
TO: Council

FROM: Kirsten Duncan, Acting Development Officer and Planning Technician

DATE: July 2023

SUBJECT: Clarification report for the Application for Land Use Bylaw Zoning Map Amendment (Rezoning) of PID 55247761



BACKGROUND

An application was received from Brighter Community Planning & Consulting on behalf of the property owner, Mitch Brison of Brison Developments Limited to rezone a vacant parcel of land identified as PID 55247761. The submitted application is to consider amending the Zoning Map of the Kentville Land Use Bylaw to rezone a vacant parcel of land identified as PID 55247761 (“the subject property”) to Single Unit Dwelling (R1), One and Two Unit Dwelling (R2), and High Density Residential (R4). The subject property is currently zoned Large Lot Residential (R5). Staff reports were compiled for March, April and May CAC providing information regarding this file. Town Council held first reading of the rezoning application during the May Council meeting on May 30th, 2023 and a Public Hearing was held on June 21st, 2023.

DISCUSSION

At the Public Hearing, held on June 21st, 2023 Council heard a number of comments from the public regarding the rezoning proposal and the concerns they had identified. On June 26th, 2023 Council met for the regularly scheduled Council meeting and one of the topics on the agenda was consideration of second reading. Several Councilors requested to table the decision and request further clarification from staff on a few items, such as: Recreation Infrastructure/Greenspaces, Stormwater Infrastructure Plan, Traffic Calming Measures, and Active Transportation/Sidewalks.

Please find clarification on the above noted matters in the remainder of this report:

Recreation Infrastructure/Greenspaces

Kentville has considerable recreational amenities existing within town limits. In addition to the existing facilities, 5% parkland dedication will be required for all lots created and multi-unit buildings with four or more units in the R4 zone require on-site amenity space for their tenants.

The 5% Parkland Dedication, as required for any subdivision of 3 or more lots by the Subdivision Bylaw, can be satisfied by either land or cash equivalent and is calculated by determining “5% of the area of land shown of the final plan of subdivision, exclusive of streets, walkways, and any

remainder lot.”¹ At this moment in time and for this subject property, it is preferred that the Town obtain land. This area of land will be negotiated at the tentative subdivision stage when the developer brings forth their plans for initial consultation. Our practice is that once the location of the greenspace is identified, agreed upon and turned over to the Town for ownership, staff will work with the surrounding community in consultation to determine what the demand is for the neighbourhood, whether it is additional trails, playgrounds, or sports fields.

Stormwater Infrastructure Plan

The April CAC report that was provided to Council outlined information regarding stormwater management requirements for both the Town and the Province. Regarding town requirements for Subdivision Lot Grading as outlined in Appendix B - Part 13 of the Subdivision Bylaw:

“it is the responsibility of the developer to predict the direction of water flow and associated volumes, and to ensure that minimum grading standards are employed in lot drainage design. Responsibility to construct the required grades on each lot rests with the lot builder. Furthermore, lot builders need to ensure that water is directed toward the street or the rear lot line at a minimum slope of 1.5% and that no building line grade shall be lower than the street grades designed. Proposed subdivision lot grading plans shall conform of Standard Drawing SD-16, and shall indicate: Building line grade at the mid-point of the lot, final corner lot grades, side yard drainage swales and direction of flow, minimum underside of footing elevation, location and slope of driveway, and locations of all storm and sanitary laterals, indicating invert elevation at the street line.”²

In addition to the above referenced section of the Subdivision Bylaw, staff would also like to highlight further sections of the Bylaw as it relates to Storm Sewer Specifications and Erosion Control Measures. In regards to Storm Sewer Specifications, it is important to note that:

“4.3 Subdivision storm systems shall accommodate the following runoff criteria:

a) Basis of design is as follows:

i) Designs shall be based on the state of development expected to exist 20 years from the time of design or complete development of both the area under design and upstream areas.

ii) The developer is responsible for downstream effects of [their] storm drainage system and therefore shall provide for a zero increase in peak runoff or alternatively provide increased downstream capacity in a manner acceptable to the Town of Kentville.”³

¹ Page 24-25 of the 2002 Town of Kentville Subdivision Bylaw, Part 9 – Parkland Transfers, attached as Schedule A

² Page 77 of the 2002 Town of Kentville Subdivision Bylaw, attached as Schedule B

³ Page 57 of the 2002 Town of Kentville Subdivision Bylaw, attached as Schedule C

Regarding Erosion Control Measures for the Development of Land Draining Directly into a Body of Water, Part 12 of the Subdivision Bylaw covers the requirements as they pertain to the developer of this subject. The full section can be found attached at the end of this report, in Schedule “D”. Specifically, staff would like to note:

“12.1 Erosion and sediment control measures for all development that takes place on lands that drain directly into lakes, streams, rivers or any existing watercourse must be approved by the Town Engineer.”

And further that:

“Development of land draining directly into a body of water may be subject to more extensive erosion and sediment control measures as a result of the Town zoning bylaw, or other bylaws, or as a result of provincial legislation or regulations, specifically under the control of the Department of Environment.

For examples of more extensive erosion control measures, refer to the **Province of Nova Scotia Erosion and Sediment Control Manual and Guidelines for Use of Construction Sites.**⁴

Regarding Provincial requirements, NS Environment (NSE) also requires all new developments to limit the impact on the downstream infrastructure with a net zero increase in the amount of stormwater run-off. This can be accomplished using several methods such as above/below ground parking lot stormwater storage, site specific storage ponds, flow control roof drains, etc.

Furthermore, the CAC report that was provided in May included a Memo from Public Works and Engineering Director Dave Bell stating that the Town “has received sufficient information from Brison Development’s engineering consultant with respect to the balancing of pre-development and post-development storm water flows for the rezoning stage.” And further that “Detailed engineering plans for all aspects of water, sewer, storm, and street & sidewalk design will be required at the tentative subdivision application stage”.

Active Transportation/Sidewalks

On June 20th, 2023, Council adopted amendments to the Subdivision Bylaw regarding sidewalks and multi-use pathways. Prior to this amendment, there was no requirement for developers to construct a sidewalk or multi-use pathway along any road, other than roads that are classified as an arterial road (which would only include the Donald E Hiltz Connector Road).

Now that the amendment has passed, the developer for this subject property will be required to construct at minimum 1 sidewalk or multi-use pathway along the Acadia Drive extension.

Council should consider the financial implications of continuing the construction of a sidewalk or multi-use pathway infrastructure along Acadia Drive from this proposed phase to Park Street to

⁴ Pages 75-76 of the 2002 Town of Kentville Subdivision Bylaw, attached as Schedule D

ensure pedestrians have access to safe active transportation routes and to help with connectivity throughout the community along the minor collector road.

Traffic Calming Measures

Currently, the Subdivision Bylaw and Land Use Bylaw do not address the requirements for traffic calming measures, however the Active Transportation Plan does address the importance and communities desire for more traffic calming measures within our Town.

When discussing the Community Vision in part 3 of the Active Transportation Plan, Upland noted discussions that resulted from various community consultations where participants voiced their desires for more traffic calming measures.⁵

Due to the ample width of the existing and future extension of Acadia Drive (approximately 40 ft from curb to curb) the asphalt could be painted to accommodate bicycle lanes as outlined in Figure 1, taken from the Active Transportation Plan. “The cost to develop bike lanes depends on the context. If unused, paved space exists alongside the road already exists, then all that is required is paint and other minor improvements. However, if the shoulders need to be paved, the costs can go up considerably.”⁶

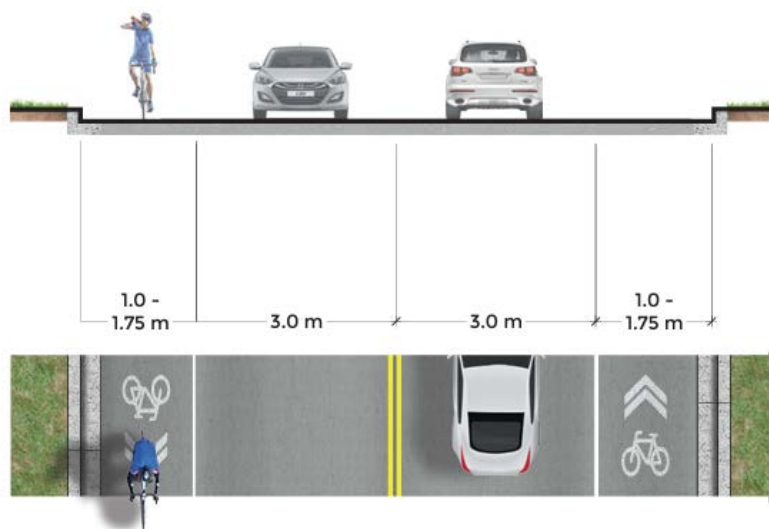


Figure 1 Page 54 of the 2019 Kentville Moves Active Transportation Plan

With the addition of sidewalks as per the amendments identified in the above noted section, safety will occur by having adequate infrastructure and moving pedestrians off the roadway and onto sidewalks or multi-use pathways.

In addition to adding lines on the roads, Council could consider the addition of curb extensions (also known as bump-outs) which are used to extend the sidewalk into the roadway, decreasing the width and reducing crossing distances and in turn adds to the pedestrian space on the sidewalk. Curb extensions can also serve as a visual cue to drivers to become more aware of their surroundings as they enter the area.⁷

⁵ Pages 31-35 of the 2019 Kentville Moves Active Transportation Plan, attached as Schedule E

⁶ Page 54 of the 2019 Kentville Moves Active Transportation Plan, attached as Schedule F

⁷ Page 70 of the 2019 Kentville Moves Active Transportation Plan, attached as Schedule G

ATTACHMENTS

- Schedule A Part 9 – Parkland Transfers, of the 2002 Town of Kentville Subdivision Bylaw
- Schedule B Appendix B, Part 13 - Subdivision Lot Grading, of the 2002 Town of Kentville Subdivision Bylaw
- Schedule C Appendix B, Part 4 – Storm Sewer Specifications, of the 2002 Town of Kentville Subdivision Bylaw
- Schedule D Appendix B, Part 12 – Erosion Control Measures for the Development of Land Draining Directly into a Body of Water, of the 2002 Town of Kentville Subdivision Bylaw
- Schedule E Part 3 – Community Vision, of the 2019 Kentville Moves Active Transportation Plan
- Schedule F Part 5 – Active Transportation Network, Bicycle Lane Specifications, of the 2019 Kentville Moves Active Transportation Plan
- Schedule G Part 5 – Active Transportation Network, Curb Extensions, of the 2019 Kentville Moves Active Transportation Plan

Respectfully submitted

Kirsten Duncan

SCHEDULE A

lots served or to be served by an on-site sewage disposal system.

- 8.16 Notwithstanding the minimum lot area and lot frontage requirements contained in the Land Use By-Law, where a development component of a permanent nature, such as a structure, driveway, well, or septic tank, is encroaching in or upon an immediately adjacent area of land, the Development Officer may approve a plan of subdivision where necessary and practical to remove the encroachment.
- 8.17 Where the lots created pursuant to section 8.16 are not surveyed, the provisions of section 8.13 shall apply
- 8.18. Cul-de-sacs or other dead end streets shall have a turn-a-round with a minimum radius of 13.72 metres (45 feet) from the centre of the cul-de-sac or dead end street.
- 8.19 (a) Where a street in an adjoining subdivision abuts the boundaries of a proposed subdivision, the street in the proposed subdivision shall, if reasonably feasible, be laid out in prolongation of the existing street, unless it would be in violation of this bylaw.
- (b) The grade of a proposed public street measured for at least 30.48 metres (100 feet) shall be a maximum of 8% and a minimum of 0.5%, unless the Engineer determines the topography dictates otherwise in accordance with generally acceptable engineering practice.
- 8.20 (a) An application to amend or repeal an endorsed plan of subdivision shall be in accordance with Section 271 (9) of the Municipal Government Act, hereto attached as Appendix "A" and shall satisfy the requirements of this Bylaw concerning approvals of final plans of subdivision.
- (b) The application to amend shall refer to the plan of subdivision as originally endorsed and such reference shall include the file number of the earlier subdivision plan filed at the Registry of Deeds.

PART 9 PARKLAND TRANSFERS

- 9.1 (a) At the time of endorsement of approval on the final plan of subdivision by the Development Officer, the subdivider shall reserve and convey to the Town free of encumbrances, for park, playground, or similar public purposes, an area of usable land to the Town equal to 5% of the area of land shown of the final plan of subdivision, exclusive of streets, walkways, and any remainder lot.

- (b) The subdivider may reserve and convey to the Town, under section 9.1(a) above, more than the required five percent.
 - (c) As an alternative to the requirements of Section 9.1(a) and pursuant to the Municipal Government Act, the Clerk may accept for park, playground, or similar public purpose, a sum of money equal to 5% of the assessed value of the new lots created, exclusive of streets, walkways and any remainder lot.
- 9.2 As a further alternative to Section 9.1(a), before endorsement of the final plan of subdivision a subdivider may offer to Council, and at Council's option the Clerk may accept an amount of usable land of equivalent value to that required under Section 9.1(a) outside the area of land to be subdivided and within the boundaries of the Town.
- 9.3 At the option of Council, a combination of 9.1(a) and 9.2 may be accepted by the Clerk, providing that it is equivalent in value to that required under Section 9.1(a).
- 9.4 Waiver
Sections 9.1, 9.2, and 9.3 of this bylaw do not apply where:
- (a) the subdivision is the consolidation of two or more lots; or
 - (b) the subdivision creates no more than 2 lots
 - (c) lot boundaries are changed but no new vacant lots are created; or
 - (d) the subdivision is of land zoned commercial or Industrial in the Town's Land Use Bylaw. **(Adopted February, 2003)**

PART 10 REQUIREMENT FOR ENDORSEMENT AND FILING OF FINAL PLANS OF SUBDIVISION

- 10.1
- (a) The Development Officer shall forward a copy of the endorsed final plan of subdivision to the subdivider.
 - (b) Pursuant to and in addition to Section 285 of the Municipal Government Act, the Development Officer shall give notice of the endorsement of approval on the final plan of subdivision to:
 - (i) the Council of the Town in which the land is located;
 - (ii) the Director, Planning and Development;

SCHEDULE B

PART 13: SUBDIVISION LOT GRADING

The intent of this section is require the developer to predict direction of water flow and associated volumes, and to ensure that minimum grading standards are employed in lot drainage design. Responsibility to construct the required grades on each lot rests with the lot builder.

- 13.1 All side yards shall conduct water to the street or the rear lot line at a minimum slope of 1.5%.
- 13.2 No building line grade shall be lower than the street grades designed.
- 13.3 Proposed subdivision lot grading plans shall conform to Standard Drawing SD-16, and shall indicate:
 - a) Building line grade at the mid point of the lot.
 - b) Final corner lot grades.
 - c) Side yard drainage swales and direction of flow.
 - d) Minimum underside of footing elevation.
 - e) Location and slope of driveway.
 - f) Location of all storm and sanitary laterals, indicating invert elevation at the street line.

SCHEDULE C

PART 4: STORM SEWER SPECIFICATIONS

Storm sewer systems shall be designed to the following specifications and criteria.

4.1 The following frequencies shall be used for design of storm drainage systems in subdivisions:

- a) Where an underground drainage system is designed as a minor system, the design of the minor system shall be based on storm frequencies of:
 - (i) 1 in 5 years for all lands, except high value commercial and business areas designated by the Town of Kentville;
 - (ii) 1 in 10 years for high value business and commercial areas designated by the Town of Kentville;

unless greater capacity is required to conform with subsection (b).

- b) Where an underground system is designated according to subsection 4.1.a, the total capacity of the major and minor systems shall be based on a storm frequency of 1 in 100 years.
- c) Watercourses (including designated floodplains), drainage channels, and underground drainage systems that do not conform to subsection 4.1.a shall be designed on the basis of a storm frequency of 1 in 100 years.

4.2 The Town of Kentville will require the designer to indicate the design methodology used to obtain the storm water flows. Examples of techniques generally considered acceptable include:

- a) The Rational Method may be used for the calculation of peak runoff. This method should not be used to determine the size of, or hydrological effects of, storage facilities. It is usually not considered acceptable for watersheds larger than 1 square mile.
- b) Methods described in TR55 may be used to estimate flows for rural areas, and to estimate urbanization impacts and to determine effects of storage facilities.
- c) The ILLUDAS model may be used for the design of minor drainage systems and for preliminary evaluation of storage facilities.

Other methods may be used if appropriate justification is provided.

4.3 Subdivision storm systems shall accommodate the following runoff criteria:

a) Basis of design is as follows:

- i) Designs shall be based on the state of development expected to exist 20 years from the time of design or complete development of both the area under design and upstream areas.
- ii) The developer is responsible for downstream effects of his storm drainage system and therefore shall provide for a zero increase in peak runoff or alternatively provide increased downstream capacity in a manner acceptable to the Town of Kentville.

b) Design flows for ordinary residential, commercial, or industrial land uses shall be based on annual rainfall data. Where the area under design includes a significant portion of undeveloped land, design flow shall be the largest of flows estimated for winter and year-round conditions.

c) Design method criteria (runoff coefficients, times of concentration, etc) shall be clearly indicated in the calculations.

4.4 Piped storm drainage systems shall be designed to carry without surcharge, flows based on the requirements of subsection (4.1.a.i), and shall conform to the following:

a) The Manning formula will ordinarily be used for storm drainage pipe design.

b) Velocities at design flow in storm sewers should not be less than 1 metre per second. Where complete development of upstream areas is expected to be delayed, consideration shall be given to cleansing velocities in the initial period.

c) The storm sewer main shall have a minimum diameter of 300 mm and shall be C-76 concrete pipe, gasketed or R320 Polyethylene Pipe CSA Standard B 182.6-02. **(Amended January 2008)**

d) The storm sewer main shall be installed parallel to the centre line of the street and shall be offset from the sanitary sewer main by a minimum of 300 mm. The minimum depth of the storm sewer main will be 2 metres.

- e) All pipe shall be laid at a uniform vertical grade and horizontal alignment in a compacted gravel bedding placed in an undisturbed or approved trench bottom as per Standard Drawing SD-2. Gravel bedding along the sides of the pipe shall be installed and compacted in such a way as not to alter the alignment or grade of the pipe. Bedding shall extend to 300 mm above top of pipe for full trench width and be compacted to 95% standard proctor. Further backfill to be placed in layers to achieve a 95% standard proctor and shall be carried out in a manner which insures that no rock migration will occur around manhole structures. When manhole or watermain structures are located within 300 mm of each other, this area shall be backfilled and compacted using Class "B" or 28 mm clear stone gravels.
- f) Manholes shall be installed at all changes in grade or alignment, at all intersections and at intervals not exceeding ninety (90) metres.
- g) Internal drop precast manholes shall be sized to ensure a minimum width of 1000 mm from inside edge of internal drop to the opposite inside wall of the manhole.
- h) All manholes shall be standard A.S.T.M. C-478-M and shall have a precast or cast-in-place base. Manhole diameter sizes shall be in conformance with Standard Drawing SD-3, maximum pipe size chart. All manholes shall be constructed using precast sections and "O" ring gaskets and topped with a 915 mm eccentric cone section. Where flat top capping rings are to be used, they shall conform to the 110 series loading requirement. Grade rings shall be a minimum of 150 mm thick with final adjustment being completed using poured in place concrete or an approved non-shrink grout. The standard MH frame and cover for roadways shall be I.M.P. R-10, and for easement areas shall be I.M.P. R-125 (5 sided bolts). All ring joints shall be grouted. Manhole ladders shall conform to Standard Drawing SD-4 or approved equal.
- i) All catchbasins shall be located in the gutter line of the street with the front edge of the capping ring opening a minimum of 350 mm and a maximum of 500 mm from the face of the curb. The capping ring shall be 110 series highway loading and the frame and grating shall be I.M.P.S-361. All catchbasins shall be A.S.T.M. C-478-M precast concrete 1050 mm in diameter as per Standard Drawing SD-8.

- j) Catchbasins shall be installed in sufficient numbers so as to prevent flooding of the road surface with a maximum distance between catchbasins of 90 metres. Double catchbasins conforming to Standard Drawing SD-9 shall be installed at intersections where the preceding street grade exceeds 8%. Refer to Part 2, Item 2.9.
- k) All catchbasin lead pipes shall have a minimum diameter of 250 mm and shall be C-14 or C-76 gasketed concrete pipe. Catchbasin leads shall have a minimum bury of 1 metre and shall enter the closest storm manhole. The invert of catchbasin lead shall not exceed the invert out at the manhole by more than 1 metre. No catchbasin lead shall protrude into the manhole or catchbasin by more than 75 mm and shall be grouted and finished on the inside and outside of the structure. Catchbasin leads at the manhole shall incorporate a flexible joint within 450 mm of the outside wall of the manhole.

Where the connecting lead pipe to a manhole serves two or more catchbasins together, the minimum diameter of this connection lead pipe shall be 300 mm.

- l) The design of outfalls from piped storm drainage systems into watercourses shall take into consideration erosion control, public safety, and appearance.
- m) All foundation drains shall be connected to the storm sewer system unless otherwise approved by the Town Engineer.
- n) Storm sewer service laterals shall be a minimum of 100 mm in size, connected to the main at an angle of 90° as per Standard Drawing SD-6A. Connection to the main shall be by Daigle saddles (or equivalent) for 450 mm or less main I.D. size, and Crowle saddles (or equivalent) for main sizes greater than 450 mm. Ramneck shall be used as a gasket for installations requiring Crowle saddles. All connections into the storm main shall be done using an approved pipe cutter. All laterals shall enter the main at spring line or above. Long radius 22.5° bends shall be used for installation of service laterals. Storm service laterals shall be PVC pipe with watertight plug or cap at termination point and a 48 mm X 96 mm marker stake at end of service extending to 600 mm above finished grade. Paint cap or stub end of pipe GREEN. Paint exposed portion of stake GREEN with designation STORM in BLACK. **(Amended January 2008)**
- o) The storm sewer lateral shall be approved PVC SDR 28 with locked-in rubber gasket joints and laid at a minimum grade of 2%,

graded uniformly to the main in a compacted gravel bedding and backfilled in accordance with Town of Kentville Standard Drawing SD-7.

- 4.5 For storms corresponding to the basis of design of the minor drainage system it is expected that roadways will remain free of water other than that accumulated between inlets. Storm drainage design shall provide that the depth of flow in a 1 in 100 year storm will not exceed 150 mm at the gutter. Provision shall be made to remove runoff into drainage channels, watercourses, and piped systems at low points and at intervals that will assure that this criteria is observed.
- 4.6 Culverts shall be installed subject to the following criteria:
- a) No culvert shall be less than 450 mm in diameter, or smaller than any upstream culvert.
 - b) Hydraulic capacity of culverts shall be determined by methods described in the manufacturer's literature or comparable references.
 - c) Culverts will generally be designed to carry peak design flow with a headwater depth not greater than the vertical dimension of the pipe. Upstream water levels associated with design headwater depth shall be determined in relationship to expected elevations of structures and ground surface.
 - d) Culvert outlet designs shall provide protection from downstream channel erosion.
 - e) Culvert inlet designs shall provide protection from erosion that could result in culvert failure.
 - f) The design shall take into account the effects of inlet gratings in restricting of flow into culverts.
 - g) Culverts shall be constructed of reinforced concrete pipe or Asphalt Coated Corrugated Steel Pipe or Plastic R320 Plus as specified by the Department of Transportation.
- 4.7 Where watercourses are included in the stormwater design proposal, 1 in 100 year flood plains shall be identified, based on expected post-development flows.
- 4.8 The capacity of a stormwater storage structure will usually be determined by the Storage-Induction method. Graphical methods from SCS report

TR55 may be used for preliminary analysis.

4.9 Overflow spillways shall be designed to meet the following conditions:

- a) Where a structure is designed to accommodate a design storm frequency less than 1 in 100 years, an emergency spillway, capable of discharging the 1 in 100 year overflow from the structure without damage to the structure, shall be installed.
- b) Where human life or high property values may be at risk if the structure fails, the capacity of the overflow spillway should be increased.
- c) The overflow spillway should discharge into a watercourse or major drainage system capable of handling the 1 in 100 year discharge from the structure.
- d) Explicit consideration shall be given to safety, nuisance and long-term maintenance implications of the proposed structure, and statements dealing with these factors should be included in the submitted documentation.

SCHEDULE D

PART 12: EROSION CONTROL MEASURES FOR THE DEVELOPMENT OF LAND DRAINING DIRECTLY INTO A BODY OF WATER

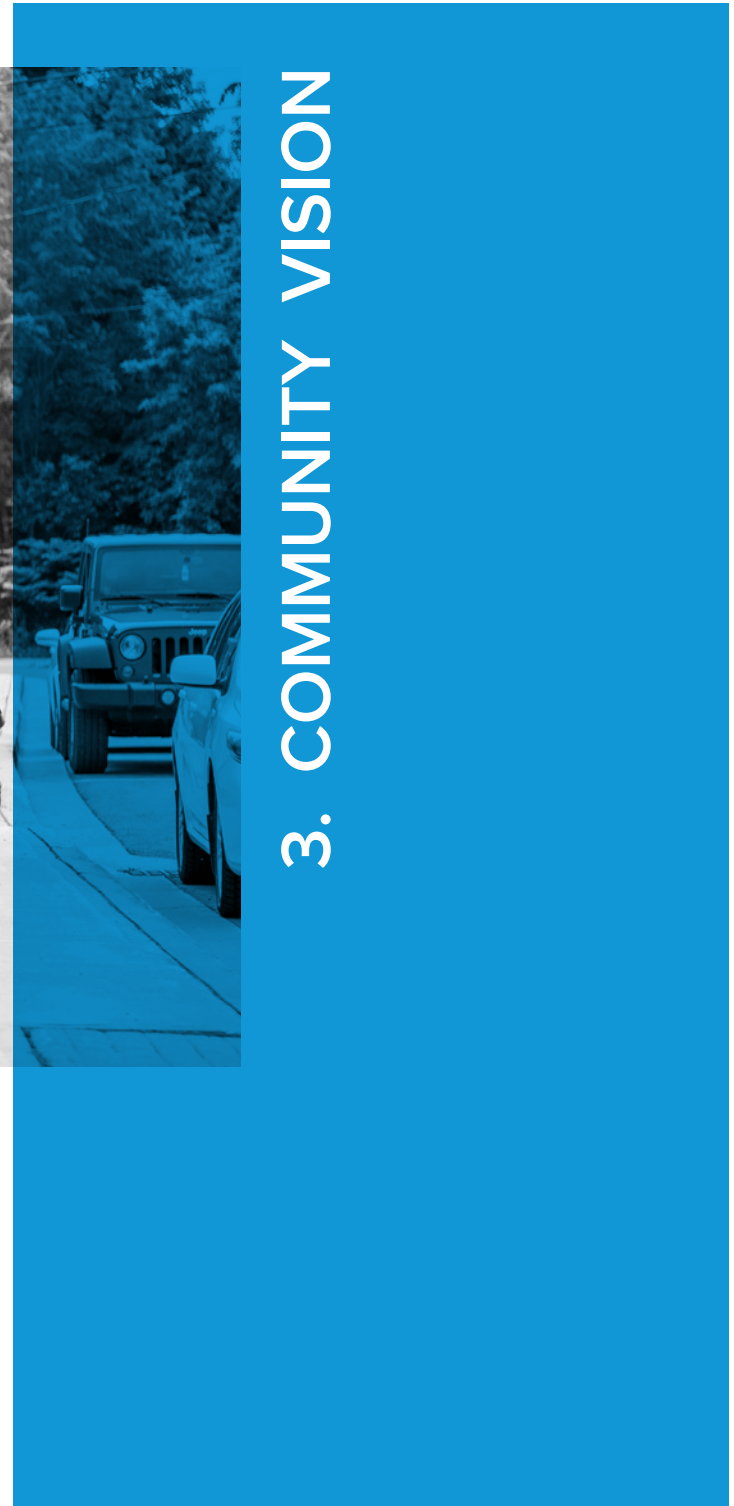
- 12.1 Erosion and sediment control measures for all development that takes place on lands that drain directly into lakes, streams, rivers or any existing watercourse must be approved by the Town Engineer.
- 12.2 Site design shall make optimum use of existing topography and vegetation and shall minimize cut and fill operations. The site should be designed to minimize/prevent surface water flows across the construction site or from the construction site directly to adjacent watercourses.
- 12.3 The construction, maintenance and use of buffers and other surface water flow control measures adjacent to all existing watercourses shall be incorporated into the design and development of lands adjacent to watercourses.
- 12.4 Stormwater management systems shall be an integral part of the overall site design and development. Measures such as temporary diversionary channels and earthen cofferdams are to be used to prevent upstream surface water from traversing construction sites.
- 12.5 Diversionary channels constructed in erodible or silt forming materials shall be stabilized with protective rock, plastic sheeting or other approved materials before any flow is diverted.
- 12.6 During site construction, on-site surface water shall be directed to settling ponds or sediment traps prior to entering an existing watercourse. Settling ponds shall be constructed to provide storage generally to a size of one-sixteenth (1/16) acre for every acre of exposed construction area.
- 12.7 Site disturbance for street construction shall be kept to an absolute minimum by minimizing clearing and grubbing operations and cut and fill situations. Diversionary channels directing water to sediment traps or settling ponds shall be constructed prior to cut and fill operations and shall contain filter trap measures such as straw bales.
- 12.8 Street construction at any given time shall be limited to 350 metres for streets parallel to the contours and 150 metres for streets perpendicular to the contours and brought to base course gravelling before new street construction may begin.
- 12.9 All surplus excavated material shall be removed from the construction site within one (1) week of the time of excavation.

- 12.10 Excavated material required for backfilling shall be neatly piled and covered with polyethylene or other suitable material be to approved by the Town Engineer.
- 12.11 Immediately following the excavation, backfilling, grading and construction of streets and services, base course gravelling shall be undertaken. Hydroseeding of slopes of more than 2:1 shall be undertaken within one (1) week of base course gravelling.
- 12.12 In the dewatering of excavated areas, water shall not be discharged directly into existing watercourses. Dewatering of excavated areas shall be undertaken in a manner designed to remove suspended silt.
- 12.13 During the initial site development process and subsequent residential lot development, due care and attention shall be given to keeping the site clear and free of deposited mud material and dust to prevent silt build-up in the storm sewer system.

Development of land draining directly into a body of water may be subject to more extensive erosion and sediment control measures as a result of the Town zoning bylaw, or other bylaws, or as a result of provincial legislation or regulations, specifically under the control of the Department of Environment.

For examples of more extensive erosion control measures, refer to the **Province of Nova Scotia Erosion and Sediment Control Manual and Guidelines for Use of Construction Sites**.

SCHEDULE E



3. COMMUNITY VISION



3.1 COMMUNITY INPUT

Input from the community is critical in order to understand the current state of active transportation in the Town of Kentville and to ascertain the key issues and opportunities. A variety of public engagement events were held to provide multiple methods through which the community could provide input into the Active Transportation Plan.

These events included a public drop-in session, a walking tour, focus groups with both middle school students and seniors, and an online survey. Information on all the community engagement opportunities were well publicized, which resulted in a positive participation rate.

3.2 PUBLIC DROP-IN SESSION

With about ten participants, the public drop-in was held at the Kentville Library and featured panels with information about the project, as well as interactive mapping activities. Participants pointed out barriers they face on their routes, identified potential active transportation connections, and located potential infrastructure upgrades.

Crosswalks, multi-use trails and sidewalks were identified as active transportation priorities while there was also support for paved shoulders, bike lanes, accessibility, maintenance and gathering spaces. General recommendations included distance markers on all trails, smoother and wider sidewalks downtown, and more seating. Crosswalks are needed at the following intersections:

- Highway 1 and Harrington
- Highway 1 at Memorial Park
- Webster and River at the Harvest Moon Trailhead
- West Main and Park
- Oakdene and Belcher

Sidewalks are needed along Highway 1 between Harrington and Roscoe, and Oakdene between Dell and James. Some potential active transportation routes were recommended including a downtown connection for the Harvest Moon Trailway, a water route along the river towards the Bird Sanctuary, a walking route over existing dyke lands, connections between the Active Transportation Connector route, and a river-crossing bridge towards Miner's Marsh.

3.3 WALK AND TALK

A public walk and talk gathered eleven participants at the local farmer's market before touring the downtown to identify major barriers and opportunities for active transportation in Kentville.

Accessible streets which improve active transportation options for people with mobility issues and other disabilities also make streets more comfortable for all users. Parents with strollers, small children, pedestrians carrying heavy bags, and people with temporary injuries are just

some of the individuals that can benefit from accessibility, and this was reinforced by walking group participants. Residents felt that Kentville's recent improvements in accessibility have been good, and even persuaded some to move into town, but more measures are needed to make pedestrian spaces truly equitable.

Slight surface changes such as sloping towards the street, raised driveways, cracks and raised bricks pose the biggest barrier. The desire for more benches, rest spaces and public washrooms was another concern agreed upon by participants. The snow and ice removal have been inconsistent within the downtown, making walking more difficult in colder months. One participant noted that stresses such as heavy traffic and other noises, buzzing or flickering lights, and harsh lighting can be a concern for residents and visitors prone to sensory overload which could be associated with autism and/or anxiety disorders.



Other general opportunities for accessibility improvements were sidewalk bump outs (particularly where pathways are narrow along Webster Street and approaching intersections), smaller blocks, more crosswalks, clear wayfinding, pedestrian islands, and traffic calming measures.

Intersections are the main source of concern for pedestrians and cyclists, and many participants have witnessed near-accidents during left turns onto one-way roads. These intersections in particular are confusing to drivers, and major crossroads at the town clock and the bridge are both especially difficult for pedestrians to navigate. Illegal parking too close to intersections has caused an issue with sight lines, something sidewalk bump outs could help to improve. Participants felt that aside from street design, the 50 km/hr speed limit is too high for a downtown.



Trails are well-used and appreciated in Kentville, but litter has been an issue along these pathways and the absence of a dog park or off-leash areas leads to some residents fearing unruly pets. Plowing the trail to KCA School was suggested as a priority, making it easier for students to access this route on their winter commute. With no bike lanes downtown, all participants felt that a trail connection was needed through the downtown, and the possibility of a multi-use path was agreed upon as an optimal option which would remove minimal parking. Participants wanted trail users to be led through the downtown, as this is the most scenic and straightforward route and could bring more visitors and money into local shops. At one end of this route, improved signage and access to Miner's Marsh could meet with the Harvest Moon Trailhead in an active transportation node.



3.4 YOUTH WORKSHOP

Held at Kings County Academy, a random selection of ten middle-school students participated in an hour-long youth workshop. The participants use active transportation for both transportation and recreation including walking, biking, scootering, skiing and sledding. Destinations included school and home as well as shops, the library, the market, friends' houses, and recreation sites. The students pointed out locations where there are hazards to walking and biking as well as optimal locations for new infrastructure.

The need for more crosswalks, particularly on main routes to school, is a major concern for students using active transportation, and bike racks are needed at Burger Hill, the farmer's market, Miner's Marsh, Ultramar, Centre Square and the pool. Many students use the Harvest Moon Trailway to get to school but find it difficult cycling downtown where there is a gap in the trail. Pot holes, upturned bricks and eroding trails came up in a discussion of road conditions and some students noted that they have a hard



time biking along rocky or gravel portions of the Harvest Moon Trailway. Most prefer the cut-back sections of the trail where sight lines are improved, and found this improved their sense of security particularly after dark. Students also mentioned the opportunity for dog bag dispensers and trash cans along trails and trail heads.

Interpretive planning and playfulness were concepts well received by youth participants, including wayfinding signage with major destinations and distances, scavenger hunt style trail signs identifying wildlife (such as that used in Port Williams), jumps for bikes and scooters, interactive interventions and art. Students felt that more active events such as the Terry Fox Run, outdoor learning and walking groups would encourage them to spend more time outside. More spaces that allow students to stop and hang out a while such as food and recreation destinations should be encouraged throughout the downtown and major routes to school.



3.5 SENIORS WORKSHOP

An active transportation workshop for seniors was held at Kings Riverside Court, engaging 26 participants. The seniors divided themselves among four tables, each with a facilitator. One of the main topics discussed was the need for a cultural shift away from the car-dominated downtown in order to take back pedestrian space. Participants felt that rather than accommodating delivery trucks, Kentville should encourage density and adopt share the road principles to accommodate the people that live, work and shop in town. One particular accessibility concern was building entrances, but participants felt improvements to accessibility must extend out from the public streetscape and into the entire built form.

While the groups enjoyed the downtown and felt the people are helpful and friendly, the design and maintenance of pedestrian space makes getting around very difficult for most participants. The combination of the too-high speed limit and drivers disobeying traffic laws was identified as

one of the biggest issues in downtown Kentville. Some participants noted that before moving to Kentville they avoided this downtown, fearful of the chaotic traffic flow. Redirecting heavy traffic onto Main Street and away from Webster was suggested in order to calm traffic. The one-way streets make many pedestrians feel unsafe, and participants added that allowing left on reds make these crosswalks unsafe.

Senior participants get around almost exclusively by foot and barriers like narrow paths, uncleared snow and ice, cracked or slanted sidewalks and upturned bricks pose a hazard to anyone with mobility issues. Lamp posts placed in the centre of sidewalks, midday deliveries, garbage day and sidewalk gaps can make it impossible to pass with a mobility device or support person. Crossing lights that don't function consistently or have inaccessible pedestrian buttons were another major concern, and seniors often have to strategize alternative routes to avoid these barriers, even when walking to the grocery store just across the street. One group pointed out that summer

patios have temporary sidewalks which are impossible to pass for those using mobility devices, while a patio that leaves the sidewalk intact would be more appropriate. Two groups noted that the design of Centre Square favours cars over pedestrians, presenting the potential opportunity for a pedestrian only zone.

While trails are well used in the warmer months, participants suggested ploughing the Harvest Moon Trailway between Kings Riverside Court and Shannex, and improving connectivity for cyclists. General traffic calming measures such as sidewalk bump-outs, speed bumps, added crosswalks at common destinations and street trees were embraced by participants. The need for more benches and public washrooms was also discussed by all groups as a pedestrian necessity.

3.6 ONLINE SURVEY

The survey collected a total of 298 responses (though this varied per question), 206 of these Town of Kentville residents.

This survey was self-selecting, promoted through the Town website, social media, newsletter and radio. About 68% of survey respondents identified as female, and about 32% as male. 4.5% of respondents were under 24 (compared to 55% within the Town), while 44.5% were between 25 and 44 (compared to 44.6%), 40.7% were between 45 and 64 (compared to 56.6%), and 10.3% were seniors (compared to 44.7%). This self-selector bias has resulted in disproportionately low responses from both youth and men, and likely representation from various communities and socioeconomic backgrounds is limited.

69% of these respondents live within the Town of Kentville, while 26% of the remaining live in New Minas, the rest divided between 38 surrounding communities. Retirees made up about 18% of respondents, and 7% do not work. Of those that work, 45% work within the Town, while 19% of the remaining work in New Minas, 13% in Wolfville, and the rest are spread between 21 communities.

Respondents identified destinations they access at least once a month, and a top five are listed below:

1. Downtown stores and restaurants (90%)
2. Miner's Marsh (67%)
3. Valley Regional Hospital (52%)
4. Harvest Moon Trailway (41%)
5. Kentville Farmer's Market (40%)

Driving was the most common form of transportation among survey respondents, with 85% frequently using a vehicle, followed by walking and the use of assistive devices, used frequently by 48% of respondents. About 11% frequently cycle, 4% utilize other forms of transportation not identified here, and 3% frequently bus. The top reasons for not using active transportation were:

6. Weather (37%)
7. Working too far from home (29%)
8. Uneven, unmaintained sidewalks (27%)
9. Drivers, pedestrians and cyclists don't know the rules of the road (26%)
10. High traffic and speeds at peak hours (24%)

108 people responded to an open-ended question identifying destinations they would like to access using active transportation, and the barriers they face in doing so. The

most commonly mentioned destination was downtown stores, restaurants and businesses, with 34% of these respondents identifying them. Following this was parks and trails (noted by 32% of respondents), residential areas and subdivisions (14%), recreational spaces (10%), surrounding communities and towns (9%), and schools and daycares (8%).

The need for new and better active transportation paths was mentioned in 40% of these comments, including bike paths, sidewalks and trails, and crosswalks. In addition to this 40%, the downtown gap in the Harvest Moon Trailway was specifically noted in 14% of responses. Cars that are speeding or unaware of pedestrians and cyclists were mentioned by 12% of respondents, followed by maintenance of streets and trails (11%) and accessibility concerns (10%).

A second open-ended question (answered by 84 respondents) looked at routes people frequent using active transportation (or would like to), and suggested improvements. The main routes included downtown (45%), followed by mentions of the trail gap specifically (20%), followed by other portions of the Harvest Moon Trailway (11%), surrounding communities and towns (10%), and Miner's Marsh (8%).

Improvements recommended by respondents included bike lanes (21%), new or improved sidewalks and trails (16%), changes to traffic such as slowing the speed limit and reintroducing two-way traffic (11%), accessibility improvements (8%), and lights, wayfinding and other amenities (8%). Several respondents answered these open-ended questions, but did not identify any desired destinations, routes, or barriers faced and so were not included in these counts.

A final question allowed respondents to make any additional comments, which again demonstrated the gap in the Harvest Moon Trailway as a major resident priority (though 4% felt this downtown trailway should not continue through Webster Street, and 5.5% felt bike paths do not belong in the downtown). Other priorities included traffic calming and accessibility for people with mobility issues, seniors, and families with small children.

The most common thread in these additional comments was the need for a cultural shift in order to facilitate and encourage safe and comfortable active transportation. This included a discussion of the education of drivers, pedestrians and cyclists, as well as promotions through events and activities.

SCHEDULE F

BICYCLE LANE

Cost:



AT Modes:



Level of Comfort:

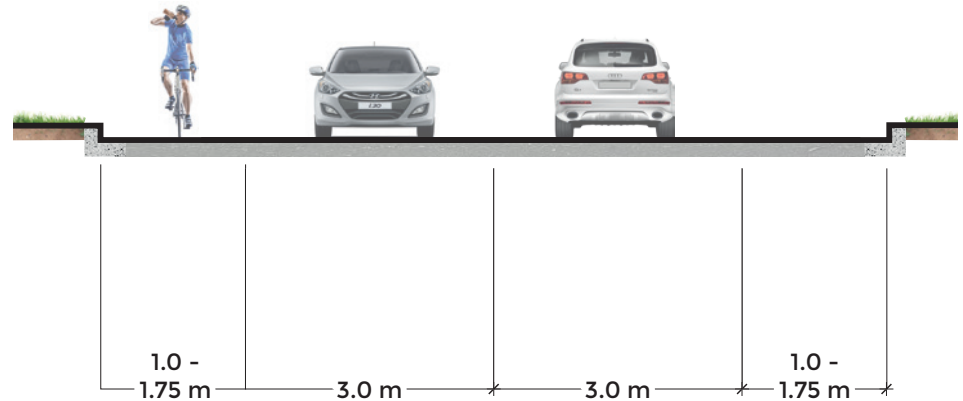


Bicycle lanes provide dedicated space for cyclists alongside vehicular traffic. They improve the level of comfort for cyclists over shared use lanes because they delineate a dedicated space for cyclists. They should be 1.8 metres wide (but must be at least one metre wide) and demarcated with a bicycle stencil placed in the center of the lane. Bike lanes provide a reasonably safe and comfortable cycling facility, particularly on roads with high traffic volumes and speeds.

It is important that bicycle lanes stay obstacle-free and are kept clean of snow, ice, litter and debris. It is also important that local law enforcement ensure that bicycle lanes aren't used for parking or loading. If cars regularly obstruct bike lanes, cyclists are forced to swerve into vehicular lanes, which creates very dangerous situations.

There are a handful of on-road active transportation routes within the Town that feature high traffic volumes or are key regional corridors, and should feature bike lanes to allow cyclists to use both sides of the road in a safe and comfortable manner.

The cost to develop bike lanes depends on the context. If unused, paved space exists alongside the road already exists, then all that is required is paint and other minor improvements. However, if the shoulders need to be paved, the costs can go up considerably. Furthermore, if on-street parking needs to be removed to accommodate a bike lane, costs could include relocating the parking spaces elsewhere.



SCHEDULE G

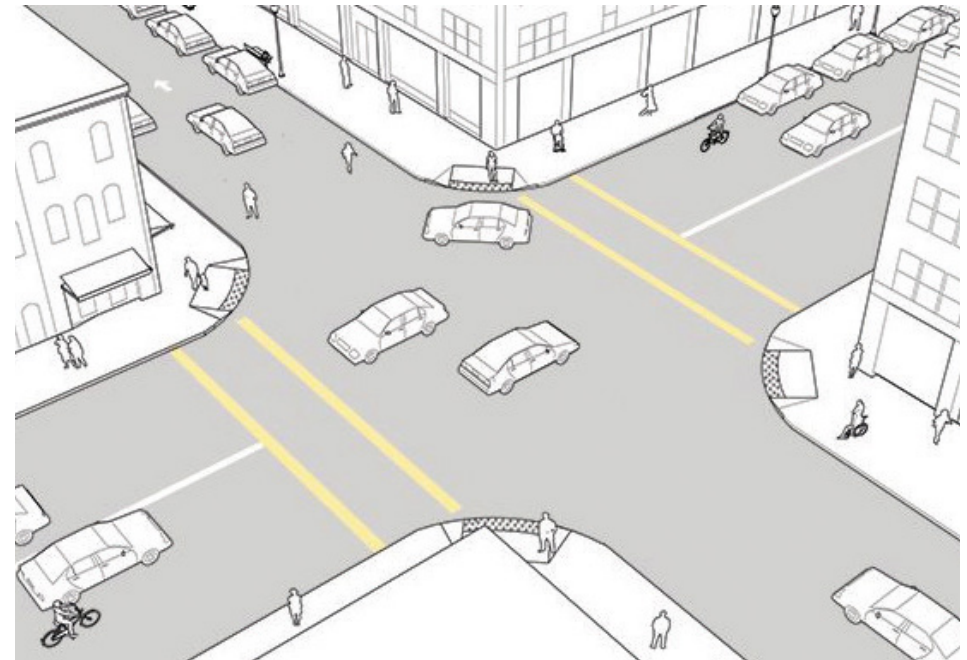
Introduce curb extensions where possible to improve and expand pedestrian space

There are areas along streets in Downtown Kentville, particularly near intersections and driveway entrances, where parking is not permitted and the roadway is unused. These areas are often identified by a yellow angled paint lines. These residual spaces and can be better used to accommodate trees, street furniture, pedestrian space, or other streetscape improvements. These spaces also provide opportunities to create areas of refuge for pedestrians who are waiting to cross the street.

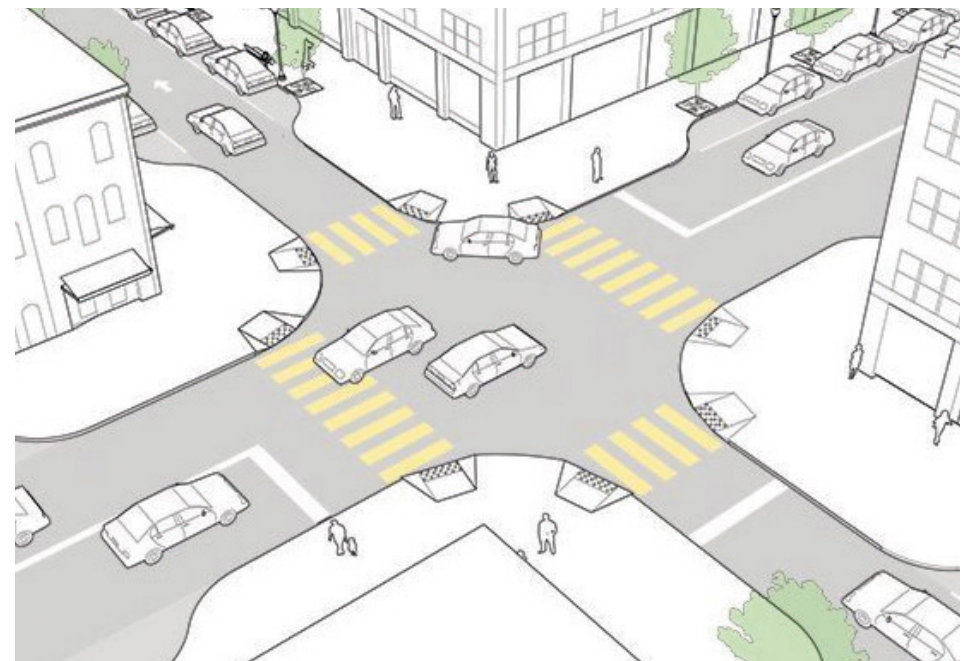
Curb extensions (also known as sneckdowns or bump-outs) are used to extend the sidewalk into these residual spaces, which reduces crossing distance and adds to pedestrian space on the sidewalks. Curb extensions also decrease the overall width of the roadway and can serve as a visual cue to drivers that they are entering an urban district.

Curb extensions at crosswalks also allows pedestrians and motorists to see each other better, when vehicles parked in a parking lane would otherwise block visibility. In the downtown, crosswalks should be kept as compact as possible. Mid-block crossings should be considered to achieve a minimum distance of 100 metres between crossings. Crosswalks should be marked with a ladder or zebra paint pattern, which are more visible than standard parallel lines, and should be well lit.

Some site specific issues will need to be addressed with a downtown plan, where unique design constraints require finer detail. One example is the Webster Street access to the Independent grocery store, where sidewalk extensions and crosswalks will need to be designed around loading zones and parking entries.



Top
Typical street layout



Bottom
Street with curb extensions

Source:
NACTO Urban Street Design Guide, 2018