



CENTRE IN THE PARK

Design & Construction Standards

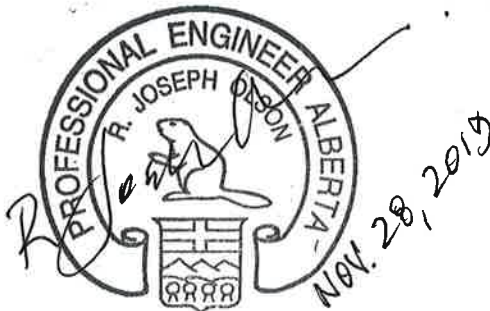


November 2019
Final

Sign-off Sheet

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Corporate Authorization

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1 HOW TO USE THE CENTER IN THE PARK DESIGN & CONSTRUCTION STANDARDS

The Centre in the Park Design & Construction Standards provides specific design requirements for the designated area and are to be used in conjunction with Strathcona County Design and Construction Standards for the design of all streets, intersections and off-street paths in Centre in the Park. It provides direction on how to prioritize transportation modes for different types of streets and identifies the principles which direct that priority. In certain cases, the designer may have to refer to other design guidance which could include:

- Design and Construction Standards, Strathcona County
- Geometric Design Guidelines for Canadian Roads, Transportation Association of Canada (TAC GDG)
- Manual of Traffic Control Devices for Canada (MUTCD-C), TAC
- Bikeway Traffic Control Guidelines for Canada, Transportation Association of Canada
- Canadian Guide to Neighbourhood Traffic Calming, Transportation Association of Canada
- Canadian Roundabout Design Guide, Transportation Association of Canada
- Alberta Transportation Highway Geometric Design Guide, Alberta Transportation
- Accessible Design for the Built Environment, Canadian Standards Association (CSA)

The standards include general cross sections, intersection design guidance, and associated design items. There are a number of Standards and Standard Drawings from the Strathcona County Design and Construction Standards that apply to Centre in the Park. These are referenced where applicable. Refer to the Strathcona County Design and Construction Standards for design requirements not included or specified in this document. For Construction Specifications, refer to the Strathcona County Design and Construction Standards. Where conflicts arise between Centre in the Park Design Standards and another standard, the Centre in the Park Design Standards shall govern.

Streets and intersections shall be reviewed under the process outlined in the Bremner Area Project & Centre in the Park Transportation Impact Assessment Guidelines.

1.1 Design Process

Refer to the Strathcona County Design and Construction Standards for Design Process, Approval Process, Drafting Standards, and associated forms.

In general, streets should align with the Cross Sections identified in this document. As Centre in the Park is a redevelopment area, exceptions will be required to adapt to existing structures, future context and existing infrastructure.

Where a mode cannot be accommodated on a street within the recommended Design Domain values due to constraints, one approach is to review the broader network to determine if movements by all modes can be adequately facilitated from a network perspective. Where this

approach is not feasible or desired, designers will need to justify the use of values outside the recommended Design Domain values through development of a Design Exception.

Design variances may be required to provide a design that is implementable (mitigate community impacts) or where the design variance will result in significantly improved performance or safety. Design variances can be initiated by the designer or requested by Strathcona County. Variances should be discussed with Strathcona County and the approval process for Centre in the Park Design and Construction projects must align with the Strathcona County Design and Construction Standards Approval Process.

2 INTRODUCTION & CONTEXT

The Centre in the Park Street Network will be purposely designed to suit the desired outcomes identified in the Centre in the Park Area Redevelopment Plan. In addition to the general principles outlined in Section 1.2, the following general policies with respect to the street network identified in the ARP were considered when choosing street elements, element width, and desired connections:

- Require that streets are designed to accommodate all users to ensure opportunities for transportation choice.
- Encourage the creation of a safe, comfortable, accessible, vibrant, and attractive year-round public realm and pedestrian environment to encourage more trips by foot.
- Require a reduction to traffic speeds to between 30-50 km/h to ensure improved safety outcomes.
- Require streets to form part of the pedestrian network to ensure connection of residential areas, retail destinations, public amenities, and open spaces.
- Require pedestrian crossings across Sherwood Drive be enhanced to ensure the safety of all users.
- Require improved and increased crossings at intersections and high pedestrian locations to ensure barriers are minimized and pedestrian-vehicle conflict is reduced.
- Require the separation of people walking and cycling from higher speed, higher volume traffic to ensure conflicts are minimized.
- Encourage a gridded network to support improved permeability for people walking and cycling.
- Require that vehicular access points are designed to minimize impacts to the pedestrian environment to ensure a positive pedestrian experience.

2.1 Context Sensitive Design

The Transportation Master Plan identifies the overall street types and facilities intended to support the transportation goals of the Area Redevelopment Plan. For existing streets within the study area, the revised street types retain the existing right-of-way. The space within that right-of-way has been reallocated to change the character of the street, compliment the proposed surrounding land uses, and prioritize the movements of people walking, cycling, and taking transit, to align with the goals and objectives of the ARP. The street types have been developed to consider all streets as a sum of zones, as illustrated below, but with flexibility in the width and details of each zone depending on the street context.

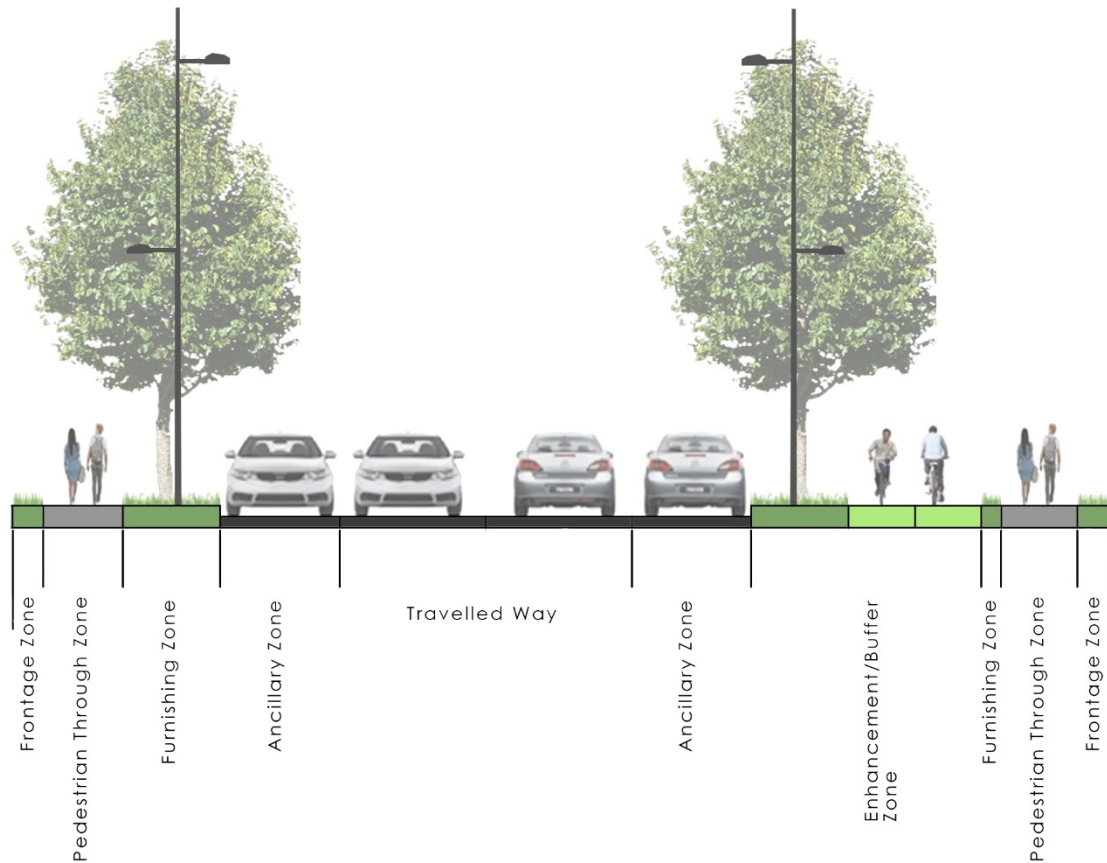


FIGURE 1 STREET ZONES

TABLE 1 STREET ZONE PURPOSE

Zone	Purpose
Travelled Way	The Travelled Way provides an area for traveling along a street or to access land uses along a street for people traveling by motor vehicle, bicycle, and transit, and for the delivery of goods. The space can include exclusive or shared lanes for bicycles, transit, motorized vehicles, and goods. Medians or islands, concrete gutters, refuge areas for people walking or cycling, crosswalks and crossrides, and turning lanes are also located within the Travelled Way. In non-peak hours, some of the Travelled Way may be used as an area for motor vehicle parking or loading zones and, in some cases, can also be closed at time to motor vehicle traffic to host events and festivals. For Shared Streets, the Travelled Way is shared by people walking, cycling, driving, and delivering goods with the priority and right of way given to people walking. The Travelled Way is also the space for underground utilities including water, sanitary sewer, and storm sewer lines.

Zone	Purpose
Ancillary Zone	Located between the Travelled Way and Furnishing Zone or Enhancement/Buffer zone, the Ancillary Zone provides a flexible space with the opportunity for various permanent and temporary street uses depending on the context and characteristics of the street. This area is typically considered “on-street”, but it is not designed for through traffic. The use of this flexible space can vary and can include motor vehicle parking, loading or delivery zones, parklets, bicycle parking, curb extensions, public art, and transit stops. This space also includes the concrete gutter along urban streets for overland drainage, catch basin installation, and can be used for snow storage. In cases where cycle tracks are provided (i.e., part of the Travelled Way), the Ancillary Zone may be located between two parts of the Travelled Way. Ancillary Zones are typically provided in street-oriented contexts including Main Street Arterials and Commercial Streets.
Furnishing Zone	Located adjacent to the Pedestrian Through Zone, the Furnishing Zone provides an area for signs, streetlight poles, street trees or landscaping, transit stops, benches, bicycle parking, public art, underground and surface utilities, low impact development (LID), snow storage, and concrete curb along urban streets. Along Main Street Arterials and Shared Streets, a hardscaped Furnishing Zone shall be used due to their street oriented commercial context and the level of activity within the Ancillary Zone with people accessing and exiting parked vehicles and/or cycle tracks. Hardscaped Furnishing Zones can be in the form of acceptable concrete, paver stones, brick, or another hard surface. Using a different surface material from the Pedestrian Through Zone can assist with Universal Design and detectability under foot or with a long cane.
Enhancement/buffer zone	The enhancement/buffer zone is the space which accommodates the cycle track and adjacent buffer areas. This zone may consist of a variety of different elements. These include curb extensions, parklets, stormwater management features, parking, bike racks, bike share stations, and curbside bike lanes or cycle tracks. It can, in some cases act as an extension of the ancillary zone with a through zone set aside for free movement of cyclists.

Zone	Purpose
Pedestrian Through Zone	Located between the Frontage and Furnishing Zones, the Pedestrian Through Zone provides an area for active transportation mobility for people of all ages and abilities to access the land uses along the street and to interact with one another. This zone is typically used by people walking but, in the case of multi-use trails, can be shared by those cycling. To ensure that the design of the walking environment accommodates the greatest possible number and range of people, the following guidelines should be adhered to: • Allow a clear path of travel, free of obstructions; • Provide a firm, non-slip, and glare-free surface (typically concrete for sidewalks, asphalt for multi-use trails); • Ensure gradients along the path of travel are gradual to allow access by all and that landings are added if grades are greater than 6%; and • Limit motor vehicle driveways across the Pedestrian Through Zone to minimize disruption and improve safety.
Frontage Zone	Immediately adjacent to buildings or private property, the Frontage Zone in street-oriented contexts (e.g., Main Street Arterials) is a space used as a support and/or extension of the land uses along the street. Uses of the Frontage Zone can include ground floor retail displays, café seating, temporary signage, queuing areas, and other activities to support active use of the street by people and businesses. For neighbourhood streets and non-street-oriented contexts, the frontage zone is typically landscaped and a passive space that can include space between the Pedestrian Through Zone and the property line for underground utilities or noise attenuation devices such as a barrier wall.

The proposed overall ARP street network is shown in **Figure 2**. Four general street types have been identified:

- Main Street Arterial
- Arterial
- Neighbourhood Street
- Commercial Street

Each street type is described and illustrated in the following section. An overview of the streets their proposed locations, proposed speed limit, AADT threshold, and level of transit service is also summarized in **Table 2**. In addition to the four proposed street types listed above, the existing cross-sections along Festival Lane, Festival Ave, and the one-way portion of Festival Way are proposed to remain and are identified on **Figure 2** and in Table 2 as Existing Commercial Streets.

TABLE 2 **PROPOSED STREET TYPES**

Street Type	Proposed ROW	Replacing which streets	Proposed Speed Limit	Proposed AADT	Level of Transit Service
Main Street Arterial	40 m	Sherwood Drive (between Gatewood Blvd and Brentwood Boulevard South)	50 km/h	25,000	Direct Routes to Transit Terminal
	36 m	Granada Boulevard	50 km/h		Direct Routes to Transit Terminal
Arterial Street	40 m	Brentwood Boulevard South	50 km/h*	35,000	-
		Sherwood Drive (west of Brentwood Boulevard South)	50 km/h		Direct Routes to Transit Terminal
Neighbourhood Street	24 m	Oak Street	30 km/h	8,000	Internal Circulation
		Georgian Way	40 km/h		
		Brentwood Boulevard North	30 km/h		
		Gatewood Boulevard	40 km/h		
Commercial Street	25 m	Festival Way North	30 km/h	5,000	Internal Circulation & Direct Route to Transit Terminal
		Festival Way South			Internal Circulation
Existing Commercial Street	25 – 30 m	Festival Way (one-way portion)	30 km/h	1,500	Internal Circulation
		Festival Lane		3,000	
		Festival Ave			

* However, the segment of Brentwood Boulevard South within the study area is short and the existing posted speed limit on the remainder of the corridor is 60 km/h.

FIGURE 2

STREET NETWORK



CENTRE IN THE PARK - DESIGN & CONSTRUCTION STANDARDS



STRATHCONA COUNTY

Note: This map is conceptual in nature. The exact location and alignment of land uses, facilities, roadways and services will be determined by the future development subject to Strathcona County's approval.

3 STREET DESIGN

3.1 Main Street Arterials (40 m and 36 m)

Main Street Arterials are the highest volume traffic streets in the Centre in the Park but must also safely and comfortably accommodate people walking and cycling, as well as provide access for transit vehicles. The two existing streets that will be classified as Main Street Arterials are Sherwood Drive north from Brentwood Boulevard to the north end of the study area at Gatewood Boulevard and Granada Boulevard from Sherwood Drive to the eastern edge of the study area.

These streets have wide rights-of-way and, except for a short portion of Granada Boulevard, do not currently accommodate people on bikes on separated facilities. The redesign of these streets focuses on finding space within the right-of-way to accommodate people using all modes and lowering vehicle travel speeds. On-street parking has also been identified within the ancillary zone for Sherwood Drive. This flexible space could also be translated into a curbside transit lane, with some adjustments to the pedestrian through zone width, if higher order transit becomes a priority along the corridor. The speed limit along Main Street Arterials is proposed to be posted at 50 km/h.

Summary of Characteristics:

- Higher traffic volumes than other street types except for Arterials;
- Potential for higher order transit;
- On-street parking;
- High capacity cycling infrastructure (exclusive facilities separated from traffic, pedestrians);
- Wide sidewalks to accommodate pedestrian activity;
- Primarily street-oriented development; and
- Small frontage zone accommodates shy space from buildings and some signage.

Sherwood Drive from Gatewood Blvd to Oak Street (40 m)

The recommended cross-section for the 40 m ROW between Gatewood Blvd and Oak Street is illustrated in **Figure 3a**. Street-oriented development is only proposed along the east side of Sherwood Drive through this segment. On-street parking and the frontage zone has only been included on the east side of the street. The presence of a cycle track on the east side and a multi-use trail on the west side allow for connectivity for individuals travelling both to and through the area on a bicycle. The existing 40 m ROW presents a unique opportunity to enhance the pedestrian and cyclist experience by introducing a double row of trees along the east side of Sherwood Drive in addition to a treed median and a single row of trees on the west side.

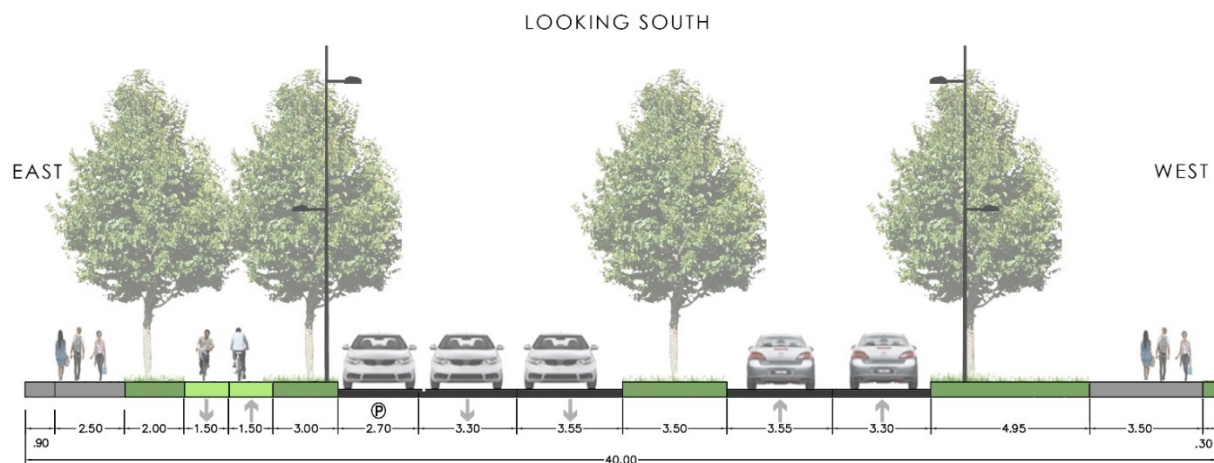


FIGURE 3A SHERWOOD DRIVE FROM GATEWOOD BLVD TO OAK STREET (40 M)

Zone	Facilities/Widths
Travelled Way	• 3.3 m centre lane • 3.55 m curbside lanes • 3.5 m median • No exclusive turning lanes
Ancillary Zone	• East side: Parking – 2.7 m
Furnishing Zone	• East side: Boulevard trees/street furniture – 2.0 m • West side: Streetlights/boulevard trees/street furniture – 4.95 m
Enhancement/buffer zone	• East side: 2-way raised cycle track (3.0 m) • East side: 3.0 m buffer area
Pedestrian Through Zone	• East side: Sidewalk – 2.5 m • West side: Multi-use trail – 3.5 m
Frontage Zone	• East side: 0.9 m • West side: 0.3 m

Sherwood Drive from Oak Street to Brentwood Blvd South (40 m)

The recommended cross-section for the 40 m ROW between Oak Street and Brentwood Blvd South is illustrated in **Figure 3b**. Street-oriented development is proposed along both sides of Sherwood Drive through this segment. On-street parking and frontage zones have been implemented along both sides. The existing 40 m ROW presents a unique opportunity to enhance the pedestrian and cyclist experience by introducing a double row of trees along the east side of Sherwood Drive in addition to a treed median and a single row of trees on the west side.

It is noted that the proposed 2.7 m parking lane along the west side of Sherwood Drive through the road curvature between Festival Ave and Festival Way South may need to be widened to allow parked vehicles extra room to check for oncoming traffic when pulling out of parallel parking stalls. The exact parking width required for sightlines should be determined in the detailed design stage and the additional width could be removed from the furnishing zone or person through zone on the west side and/or existing wide travel lane width in the short term. As additional right of way is currently accommodating the existing service road, land may be available to accommodate needed alterations.

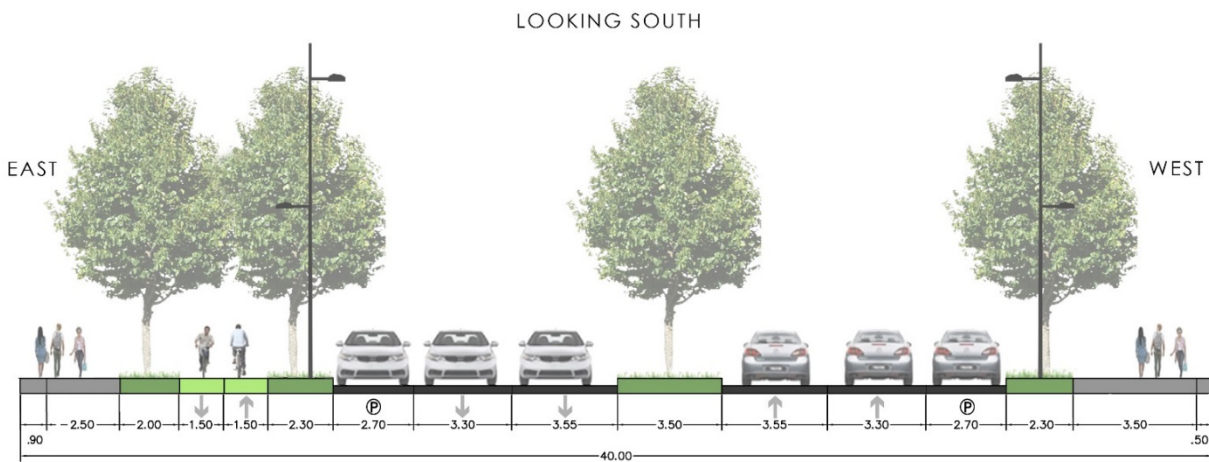


FIGURE 3B SHERWOOD DRIVE FROM OAK STREET TO BRENTWOOD BLVD SOUTH (40 M)

Zone	Facilities/Widths
Travelled Way	3.3 m centre lane 3.55 m curbside lanes 3.5 m median - No exclusive turning lanes
Ancillary Zone	Parking – 2.7 m*
Furnishing Zone	- East side: Boulevard trees/street furniture – 2.0 m - West side: Streetlights/boulevard trees/street furniture – 2.3 m
Enhancement/buffer zone	- East side: 2-way raised cycle track - 3.0 m - East side: 2.3 m buffer area
Pedestrian Through Zone	- East side: Separated Walk – 2.5 m - West side: Separated Walk – 3.5 m

Zone	Facilities/Widths
Frontage Zone	- East side: 0.9 m - West side: 0.5 m

* Parking lane width should be increased along west side of Sherwood Drive through road curvature south between Festival Ave and Festival Way South.

Granada Blvd from Sherwood Drive to the east boundary of the Main Street Policy Area (36 m)

The recommended cross-section for the 36 m ROW between Sherwood Drive and the east boundary of the Main Street Policy Area is illustrated in **Figure 4a**. This 36 m Main Street will introduce on-street parking on both sides of Granada Blvd in the vicinity of the Main Street policy area where direct street frontage is anticipated. As such the Cross-section includes a frontage zone on each side.

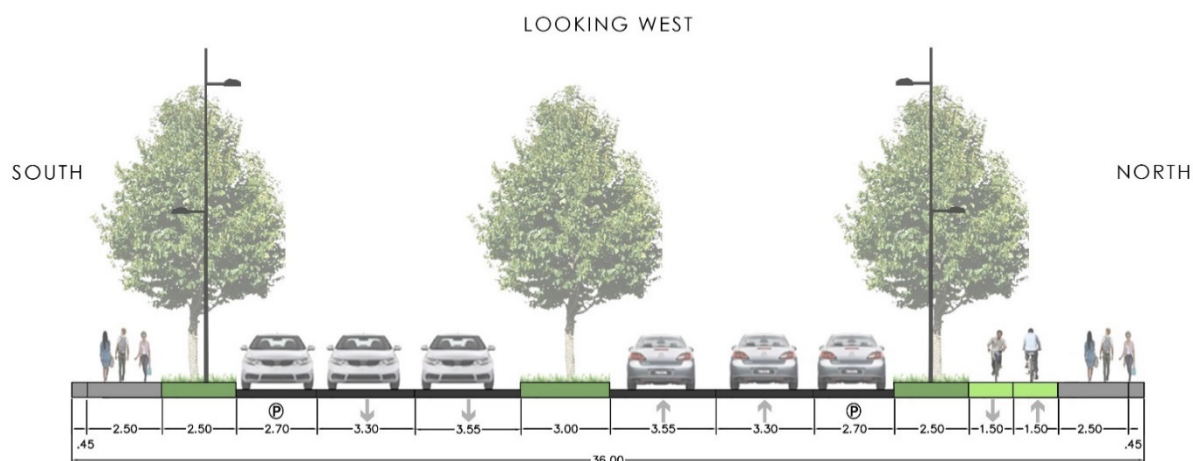


FIGURE 4A GRANADA BLVD FROM SHERWOOD DRIVE TO THE EAST BOUNDARY OF THE MAIN STREET POLICY AREA (36 m)

Zone	Facilities/Widths
Travelled Way	3.3 m centre lane 3.55 m curbside lanes - Median – 3.0 m - No exclusive turning lanes
Ancillary Zone	Both sides: Parking – 2.7 m
Furnishing Zone	South side: Streetlights/boulevard trees/street furniture – 2.5 m
Enhancement/buffer zone	- North side: 2-way raised cycle track (3.0 m) - North side: 2.5 m buffer area
Pedestrian Through Zone	Both sides: Separated Walk – 2.5 m
Frontage Zone	- North side: 0.45 m - South side: 0.45 m

Granada Blvd from the east boundary of the Main Street Policy Area to Georgian Way (36 m)

Two Options are proposed for the 36 m ROW between the east boundary of the Main Street Policy Area and Georgian Way as illustrated in **Figure 4b** and **Figure 4c**. The option selection should be based on the ultimate land use configuration fronting the street. Where no active frontages are proposed on the north side Option A should be selected. Grade elevations and existing context will create difficulty in establishing active frontages along the south portion of the area. Where active frontages are proposed along the north section on-street parking and a frontage zone should be integrated as shown in Option B.

Option A

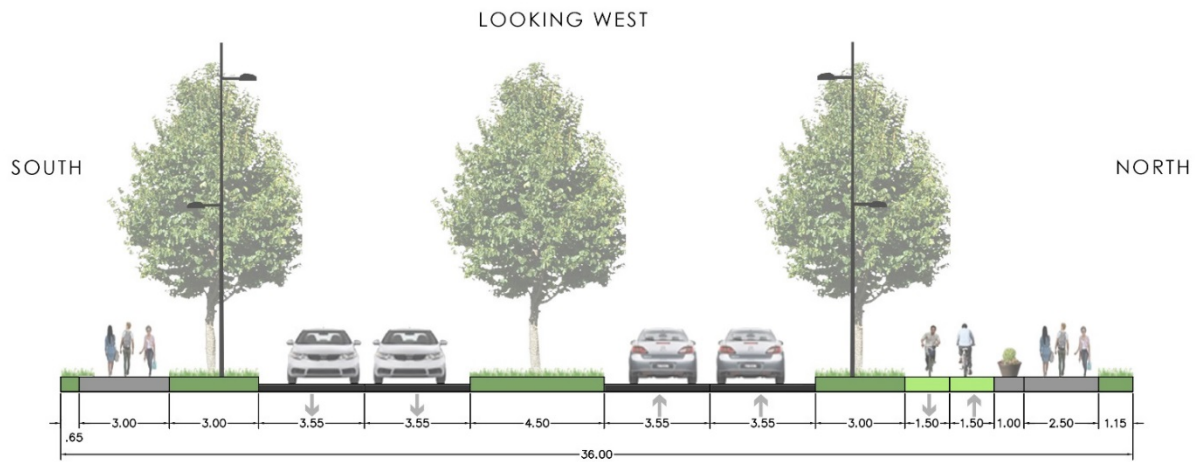


FIGURE 4B OPTION A – GRANADA BLVD FROM THE EAST BOUNDARY OF THE MAIN STREET POLICY AREA AND GEORGIAN WAY

Zone	Facilities/Widths
Travelled Way	3.55 m curbside lanes - Median – 4.5 m - No exclusive turning lanes
Ancillary Zone	N/A
Furnishing Zone	- North side: Street furniture – 1.0 m - South side: Streetlights/boulevard trees/street furniture – 3.0 m
Enhancement/buffer zone	- North side: 2-way raised cycle track (3.0 m) - North side: 3.0 m buffer area
Pedestrian Through Zone	- North side: Separated Walk – 2.5 m - South side: Multi-Use Trail – 3.0 m
Frontage Zone	- North side: 1.15 m - South side: 0.65 m

Option B

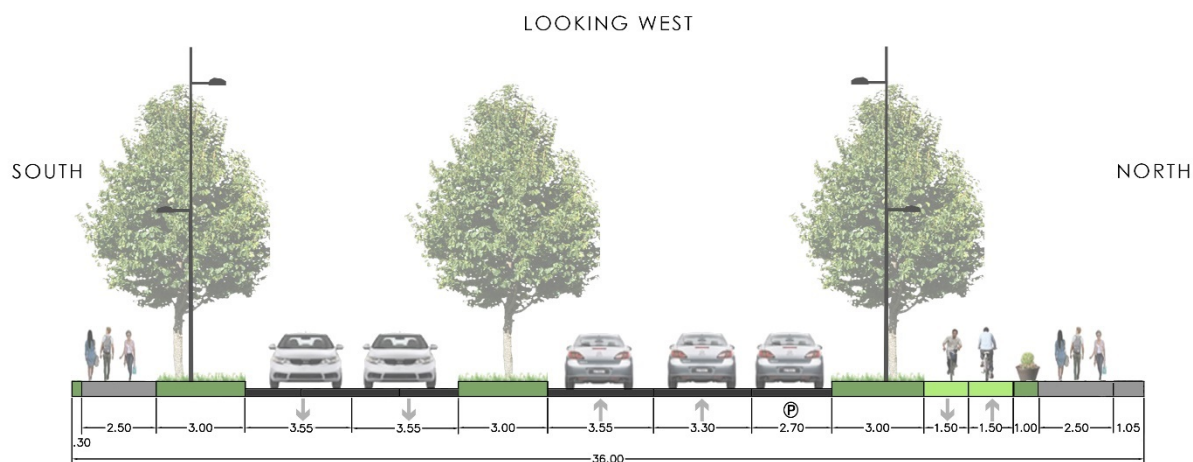


FIGURE 8C: OPTION B - GRANADA BOULEVARD FROM EAST BOUNDARY OF THE MAIN STREET POLICY AREA AND GEORGIAN WAY (36M)

FIGURE 4C OPTION B - GRANADA BLVD FROM THE EAST BOUNDARY OF THE MAIN STREET POLICY AREA AND GEORGIAN WAY

Zone	Facilities/Widths
Travelled Way	• 3.55 m curbside lanes • Median – 3.0 m • No exclusive turning lanes
Ancillary Zone	• North side: Parking – 2.7 m
Furnishing Zone	• North side: street furniture – 0.5 m • South side: Streetlights/boulevard trees/street furniture – 2.2 m
Enhancement/buffer zone	• North side: 2-way raised cycle track (3.0 m) • North side: 2.5 m buffer area
Pedestrian Through Zone	• North side: Separated Walk – 2.5 m • South side: Multi-Use Trail – 2.5 m
Frontage Zone	• North side: 0.5 m • South side: 0.3 m

3.2 Arterial (40 m)

The arterials within this study area have primarily open space frontage. With the implementation of the ACP, sections of these streets will continue to have non street-facing land use development. The recommended street cross-section reflects this land use context. The posted speed limit proposed for Arterials is 50 km/h.

Summary of Characteristics:

- Higher traffic volumes
- Lower pedestrian and cyclist volumes (use of shared facilities separate from traffic)
- Higher travel speed
- Transit service
- Non-street-oriented development

Sherwood Drive West of Brentwood Blvd South and Brentwood Blvd South to the ARP Boundary (40 m)

The remaining segment of Sherwood Drive west of Brentwood Boulevard South as well as Brentwood Boulevard South is illustrated in **Figure 5**. The recommended cross-section accommodates people cycling and people walking in a shared facility in the form of a multi-use trail.

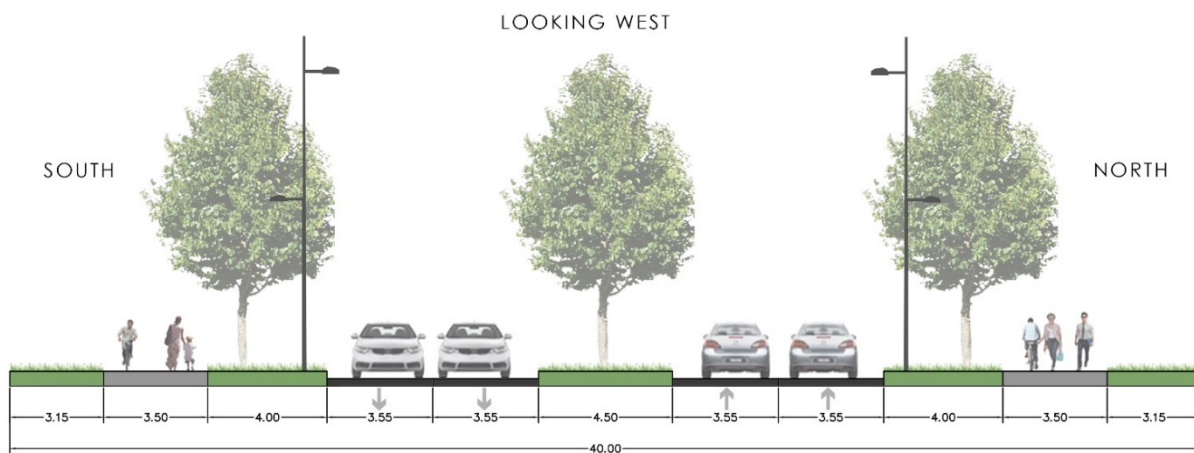


FIGURE 5 SHERWOOD DRIVE WEST OF BRENTWOOD BLVD SOUTH AND BRENTWOOD BLVD SOUTH TO THE ARP BOUNDARY (40 M)

Zone	Facilities/Widths
Travelled Way	• 3.55 m curbside lanes • Median – 4.5 m
Ancillary Zone	• N/A
Furnishing Zone	• Both sides: Streetlights/boulevard trees/street furniture – 4.0 m
Enhancement/buffer zone	• N/A
Pedestrian Through Zone	• Both sides: Multi-Use Trail – 3.5 m
Frontage Zone	• Both sides: 3.15 m

3.3 Neighbourhood Street (24 m)

Neighbourhood streets are lower speed residential streets. These streets provide access into and out of Centre in the Park. These street types can be implemented on the existing streets of Oak Street, Brentwood Boulevard North, Georgian Way, and Gatewood Boulevard. Lane widths have been chosen to accommodate transit. The proposed speed limit along Georgian Way and Gatewood Boulevard is 40 km/h. The speed limit along Brentwood Boulevard North is currently posted at 30 km/h; therefore, it is recommended that it remains 30km/h. The recommended speed limit along Oak Street is 30 km/h to discourage shortcutting.

Summary of Characteristics:

- Primarily local residential traffic;
- May have mixture of street oriented and non-street-oriented development;
- On-street parking;
- Separated cycling and walking infrastructure;
- Low speed traffic;
- Transit service; and
- A small easement may be needed to accommodating servicing outside of pedestrian through zone.

Oak Street, Brentwood Boulevard North and Gatewood Boulevard (24 m)

The cross-section for Oak Street, Brentwood Boulevard North and Gatewood Boulevard is illustrated within **Figure 6a**. Though the cross-section is the same as Georgian Way the cycling facility occur on the south and east portion of these roads.

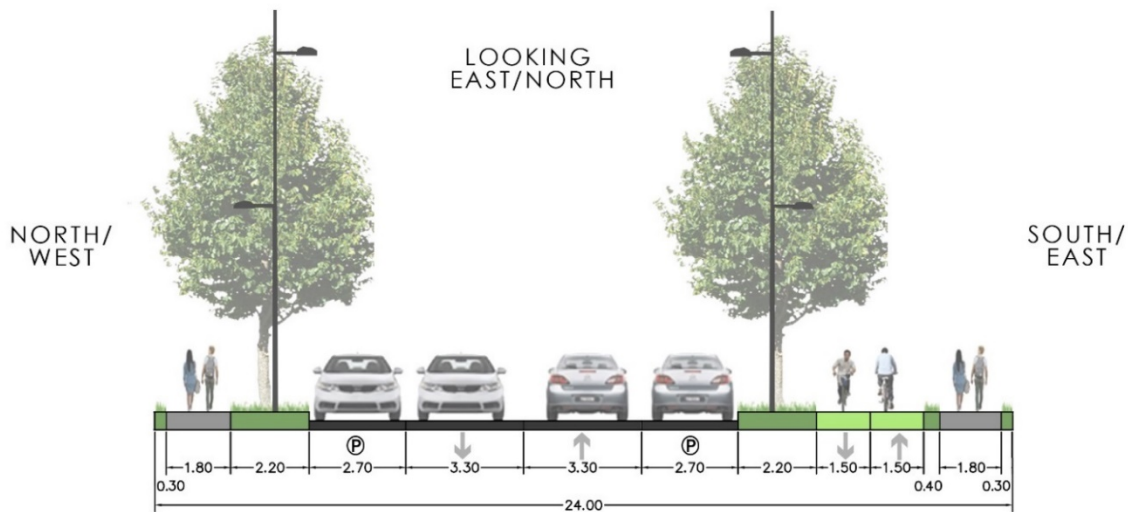
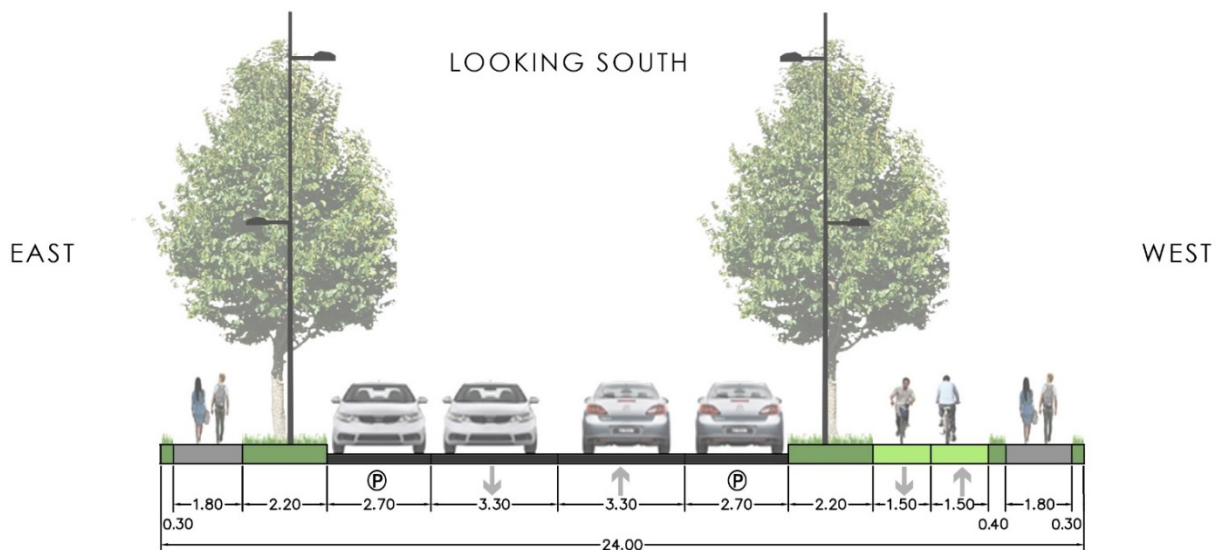


FIGURE 6A OAK STREET, BRENTWOOD BOULEVARD NORTH AND GATEWOOD BOULEVARD (24 M)

Zone	Facilities/Widths
Travelled Way	3.3 m Travel lanes
Ancillary Zone	Both sides: Parking – 2.7 m
Furnishing Zone	- South or East side: Streetlights/boulevard trees/street furniture – 0.4 m - North or West side: Streetlights/boulevard trees/street furniture – 2.2 m
Enhancement/buffer zone	- South or East side: 2-way raised cycle track (3.0 m) - South or East side: 2.2 m buffer area
Pedestrian Through Zone	Both sides: Separated Walk – 1.8 m
Frontage Zone	Both sides: 0.3 m

Georgian Way (24 m)

The cross-section for Georgian Way is illustrated within **Figure 6b**. Though the cross-section is the same as Oak Street, Brentwood Boulevard North and Gatewood Boulevard the cycling facility occur on the south and east portion of this road.

**FIGURE 6B GEORGIAN WAY (24 M)**

Zone	Facilities/Widths
Travelled Way	3.3 m Travel lanes
Ancillary Zone	Both sides: Parking – 2.7 m
Furnishing Zone	- West side: Streetlights/boulevard trees/street furniture – 0.4 m - East side: Streetlights/boulevard trees/street furniture – 2.2 m
Enhancement/buffer zone	- West side: 2-way raised cycle track (3.0 m) - West side: 2.2 m buffer area
Pedestrian Through Zone	Both sides: Separated Walk – 1.8 m
Frontage Zone	Both sides: 0.3m

3.4 Commercial Street (25 m)

The Commercial Street is proposed along Festival Way North and South, the existing two-way travel portions of Festival Way. These segments of Festival Way generally carry lower traffic volumes with higher pedestrian activity, and both provide important connections throughout the site for people driving as well as walking and cycling.

Both streets represent shorter segments of Festival Way and accommodate transportation movements entering and exiting the central portion of Centre in the Park via Sherwood Drive. These segments currently accommodate one travel lane in each direction with additional vehicle capacity in left and right turn bay storage at Sherwood Drive and Brentwood Blvd North. It is noted that while a reduced cross-section is proposed for these streets, ultimate intersection capacity requirements at the Festival Way North/Sherwood Drive and Festival Way South/Sherwood Drive South intersections will require monitoring and analysis through future studies.

This plan maintains the two-way functionality of the existing streets. It is noted that the remainder of Festival Way is proposed to continue to accommodate one-way operations and no changes to the direction of travel are proposed along all segments of Festival Way. The recommended cross-section for a commercial street provides wide pedestrian through zones and on-street parking. It is recommended that the speed limit within the Commercial Streets and along the remainder of Festival Way remains 30 km/h.

Summary of Characteristics:

- Street-oriented development;
- On-street parking;
- Transit service;
- Separated walking and cycling facilities;
- May have transit service; and
- Minimal frontage zone to allow shy space from buildings.

Festival Way North and South (25 m)

The cross-section for Festival way North and south is illustrated on **Figure 7**. It is anticipated that parking along Festival Way North could be introduced along the north side of the street and consideration should be given to the removal of the westbound channelized right turn lane currently constructed at the Festival Way North/Brentwood Boulevard North intersection. The parking along Festival Way South could be introduced along the west side of the street adjacent to the school site.

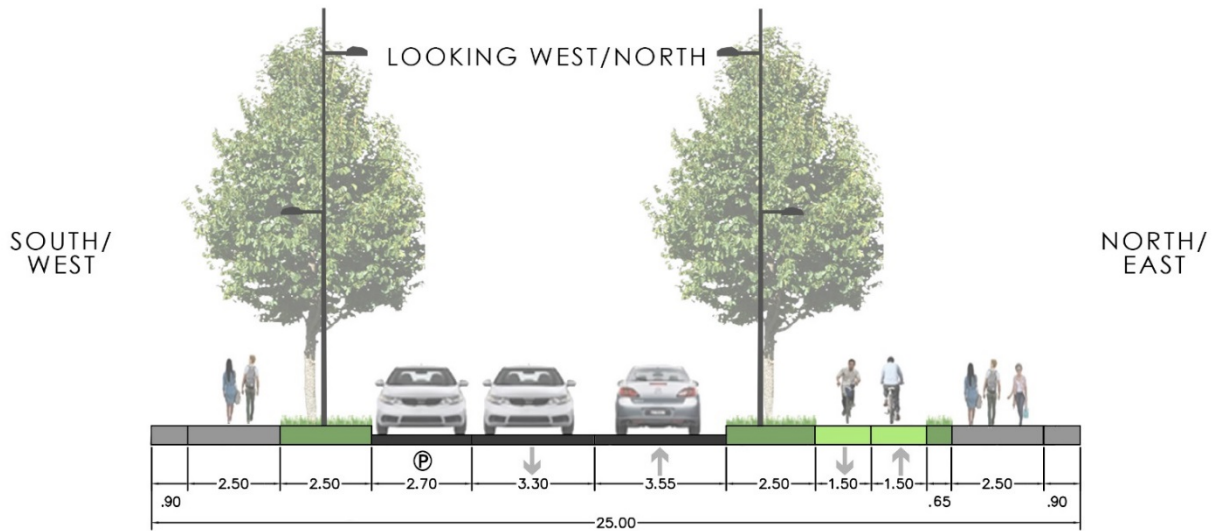


FIGURE 7 FESTIVAL WAY NORTH AND SOUTH (25 M)

Zone	Facilities/Widths
Travelled Way	3.3 m centre lane 3.55 m curbside lanes
Ancillary Zone	South and West side: Parking – 2.7 m
Furnishing Zone	- South and West side: Streetlights/boulevard trees/street furniture – 2.5 m - North and East side: Streetlights/boulevard trees/street furniture – 0.65 m
Enhancement/buffer zone	- North and East side: 2-way raised cycle track (3.0 m) - North and East side: 2.5 m buffer area
Pedestrian Through Zone	Both sides: Separated Walk – 2.5 m
Frontage Zone	Both sides: 0.9 m

3.5 Existing Commercial Streets

Festival Way

Based on discussions with Strathcona County, maintaining one-way operations along Festival Way was identified as the preferred option as one-way operations can be safer for all street users. Maintaining on-street parking supply along Festival Way was also identified as a priority for Strathcona County. Therefore, the existing Festival Way cross-section is recommended to remain as a one-way operational street including one travel lane, angled parking one side, parallel parking on the other side, and wide pedestrian mono-walks on both sides. The existing posted speed limit of 30 km/h hour is also recommended to be maintained. The existing bus lane along the outside of the loop could function as additional parking when the bus lane is not required.

Consideration could be given to designating the travel lane through the one-way portion of Festival Way as shared between cyclists and vehicle drivers. Appropriately placed pavement

markings to direct cyclists to travel on the far side of the travel lane from the existing angled parking and signage to indicate the shared cyclist/vehicle function of the street is recommended.

Pedestrian and cyclists crossing treatments along Festival Way should be considered, particularly at major pedestrian/cyclist crossing points, for example at the Prairie Walk crossing.

Festival Avenue & Festival Lane

The existing Festival Avenue and Festival Lane cross-sections accommodate two-way operations, and each include two travel lanes, angled parking one side, parallel parking the other side, and wide pedestrian zones on both sides of the street. It is recommended that the existing cross-section along Festival Avenue and the existing posted speed limit of 30 km/h be maintained.

However, due to the low vehicle traffic volume and speeds of the street, it is recommended Festival Avenue and Festival Lane be designated as streets where travel lanes are shared amongst cyclists and vehicle drivers. Signage should be considered along Festival Avenue and Festival Lane to communicate this designation and will act as a wayfinding tool for cyclists and warn vehicle drivers to be aware of cyclists on Festival Avenue.

4 INTERSECTION DESIGN & TRAFFIC CALMING

4.1 Tools and Potential Treatment Options

Table 3 and **Table 4** summarize some industry best practice tools that could be applied at intersections and corridors within the Centre in the Park area in order to increase pedestrian and cyclist safety when crossing roadways, enhance the pedestrian and cyclist experience throughout the study area, and reduce vehicle speeds. Table 3 focuses on pedestrian/cyclist safety tools and Table 4 focuses on tools associated with reducing vehicle speeds. The tools identified were considered during the development of the proposed cross-sections and may apply to multiple street types within the proposed street network.

TABLE 3 POTENTIAL TREATMENT TOOLS – PEDESTRIAN/CYCLIST SAFETY & EXPERIENCE

Treatment	Intent	Photo Example
Median Refuge Island	Provides a refuge for pedestrians in the middle of the crossing movement, allowing for people crossing on foot and bike to cross one direction of travel at a time.	
Crosswalk Signage (Side-mounted or Overhead-mounted)	Increases driver awareness for pedestrians and cyclists crossing.	

Treatment	Intent	Photo Example
Pedestrian Crossings	Rectangular rapid flash beacon (RRFB) or similar, to provide a warning communication to drivers when pedestrians or cyclists are crossing.	
Half Signals	Provides an indication to drivers to stop when pedestrians and cyclists are crossing.	
Curb Extensions & Removing Channelized Right-turns	Narrows crossing distances for pedestrians and cyclists crossing. Narrowing of the street also results in drivers travelling slower and provides increased visibility of pedestrians and cyclists intending to cross the street. The removal of channelized right-turns reduces crossing distances and reducing the speed of right turning vehicles.	
Tabletop Intersections or Raised Crosswalks	Vertical deflection to reinforce the desired operating speed of drivers travelling along the street. Transit and winter maintenance should be considered in application of this treatment.	

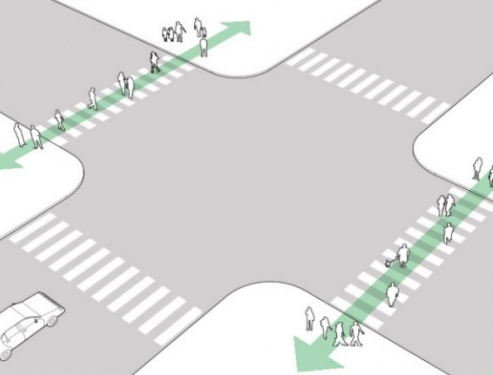
Treatment	Intent	Photo Example
Pedestrian Scramble (after each motor vehicle phase)	For high pedestrian areas where crossing typically occur in multiple directions, reduces delay for pedestrians crossing.	
Cyclist Crossing Markings	Indicates the intended path of cyclists to both cyclists and vehicle drivers.	
Leading or Lagging Pedestrian Interval	Provides a short separation in time between people crossing the street on foot and drivers making left or right turns at signalized intersections to reduce conflicts.	

TABLE 4 **POTENTIAL TREATMENT TOOLS – REDUCING VEHICLE SPEEDS**

Treatment	Intent	Photo Example
Narrower Travel Lanes	Tends to make drivers travel slower though an area; however, can be less effective if there are multiple travel lanes or high volumes of heavy vehicles.	
Provide Median for narrowing effect	Creates a narrower feel to the roadway for drivers, which can encourage lower speeds.	
Introducing On-street Parking	Creates a narrower feel and friction to the roadway for drivers, which can encourage slower travel speeds.	
Edge/Separate Sidewalk treatment to make street feel less “open”	Creates a narrower feel to the roadway for drivers, which results in slower speeds by expanding the edge space along the travelled way. This could also include adding trees to the boulevard space or developing street-oriented active frontages along the roadway.	

Treatment	Intent	Photo Example
Increase Friction On-Street so operating speed matches design speed (intersection treatments)	Collection of intersection controls along the street may have the effect of slowing vehicles since one consistent speed may not be possible.	
Vertical Deflection (e.g. speed hump)	Reinforces the desired operating speed of drivers travelling along the street.	
Curb Extensions & Removing Channelized Right-turns	Narrowing of the street results in drivers travelling slower and provides increased visibility of pedestrians and cyclists intending to cross the street. Curb extensions along the corridor at transit stops can increase transit level of service and enhance boarding and alighting for transit users. The removal of channelized right-turns reduces crossing distances and reducing the speed of right turning vehicles.	

In general, pedestrian and cyclists crossing treatments outlined in Section 4.1 should be considered at intersections within the study area on a case by case basis, particularly on the Main Street Arterial and Arterial corridors, and at a minimum, all intersections should include the following treatments:

- Curb extensions shadowing parking lanes; and
- Removal of channelized right turns.

5 PAVEMENT MARKINGS & SIGNAGE

Pavement markings and traffic controls (signs and signals) provide clarity on intended operation and regulate operations. They reinforce the regulations in the Alberta Traffic Safety Act and associated Use of Highway and Rules of the Road Regulation as well as local traffic and parking bylaws. The Manual of Uniform Traffic Control Devices for Canada (MUTCD-C), published by the Transportation Association of Canada (TAC), provides guidance for the application of pavement markings and traffic controls in Canada and is supplemented by the TAC Bikeway Traffic Control Guidelines for Canada for signs and markings related to bicycle facilities including multi-use trails. The MUTCD-C supports the uniformity of traffic controls across Canada.

Refer to the Strathcona County Design and Construction Standards for requirements on Travelled Way longitudinal and traverse pavement markings for motor vehicle lanes.

5.1 Street Signage

Streets Sign Blades within Centre in the Park should consider the character and design of the area providing decorative aesthetics that match the overall theme of the urban core. Consideration should be given to black and white signage with decorative artwork.



5.2 Way Finding and Destination Signage

Way finding signing matching the existing character and design of the area should be placed along Main Street Arterials and key destination areas outside of the pedestrian through zone within regular intervals. Wayfinding signs should also be situated at major intersections, unique environmental landmarks, at the beginning of a specific route, and where there is a decision point to be made along a route. Wayfinding should be updated as substantive redevelopment occurs.



5.3 Bicycle Boulevard and Local Street Pavement Markings

Shared lane markings (i.e., sharrows) are used to guide people cycling along shared streets without designated cycling infrastructure. Sharrows shall be spaced at 75 m intervals along bicycle boulevards. Sharrows can also be used to indicate the intended path of people cycling through intersections along bicycle boulevards (i.e., local streets that form part of the bicycle network).

5.4 Cycle Track and Multi-Use Trail Lines

Lane lines shall be used to delineate the edge of a travelled lane dedicated for bicycle use. Lane lines shall be solid, white in colour with a width of 100 mm.

Centrelines shall be used on multi-use trails and two way cycle tracks. Centrelines shall be solid, yellow in colour, and a width of 100 mm.

5.5 Cycle Track Pavement Markings at Conflict Zones

At driveways, accesses, intersections, and other conflict points, except at locations with very low motor vehicle volumes (e.g., driveway to a single-family home), the cycle track shall be marked with green dashed pavement markings and bicycle symbols. Additionally, signalized intersections may require bicycle signals and separate signal phasing to protect crossing cyclists.



5.6 Multi-Use Trail Pavement Markings at Intersections

Crossride bicycle markings (i.e., crossrides) shall be used to define a bicycle traffic crossing area where a multi-use trail intersects a street. Crossride markings shall be two parallel square dashed markings that are 0.4 m by 0.4 m in dimension with a 0.4 m gap between squares.



5.7 Crosswalk Markings

Crosswalks shall be marked with series of wide white lines running perpendicular to the crosswalk (i.e., zebra crossing) extending across the Travelled Way from curb to curb.

The minimum width of a crosswalk is 2.5 m, with a recommended width of 4.0 m. Along Main Street Arterials, crosswalks shall be at least 5.0 m in width. The width of the crosswalk shall be determined based on the widths of the sidewalks and curb ramps, and the number of people walking across the street.



Decorative/creative crosswalk pavement marking treatments can provide value in highlighting street crossings as an important extension of the public realm and for placemaking. Decorative

crosswalks may be applied at standard crosswalk locations and are recommended in areas with high concentrations of people walking such as school zones and on Main Street arterials.

A decorative crosswalk design shall include the standard parallel white crosswalk pavement markings at the edges of the decorative markings to meet minimum crosswalk design standards and provide clearly defined directional guidance.



6 PEDESTRIAN INFRASTRUCTURE

6.1 Street Trees and Landscaping

Street trees and landscaping are critical elements of urban streets and should be prioritized accordingly due to their contributions to an urban space; providing climate control (microclimates) from heat, wind, and rain; reducing traffic speeds; improving pedestrian safety; and adding value to adjacent properties.

Adequate tree spacing, and soil volume is required for healthy tree growth and is dependent on tree species. The soil volume can be located under a combination of the Furnishing Zone, Pedestrian Through Zone, and Ancillary Zone or Travelled Way through the use of soil cells. Soil cells may double as a pavement support system and allow for tree growth without compromising or damaging paved surfaces. These soil cells can be used for stormwater management by directing flows to the top of the soil cell to be filtered, absorbed, and infiltrated. Each company that develops soil cells will have a proprietary maintenance guide. For additional details on soil cell maintenance please refer to the Bremner Area Concept Design and Construction Standards.

The location of trees may obscure sightlines and visibility at intersections and mid-block crosswalks. Trees shall be adequately set back from curbs, signs, and utilities. The following table summarizes tree set back requirements.

TABLE 5 TREE SET BACK REQUIREMENTS

Tree Set Back/Offset Requirements by Street Element	Minimum Set Back/Offset Distance (m)
Face of Curb along: Neighbourhood Street and Commercial Street	1.25
Face of Curb along: Arterial Streets and Main Street Arterials	2.00
Street lights	3.5
Street Corners, Intersections, Traffic Signals	15.00
Driveways	2.00
Sidewalks, Walkways, Multi-Use Trails, Cycle Tracks	1.00
Notes:	
1. Distances are measured from centre of tree trunk to edge of linear street elements (e.g., sidewalks, curbs) or centre line for utilities and other appurtenances (e.g., signs, hydrants).	
2. For elements not listed above, refer to the Strathcona County Design & Construction Standards.	
3. Bus pads should be clear of streets and trees should be setback 1.0 m from bus pads.	
4. If horizontal clearance from sidewalk to trees is less than 1.0m, tree type suitability must be reviewed to minimize disturbance to the adjacent infrastructure at tree's full growth.	

6.2 Street Furniture

Street furniture includes functional and decorative elements that support the function and use of the street. Street furniture can include poles for traffic signals and lighting, benches, bicycle parking, flower pots, waste receptacles, bollards, banners, tables and chairs, advertising boards, signal boxes and traffic controllers, fire hydrants, pay parking stations, newspaper

boxes, electric vehicle charging stations, wayfinding, sign poles, and public art. Street furniture is to be placed in the Furnishing Zone (and can extend to the Ancillary Zone in some cases). The placement of street furniture shall also consider maintenance and operations including snow clearing, snow storage, street sweeping, and replacement of damaged pieces.

Street furniture shall not be placed to negatively impact the sightlines and visibility at intersections and driveways.

Street Furniture within Centre in the Park should consider the character and design of the area providing decorative aesthetics that match the overall theme of the urban core.

6.3 Lighting

Street lighting is used to illuminate the public right of way for its various users and contributes to safety and personal security and shall be provided along all in Centre in the Park streets and at all intersections to illuminate the crossings and ensure adequate visibility of people walking. Refer to the Strathcona County Design and Construction



Standards and the TAC Guide for the Design of Roadway Lighting for street lighting requirements.

Human-scaled lighting, commonly referred to as “pedestrian oriented lighting,” with increased spacing and luminaires at lower elevations shall be used along Main Street Arterials streets with active frontages. Human-scaled lighting shall be placed with spacing of 30 m between poles and luminaires at approximately 5 m above the sidewalk surface to provide sufficient illumination of the Pedestrian Through Zone. This infrastructure is not currently reflected in the standard cross-section drawings until details of location, power supply, and specifications have been determined. Consideration also needs to be given the effects of artificial lighting on wildlife and vegetation, not just humans. For this reason, no artificial lighting is to be located in natural areas.

Light fixtures for the Travelled Way spaced every 60 m complements the 30 m pedestrian lighting spacing. Street lighting can be added to traffic signal poles to increase the illumination and safety of intersections.



Lighting for streets and pedestrian within Centre in the Park should consider the character and design of the area providing decorative aesthetics that match the overall theme of the urban core. At a minimum, light standards shall be powder coated black in colour.

7 TRANSIT

7.1 Bus Stops

Bus stops are the street interface between transit services and the people they serve. Bus stops shall facilitate people accessing, loading, and unloading from buses and shall also provide a comfortable environment for people to wait for the bus to arrive. Supportive elements for a bus stop include a shelter, bench, waste receptacle, bicycle parking, traveler information for transit services, and wayfinding.

Bus stops shall be located in the Furnishing Zone and may extend into the Ancillary Zone. The street furniture associated with bus stops shall not encroach in the Pedestrian Through Zone or restrict this space below the horizontal operating envelope for people walking and cycling.

Bus stops are typically located after an intersection to allow the bus to depart immediately after stopping. The placement of bus stops shall consider visibility, safety, transit operations, bus signal priority, intersection operations, parking restrictions, passenger demand, passenger access, and right of way constraints.

The minimum size of a bus pad is 3 m in width by 9 m in length. This size accommodates the loading and unloading for one bus and the installation of a shelter, bench, and other bus stop amenities.

Bus stops along Main Street Arterials shall extend into the Ancillary Zone to prioritize transit services and limit delay for bus operations (related to merging back into traffic). Interaction with cycle tracks and access to the bus stop across the bike lane needs to be considered.

Bus Shelters within Centre in the Park should consider the character and design of the area providing decorative aesthetics that match the overall theme of the urban core.

