	0.42
North of Rutherford Road	10083	11	11300	2878	5	3500	0.82	16763	15	14200	1.18	8802	11	7600	1.16
North of Highway 7	5446	11	11300	1655	6	3900	0.42	9130	15	14200	0.64	3812	11	7600	0.50
North of Highway 7	11437	13	12200	5078	9	6600	0.77	19397	18	19200	1.01	11384	17	11800	0.96
North of Highway 7	6864	13	12200	2206	11	7400	0.30	13079	20	24000	0.54	9188	17	11800	0.78
North of Steeles	14029	9	10200	6104	10	7233	0.84	14900	17	18100	0.82	11019	16	9600	1.15
North of Steeles	9383	9	10200	3743	10	7233	0.52	10283	17	18100	0.57	7677	16	9600	0.80

Direction	Teston Corridor			Rutherford Corridor			Highway 407 Corridor				
	Total Traffic Volumes	Total Number of Lanes	Total Capacity	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C	Total Traffic Volumes	Total Number of Lanes	Total Capacity	V/C
East of Hwy 50	940	2	1400	6162	8	5600	1.10	17604	15	17800	0.99
East of Hwy 50	1041	2	1400	3002	8	5600	0.54	11938	15	17800	0.67
East of Hwy 27	2107	4	3400	3887	9	6400	0.61	12581	11	14300	0.88
East of Hwy 27	2366	4	3400	5170	9	6400	0.81	12530	11	14300	0.88
East of Pine Valley Drive	2482	4	3600	4505	7	5200	0.87	16946	17	17900	0.95
East of Pine Valley Drive	2188	4	3600	4466	7	5200	0.86	17110	17	17900	0.96
East of Hwy 400	3596	6	4900	7118	11	7800	0.91	17875	19	20200	0.88
East of Hwy 400	3267	6	4900	6572	11	7800	0.84	18121	19	20200	0.90
East of Keele St.	2947	5	4500	3641	9	5000	0.73	14750	16	17400	0.85
East of Keele St.	3917	5	4500	4863	9	5000	0.97	17203	16	17400	0.99
West of Bathurst	1635	5	4500	3706	9	6600	0.56	13616	17	18600	0.73
West of Bathurst	3333	5	4500	3722	9	6600	0.56	16945	17	18600	0.91

## 2.2.1 North-South Improvements

In the N-S direction, completion of the widening of Highway 50 from Langstaff Road to Rutherford Road needs to be done by 2031.

Other major N-S arterial road improvements to be completed between 2021 and 2031 (as shown in **Figure L6**) will be the widening of Highway 27 from Highway 7 to Major Mackenzie Drive, Pine Valley Drive and Weston Road from Steeles Avenue to Highway 7, and Keele Street from Rutherford Road to Major Mackenzie Drive, all from 4 to 6 lanes. These improvements will expand the HOV and on-street bike networks. Widening of McGillivray Road, Huntington Road between Langstaff Road and Kirby Road, and the extension of Millway Avenue south of Highway 7 to Interchange Way (as a 4-lane roadway) are also needed by 2031. For the West Vaughan Employment Area there are two 2-lane collectors, west and east of Huntington Road from Langstaff Road to Rutherford Road, that need to be included in the road network by 2031.

## 2.2.2 East-West Improvements

In the E-W direction of travel, Rutherford Road from Highway 27 to Weston Road needs to be widened from 4 to 6 lanes by 2031.

Teston Road between Pine Valley Drive and Highway 400 and King-Vaughan Road from Highway 400 to Keele Street should be also widened from 2 to 4 lanes.

In addition to widenings of Regional arterials and local roads, Interchange Way Extension between Jane Street and Creditstone Road is also required by 2031.