8. Identification and Evaluation of the Alternative Solutions

8.1 Transportation Alternative Development

Ultimately five alternative transportation network solutions were developed, including the "Do Nothing" scenario for comparison and evaluation as part of this study. The alternatives were developed by consulting the recommendations of previous transportation studies for HCV (i.e., the Highland Creek Area Transportation Study (1986) and the HCV Area Functional Study (1995) discussed in **Sections 3.2.4** and **3.2.5**), the 2012 Highland Creek Village Area Study, considering feedback received from the public, and through application of the TAC's experience and professional judgement.

At the outset of the study, four draft preliminary alternatives were developed and presented at PIC 1, as shown in the PIC display panels provided in **Appendix A.5**, included the following:

Do Nothing

This alternative maintains the existing road network and parking with no changes. The alternative serves as a base case that highlights the benefits and impacts of the other alternatives that propose changes and improvements to existing conditions. This alternative significantly limits the development potential of the lands in the vicinity of the Highland Creek Overpass since the overpass and existing ramps remain in place.

Alternative 1 – Overpass Removal and New At-Grade Intersection

This alternative was developed from the road network that was recommended as part of the Highland Creek Area Study (2012). It proposed the long-term removal of the Highland Creek Overpass and closure of associated Highway 2A ramps to open up the lands for development. Three new intersections were proposed along Highway 2A at Meadowvale Road, the Highland Creek Overpass (at grade) and at Military Trail. A laneway was included between Military Trail and Morrish Road, and angled parking along Old Kingston Road on the north side in front of the Morrish Plaza was proposed to be converted to parallel parking.

Alternative 2 – Meadowvale Traffic Signals and Westbound Overpass Ramp

This alternative was developed from the road network that was recommended as part of the Highland Creek Functional Study (1995). It proposed to maintain the Overpass in-place, while removing existing ramps and introducing two new intersections along Highway 2A at Meadowvale Road and Military Trail. Signalized intersections were also introduced at the

Kingston Road / Meadowvale Road intersection, as well as at the Lawson Road / Meadowvale Road intersection. A new westbound access ramp to Highway 2A was also proposed at the Highland Creek Overpass.

Alternative 3 – Kingston Road Connection

This alternative developed as part of the HCV TMP proposed to maintain the Overpass in place, while removing existing ramps and introducing a new signalized intersection along Highway 2A at Kingston Road (to the north) / Lawson Road (to the south). A roundabout intersection was included at the Kingston Road / Highland Creek Overpass intersection. A new westbound access to Highway 2A was also proposed at Meadowvale Road.

In response to comments received from the public, the following modifications were made to the four draft preliminary alternative solutions that were presented at PIC 1:

Meadowvale Connection

All of the alternatives that were presented at PIC 1 (except for Do Nothing) included some form of new road network connection between Meadowvale Road and Highway 2A (i.e., a full intersection or a new SB to WB right-turn access). Alternative 1 was modified to exclude the new westbound access to Highway 2A from Meadowvale Road due to the following considerations:

- Additional access may not be needed, particularly if two new intersections are included along Highway 2A (e.g., Military Trail and Lawson Road).
- Strong opposition to Meadowvale access by some residents.
- An alternative that does not include a new Meadowvale Road intersection or access allows for a fairer assessment of the connection's benefits and impacts. New connections to Highway 2A were maintained in Alternatives 2 (full intersection) and 3 (westbound access).

Roundabout

A roundabout at Kingston Road/ Highland Creek Overpass was originally proposed as an option in Alternative 3 at PIC 1. The roundabout was removed from further consideration due to the following:

- Comments that roundabout use is inconsistent with a pedestrian and cycling friendly Village.
- Potential sizing issues and property impacts.

- Potential transit navigation issues
- Concerns expressed by motorists, pedestrians, and cyclists at PIC 1.

Laneway

A laneway between Military Trail and Morrish Road was originally proposed as an option in Alternative 1 at PIC 1. The laneway was added to Alternatives 2 through 4 due to the following considerations:

- The laneway would benefit all alternatives by providing delivery and service vehicles with access to the rear of the commercial properties along the south side of Old Kingston Road. This would allow for the loading and un-loading of goods to occur to the rear, off Old Kingston Road.

Parking

The existing angled parking on Old Kingston Road (north side in front of the Morrish Plaza) was proposed to be converted to parallel parking in Alternative 1 at PIC 1. The conversion of the existing perpendicular parking on Morrish Road was added to Alternative 1 due to the following considerations:

- Similar to angled parking on Old Kingston Road, perpendicular parking takes up a significant amount of ROW (limiting possible public realm improvements) and hinders visibility for parking manoeuvres.
- Concerns about safety and the reduced visibility associated with parking manoeuvres (i.e., limited visibility when exiting the perpendicular parking).

It also should be noted that some members of the public expressed concerns that the traffic signal currently located at Old Kingston Road and Morrish Road is unnecessarily disrupting traffic through the Village. Although the preliminary analysis indicated that the traffic signal is not warranted from a traffic volume point of view, it was determined that the need for the signal was originally justified on the basis of collision hazard[16]. This basis for the warrant is expected to continue to be valid in the future and consequently the existing signal remains in all of the alternatives.

16. The traffic signals were recommended by Scarborough Community Council and approved by City Council in 2011: http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2011.SC9.28

8.2 Preliminary Alternative Solutions

The five transportation network alternatives that were carried forward for more detailed analysis and evaluation as part of this TMP are described below and presented in **Exhibit 8-1** through **Exhibit 8-5**. As discussed in the previous Section, these five final alternatives were developed by modifying the four draft preliminary alternative solutions that were originally presented at PIC 1 by addressing feedback received from the public and the TAC in the lead up to, during, and following the first PIC. Consequently, each Exhibit identifies the modifications that were made to each alternative following PIC 1.

Do Nothing

This alternative maintains the existing road network and parking with no changes. The alternative serves as a base case that highlights the benefits and impacts of the other alternatives that propose changes and improvements to existing conditions. This alternative significantly limits the development potential of the lands in the vicinity of the Highland Creek Overpass since the overpass and existing ramps remain in place. The Do Nothing alternative is shown in **Exhibit 8-1**.

Alternative 1 – Overpass Removal and New At-Grade Intersection

This alternative is developed from the road network that was recommended as part of the Highland Creek Area Study (2012). It proposes the long-term removal of the Highland Creek Overpass and closure of associated Highway 2A ramps to open up the lands for development. Two new intersections are proposed along Highway 2A at the Highland Creek Overpass (at grade) and at Military Trail. Since PIC 1, this alternative was revised to remove the westbound access to Hwy 2A from Meadowvale Road and to include the conversion of perpendicular parking on Morrish Road to parallel parking. Alternative 1 is shown in **Exhibit 8-2**.

Alternative 2 – Meadowvale Traffic Signals and Westbound Overpass Ramp

This alternative is developed from the road network that was recommended as part of the Highland Creek Functional Study (1995). It proposes to maintain the Overpass in-place, while removing existing ramps and introducing two new intersections along Highway 2A at Meadowvale Road and Military Trail. A new westbound access ramp to Highway 2A is also proposed at the Highland Creek Overpass. Since PIC 1, this alternative was revised to include a new laneway to provide delivery and service vehicles with access to the rear of the commercial properties along the south side of Old Kingston Road. Alternative 2 is shown in **Exhibit 8-3**.

Alternative 3 – Kingston Road Connection

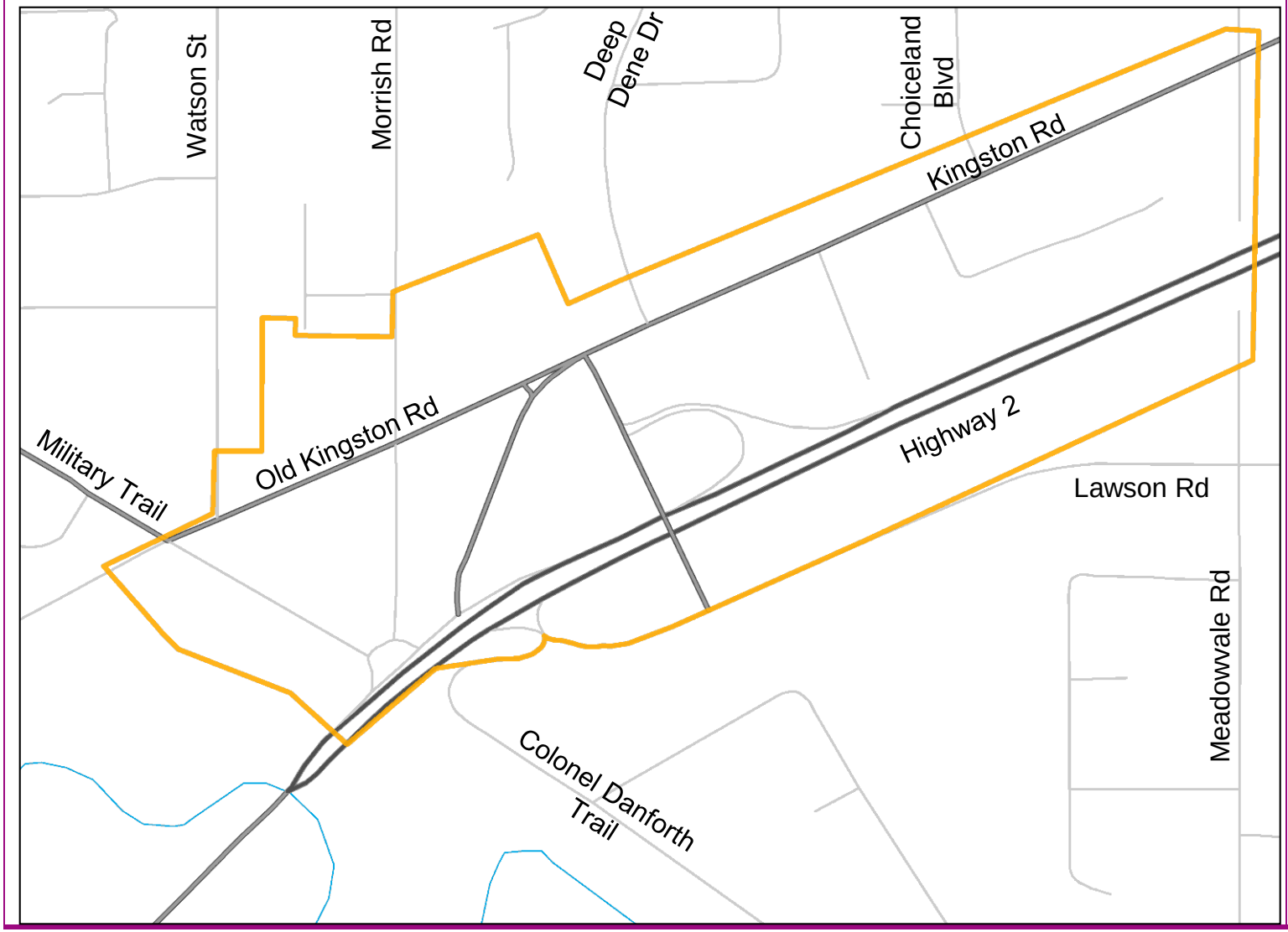
This alternative was newly developed as part of the HCV TMP. It proposes to maintain the Overpass in place, while removing existing ramps and introducing a new signalized intersection along Highway 2A at Kingston Road (to the north) / Lawson Road (to the south). A new westbound access to Highway 2A is also proposed at Meadowvale Road. Since PIC 1, this alternative was revised to remove the roundabout previously proposed for the Kingston Road and Lawson Road intersection and add the new laneway for access to commercial properties along the south side of Old Kingston Road. Alternative 3 is shown in **Exhibit 8-4**.

Alternative 4 – Military Trail Intersection with Overpass In-Place

This alternative was newly developed as part of the HCV TMP after PIC 1. It is similar to Alternative 1, including a new Military Trail intersection, with the only difference being the continued presence of the Overpass. Alternative 4 is shown in **Exhibit 8-5**.

It also should be stressed that improvements to the study area's streetscape, public realm, and active transportation (cycling and pedestrian) network are also important components of Alternatives 1 through 4. Recognizing that the recommended transit, pedestrian, and cycling network will, in a large part, be informed by the recommended road network specific transit, pedestrian, and cycling network recommendations were not developed until after the selection of a preferred road network alternative. (see **Section 10.2** for more details on the pedestrian and cycling related recommendations and **Section 10.3** for more details on the transit related recommendations). However, the ability of each road network alternative to support the broad multi-modal objectives of the study's Problem and Opportunity Statement is a significant component of the evaluation of road network alternatives (see **Section 8.4** for more details on the evaluation).

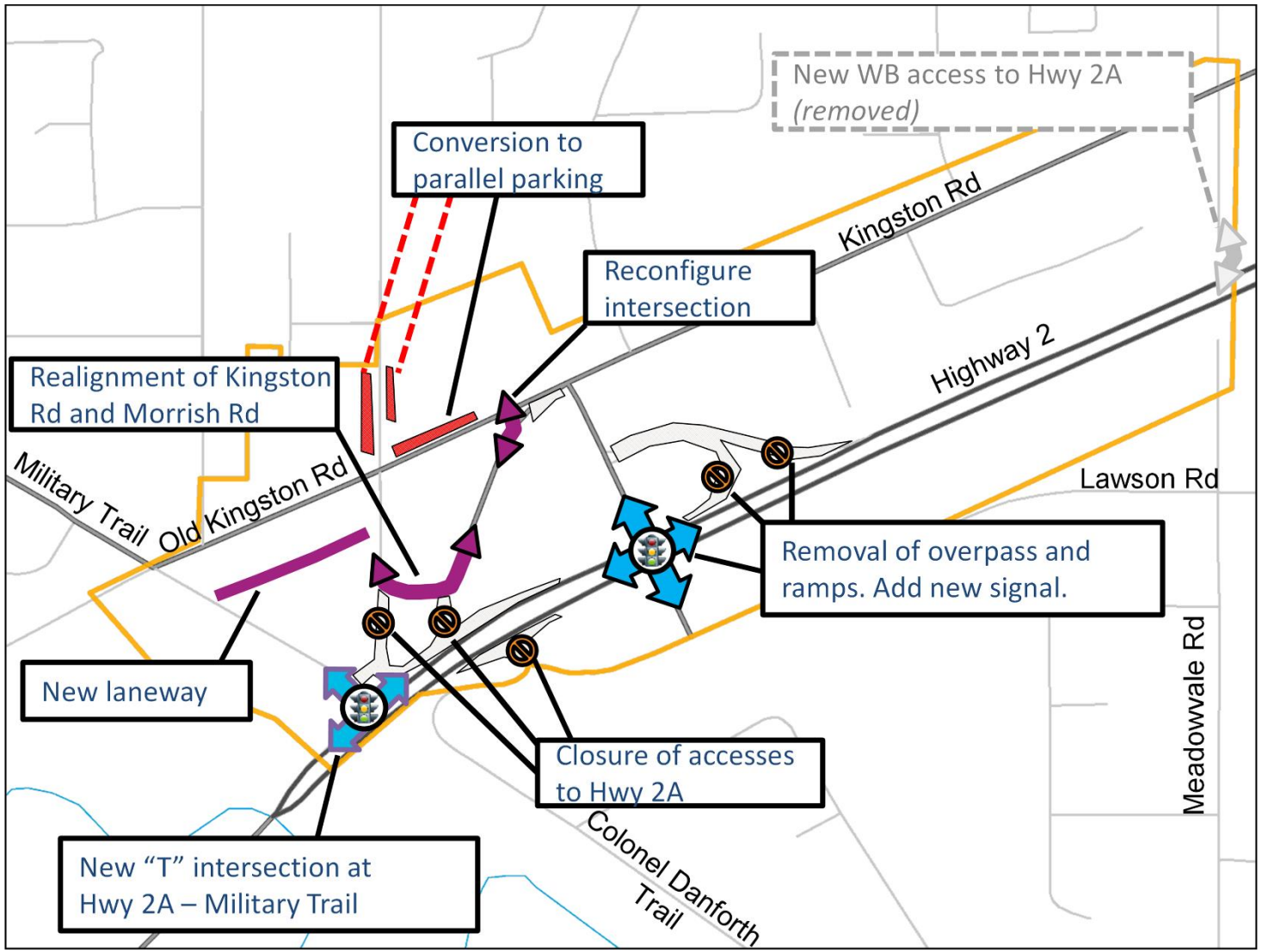
Exhibit 8-1: Do Nothing Alternative

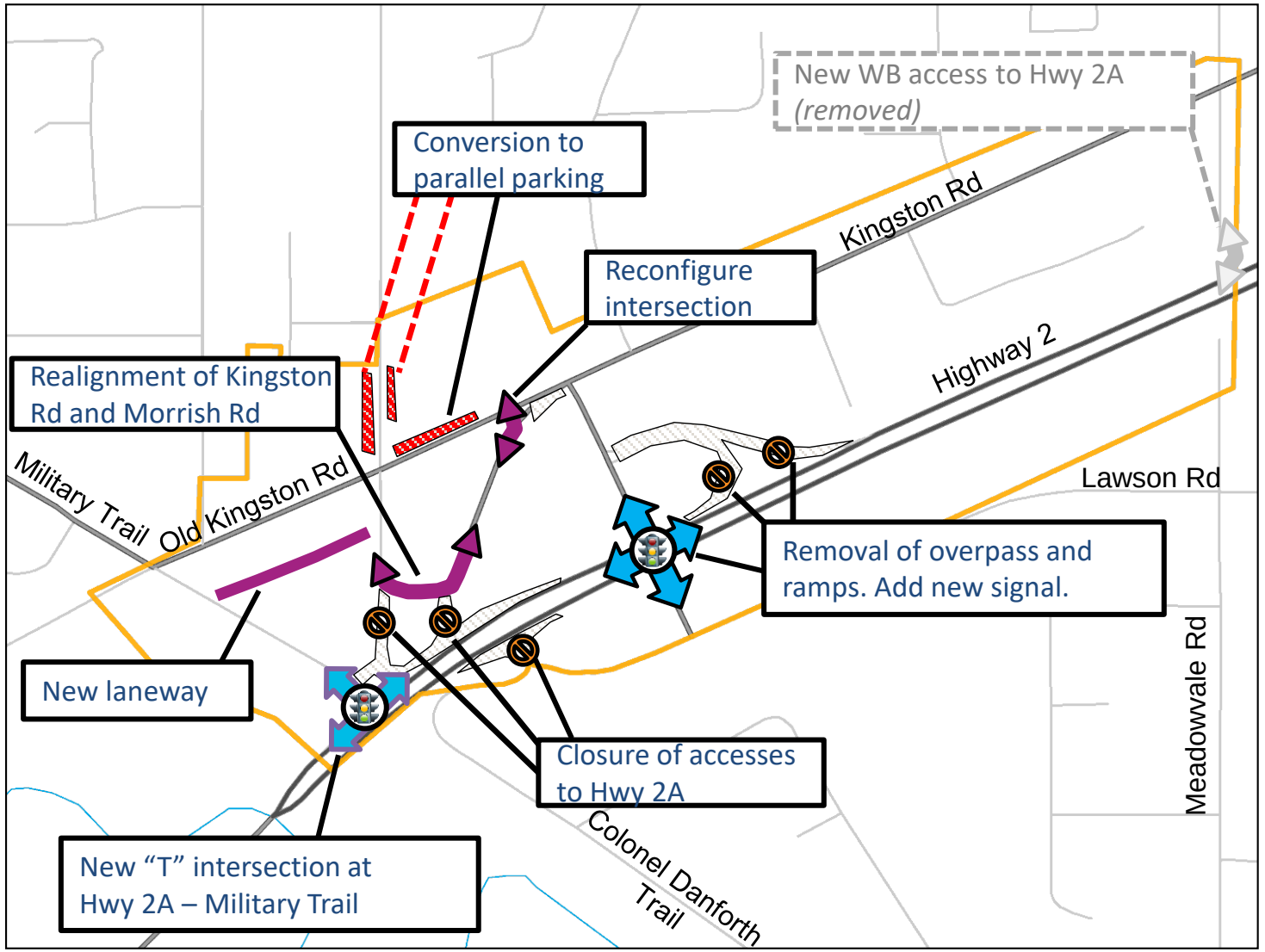


Background

- Maintains existing road network and parking with no changes

Exhibit 8-2: Alternative 1 – Overpass Removal and New At-Grade Intersection





Background

- Based on Highland Creek Area Study (2012) Recommended Network

Updates since PIC#1:

Removed: - - -

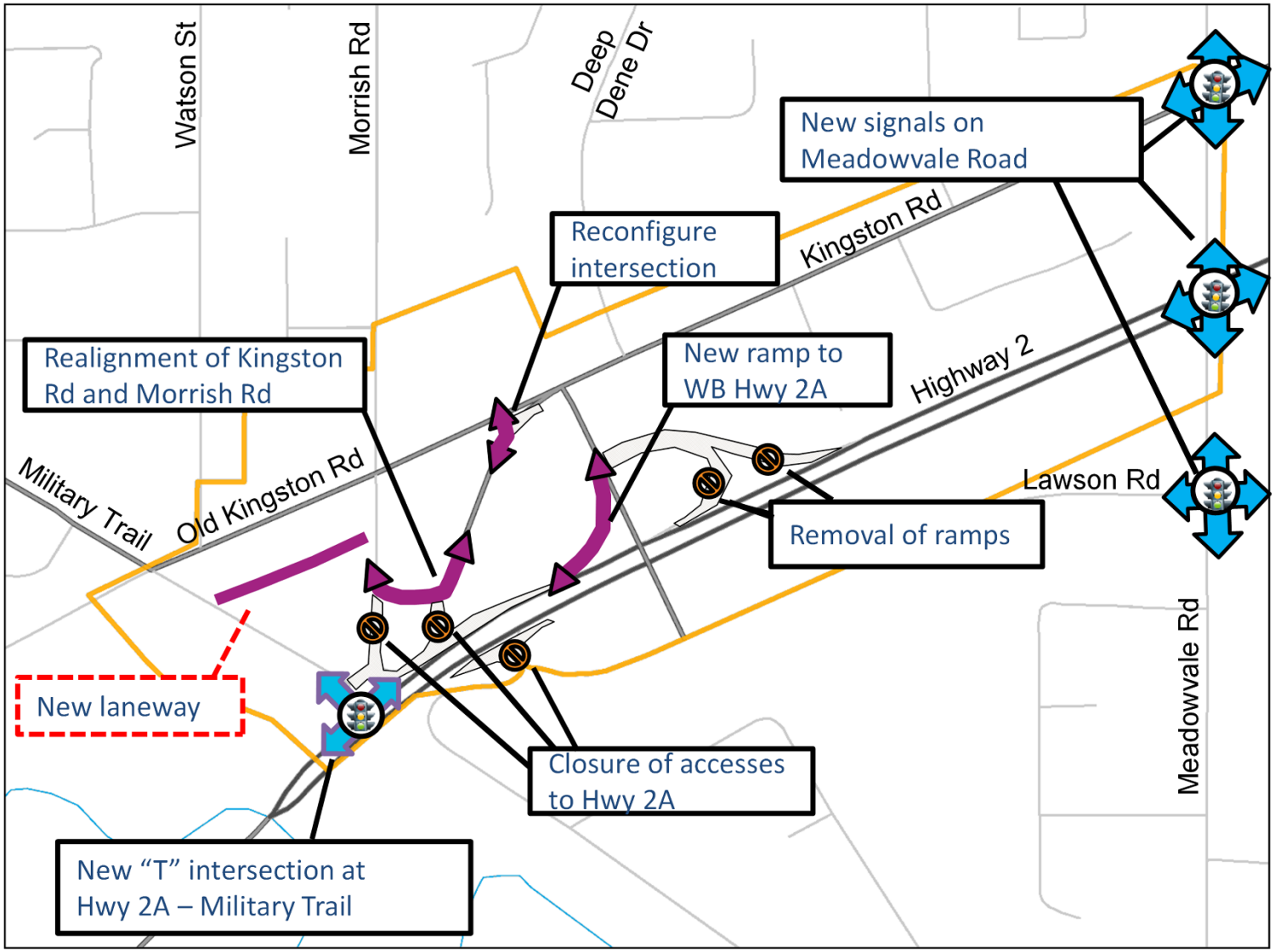
- Westbound access to Hwy 2A.
  - Provides alternative with no changes to Meadowvale Rd
  - Access remains in Alternative 3

Added: ---

- Morrish Rd parallel parking conversion.

Legend: New Signalized Intersection | Re-Aligned Or New Road | Ramp Closure | Parallel Parking Conversion | Roundabout

Exhibit 8-3: Alternative 2 – Meadowvale Signals and Westbound Overpass Ramp



Background

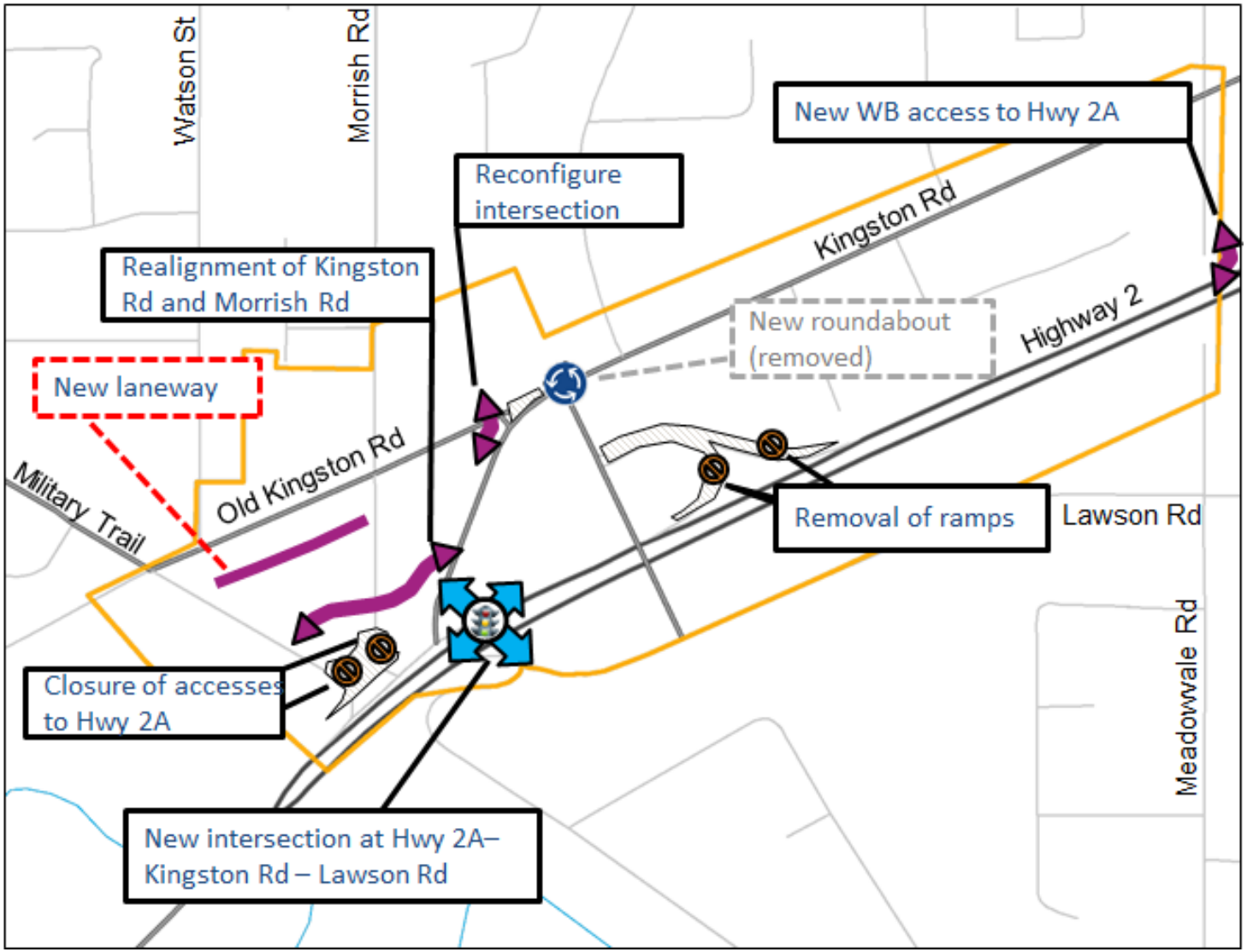
- Based on Highland Creek Functional Study (1995) Recommended Plan

Updates since PIC#1:

Added: - - -

- New laneway

Exhibit 8-4: Alternative 3 – Kingston Road Connection



Background

- New alternative developed for the TMP

Updates since PIC#1:

Removed: - - -

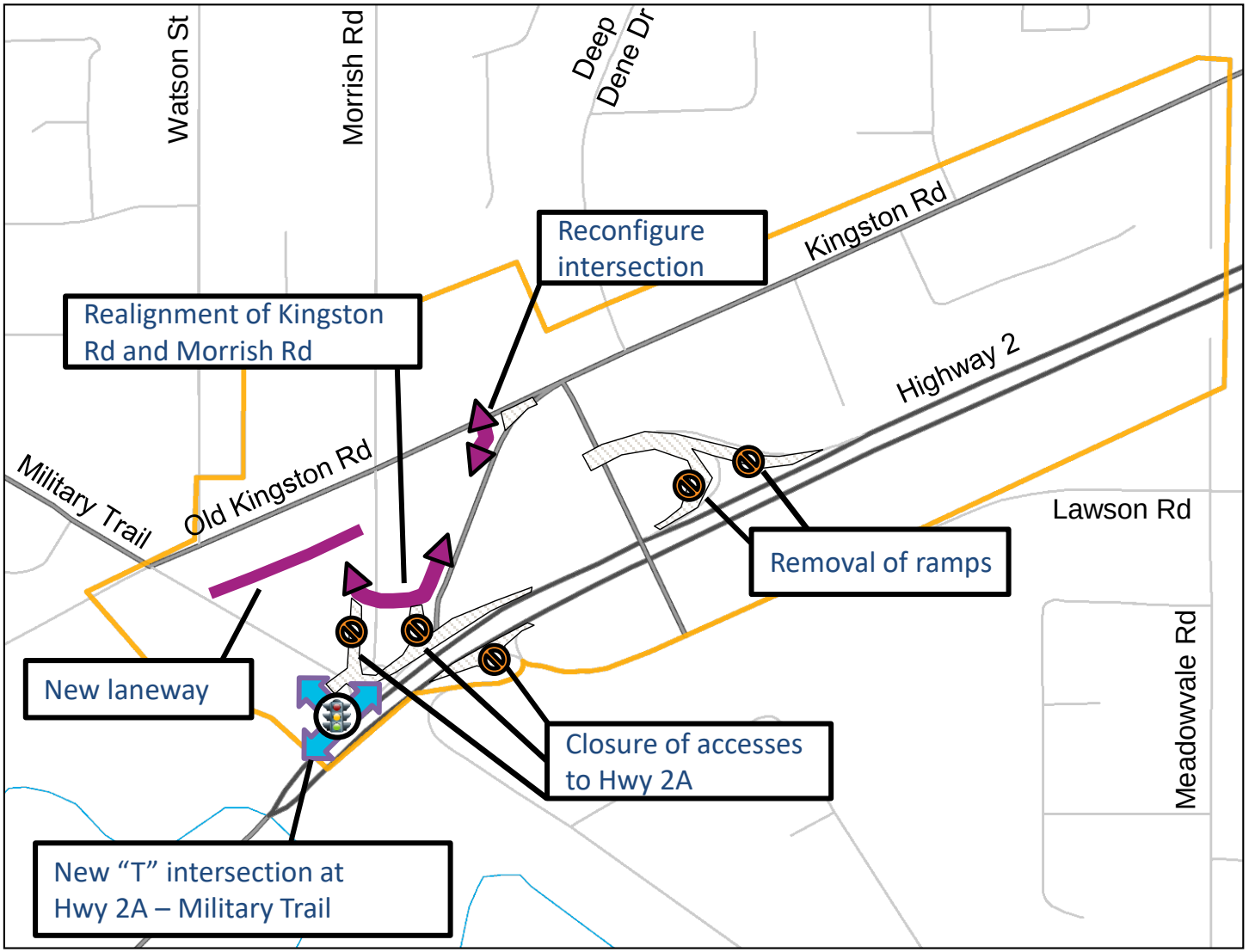
- Roundabout Kingston Rd and Lawson Rd:
  - Inconsistent with pedestrian and cycling friendly Village
  - Issues with sizing
  - Concerns expressed by public

Added: - - -

- New laneway

Legend: New Signalized Intersection | Re-Aligned Or New Road | Ramp Closure | Parallel Parking Conversion | Roundabout

Exhibit 8-5: Alternative 4 – Military Trail Intersection with Overpass In-Place



Legend: New Signalized Intersection | Re-Aligned Or New Road | Ramp Closure | Parallel Parking Conversion

Background

- New alternative developed for the TMP
- Same as Alternative 1 but with Overpass in place

Updates since PIC#1:

- New alternative (not previously shown at PIC #1)

8.3 Transportation Assessment

When determining the amount and type of transportation infrastructure that is required to support growth, it is important to consider the future traffic demands that are created by both new and existing development within the study area and its surroundings. Although accommodating traffic demand is an important consideration, accommodating all multimodal roadway users, including cyclists, pedestrians, and transit riders is also a core focus of this TMP. Moreover, public input, environmental, social, economic, and City planning policy criteria also play a significant role in the evaluation process. These criteria are assessed in the Evaluation Matrix that is discussed in **Section 8.4**.

The "sub-area" transportation demand model that was developed as part of this study (see **Section 6.2.2**) was applied to forecast future travel demands in the 2031. The traffic zone level estimates of population and employment in the Village, which were developed in co-ordination with City Planning (see **Section 6.1**) were input to the model. The model's transportation network was also updated to be consistent with the improvements and network changes proposed in each of the alternatives. Planned improvements to Port Union Road (additional northbound travel lane – see **Section 5.3.2.1** for details) were also accounted for in the travel demand model.

The following sub-section summarizes the key results of the 2031 traffic demand and capacity assessment that was conducted to support the evaluation of alternatives. Please refer to **Appendix J** for more details.

8.3.1 2031 Link Level Volume to Capacity Assessment

The 2031 traffic levels were assessed using volume-to-capacity (v/c) ratios to isolate key bottlenecks and areas of congestion within the study area and on the surrounding road network. V/C ratios indicate the level of congestion on a road, where a v/c ratio of 1.00 means that the traffic on a road segment is equal to the roadway's theoretical capacity. A v/c of 0.9 or higher is generally indicative of stop and go traffic conditions.

First, 2031 traffic forecasts were completed for the AM and PM peak hours under the Do Nothing alternative. From this analysis, it was found that the AM peak hour travel demands were generally higher than the PM peak hour demands, thereby representing the worst-case scenario for traffic within the HCV TMP study area. For example, Highway 2A to the west of Meadowvale Road is forecast to operate with a v/c of 1.12 in the peak westbound direction AM peak hour in comparison to a v/c of 0.82 in the peak eastbound direction in the PM peak hour. This trend is

consistent with existing traffic counts. Consequently, the AM model results were used for the purposes of identifying areas of road network congestion and to compare the performance of the identified improvement alternatives.

To facilitate the comparison of network performance across alternatives, v/c ratios were extracted at key screenlines and road segments in the peak direction of travel[17]. **Exhibit 8-6** and **Exhibit 8-7** presents the screenline and road segment level v/c ratios for Do Nothing and Alternatives 1 through 4. The best performing alternative(s) for each screenline and road segment are in **black bold text**. The screenlines are consistent with those used during the development the “sub-area” model (see **Appendix J**).

Overall, the model results suggest that the Do Nothing alternative will have the best performance from a traffic point of view. This result is to be expected because Alternatives 1 through 4 involve converting parts of Highway 2A to an arterial street with traffic signals. However, it should be noted that Highway 2A already transitions to an arterial corridor (Kingston Road) with traffic signals immediately to the west of the study area on the other side of the Highland Creek Valley. Consequently, the proposed changes only serve to make this transition occur slightly sooner.

Beyond the Do Nothing alternative, Alternative 2, which implements a new Meadowvale Road intersection at Highway 2A, provides the best overall network performance. The connection provides new routing opportunities and some relief to traffic through the Village on Old Kingston Road and Highway 2A. However, Alternative 2 does not outperform Alternatives 1, 3, and 4 by a wide margin. Capacity issues, congested “hot spots”, and delays are expected to be similar across all alternatives. In fact, the “sub-area” model suggests that average speeds within the model’s coverage area, which includes the area bounded by Morningside Avenue, Lawrence Avenue, Port Union Road, and Highway 401, differ by no more than 2.0 km/h across all of the alternatives (including Do Nothing).

It also should be noted that the above v/c assessment is based on a theoretical assessment of link-based planning capacities. Although this strategic assessment is useful for understanding bottlenecks, understanding demand patterns, and for comparing performance across alternatives, a more detailed assessment at the intersection level of detail is required to better understand the level of delays that may be experienced by motorists in the future.

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17. A screenline is an imaginary boundary that spans over a series of roads where crossing traffic can be analyzed with respect to the available road capacity over the screenline. The screenline analysis determines the level of congestion over the network and assists with identifying if road network deficiencies will exist in the future.

Exhibit 8-6: 2031 AM Peak Hour Screenline Volume to Capacity Ratio (Peak Direction) by Alternative

Screenline #	Screenline/Description	Do Nothing	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Eastbound/Westbound Traffic						
120	East of Morningside Ave (Military Trail to Lawrence Rd)	0.85	0.86	**0.84**	**0.84**	0.85
130	West/South of Military Trail (Morningside Rd to Kingston Rd)	**0.77**	0.95	0.93	0.97	0.96
150	East of Port Union Rd (Hwy 2A to Lawrence Rd)	**1.23**	**1.23**	**1.23**	**1.23**	**1.23**
160	West of Meadowvale Rd (Ellesmere Rd to Hwy 2A)	0.93	0.95	**0.89**	0.96	0.89
Northbound/Southbound Traffic						
100	South of Ellesmere Rd (Morningside Road to Kingston Rd)	**0.50**	**0.50**	0.51	0.51	**0.50**
140	South of Hwy 401 (Morningside Rd to Meadowvale Rd)	**0.62**	0.66	0.66	0.66	0.65

Exhibit 8-7: 2031 AM Peak Hour Link Level Volume to Capacity Ratio on Key Road (Peak Direction) by Alternative

Road Segment	Do Nothing	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Ellesmere Rd (East of Military Trail)	**0.95**	0.98	0.99	0.98	0.98
Old Kingston Rd (East of Morrish Rd)	0.96	1.05	1.00	**0.89**	1.16
Kingston Rd (East of Highland Creek Overpass)	**0.87**	1.02	0.97	1.10	0.96
Highway 2A (East of Military Trail)	**0.96**	1.18	1.12	1.12	1.15
Highway 2A (East of Highland Creek Overpass)	1.12	1.10	**0.99**	1.10	1.14

To this end, the “sub-area” model’s forecasts of future traffic volumes in the study area were used to support a preliminary assessment of traffic operations for each alternative through the use of Synchro / Sim Traffic. This initial high-level analysis was used to highlight potential differences between alternatives and to identify any significant intersection level issues that might render an alternative infeasible (with a focus on the new Highway 2A intersection). The initial analysis was expanded, refined, and finalized to support the more detailed assessment of the preferred alternative (see **Section 9** for more details).

The following list summarizes the key observations from the initial high-level assessment of intersection operations:

- New intersections along Highway 2A (Highland Creek Overpass and Military Trail) are expected to provide acceptable level of service overall in Alternatives 1 through 4.
- Some delays are expected for individual movements at the new Highway 2A and Highland Creek Overpass intersection (Alternative 1), Highway 2A and Meadowvale Road intersection (Alternative 2), and Highway 2A and Kingston Road intersection (Alternative 3). These intersections must balance heavy east-west through traffic demand on Highway 2A with lighter north-south traffic and turning movements.
- No issues are expected at the Highway 2A and Military Trail intersection in Alternatives 1 through 4. The “T” intersection configuration simplifies operations relative to the Highland Creek Overpass intersection.

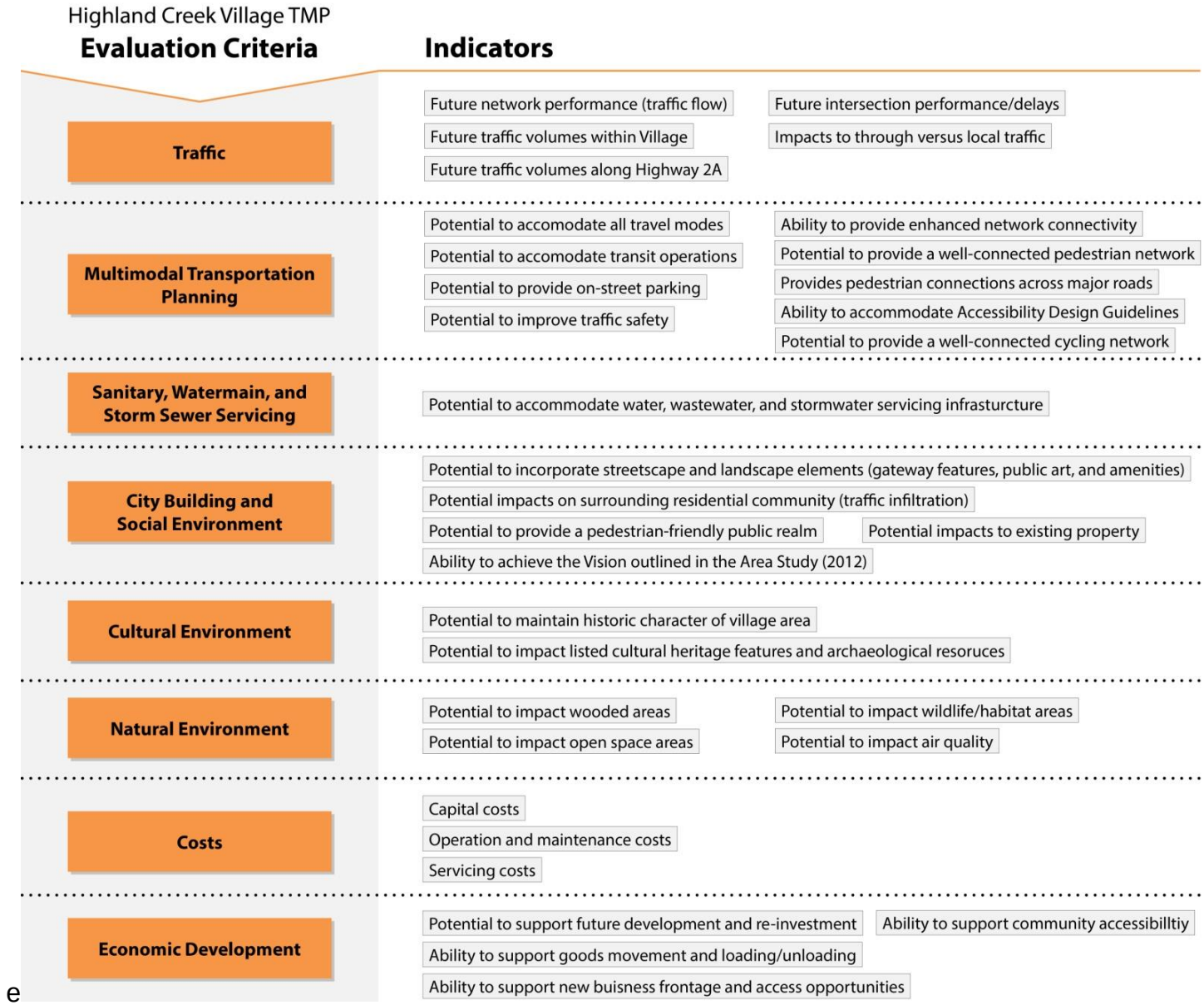
Even with observed differences in intersection operations and performance across the alternatives, it was concluded that acceptable intersection operations and delays could be maintained along Highway 2A and other study area roads in any of the alternatives.

8.4 Evaluation of Transportation Alternatives

In accordance with Phase 2 of the Class EA process, each of the alternative solutions that were developed in **Section 8.1** were assessed to determine how well they address the Problem and Opportunity Statement identified in **Section 7**, and to determine their positive and negative impacts on the environment (natural, cultural, social, economic) in the study area. In this section, each of the alternatives is evaluated against a list of evaluation criteria that consists of both qualitative and quantitative factors.

The evaluation criteria and indicators, listed in **Exhibit 8-8**, were selected to systematically evaluate the effectiveness of each alternative and to assist with identifying the preferred alternative. These criteria and associated indicators were developed based on the key

Exhibit 8-8: Evaluation Criteria and Indicators



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objectives and principles of the Environmental Assessment Act, this study's Problem and Opportunity Statement, and the City of Toronto Official Plan.

Specific criteria were developed under the following eight categories. Specific quantitative and qualitative indicators are identified in **Exhibit 8-8** for each of the categories to support and logically organize the evaluation.

- **Traffic** – considers the network performance and traffic operations of each alternative. Overall network performance, the ability to accommodate traffic growth, and impacts to through and local traffic are examined.
- **Multimodal Transportation Planning** – considers the ability of each alternative to support all travel modes and roadway users, including pedestrians, cyclists, and transit users (not just automobiles). Network connectivity, safety, meeting accessibility needs, and parking are also examined.
- **Sanitary, Watermain, and Storm Sewer Servicing** – considers the ability of each alternative to support the overall water, wastewater, and stormwater solution (including accommodating proposed servicing infrastructure).
- **City Building and Social Environment** – considers the ability of each alternative to support the revitalization of the Village into a vibrant, pedestrian friendly, and mixed-use community (in accordance with the Vision of the 2012 Highland Creek Village Area Study). Impacts to residents, property owners, and neighborhoods are also considered.
- **Cultural Environment** – considers the impacts of each alternative on the study area's historic character, listed cultural heritage features, and archaeological resources.
- **Natural Environment** – considers the impacts of each alternative on the study area's natural components of the environment, including wooded areas, open spaces areas, and wildlife/habitat areas.
- **Costs** – considers each alternative's capital, operation, and maintenance costs.
- **Economic Development** – considers the potential of each alternative to support future development in the Village, accessibility to community businesses, goods movement, and new business frontages.

The detailed Evaluation Matrix, included in **Appendix K**, assesses the strengths and weaknesses of each of the proposed network alternatives based on the evaluation criteria and indicators summarized above. In the Evaluation Matrix, a rating is assigned to each of the alternatives for each of the eight evaluation categories ranging between Least Preferred (red

and zero dots filled) to Most Preferred (green and four dots filled; filled dots are completely black). The rating was selected by considering the performance of each alternative across all indicators in the given evaluation category. An overall evaluation rating is also developed for each alternative by considering its rating in each evaluation criteria and the overall goals and objectives of this study, which are succinctly captured by the Problem and Opportunity Statement in **Section 7**.

Based on the Evaluation Matrix assessment process, Alternative 1 was identified as the preferred alternative.**Exhibit** 8-9 provides a summary of the detailed Evaluation Matrix, highlighting each alternative's overall rating and its rating in each of the eight evaluation categories.

Section 8.4.1 to **Section 8.4.5** summarizes the evaluation results and the key strengths and weaknesses of each alternative.

8.4.1 Do Nothing Alternative

This is the Least Preferred (lowest ranked) alternative by considering and balancing the following key factors:

- Least delays for auto traffic since Highway 2A continues to operate as a highway.
- Area transportation network primarily caters to the automobile.
- Highway 2A remains a barrier to pedestrians, cyclists, and vehicles. Highland Creek Overpass remains as the only crossing of the highway.
- No improvements to pedestrian environment and network. Existing gaps in sidewalks remain.
- Limited opportunities to improve public realm, particularly in the vicinity of Highway 2A and its associated ramps.
- Does not impact Cultural or Natural Environment.
- Does not support development / reinvestment in the Village and the vision of the Highland Creek Village Area Study. No surplus highway and ramp lands are released for development.
- No impacts to existing parking but limited opportunities to provide new parking.
- Lowest capital costs but highest maintenance costs (continued maintenance of Overpass).
- Meadowvale Road remains as is, not connected to Highway 2A.

Exhibit 8-9: Evaluation Summary

Evaluation Criteria	Do Nothing	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Traffic	●●●●	○○●●	○●●●	○○●●	○○●●
Multimodal Transportation Planning	○○○○	●●●●	○●●●	○●●●	○●●●
Servicing	○●●●	●●●●	○●●●	○●●●	○●●●
City Building and Social Environment	○○○○	●●●●	○○●●	○●●●	○●●●
Cultural Environment	●●●●	○○○●	○○○○	○○○●	○○○●
Natural Environment	●●●●	○●●●	○○○○	○○●●	○●●●
Costs	●●●●	○○○○	○○●●	○○○●	○●●●
Economic Development	○○○○	●●●●	○●●●	○●●●	○●●●
Overall Evaluation	**Least Preferred** ○○○○	**Most Preferred** ●●●●	**Less Moderately Preferred** ○○●●	**Moderately Preferred** ○●●●	**Moderately Preferred** ○●●●

LEGEND (meaning of dot ranking)	Most Preferred ●●●●	Moderately Preferred ○●●●	Less Moderately Preferred ○○●●	Less Preferred ○○○●	Least Preferred ○○○○

With no changes to the existing conditions, the Do Nothing alternative does not fulfill the goals of the Problem and Opportunity Statement. Moreover, this alternative will not support the recommendations of the Highland Creek Village Area Study and the long-term revitalization of the Village into a vibrant, pedestrian-friendly, and mixed-use community. Although the Do Nothing alternative performs the best from a traffic operations perspective, it primarily caters to the automobile and does not adequately support pedestrians, cyclists, and transit users. With no improvements to the pedestrian environment and network, existing gaps in the sidewalk network will remain.

8.4.2 Alternative 1 – Overpass Removal and New At-Grade Intersection

This is the Most Preferred (highest ranked) alternative. This ranking was selected by considering and balancing the following key factors:

- Two new Highway 2A traffic signals at Military Trail and the Highland Creek Overpass increase auto travel times compared to the Do Nothing alternative. These delays will primarily be experienced by longer distance through traffic (90% of users of Highway 2A in the peak direction) that is not originating in, or destined to, the Village area. These delays will primarily occur during the weekday AM peak hour in the westbound direction.
- More vehicles from outside the study area will travel through the Village along Old Kingston Road (due to some diversion from Highway 2A).
- Two new Highway 2A intersections provide new routing options and connections for vehicles, pedestrians, and cyclists.
- Long-term removal of the Highland Creek Overpass allows for transformation of Highway 2A into a more pedestrian and cyclist friendly environment.
- Provides significant opportunities to improve the public realm and pedestrian environment throughout the Village, including the existing highway and ramp lands of Highway 2A.
- Impacts to existing angled parking on Old Kingston Road (21 spaces) and perpendicular parking on Morrish Road (33 spaces). New road cross-sections (i.e., along Military Trail and the new Morrish / Kingston “loop” road) provides opportunities for on-street parking. New development will also provide additional off-street parking.
- Best supports long-term development / reinvestment in the Village and the vision of the Highland Creek Village Area Study.
- Highest capital cost but lowest maintenance costs.
- Does not provide a connection between Meadowvale Road and Highway 2A.

Alternative 1 best addresses the Problem and Opportunity Statement and supports the long-term vision of the Highland Creek Village Area Study. The alternative provides a continuous multimodal transportation network that accommodates all roadway users and supports reinvestment by releasing significant amounts of surplus Highway 2A highway and ramp lands for development. The refined network and proposed streetscaping and sidewalk improvements will provide a positive environment for pedestrians, support the City's Cycling network, and provide new routing opportunities for the TTC as a result of the two new at-grade intersections on Highway 2A.

It is recognized that the existing angled and parallel parking areas adjacent to the Morrish Plaza provide convenient parking to some motorists and overall provide more total on-street spaces (per unit length of curb) than can be provided by parallel parking in the same amount of curb space. However, parallel parking improves the visibility of parking manoeuvres and provides more room for streetscape and sidewalk improvements as it requires less ROW. In light of the above considerations, an ultimate conversion of existing angled and perpendicular parking to parallel parking is recommended due to safety concerns, inconsistency with City standards, policies, and practices, and resulting improvements to the public realm. The conversion from angled and perpendicular parking to parallel parking is likely to occur in the long-term together with development in the Village. Please refer to **Section 10.4** for a more detailed discussion of the parking related recommendations of this study.

8.4.3 Alternative 2 – Meadowvale Road Signals and Westbound Overpass Ramp

This is the Less Moderately Preferred (third ranked) alternative. This ranking was selected by considering and balancing the following key factors:

- Similar to Alternative 1, the two new Highway 2A traffic signals at Military Trail and Meadowvale Road increase auto travel times compared to Do Nothing. However, overall traffic performance is improved relative to Alternatives 1, 3, and 4 since the Meadowvale Road intersection diverts some through traffic away from the Village.
- Two new Highway 2A intersections provide additional routing options and connections for vehicles, pedestrians, and cyclists.
- Impacts to residents along Meadowvale Road, including additional traffic and changes to the existing cross-section and road design with potential expropriations.
- Limits accessibility to Lawson Road and Colonel Danforth Trail from Highway 2A eastbound (due to off-ramp closure); traffic to/from these areas must use the new Military Trail intersection or the new Meadowvale Road intersection.

- Highland Creek Overpass and new westbound on-ramp limit transformation of Highway 2A into a more pedestrian and cyclist friendly arterial road.
- New Meadowvale Road intersection enhances pedestrian and cyclist environment and increases the connectivity of the network in eastern portion of study area.
- Highland Creek Overpass and new westbound on-ramp significantly limit opportunities to develop surrounding lands.
- Lower capital cost than Alternative 1. Similar maintenance cost to Do Nothing.

Alternative 2 addresses most aspects of the Problem and Opportunity Statement and supports the vision of the Highland Creek Village Area Study. In comparison to Alternative 1, this alternative limits opportunities for development in the East Village area with the Highland Creek Overpass remaining in place and the addition of a new westbound ramp to Highway 2A.

This alternative also best improves network connectivity with the introduction of a new intersection at Meadowvale Road and Highway 2A. The Meadowvale Road connection provides new routing opportunities for both local residents and for longer-distance through traffic. The intersection also provides an additional pedestrian and cycling crossing opportunity in the eastern part of the study area. Forecasts using the “sub-area” model suggest that a full-movement signalized intersection would be well-utilized; however, limited benefits are expected for the Village itself with only a 10% reduction in peak hour traffic along Old Kingston Road. The forecasts suggest that the connection would have Regional benefits (e.g., relief of Port Union Road) by servicing a more direct connection for through traffic to/from Highway 401 in the east and north and Lawrence Avenue in the south.

It is also recognized that the new Meadowvale Road connection will impact this primarily residential street both to the north and south of Highway 2A with increased traffic (mostly cut-through traffic), which would require changes to the existing cross-section and road design with potential expropriations. Considering the impacts and the lack of a significant benefit to the Highland Creek Village area itself, the Meadowvale Road connection is not recommended as part of this Village focused TMP. In view of the potential regional benefits of this connection, it is recommended that a new Meadowvale Road / Highway 2A intersection be further examined by a future Feasibility Study that includes a wider study area and considers broad Regional transportation need and benefits.

8.4.4 Alternative 3 – Kingston Road Connection

Alternative 3 is Moderately Preferred and ranked second along with Alternative 4. This ranking was selected for Alternative 3 by considering and balancing the following key factors:

- Introducing a new Highway 2A traffic signal increases auto travel times compared to Do Nothing. These delays will primarily be experienced by through traffic and will primarily occur during the weekday AM peak hour in the westbound direction.
- More vehicles from outside the study area will travel through the Village along Old Kingston Road (due to some diversion from Highway 2A).
- Highway 2A intersection provides additional routing options and connections for vehicles, pedestrians, and cyclists. Less crossing and routing options are provided relative to Alternatives 1 and 2 (one new intersection versus two).
- New right-turn only access from Meadowvale Road to Highway 2A provides limited benefits to vehicles only. Few vehicles are forecast to use this new connection since it only serves a limited market (the homes north of Highway 2A in the immediate vicinity of Meadowvale Road). Alternate more direct accesses exist for trips that start or end further to the east in the vicinity of Highway 401 and further to the west in the vicinity of the Highland Creek Overpass.
- Similar to Alternative 2, the Highland Creek Overpass limits the transformation of Highway 2A into a more pedestrian and cyclist friendly environment.
- The Highland Creek Overpass also limits opportunities to develop surrounding lands. Furthermore, the new intersection at Highway 2A and Kingston Road also limits the opportunity to eventually remove the Overpass since the new intersection would be located too close to a second new intersection on Highway 2A where the Overpass is currently located. The close spacing would make it difficult to maintain acceptable traffic flow along Highway 2A.
- Higher capital cost than Alternative 4 and lower capital cost than Alternative 1. Similar maintenance cost to Do Nothing.

Alternative 3 addresses most aspects of the Problem and Opportunity Statement and supports the vision of the Highland Creek Village Area Study. In comparison to Alternative 1, this alternative limits opportunities for development in the East Village area with the Highland Creek Overpass remaining in place. Without a new westbound ramp to Highway 2A from the Highland Creek Overpass, this alternative has the potential to better support the pedestrian environment in this area (relative to Alternative 2).

There are also constraints associated with property located to the south of Lawson Road; property acquisition may be required to accommodate the horizontal curves that are needed to connect Lawson Road to Highway 2A at Kingston Road (i.e., the approaches to an intersection ideally connect at right angles and there are limits to the amount of curvature that can be accommodated in a short distance). Lastly, the new right-turn only westbound access to Highway 2A from Meadowvale Road is not forecast to be well utilized and only provides benefits to automobiles.

8.4.5 Alternative 4 – Military Trail Intersection with Overpass in Place

Alternative 4 is Moderately Preferred and ranked second along with Alternative 3. This ranking was selected for Alternative 4 by considering and balancing the following key factors:

- Introducing a new Highway 2A traffic signal increases auto travel times compared to Do Nothing. These delays will primarily be experienced by through traffic and will primarily occur during the weekday AM peak hour in the westbound direction. Overall delay comparable to Alternatives 1 and 3.
- More vehicles from outside the study area will travel through the Village along Old Kingston Road (due to some diversion from Highway 2A).
- Highway 2A intersection provides additional routing options and connections for vehicles, pedestrians, and cyclists. Less crossing and routing options are provided relative to Alternatives 1 and 2 (one new intersection versus two).
- Limits accessibility to Lawson Road and Colonel Danforth Trail from Highway 2A eastbound (due to off-ramp closure); traffic to / from these areas must use the new Military Trail intersection or an alternate route via Lawrence Avenue.
- The Highland Creek Overpass limits the transformation of Highway 2A into a more pedestrian and cyclist friendly arterial road.
- Maintains the Highland Creek Overpass limiting the opportunities to develop the surrounding lands. This alternative does not preclude the possibility of removing the Overpass in the future.
- Lower capital cost than Alternatives 1 through 3.

Alternative 4 addresses most aspects of the Problem and Opportunity Statement and supports the vision of the Highland Creek Village Area Study. In comparison to Alternative 1, this alternative limits opportunities for development in the East Village area with the Highland Creek Overpass

remaining in place. Similar to Alternative 3, this alternative has the potential to better support the pedestrian environment in the vicinity of the Overpass area (relative to Alternative 2).

Similar to Alternative 2, the closure of the existing accesses to / from Highway 2A eastbound limits accessibility to Lawson Road and Colonel Danforth Trail. In comparison to Alternative 3, this alternative maintains the flexibility to potentially remove the Highland Creek Overpass in the future.