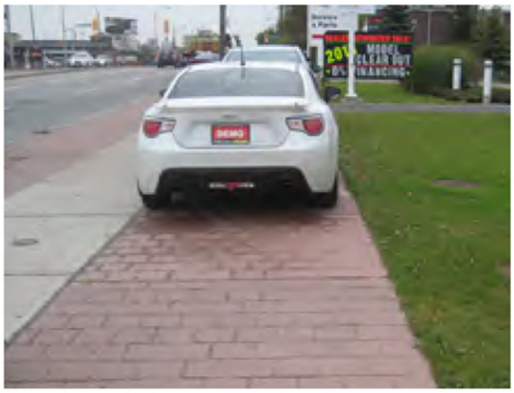
Inadequate pedestrian environment for an *Avenue*



Encroachment on the pedestrian boulevard

Few amenities along the street from pedestrians

Dufferin Street and Orfus Road: High pedestrian intersection with ladder markings

Some of the local streets have discontinuous or no sidewalks

Figure 18: Existing pedestrian realm conditions

5 Identified problems and opportunities

Based upon existing data, observations, and key messages heard during the public consultation process, this section identifies the transportation problems and opportunities in the study area:

- The City of Toronto recognizes that the successful redevelopment of the study area requires an integrated process of land use, transportation, and municipal infrastructure planning. However, the existing infrastructure, in its current configuration, is a barrier to change.
- The proximity of Highway 401, Yorkdale Shopping Centre as a major trip attractor, the adjacent Allen Road as a barrier to movement (east-west and north-south given the limited access points), and the rail corridor to the west constrain the road network in the study area and contribute to its disconnection and congestion.
- Dufferin Street is an auto-dominated environment and private vehicles and public transit are delayed by congestion. The study area lacks a multimodal transportation network to support all users.
- Aesthetically, Dufferin Street's urban fabric fails to provide the kind of atmosphere conducive to walking, cycling, economic vitality, ground floor retail activity, and urban vibrancy.
- Operationally, Dufferin Street suffers from congestion and lacks the appropriate transportation and servicing infrastructure to support redevelopment and intensification adequately. There is an opportunity to improve operations with soft and hard measures with varying costs and impacts.
- There is a significant opportunity to improve the public realm and to help generate social and recreational events that will make the street corridor attractive and enhance the community.
- A revitalized Dufferin Street presents the opportunity to implement City of Toronto policy objectives for the *Avenues* while more effectively balancing the needs of its residential, business, and recreational users.
- Strategically, there is an opportunity to coordinate redevelopment of the study area with other planned City and Provincial projects and infrastructure renewal.
- The introduction of new, higher capacity, articulated buses on route 29 is an opportunity to improve service reliability and reduce peak period congestion on the local bus network.
- There is an opportunity to use the large blocks on the west side of the study corridor to develop a finer street network that complements Dufferin Street, facilitating movement of people through the local area.

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6 Guiding principles, guidelines and standards

The Dufferin Street study corridor today is an example of post-war era, auto-dominated land use planning. The existing urban fabric and the shape of the land parcels provide many opportunities for redevelopment along the street, and to improve the functionality of the local transportation system by adopting a multimodal approach.

6.1 Guiding principles

The vision for this segment of Dufferin Street is best summarized in the guiding principles shown in Figure 19, which were developed in consultation with the public and informed the process and recommendations.

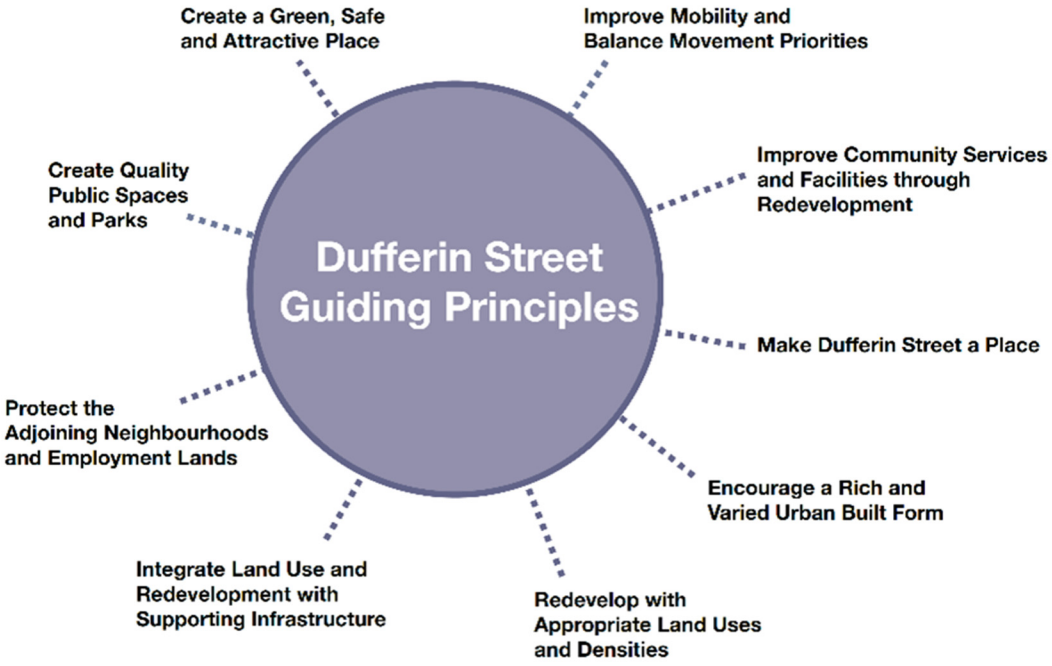

Figure 19: Dufferin Street guiding principles

6.2 Recommended guidelines and standards

Guidelines and strategies that will help achieve the vision include:

- **Streets and blocks**: the deep blocks within the study area should be subdivided by a network of new local streets to facilitate movement and accessibility, as shown in Figure 20. These streets are identified as either fixed or flexible in location. Additionally, rear laneways are recommended for most of the shallow blocks.

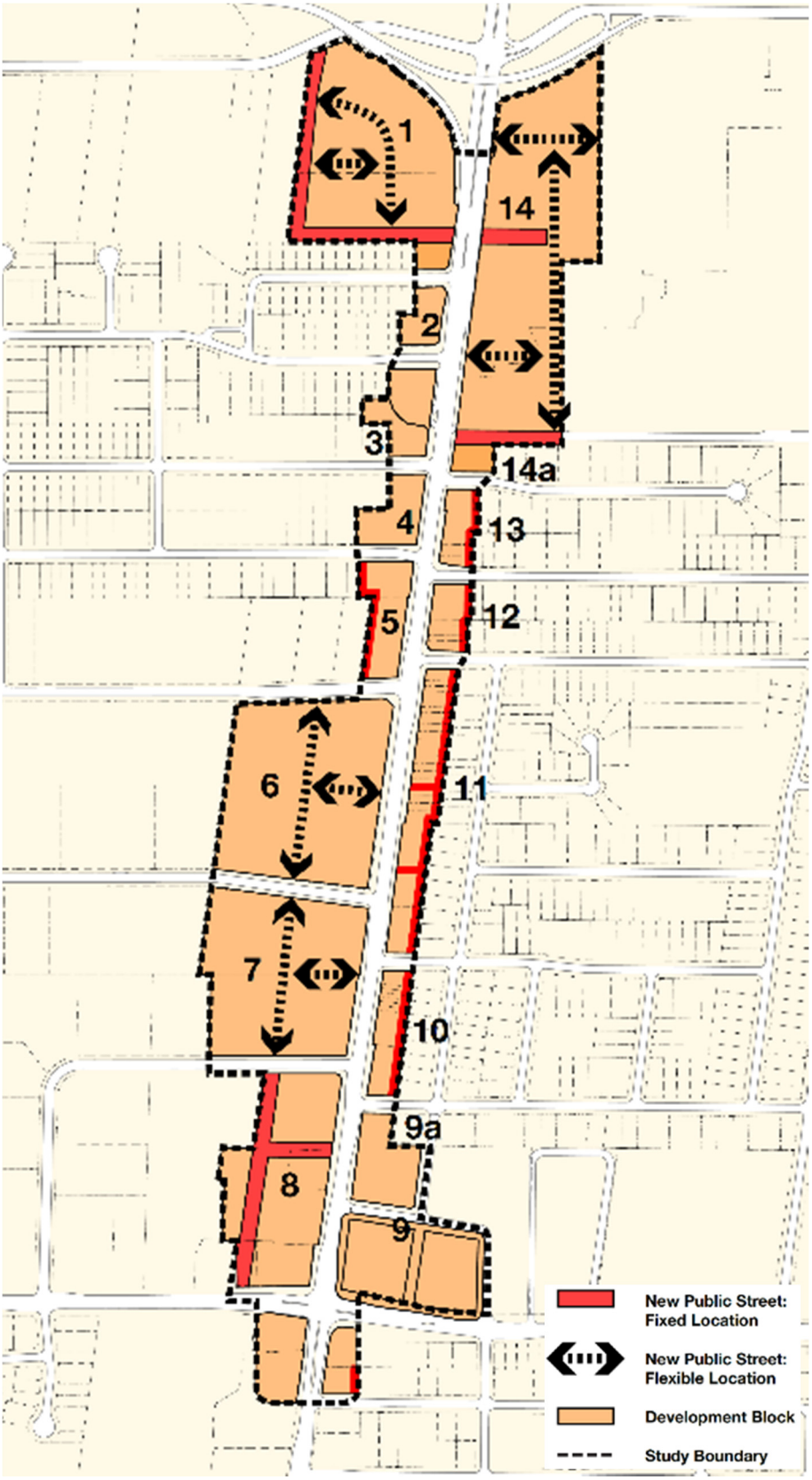

Figure 20: Streets and blocks

- **Parks and open spaces:** New parks should be included as part of future redevelopment of all the deep blocks in the study area with the exception of Yorkdale Shopping Centre, as shown in Figure 21. The McAdam turning loop should be converted to a public park, and a landmark, landscaped gateway area should be constructed at Highway 401. Smaller privately owned, publicly accessible urban plazas should be added at specific locations. Courtyard spaces are recommended where feasible and desirable.
- **Land use**: Residential mixed use is recommended for the study area, with the exception of Yorkdale Shopping Centre. This is expected to result in primarily residential development, with street-related retail at grade. However, retail at grade will only be mandatory at key nodes.
- **Setbacks**: A system of mandatory setbacks is proposed for all blocks within the study area to permit wider sidewalks, retail amenity spaces, or green landscaping in front of ground-level residential uses.
- **Density**: An average gross density of 2.5 times site area is recommended for the study area, apportioned distinctly by block. This density target is in keeping with intensification corridors with similar conditions.
- **Mobility:** The study identifies a number of approaches for improving vehicle, transit, pedestrian, and bicycle linkages including:
    - New public street connections and access lanes;
    - New signalized intersections;
    - Transit priority lane, north of Cartwright Avenue; and
    - New cycle tracks, bike lanes and signed cycling routes.

An overview of the mobility strategy is provided below. In the following section, the mobility strategy is described in further detail.

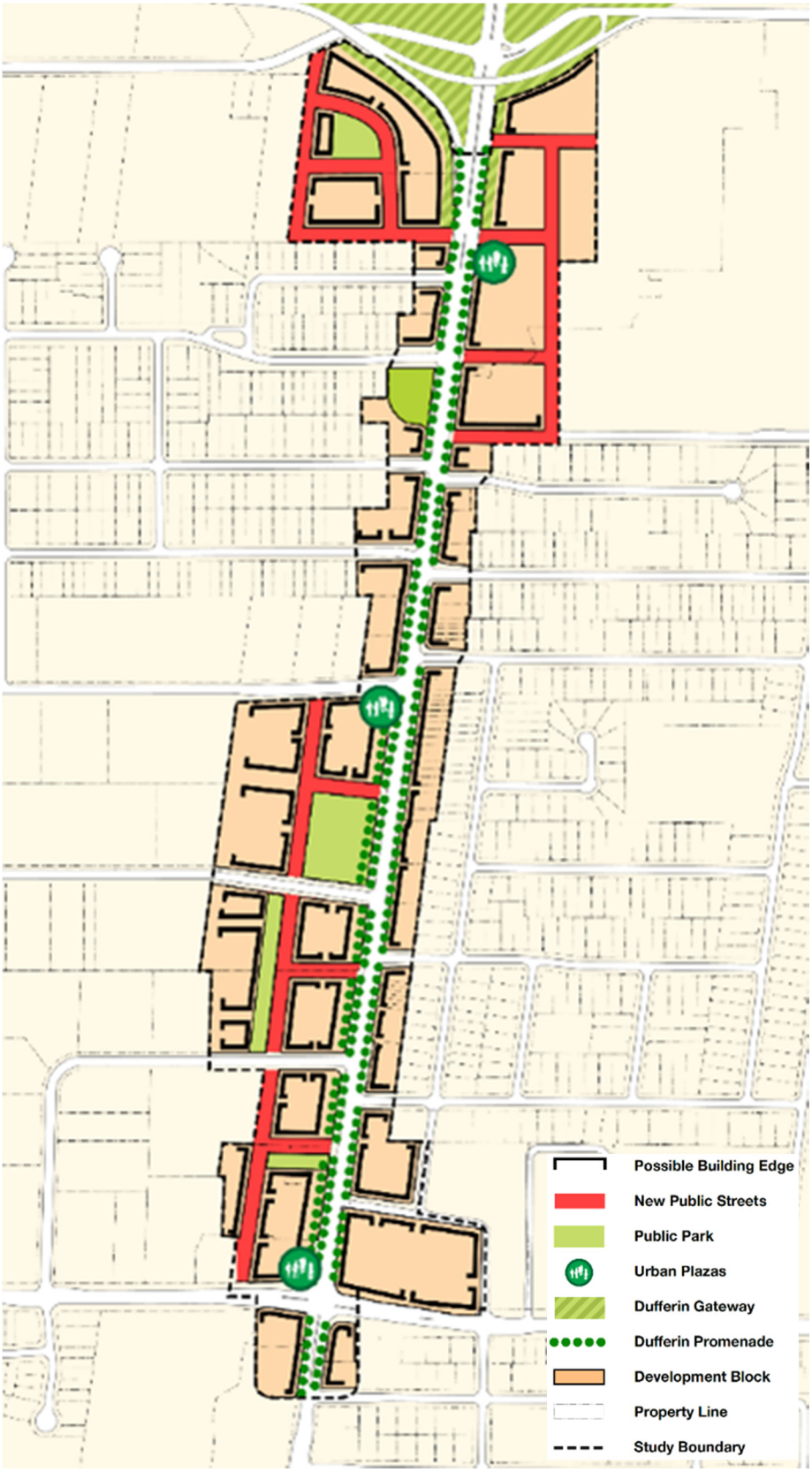

Figure 21: Urban structure

7 Integrated mobility strategies

In addition to the planning and urban design recommendations, an integrated set of mobility strategies are proposed.

The Guiding Principle relating to mobility is to improve mobility and balance movement priorities: to enhance movement through the study area by providing greater access to walking, cycling, and public transit use, as well as creating new streets and connections through redevelopment parcels.

With intensification, a mixed land use approach would place residents closer to their workplaces, and transit-oriented development would create opportunities to shift people's mobility choices. Improvement to the quality of sidewalks and the addition of bicycle facilities will encourage walking and cycling.

Priority treatments, where possible, will improve the speed and attractiveness of transit. A network of local streets, to be introduced into larger parcels, will provide better connectivity. Safer access control measures, such as medians, will be considered to facilitate turning vehicles and improve overall flow.

The primary aims of the mobility strategies are:

- To introduce a finer grained street network to encourage walking, cycling, and public transit, shifting dependence away from the automobile.
- To introduce road network additions and modifications that allow automobiles to move more efficiently, and to reduce congestion.
- To recognize that both the regional and provincial network of highways and streets and the transit network are essential to maintain the redevelopment potential of this corridor.
- To reduce the demand for infrastructure, all types of mobility services and programs shall be incorporated for all development projects along the corridor.
- To consolidate major street access while providing local streets and access, and to improve the streetscape for all development.
- To improve the transit user experience and complete a transit grid network linking to subway stations and regional transit.

7.1 Vehicular mobility strategy

Improvements to the local road network, as shown in Figure 22 and particularly in the employment areas, are recommended. The development of a street grid with more interconnected blocks will improve access through the employment areas, reducing reliance on congested roads, especially Dufferin Street, for local travel.

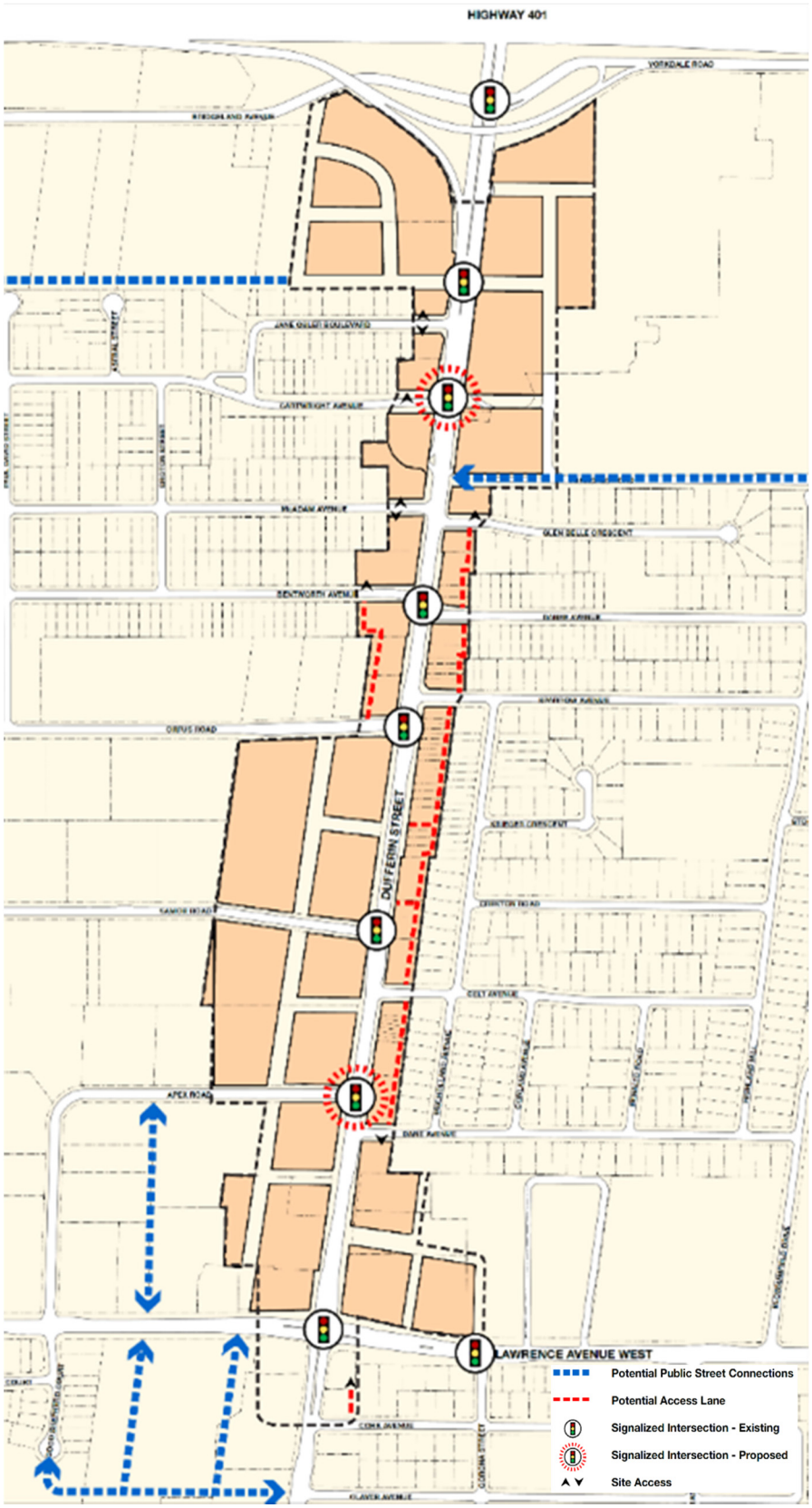

Figure 22: Recommended vehicular strategy

The McAdam access loop access from southbound Dufferin Street to Yorkdale Shopping Centre near Cartwright Avenue should be replaced with an at-grade intersection, potentially to make land available for a public park. This improvement should not be pursued in isolation because it is closely linked to the reconfiguration of the Highway 401 eastbound off-ramp to Dufferin Street.

Adding a continuous raised median to much of Dufferin Street will prevent left turn access from unsignalized accesses and improve the flow of traffic. The further realignment of east-west streets may help reduce congestion points as they cross Dufferin Street, but the potential benefit must be balanced with land use and urban design impacts, namely the reduction of land area for redevelopment.

Guidelines and standards

- Implement the new local streets in the larger blocks.
- Remove the McAdam access loop and replace it with a public park, while investigating the reconfiguration of the Highway 401 eastbound off-ramp.
- Introduce a raised, planted median on Dufferin Street to improve traffic operations and provide a new greening opportunity.
- Study the potential for further alignment of other east-west and north-south streets in the study area to improve mobility.

7.2 Transit mobility strategy

Capitalizing on the presence of high transit ridership on the Dufferin Street bus corridor, the provision of a southbound transit priority lane in the northern portion of the study area will ensure effective operation and movement of people.

Improving access to and from the subway stations along Allen Road, as identified in the TTC Transit Ridership Growth Strategy (2003), will provide residents and workers in the area with expanded regional access. Further options to increase transit use along the Dufferin Street corridor should be explored with the TTC.

The recent introduction of articulated buses on route 29 is a positive step, and should be accompanied in the future by enhanced shelters and other stop area facilities, such as benches and waste bins.

Figure 23 provides an overview of the recommended transit strategy.

Guidelines and standards

- Implement the southbound transit priority lane in the northern segment of the Dufferin Street corridor.
- Improve access and service to the subway stations from the study area.
- Introduce new street furniture and amenities at all stops in the study area to support the ridership growth.

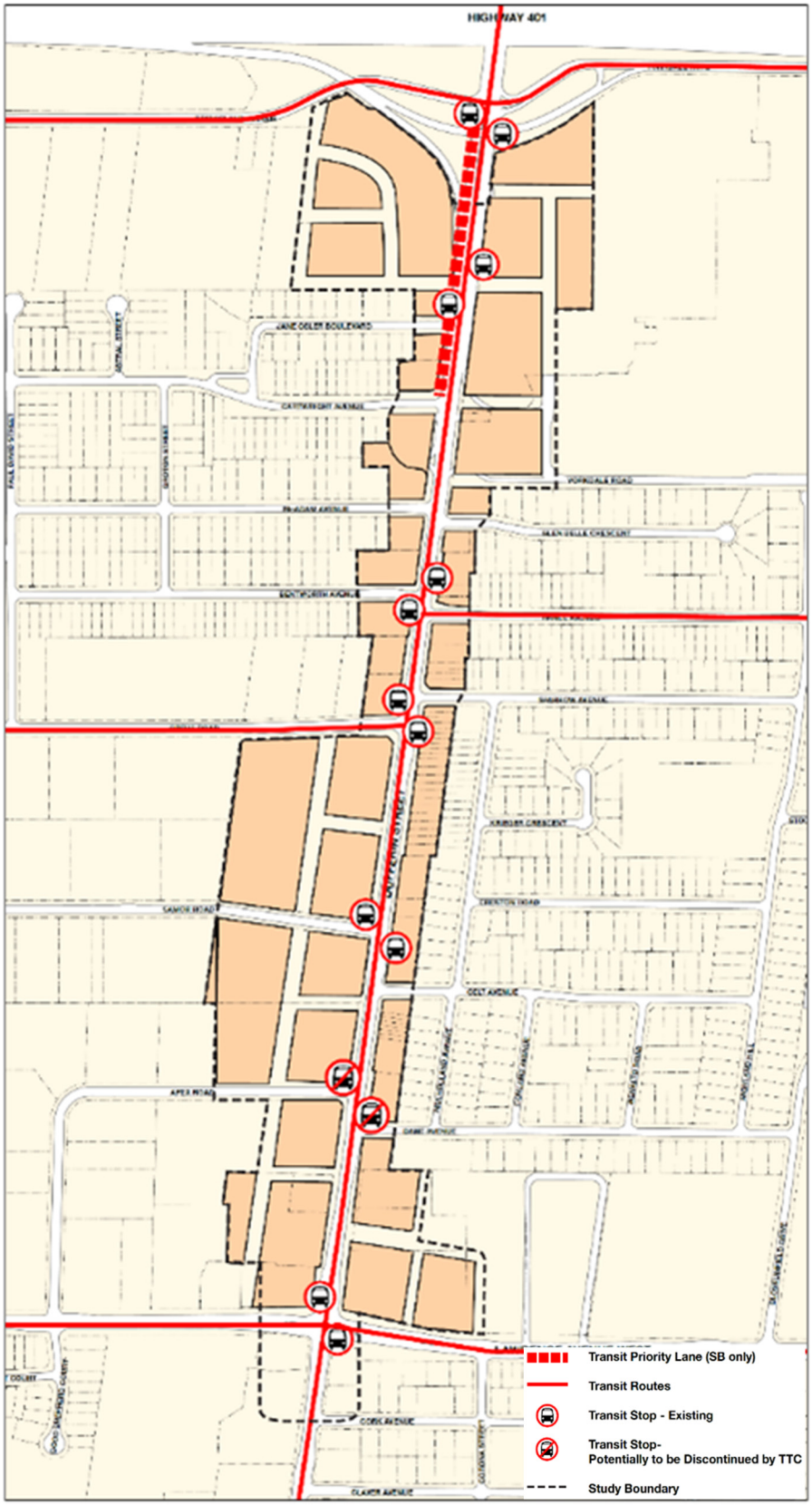

Figure 23: Recommended transit strategy

7.3 Pedestrian mobility strategy

Improvements to the streetscape along Dufferin Street will help develop an inviting space for pedestrians. Encouraging walking as a sustainable mode of transportation will complement mixed-use development and increase retail activity. High-density development with mixed uses in close proximity will help improve the walking mode share and reduce auto trips.

Development of a fine-grained local street network grid will also promote walking by improving pedestrian access between buildings and blocks. In addition, an improved east-west pedestrian crossing environment across Dufferin Street will enhance safety and promote walking connections between the employment areas, new residential developments, Yorkdale Shopping Centre, the Lawrence Heights residential district, and the subway along Allen Road.

Figure 24 provides an overview of the pedestrian strategy.

Guidelines and standards

- Implement the new local streets in the larger blocks to improve pedestrian access.
- Implement the streetscape improvements by providing broader pedestrian boulevards on existing and new streets.
- Introduce, where possible, additional signalized pedestrian crossings at intersections to improve east-west pedestrian movement.

7.4 Cycling mobility strategy

Improvements to the cycling infrastructure will promote recreational cycling and bicycle commuting.

Implementation of cycling routes recommended in the City of Toronto Bike Plan (2001) and the Lawrence-Allen Secondary Plan (2011) will help improve cycling mode share by providing a safer environment as shorter trips in the local area are increasingly made using bicycles.

Figure 25 provides an overview of the cycling strategy.

Guidelines and standards

- Implement the grade separated cycle track on Dufferin Street, bike lanes on Orfus Road, and bike friendly lanes on all other existing and new local streets.
- Introduce bike parking facilities on all public streets to encourage local cycling activity.

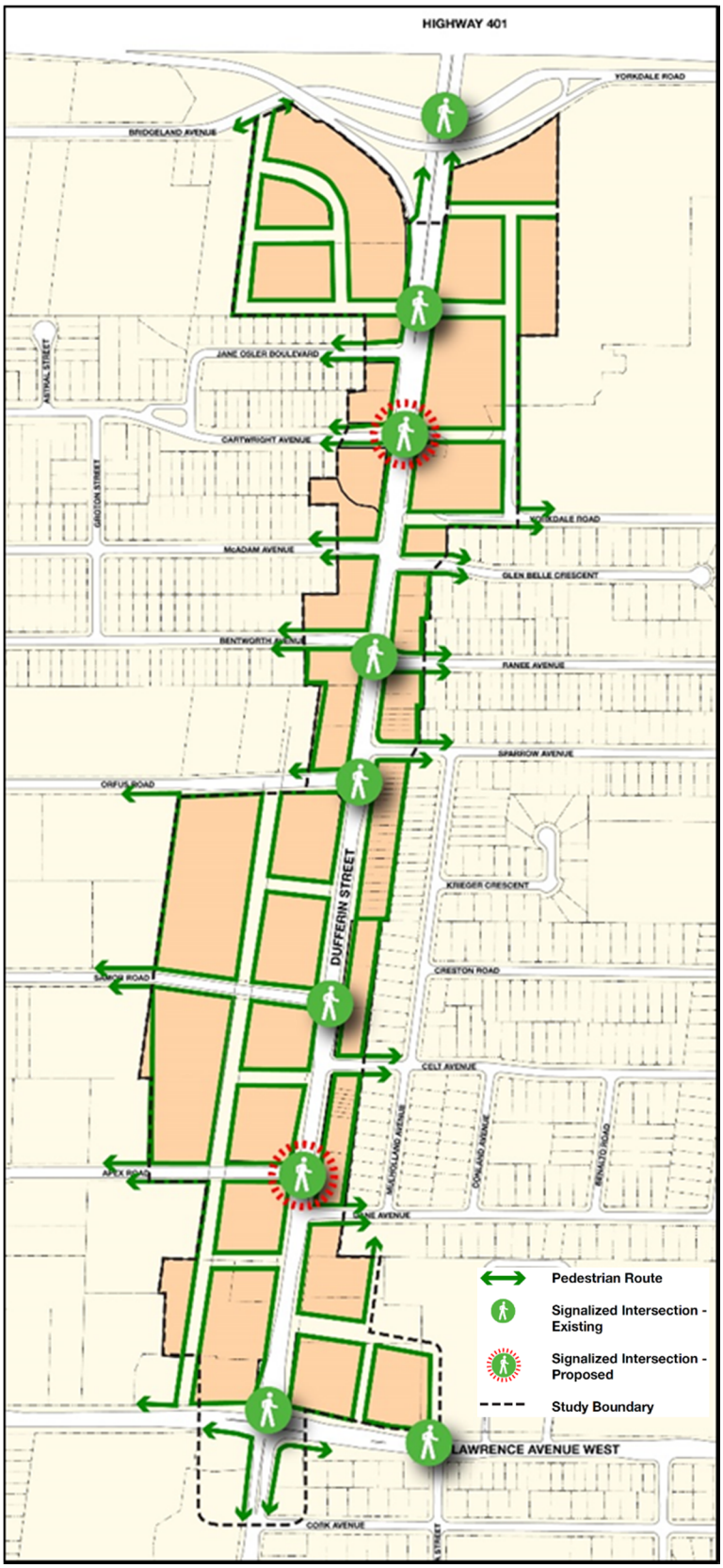

Figure 24: Recommended pedestrian strategy

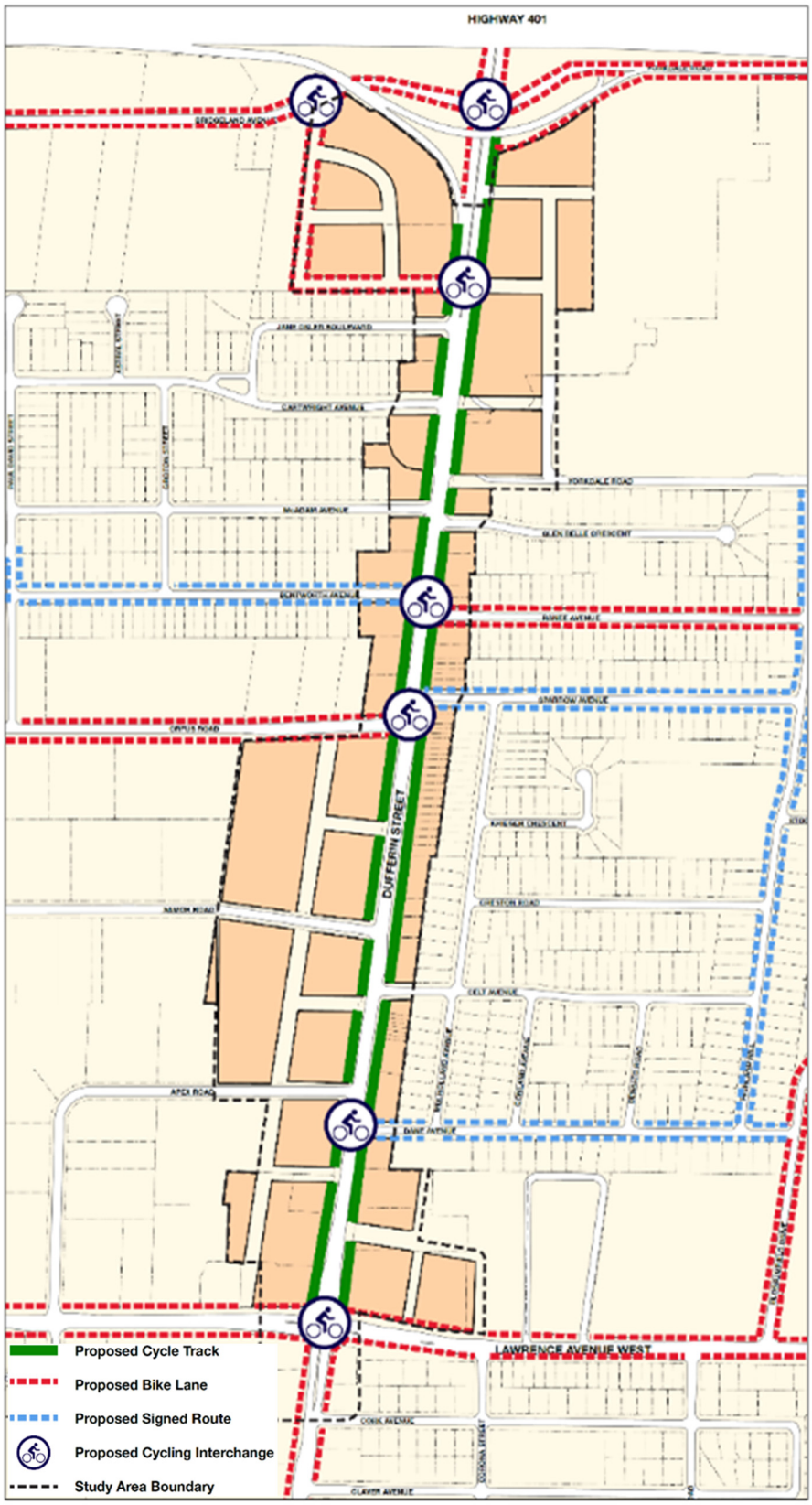

Figure 25: Recommended cycling strategy

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8 Alternative land use options

Land use and built form design options were put forward so that alternative transportation planning solutions could be established and the two iteratively refined. The Transportation Master Plan (TMP) refers to these land use and built form design options as land use options for ease of comprehension.

The land use options consist of a mix of commercial and residential floor space. The vehicular trips for the proposed new developments could reduce due to the proposed land use mix (see Figure 26).

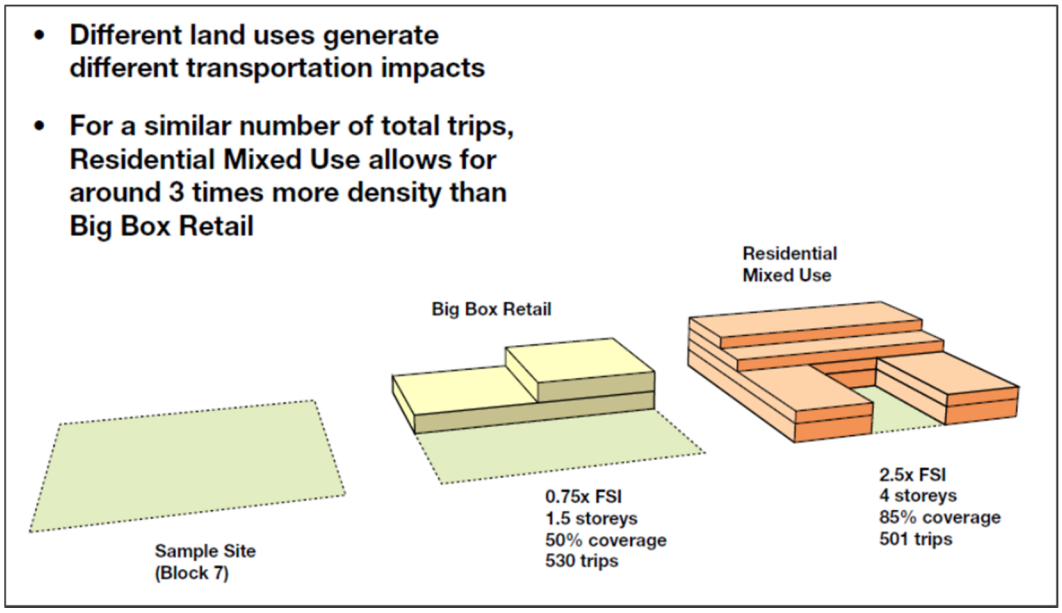
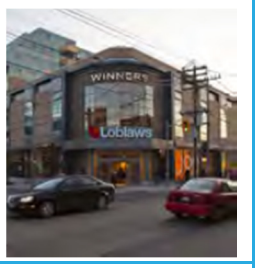


Figure 26: Relationship between land use type and transportation impact (DTAH, 2014)

Residential land uses generate fewer trips per unit area compared to other uses, while retail generates few morning peak trips, but more afternoon peak trips. In addition, a mix of land uses would ideally provide amenities and jobs in close proximity to residential uses, which may enable local and shorter trips that are ideal for walking and cycling.

This understanding led the study team to conclude that residential-mixed uses would form part of the preferred option, reinforcing the *Mixed Use* policies in the Official Plan. Three land use options were developed on this premise, and are described in Table 9.

Table 9: Details of land use options 1-3

	1. Treviso Model	2. McAdam Model	3. Queen and Portland Model
Massing Model			
Rendering/example			
Description	Based on the precedent of the Treviso high-rise mixed-use development at the corner of Dufferin Street and Lawrence Avenue West.	Based on the recently approved mid-rise development at the corner of Dufferin Street and McAdam Avenue.	Places greater emphasis on commercial uses, it mixes mid-rise buildings with urban-format big box retail, similar to the complex at the corner of Queen Street West and Portland Street.
Built Form	Tall buildings and mid-rise buildings on all large blocks	Tall buildings at north and south with mid-rise buildings at the maximum anticipated height defined by the Official Plan Avenues overlay	Mid-rise residential with street related and big box retail
Residential (m^2)	644,225	564,839	472,574
Street retail (m^2)	43,459	38,921	46,179
Large format retail (m^2)	25,362	25,000	119,696
Hotel (m^2)	0	0	0
Residential population	17,000	14,905	12,471
Residential units	8,948	7,845	6,564
Employees	1,112	998	1,375

8.1 Evaluation of land use options

All three of the land use options were tested using evaluation criteria and assumptions described below. The qualitative evaluation criteria include transportation, and the following sections describe the detail and results of the iterative testing of the transportation function of the various land use options.

8.2 Trip forecasting assumptions

The trip forecasting approach has four steps, as shown in Figure 27, and major assumptions that have been made in the analytical work.

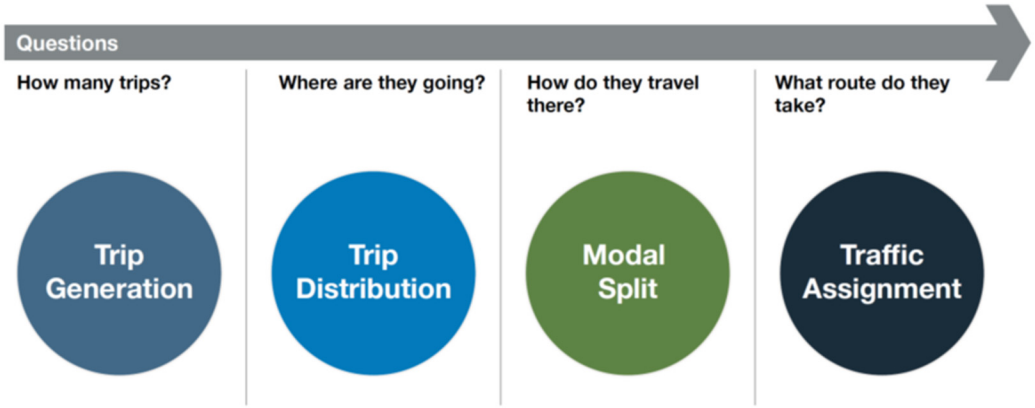


Figure 27: The four-step transportation planning approach

Step 1: trip generation

The Dufferin Street corridor has unique characteristics, particularly resulting from its proximity to subway, highway, and major shopping and employment areas. Therefore, other studies of nearby areas were sought to refine the Institute of Transportation Engineers guidelines on trip generation (8th edition). The Downsview Secondary Area Plan was identified to be most relevant and residential and office trip rates from that Plan were used instead of ITE rates.

The ITE rates were higher than Downsview Secondary Area Plan rates. For instance, the High Rise Apartment (ITE 222) AM/PM rate was 0.34/0.40 compared to 0.29/0.31 for Downsview Secondary Area Plan. Similarly, the General Office Building (ITE 710) AM/PM rate was 1.55/1.49 compared to 1.00/0.97 for Downsview Secondary Area Plan. Trip generation rates applied to new development in the Dufferin study area are summarized below in Table 10.

Table 10: Trip Generation Rates

	AM Peak Hour			PM Peak Hour		
Land Use	In	Out	Total	In	Out	Total
Residential*	0.05	0.24	0.29	0.21	0.10	0.31
Street Retail ITE 820	In: 0.61, Out: 0.39			In: 0.49, Out: 0.51		
Large Retail ITE 813	0.94	0.73	1.67	In: 0.50, Out: 0.50		
Office**	0.88	0.12	1.00	0.05	0.92	0.97
Hotel ITE 310	In: 0.55, Out: 0.45			In: 0.58, Out: 0.42		

*Downsview Secondary Plan High Res Condo>1km from subway; **Downsview Secondary Plan Office>1km from subway; GFA: Gross Floor Area. Street Retail AM: exp(0.59*ln(GFA))+2.32; Street Retail PM: exp(0.67*ln(GFA))+3.37; Large Retail PM: exp(1.32*ln(GFA))-0.16; Hotel AM: exp(0.87*ln(no. of rooms)+0.02; Hotel PM: exp(ln(no. of rooms)-0.58

Step 2: trip distribution

Transportation Tomorrow Survey (TTS) 2011 data was used to estimate the proportions of total generated trips moving in each direction from the various alternative land uses.

Figure 28 shows the existing annual average[4] trip distribution for the AM peak in the outbound direction, split into four directions. An origin-destination matrix was created for existing trips and factored up to 2031 using the new trips generated rates. For each land use option, an origin-destination matrix was created for the forecasted numbers of trips to and from each block in 2031. This can be found in Appendix C.

[4] The trip distribution was estimated using TTS zones (of which there were three in the study area). This diagram shows on average what the distribution looks like for the site overall.

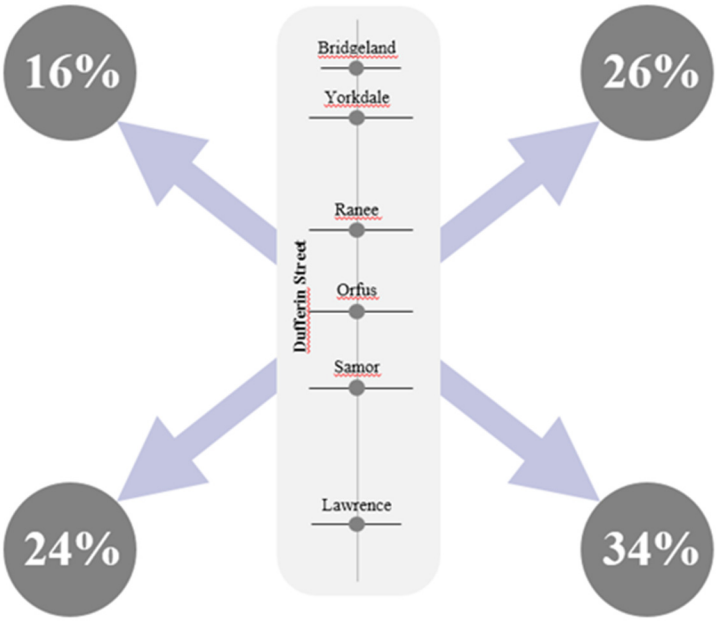


Figure 28: Existing trip distribution, AM peak, outbound average percentage of trips from the Dufferin Street Avenue study area, split into four directions

Step 3: modal splits

The ability to walk, cycle, and use transit really depends on the available travel options to each destination. As part of this study, significant research was conducted to determine how the planned transportation improvements would affect future modal choices.

Several sources for estimating mode split were considered, including the existing condition (represented in TTS 2011 data), mode splits inherent in ITE trip rates, and the City's EMME multi modal transportation demand forecasting model. The modal split assumptions generated by each of these sources is captured in Appendix C.

TTS data is a good starting point for existing conditions; however, it is not a predictor of future mode split. ITE rates represent aggregations of past development projects across North America, with a strong bias toward auto-dominant land use forms. This is reflected in the high ITE trip rates compared to Downsview Secondary Area Plan rates discussed in Step 1 above.

On the other hand, the City's EMME model was the only available tool designed to predict future transportation conditions including mode split. It takes into account background population growth factors as well as regional transportation infrastructure changes/improvements. On that basis, the forecast year 2031 morning peak incoming/outgoing mode share was obtained from the City's EMME model, for the traffic analysis zones adjacent to the study corridor. For the evening peak, the incoming/outgoing morning peak mode share was reversed to create a reasonable estimate of mode share.

However, the EMME model does not take into consideration local-scale transportation infrastructure improvements nor does it take into account the balanced mobility proposal being considered in this study. With the progressive growth of transit and active transportation infrastructure contemplated in this study, it is reasonable to expect future 2031 travel choice to change even further than that predicted in the EMME model. Hence, adjustments were made to the EMME model (on the order of several percentage points) to reflect a higher mode share for non-auto modes, which include walking and cycling, to obtain the future mode share for Dufferin Street, as shown in Table 11. Refer to Appendix C for EMME mode share before adjustments.

Table 11: Dufferin Street mode share, 2031 (all land uses except retail)

Dufferin Street	AM		PM		
Mode Share	In	Out	In	Out	**2031 EMME Adjusted, excludes retail trips**
Auto	72%	53%	53%	72%	
Transit	23%	37%	37%	23%	
Other	5%	10%	10%	5%	

For trips related to retail uses, modal choices would shift further away from vehicular use because of locally accessible retail and better local walking and cycling conditions. The assumed mode share for retail is shown in Table 12.

Table 12: Dufferin Street Mode Share, 2031 (retail)

Dufferin Street	AM		PM		
Mode Share	To	From	To	From	**2031 EMME Adjusted, retail trips only**
Auto	70%	50%	50%	70%	
Transit	23%	37%	37%	23%	
Other	7%	13%	13%	7%	

Step 4: traffic assignment

Trips for both existing and future conditions are assigned to the network using the origin-destination matrix. Refer to Appendix C for the distribution matrix that the origin-destination matrix is based on. Due to constrained network topology in the study area (Allen Road/Rail Corridor/Highway 401/Yorkdale Shopping Centre), there are limited options for movement when considering long distance trips. However, the local area network is envisaged to play a greater complementary role in helping relieve traffic congestion on Dufferin Street in the future.

8.2.1 Testing the land use options

Land use options 1, 2, and 3 were tested and the resulting road capacity (v/c) ratios are shown in Figure 29. Based on this analysis, it was established that the three initial land use options were not ideal from a vehicular network capacity standpoint. The land use options were also evaluated based on the evaluation

criteria listed in Figure 30 and Option 2 fared slightly better than the other options. Please see Figure 30 for results and refer to Appendix C for the corresponding data tables.

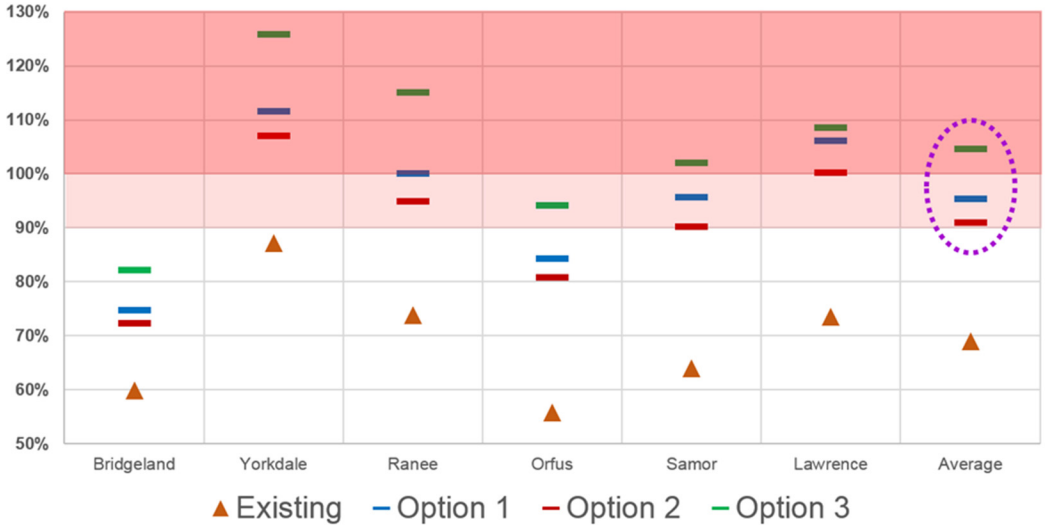


Figure 29: Percentage of roadway capacity: options 1-3, Dufferin Street, PM peak period northbound, midblock volume over capacity (v/c) ratios

Preferred / Not Preferred / Requires Further Study	Option 1. Treviso Model	Option 2. McAdam Model	Option 3. Queen+Portland Model
			
Land Use	🟢	🟢	🟡
Density	🔴	🔴	🔴
Built Form	🔴	🟢	🟡
Transportation Function	🔴	🔴	🔴

Figure 30: Preliminary evaluation of the land use options

8.2.2 Refining the land use options

As a result, the three land use options were refined and two additional options added to test issues raised during the preliminary evaluation. These two additional options are detailed in Table 13.

Table 13: Details of land use options 4 and 5

	4. McAdam Model (Option 2) Reduced	5. Mid Rise (Option 4) with Big Box (Option 3)
Rendering/example		
Description	This model maintains the midrise form and primarily residential mixed-use character of Option 2, but with a reduced density of 2.0-2.5 with 7,147 residential units and 830 employees, and more than 2 ha of parkland dedication. The result is a lower projected population and employment count.	This model modifies Option 4 to include a large big box development on one of the blocks, in some ways incorporating an element of the "Queen and Portland" model (Option 3).
Built Form	Where midrise buildings reach a high of nine storeys in the initial model (the maximum permitted on a 30 m right-of-way), in the reduced version they would mostly be limited to four or five storeys, as density permitted. Tall buildings would be limited to the northern and southern ends of the study area.	It is partly designed to test the impacts of an option in which certain landowners would choose not to build the denser midrise built form anticipated in "McAdam Reduced" (Option 4), but instead pursue a lower density commercial scheme currently permitted as-of-right.
Residential (m^2)	496,646	346,928
Street retail (m^2)	24,543	47,970
Large format retail (m^2)	25,362	25,362
Hotel (m^2)	0	0
Residential population	13,106	9,155
Residential units	6,898	4,818
Employees	839	1,225

Options 4 and 5 were tested using the same method applied to Options 1-3 and the v/c ratios for the midblocks for these two additional all five land use options are shown in Figure 31. Refer to Appendix C for the corresponding data tables.

Figure 31: Percentage of roadway capacity: options 4 and 5, Dufferin Street, PM peak period northbound, midblock volume over capacity (v/c) ratios

Preferred / Not Preferred / Requires Further Study	Option 1. Treviso Model	Option 2. McAdam Model	Option 3. Queen+ Portland Model	Option 4. McAdam Reduced	Option 5. Mid Rise OR Big Box
Land Use	🟢	🟢	🟡	🟢	🟡
Density	🔴	🔴	🔴	🟡	🟡
Built Form	🔴	🟢	🟡	🟢	🟡
Transportation Function	🔴	🔴	🔴	🟡	🟡

Figure 32: Preliminary evaluation of the land use options

Option 4: McAdam (Option 2) Reduced Model

Congested operations are still likely along the corridor under Option 4 in both northbound and southbound directions during PM peak period but the average v/c along the corridor is less than 1.0.

Option 5: Midrise (Option 4) with Big Box (Option 3)

From a transportation capacity standpoint, both Options 4 and 5 are considered worthy of further evaluation through the application of alternative planning solutions, when compared to Options 1, 2, and 3.

Note that all land use options (1 to 5) demonstrate vehicular constraints (see Figure 29 and Figure 31), but land use Options 4 and 5 were selected for their lower level of impact.

8.2.3 Preferred land use option

The selection of a preferred land use option is informed through the overall decision matrix provided in the Dufferin Street Avenue Study (see Figure 32), that evaluates alternative options holistically, considering land use, density, and built form in addition to transportation.

With further refinement of the land use and built form analysis, iterative design refinements between the land use mix and the transportation planning solutions were made. In consultation with City staff, the preferred land use model was derived as shown in Table 14 (final column).

Table 14: Details of the land use options (includes approved developments)

	1. Treviso Model	2. McAdam Model	3. Queen and Portland Model	4. McAdam Reduced	5. Midrise or Big Box	Preferred
Residential (m^2)	644,225	564,839	472,574	496,646	346,928	528,542
Street retail (m^2)	43,459	38,921	46,179	24,543	47,970	26,222
Large format retail (m^2)	25,362	25,000	119,696	25,362	25,362	25,362
Hotel (m^2)	0	0	0	0	0	22,202
Residential population	17,000	14,905	12,471	13,106	9,155	13,948
Residential units	8,948	7,845	6,564	6,898	4,818	7,341
Employees	1,112	998	1,375	839	1,225	881

9 Alternative transportation solutions

This section discusses the alternative transportation solutions for the preferred land use option, the evaluation approach and criteria, description of the solution components, and the results of the evaluation.

9.1 Identification and evaluation approach

A comprehensive transportation framework was developed in which the transportation analysis was developed through an iterative process with the land use and density analysis. The results of this analysis informed the ultimate recommended mix of land uses and densities. The transportation analysis included qualitative analyses and forecasts of future travel demand generated for the study area transportation network.

Major new transportation infrastructure under construction, including the planned Toronto-York Spadina Subway Extension to Vaughan Metropolitan Centre and the Eglinton Crosstown LRT projects, were considered as part of the analysis due to the fact that they will improve regional transit connectivity and provide alternative travel options. Other planned local improvements include:

- Road resurfacing along Dufferin Street with the potential for localized curb and centre lane adjustments;
- A corridor improvement program for traffic signal operations; and
- Reconfiguration of the intersection at Dufferin Street at Bridgeland Avenue and Yorkdale Road.

There are also recommendations in the 2011 Lawrence-Allen Revitalization Study Transportation Master Plan (TMP) that for the improvement of local east-west connections for pedestrians and cyclists, particularly to the subway stations east of the study area.

Based on the ultimate recommended land use (and density) option, alternative solutions were developed and tested for their ability to address the outstanding transportation planning issues identified in the existing conditions analysis and through public consultation. Four transportation planning solutions were developed for testing. A preferred solution emerged that has the most potential to complement the preferred land use option.

Modelling was undertaken using Synchro to demonstrate the vehicular operational benefits and issues of implementing the preferred transportation solution.

9.2 Evaluation criteria

The evaluation process involves answering key questions for each criterion using a qualitative approach. Table 15 lists the considerations, criteria, and key questions used to evaluate the alternative transportation planning solutions. Refer to Appendix C for a version of the below matrix that includes a definition of the rating scale for each consideration.

Table 15: Evaluation criteria

Considerations	Evaluation Criteria	Key Questions
City Planning Framework	Policy fit	Can it deliver adopted city policies?
Congestion/network modal imbalance	Operations: pedestrian, cycle, transit and vehicular	Can it enhance operations?
Limited connectivity	East-west connections	Can it improve east-west connections?
	North-south connections	Can it improve north-south connections?
	Access	Can it provide efficient access to properties?
Socio-Economic	Aesthetically vital/socio-economic environment	Can it provide an aesthetically vital and vibrant public realm?
Cultural and Natural Environment	Impact on cultural environment	Can it improve the cultural environment?
	Impact on natural environment (air quality and noise impacts)	Can it improve the natural environment?
Implementation	Feasibility	How feasible is the solution to implement?
Land Use	Fit in space available	Can it fit in the space available without additional land?
	Support to land use and built form Recommendations	Can it support the recommended preferred redevelopment option?

9.3 Transportation solutions tested

Four planning solutions were developed for testing:

A: “Do Nothing”, in which no changes would be made;

B: “Quick Wins”, in which short-term improvements would be made;

C: “Upgrade”, in which the Dufferin Street cross-section would be comprehensively reconfigured; and

D: “Additional”, in which the right-of-way is widened, permitting transit/HOV lanes.

9.4 Components of transportation solutions

Each solution comprises components as summarized in Table 16.

Table 16: Transportation planning solution components

Solution Components	A	B	C	D
Street Network				
New local roadways within larger development blocks			✓	✓
New roadway connections (i.e. employment lands, south of Lawrence Avenue, Keele Street, Allen Road)			✓	✓
Improved wayfinding and signage to key destinations		✓	✓	✓
Investigate Highway 401 eastbound off-ramp into Bridgeland			✓	✓
Investigate direct connection to Allen Road and eastbound Highway 401 from Dufferin St			✓	✓
Vehicular Operations				
Corridor signal retiming program		✓	✓	✓
Dufferin Street/Yorkdale Road/Bridgeland Avenue intersection re-alignment			✓	✓
Convert Honda/Yorkdale Shopping Centre traffic signal to full move intersection			✓	✓
Remove McAdam Loop to Yorkdale Shopping Centre and replace with at-grade signalized intersection				✓
Centre turn lane/median throughout			✓	✓
Adjusted turn movements per lane as necessary			✓	
New traffic signal at Apex			✓	✓
Transit				
Investigate potential for GO station between Lawrence Avenue and Highway 401		✓	✓	✓
Operational improvements: Express Service, green light phase extension for buses, pavement marking at key stops		✓	✓	✓
Physical improvements: transit shelters, seating, and security cameras		✓	✓	✓
Repurpose southbound curb lane to transit/HOV only: Bridgeland to Cartwright		✓	✓	
Repurpose northbound curb lane to transit/HOV only: Yorkdale out ramp to Bridgeland/Yorkdale		✓	✓	
Investigate potential for queue jump lanes where warranted			✓	
Bus lane throughout: Repurposed Lane		✓	✓	
Bus lane throughout: Additional Lane				✓
Walking				
Improved streetscape / central median		✓	✓	✓
Improved streetscape along Dufferin Street			✓	✓
Improved streetscape along side streets			✓	✓
Cycling				
New dedicated cycling facilities along Dufferin Street			✓	✓
Expanded bicycle network within study area and broader context			✓	✓
Transportation Demand Management (TDM) Measures				
Various TDM measures			✓	✓

9.5 Evaluation of transportation solutions

Figure 33 provides an overview of the following performance of each of the four alternative planning solutions against the evaluation criteria:

A: the “Do Nothing” solution maintains the status quo and therefore does not meet any of the criteria.

B: the “Quick Wins” solution is feasible and fits into the available right of way. However, this solution does not meet other criteria because it does not improve east-west-north-south connections, nor does it enhance the cultural or socio-economic environments. The solution may fit with policies, offer operational improvements, improve access, enhance the natural environment, and/or support the land use and built form recommendations, but it will be challenging.

C: the “Upgrade” solution meets all the criteria but is considered challenging for operations.

D: the “Additional” solution improves north-south connections but does not meet four criteria (i.e. fit with policy, support for land use and built form recommendations, feasibility, and fit within the space available) and is considered challenging for six criteria (i.e. operations, east-west connections, access, socio-economic environment, cultural environment, and natural environment).

Guiding Principles and Problem Statement	A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
Policies	Not Preferred	Requires Further Study	Preferred	Not Preferred
Operations	Not Preferred	Requires Further Study	Requires Further Study	Requires Further Study
East West Connections	Not Preferred	Not Preferred	Preferred	Requires Further Study
North South Connections	Not Preferred	Not Preferred	Preferred	Preferred
Access	Requires Further Study	Requires Further Study	Preferred	Requires Further Study
Aesthetically Vital / Socio-Economic Environment	Not Preferred	Not Preferred	Preferred	Requires Further Study
Cultural Environment	Not Preferred	Not Preferred	Preferred	Requires Further Study
Natural Environment	Not Preferred	Requires Further Study	Preferred	Requires Further Study
Feasibility	Preferred	Preferred	Preferred	Not Preferred
Fit in Space Available	Preferred	Preferred	Preferred	Not Preferred
Support Land Use and Built Form Recommendations	Not Preferred	Requires Further Study	Preferred	Not Preferred

Preferred
Not Preferred
Requires Further Study

Figure 33: Summary of evaluation of alternative transportation solutions

9.6 Modelling future vehicular operations

The best performing transportation solution (Solution C, “Upgrade”) was the only solution modelled in Synchro. It was modelled in combination with the preferred land use option (see Section 8.2.3) to evaluate the future vehicular operational conditions. The purpose was to inform the preferred transportation solution. Figure 34 to Figure 37 summarizes the existing and future conditions for vehicular level of service in the AM and PM peak periods. Appendix D contains the detailed for Synchro model output reports.