

ONTARIO'S 2011 TRANSIT-SUPPORTIVE GUIDELINES

Integrating Land Use, Transit and Active Transportation

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ABSTRACT

In 1992, the Ontario Ministries of Transportation and Municipal Affairs and Housing published the *Transit-Supportive Land Use Planning Guidelines*. The Guidelines were focused on transit-friendly land use planning and urban design practices.

Since it was published, the Ontario government has introduced policies such as the Growth Plan for the Greater Golden Horseshoe (2006) and the updated Provincial Policy Statement (2005) to manage growth, encourage more livable and walkable communities and to develop sustainable, multi-modal transportation networks. At the same time, Ontario has made the growth of transit ridership a priority through more than \$10.8 billion in transit investments since 2003.

Recently, the Ministry of Transportation undertook to update the original Guidelines to support continued progress in building more compact, transit-supportive communities. The new *Transit-Supportive Guidelines* (draft) take a comprehensive approach, bringing together the most current thinking on transit-supportive urban planning and design *and* best practices in transit planning and delivery of customer-oriented transit service. The Guidelines emphasize the inter-dependent relationship between transit ridership and land use patterns: that higher density communities need dependable transit systems to thrive, and in turn, transit systems rely on transit-supportive land uses to sustain and increase ridership.

This paper illustrates the close relationship between land use, transportation options and travel behaviour, and the strategic approaches needed to integrate principles and practices of land use, transportation and transit service planning to achieve sustainable communities and multi-modal transportation systems.

1.0 INTRODUCTION

Building on recent provincial policies and a variety of initiatives, Ontario's Ministry of Transportation (MTO) is expanding its *Transit-Supportive Guidelines* (draft) to reflect the most current thinking on transit-supportive urban planning and design and best practices in transit planning and delivery of customer-oriented transit service. The Guidelines document includes over 50 individual guidelines and almost 450 specific strategies to assist urban planners, transit planners, developers and others in creating an environment that is supportive of transit and increasing transit ridership. The Guidelines also include, for the first time, a new chapter with strategies for growing ridership through a range of tools, management approaches and technologies.

The Guidelines document is an update of Ontario's *Transit-Supportive Land Use Planning Guidelines*, first published jointly with the Ministry of Municipal Affairs and Housing in 1992. Recent provincial initiatives aimed at managing growth, curbing urban sprawl and supporting transit, along with complementary changes to key aspects of Ontario's planning system, provided MTO with an opportune time to update the Guidelines. Today's Guidelines continue to provide municipalities planning for, or with existing transit systems, the ideas, tools and best practices to consider transportation and land use planning simultaneously in their local decision-making in order to develop more transit-supportive communities.

The Guidelines are intended for use within Ontario's existing legislative and policy framework by municipalities across the province. The Guidelines:

- Outline how provincial policies and programs can assist municipalities and transit systems in their efforts to increase transit use.
- Describe emerging trends in transit-supportive land use planning.
- Provide best practices from jurisdictions across Canada and elsewhere to outline effective ways to support transit and to demonstrate the social, environmental and economic benefits from doing so.
- Identify land use practices that support transit through measures such as higher densities, intensification and mixed-use development.
- Identify urban design elements that can make transit more attractive through, for example, improved accessibility.
- Identify best practices that can contribute to increased ridership through improvements to transit quality, reliability, convenience and efficiency.
- Provide resources for practitioners.

Supporting increased transit ridership can help to better manage urban growth, limit the impacts of transportation on the environment and adapt to changing demographics. The Ontario government is committed to developing a multi-modal transportation system and supporting the development of communities to provide transportation alternatives to the single-occupant vehicle.

The Guidelines draw from experiences in Ontario, elsewhere in North America and abroad. As a tool for Ontario communities, the document is intended to provide guidance for a wide range of places, from small towns that may not currently provide transit service, to mid-size cities and large urban centres with extensive existing, planned transit infrastructure. The applicability of the particular planning and urban design strategies for various planning and community scales (e.g. municipal vs. site planning scale or small vs. big city community scale) has been indicated throughout the document.

The following paper outlines why and how the new *Transit-Supportive Guidelines* (draft) take a comprehensive approach, bringing together the most current thinking on transit-supportive urban planning and design *and* best practices in transit planning and delivery of customer-oriented transit service. The paper highlights examples of key strategies from the Guidelines. These are then illustrated, moving from the regional scale of planning for settlement areas and transit networks, to more district and site-specific pedestrian and cyclist transit access strategies.

2.0 THE NEED FOR INTEGRATED PLANNING

One reason private automobile transportation has appeal over public and active transportation modes is its potential to transport people from doorstep to doorstep in relative comfort and privacy. However, to realize this potential, the automobile requires significant amounts of land to facilitate efficient and quick movement to destinations. As a result, patterns of land use within a largely automobile-oriented transportation system tend toward scattered, low densities of segregated uses where developments and centres of activities and services are isolated from each other, connected largely by roadways and surrounded by surface parking lots.

Just as the predominance of the private automobile as the preferred transportation mode results in a land use pattern of sprawling and fragmented low density developments, so public transit requires higher density and more compact urban forms to attract and build transit ridership.

If towns and cities grow at low densities, and land uses are not coordinated with planned transit investments, distances between locations may expand, making the provision of transit more difficult and expensive to communities that are already dependent on the car. Routes may become longer and the number of potential transit users is spread out over greater distances. As the ridership per kilometre decreases, the cost of providing services increases, which can lead to service cuts and loss of ridership.

In order to make transit efficient and increase ridership, we must reconsider how to organize our cities, how they grow and the role transit plays in community building.

New communities must be planned in concert with transit, focusing development to minimize the effects of outward expansion on transit services.

Existing land use patterns that do not support transit use can be transformed to more compact communities through redevelopment, intensification and phasing in walkable street grids. Growing populations and shifts in residential patterns and commercial development can create opportunities to intensify and introduce a mix of functions and uses into existing communities. Transit providers can respond to changes in local land use and the consequent changes in travel demand by increasing service frequencies, extending routes, adding stops and stations or modifying services to shift resources from areas of low ridership to areas of higher ridership. Conversely, development of more compact urban forms can create demand for more transit services. Concentrating densities and a mix of uses in and around stop and station areas is an effective way of optimizing transit infrastructure, placing more people and uses within close proximity to transit facilities and supporting higher levels of pedestrian activity.

3.0 KEY STRATEGIES

Create a Transit-Supportive Community Structure

Identify places that are suitable for growth and link built form and land use patterns to transit through the designation of mixed use, higher density nodes and corridors. Encourage compact patterns of development at densities capable of supporting transit service.

By structuring settlement areas into distinct elements such as nodes, corridors, built-up areas and designated growth areas, growth can be directed to support the clustering of uses and activities, enabling the creation of an efficient transit network.

Nodes are areas of more intense density, use and activity. They are compact clusters of uses that may include downtowns, clusters of office buildings, post-secondary educational campuses and other higher-density uses, both large and small. Corridors are similar to nodes but are linear developments oriented along major transit routes. Focusing urban growth within nodes and corridors can facilitate higher levels of transit service, reducing walking times to and from uses and making it easier to access transit.

One of the concepts most fundamental to land use and transit planning integration is the idea that almost every transit trip begins and ends as a walking trip. People are willing to use transit on a regular basis, if access to transit is within a reasonable walking distance, typically 400 to 800 metres or a 5 to 10 minute walk, depending on the level of transit service and the pedestrian environment.

Strategies for transit-supportive nodes and corridors are built around this fundamental concept. The boundaries of a node should generally reflect a 5 to 10 minute walk from a focal point within the transit system. Likewise, boundaries of a corridor should reflect the 400 to 800 metre distance from transit stops and stations located along the corridor.

Intensification and development of mixed uses should occur within nodal and corridor boundaries to take advantage of existing activities and transit infrastructure.

Other key strategies for nodes and corridors include:

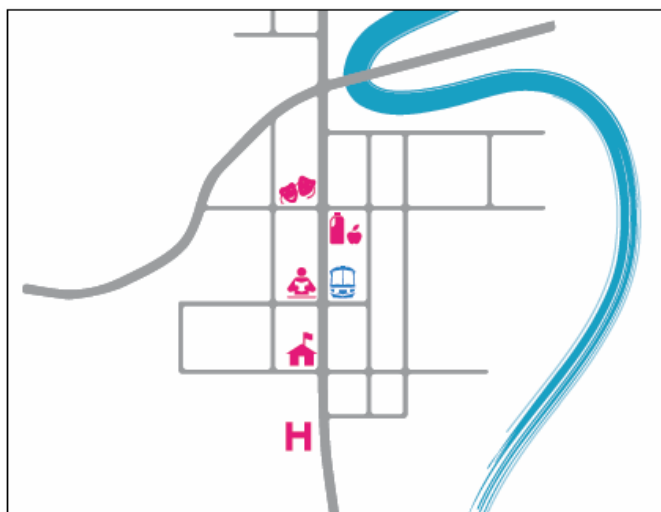
- Identifying new nodes where they can strengthen existing land use anchors, such as shopping centres, hospitals and offices.
- Providing a full range of uses and functions, such as employment, retail, recreational, cultural, institutional and personal services that will create demand for transit, and which in turn brings transit users to access services.
- Incorporating residential uses within nodes and corridors to balance ridership levels in all directions.

Within rural settlement areas, which are generally designed to be accessed by private automobile, it is important to plan redevelopment and new development in a way that can help sustain existing transit service or to make the future introduction of transit service feasible. The Guidelines suggest designating growth areas within rural settlement areas and controlling development to protect natural and prime agricultural areas and preserve the rural character of these smaller communities. A number of strategies are proposed including:

- Enhancing the settlement core, the heart of the rural settlement, by creating complete streets and strengthening pedestrian and cycling connections to key destinations, keeping the small town feel of these communities.
- Developing a transitional area between the settlement core and its rural surroundings, with a focus on traffic calming and streetscape enhancements.
- Locating transit-supportive uses such as schools, community centres, places of worship, health facilities and retail where they can be accessed by foot and where transit is available (see Figure 1).

Concentrating these uses creates a critical mass of potential transit users, enabling transit services between rural centres.

Figure 1: Land Use Strategies for Rural Settlement Areas



Focus transit-supportive uses such as schools, community centers, health facilities, places of worship, and shopping centers in rural settlement areas to support the more efficient provision of transit service.

Retrofit Existing Built-Up Areas To Make Existing Development More Transit-Supportive

Encourage infill development and enhance street and open space networks to increase the overall density and mix of uses around transit services and make it easier for people to walk and bike to and from stop/station areas.

Built-up areas are locations that have already been developed within the established settlement area, but are not designated as nodes or corridors. These areas make up the largest proportion of the settlement area and in many communities are where the majority of people live, making them prime areas for transit-supportive planning. The Guidelines suggest a variety of strategies to make built-up areas more transit friendly, for example:

- Intensification and infill development strategies to retrofit built-up areas, combined with street and open space improvements. Retrofit strategies can include small changes, such as the addition of second units and improvements to pedestrian and cycling connections.
- Larger changes may include development of brownfields and greyfields and retrofitting or redevelopment of existing uses such as strip malls and big box retail. Where there are larger redevelopment opportunities, municipalities can create a pattern of streets and blocks that enhance connections to transit services.
- Ridership-generating uses, such as retail centres, higher-density housing, employment uses, schools and government services should be located near existing transit stations and stops.

Coordinate Transit And Land Use Decisions To Minimize Trips And Enhance Access To Transit Services

Transit service should be a primary consideration in all new developments and assessed accordingly. Plan for higher densities and a greater mix of uses in proximity to transit in order to support higher levels of transit ridership and improve access to jobs, housing, goods and services.

Creating transit-supportive communities relies on the effective coordination of land use and transit so they are mutually supportive. When transit and land use decisions are made in isolation, it can result in patterns of development that are difficult and inefficient to serve by transit. The Guidelines propose embedding transit considerations and requirements directly in municipal and regional land development processes by, for example:

- Developing official plans in concert with municipal and regional transportation plans.
- Establishing transit-supportive density targets in official plans, with greater densities and mix of uses around transit stations and stops.

- Involving transit agencies in the planning process at the stage of creating official plans and transportation plans, including the planning of future routes, transit nodes, station locations and identification of density thresholds near transit routes.
- Providing input into requirements for developers related to the installation of basic transit infrastructure, such as bus stop pads or pedestrian pathways connecting to transit.

A key consideration in planning transit services in relation to land use is that transit systems require minimum levels of density in order to provide the potential ridership that helps to make transit systems succeed. The Guidelines provide suggested minimum densities to support various types of transit service, noting that these vary dependent on factors such as mix of uses, travel times, the design of streets and open spaces, building characteristics and levels of feeder transit service (see Table 1).

Table 1: Suggested Minimum Density

Transit service type	Suggested minimum density
Basic Transit Service (One bus every 20-30 minutes)	22 units per ha / 50 residents & jobs combined
Frequent Transit Service (One Bus every 10-15 minutes)	37 units per ha / 80 residents & jobs combined
Very Frequent Bus Service (One bus every 5 minutes with potential for LRT or BRT)	45 units per ha / 100 residents & jobs combined
Dedicated Rapid Transit (LRT/BRT)	72 units per ha / 160 residents & jobs combined
Subway	90 units per ha / 200 residents & jobs combined

Suggested minimum density thresholds needed to support various types of transit service

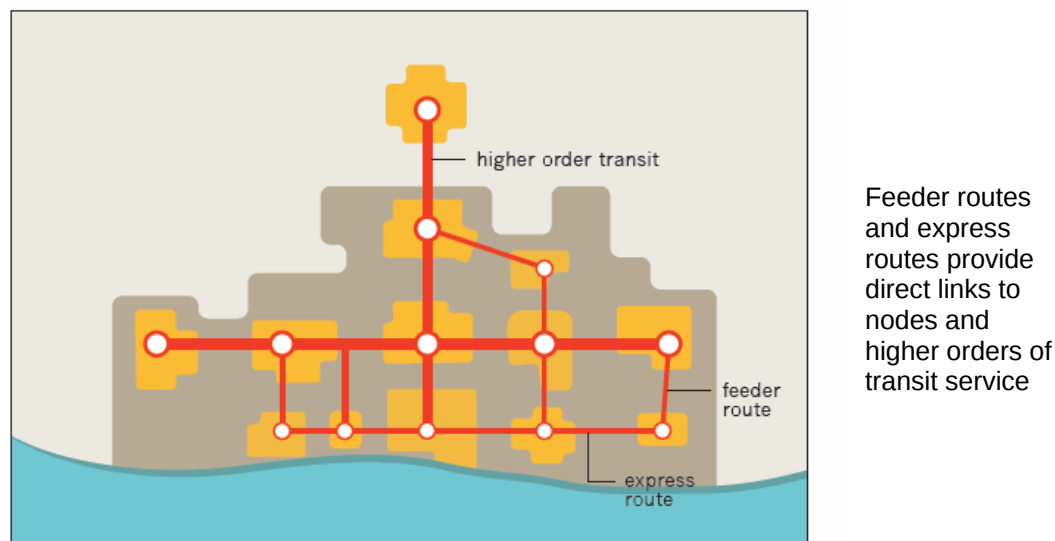
Plan for an Effective Transit Network at a Regional Scale

Coordinate planning for an effective transit network at a regional scale alongside existing and planned land use patterns. Balance support for travel between established destinations and fostering travel patterns related to planned or emerging corridors, nodes and new communities.

Transit network design and planning is about effectively linking people to destinations by designing transit routes, stops and stations around where people live, work and play. The more direct a transit route, the more direct and convenient the access to transit, the more people are likely to use transit. Planning transit systems, whether at a regional or local scale, needs to be grounded in a strong understanding of existing and planned patterns of mobility and land use.

The Guidelines recommend an assessment of existing and proposed land use patterns in planning transit service. In larger communities, the Guidelines emphasize providing a variety of transit services that can cater to different patterns of land use and commuting needs, for example direct line haul routes, circulators, feeder routes, express routes, community and dial-a-bus services (see Figure 2). This could include a range of route configurations, different levels of service hours and frequencies, and variations in transit mode and vehicle sizes. By tailoring transit service to the pattern of land use and travel behaviour, service can be provided efficiently and economically.

Figure 2: Community Transit Network



Other transit-supportive strategies when planning new developments include:

- Expansion or introduction of new routes should be implemented early in their development. By making transit available at the outset, there is greater likelihood that transit use will become one of residents' regular transportation choices.
- Transit hubs should be coordinated with the planning for nodes to ensure that hubs are located at concentrations of transit-supportive uses and density.

Planning and Delivering Transit Services to Respond to Changes in Local Land Use and Travel Demand

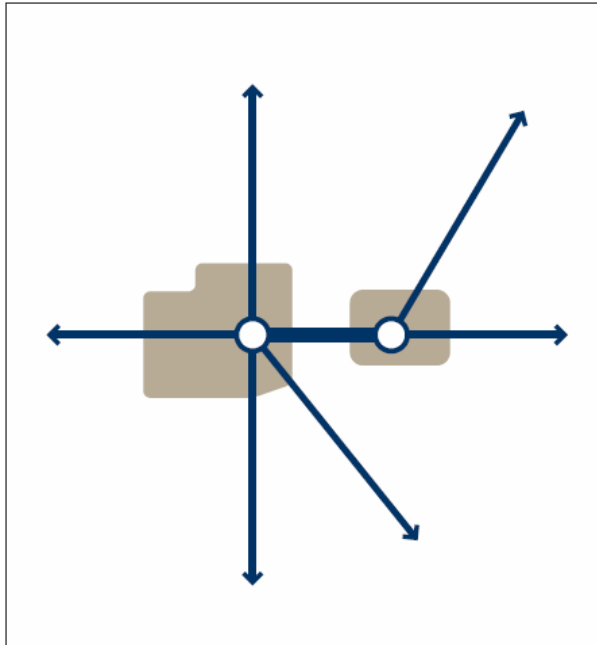
To continue to be transit-supportive, municipalities need to constantly review, evaluate, change, modify and adjust their transit services to address changes in local land use.

Over time, municipalities may grow, populations can disperse, neighbourhoods may intensify and diversify and communities may expand out or up. The Guidelines provide a few key strategies to adjust transit services as communities change:

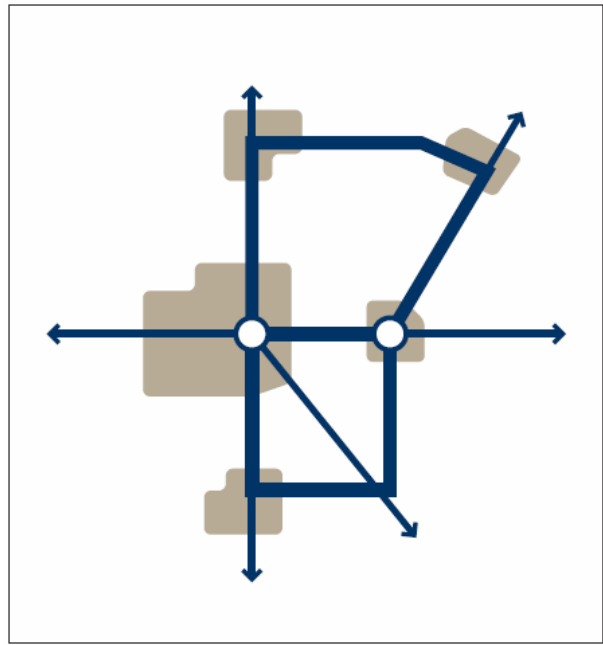
- When considering establishing or extending bus routes in new or expanded developments, use density thresholds for new developments to determine when new service should be introduced. For example, transit agencies may consider providing new bus routes, or expanding bus routes, based on information such as the scale of a new housing development or when most of the new development is a particular distance from existing transit (e.g. more than 800 metres).
- Increase service frequency in areas that achieve higher residential or employment densities resulting in higher transit demand. The Guidelines provide examples of methodologies to determine when to increase frequencies when certain thresholds such as average number of customers on board or percentage of seated capacity are exceeded.
- Where growth is uneven, it is recommended that segments of service should be tailored to the local context. For example, buses may move from mixed traffic in areas of low congestion to priority lanes in areas of high congestion.

Often, communities undergo changes in their land use pattern and urban structure over a long period of time. Where services and uses are concentrated only at the centre of a community, a radial transit network design that offers efficient service to transit users to and from downtown is sufficient (see Figure 3). As these communities grow or change, and activities and services disperse outward, the Guidelines suggest adding a network of cross-town routes to facilitate non-downtown transit trips. Where the transformation of a community extends to a multi-nodal land use pattern, municipalities can consider transitioning to a grid transit network with service oriented on arterial and collector road networks. The viability of a transit system needs to anticipate, plan for and respond to localized changes in a community.

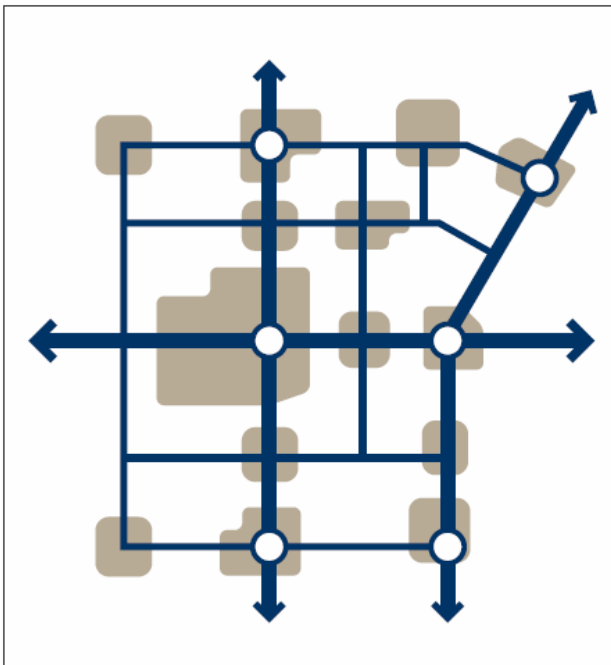
Figure 3: Community Transit Network Design



Radial Transit Networks are most efficient where there is a concentration of activity in one node such as a downtown.



Cross Town Routes can be added as communities grow to enable efficient cross-town service and better serve emerging nodes.



Grid Transit Networks are effective in larger municipalities where there is a multi-nodal land use pattern

Create Complete Streets That Support and Balance The Needs Of All Users

Consider the needs of all users when designing streets. Where appropriate, incorporate a range of design elements and features to support walking, cycling and transit. Trade-offs between various features should reflect the long-term objectives for the street and surrounding areas.

A transit-supportive environment enhances mobility not just for transit riders but for the full range of users within the catchment area of the transit system. For many transit riders walking and cycling are daily components of their transit trip. A transit system that considers their needs and enhances the walking and cycling experience to and from transit increases the appeal of using transit and broadens its potential ridership.

Just as the integration of transit planning to land use planning is a necessary step toward developing multi-modal transportation networks and sustainable communities, so the planning and building of supports for pedestrians and cyclists needs to be integrated into the planning of streets and transit infrastructure.

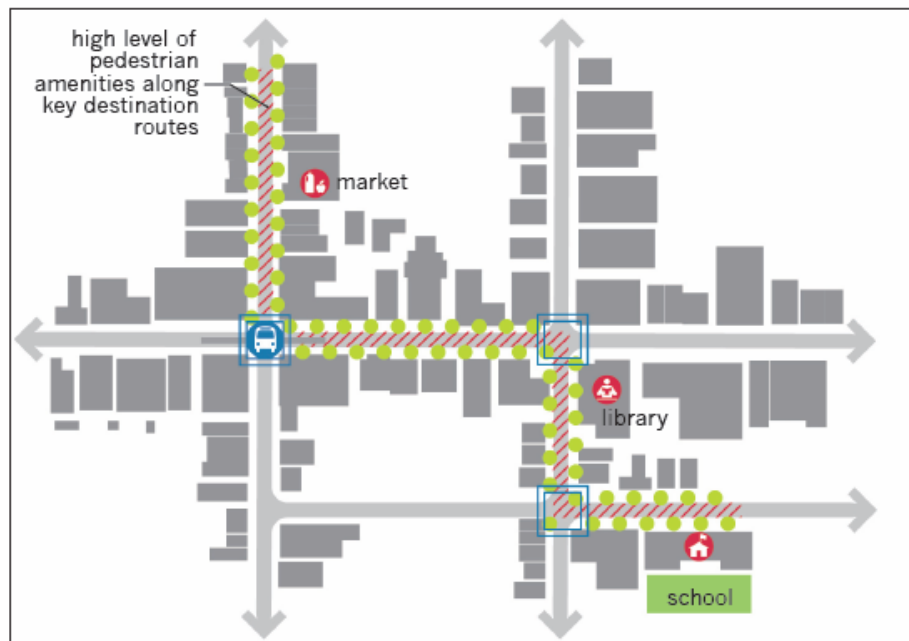
Transitioning communities away from a primarily single-occupant vehicle orientation requires attention to the street level and the elements of the street that create barriers to pedestrians and cyclists of varying ages and abilities. This necessitates a comprehensive process to consult with users, identifying their needs and respective design requirements along a street, adjusting standards where necessary and balancing design trade-offs where needed. Not all streets are alike and not all streets will require the same elements of design to bring about thoroughfares that support the movement of all users.

The Guidelines outline a complete streets planning process that begins with review of existing street standards, such as speed limits and lane widths, to assess their impacts on all users. Working with local stakeholders, level of service criteria for all transportation modes are identified. From this, the benefits and trade-offs of different design approaches in relation to the impacts on various users can be documented to assist in decision-making. Street improvements should be coordinated with scheduled road repairs and reconstructions to expand the network of complete streets.

To ensure the realization of complete streets as a routine part of community building, regions and municipalities should embed complete street planning policies within official plans and establish a planning process that ensures all users are considered in the design, refurbishment or reconstruction of existing and planned streets.

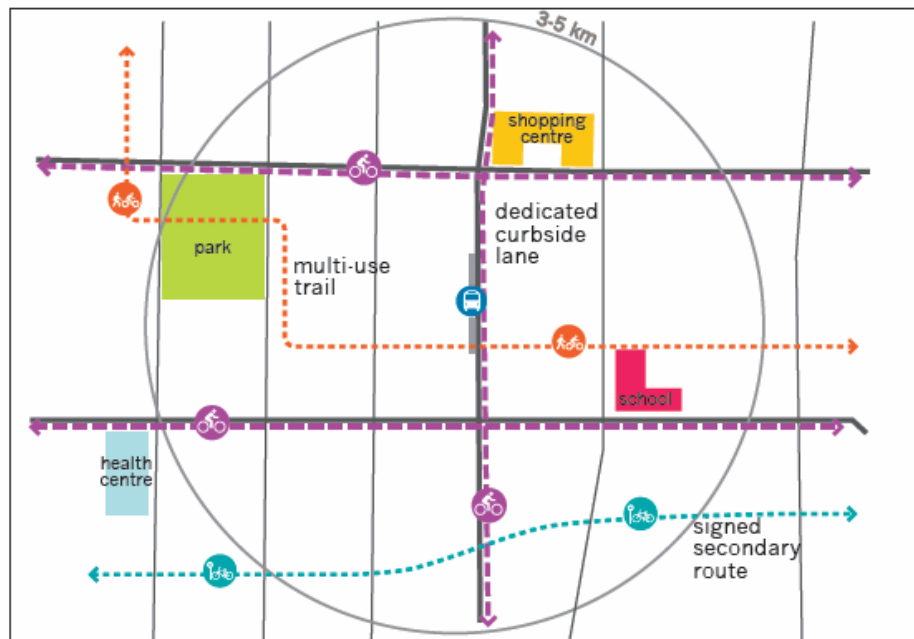
Complete streets can be the effective conduits that bring commuters and other travelers to transit systems. The Guidelines outline some basics to creating transit-supportive complete streets that provide safe access to destinations for pedestrians and cyclists (see Figures 4, 5 and 6).

Figure 4: Supporting Pedestrians



- ❖ Create a pleasant pedestrian experience on routes to and from transit stations by building in pedestrian amenities, such as landscaping, human-scaled street lighting, and special surface treatments.
- ❖ Locate services and retail on routes to transit.
- ❖ Provide sidewalks and other pedestrian amenities within 400-800 m radius of transit stops and stations.

Figure 5: Supporting Cyclists



- ❖ Combining cycling with transit can increase transit's catchment area to as much as 5 km without requiring expensive investments in transit infrastructure
- ❖ Establish cycling amenities along routes that connect to transit, such as bike lanes and parking.
- ❖ Establish signage along bike routes leading to and from station areas within a 3 to 5 km radius of rapid transit stations

In particular, the movement of people in and around transit stations requires an emphasis on design of the pedestrian realm. Transit stations and station areas, to the degree possible, should have adequate capacity to accommodate peak pedestrian volumes safely and comfortably. Likewise, in order to extend the reach of transit, station and station area design should where possible promote the use of cycling as a

component of a wider transportation system by accommodating cycling through convenient and secure bike storage and other facilities.

The Guidelines offer a number of strategies targeted toward supporting pedestrians and cyclists in station areas including:

- Treat sidewalks in and immediately adjacent to a station as pedestrian priority areas.
- Organize sidewalks and pathways within station areas to provide continuous and direct connections to area destinations and pathways outside of the station area.
- Situate station buildings as close as possible to surrounding developments and areas of pedestrian activity to minimize walking distances.
- Keep cycling routes and pedestrians pathways within the station area separate to minimize conflicts.
- Clearly identify cycling access points and routes and locate them to minimize conflicts with transit and private vehicles.
- Locate clear wayfinding signage around the perimeter of station areas and at the terminus of primary cycling routes, directing cyclists to the appropriate station access points and cycling facilities.

Figure 6: Enhancing Access to Transit



The creation of a primary access route can consolidate entrance points and create a clear structure for pedestrian and cycling infrastructure leading to and from the station.

4.0 CONCLUSION

In communities of all sizes, environmental, social and economic concerns provide an impetus for creating more transit-supportive communities. Transit-supportive initiatives support healthy, active communities, address environmental challenges, reduce

congestion, travel times and transportation costs, promote economic competitiveness and make more efficient use of infrastructure.

Re-orienting communities to move from a dependence on the single-occupant vehicle is a complex, multi-faceted task that requires integrated solutions. This is an issue that cannot be addressed from an urban planning, transit operations or health promotion perspective in isolation, though each one of these is important. Building healthy, active transit-supportive communities requires coordination between a broad range of actors, from local planners to transit agencies, and many others in the community.

Success requires not only transit-supportive policies at the provincial level, but also effective implementation and coordination at the local and regional community level. By bringing together both provincial policy and local tools for implementation across several areas - land use planning, urban design and transit operational practices - the Transit-Supportive Guidelines will assist practitioners in communities of all sizes in managing growth, encouraging more livable and walkable communities and developing sustainable, multi-modal transportation networks.

To download a copy of the draft Guidelines, go to:

<http://www.mto.gov.on.ca/english/transit/MTO-Guideline-Book-Jan-4-2011.pdf>.