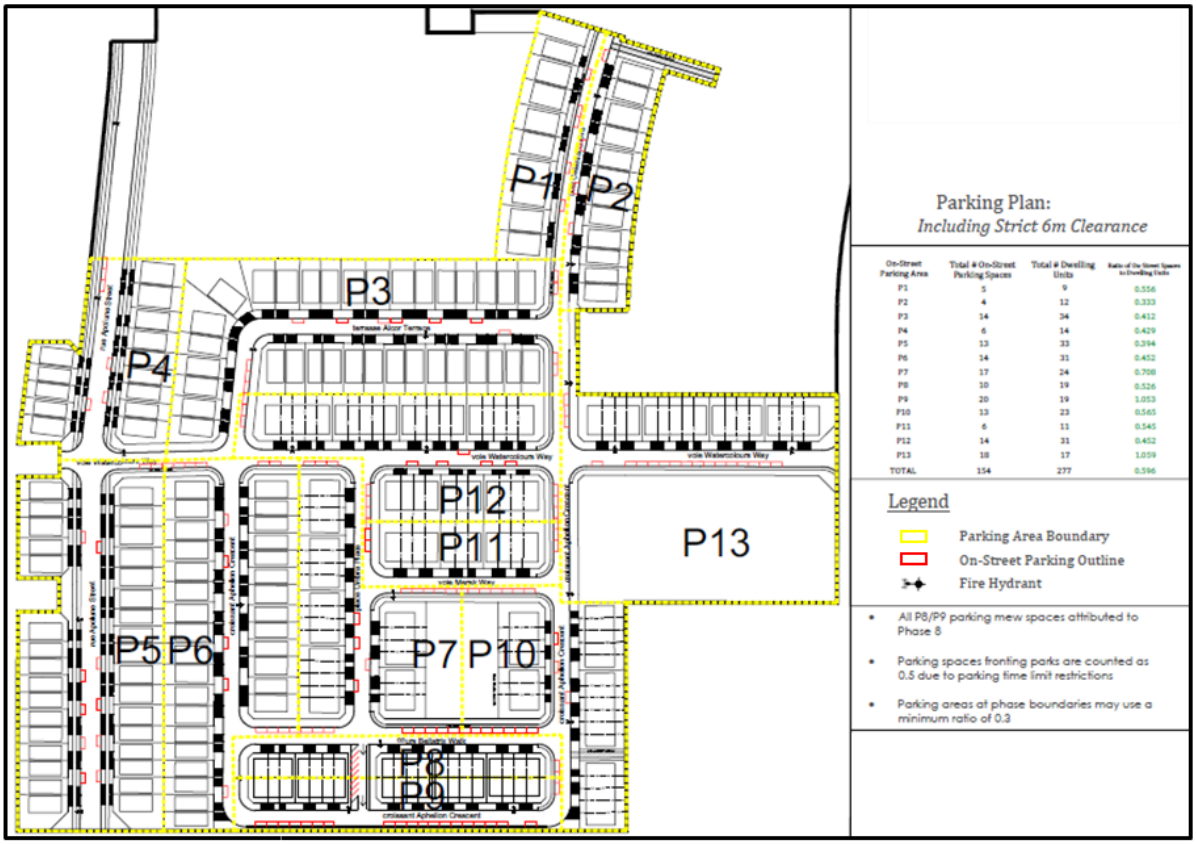
Parking Plan

Terms of Reference

1. Description

The Parking Plan is a tool to assess the sufficiency of on-street parking in new plans of subdivision. It considers the ratio of conceptual on-street parking spaces to dwelling units per street segment, referred to as on-street parking area. It is used early in the subdivision process to identify the location and extent of deficiencies in on-street parking and provides flexibility in terms of potential solutions.

For Example:



The Parking Plan was developed through the Building Better and Smarter Suburbs initiative, in collaboration with multiple representatives from the Greater Ottawa Home Builders Association. It intentionally avoids blanket requirements across a plan of subdivision and provides a location-specific approach that only targets

deficient areas, while allowing for flexibility in determining context-appropriate planning and design responses.

2. Process and Applicability

The Parking Plan is to be prepared and submitted at the same time as each iteration of the draft plan of subdivision and is required as part of a complete submission.

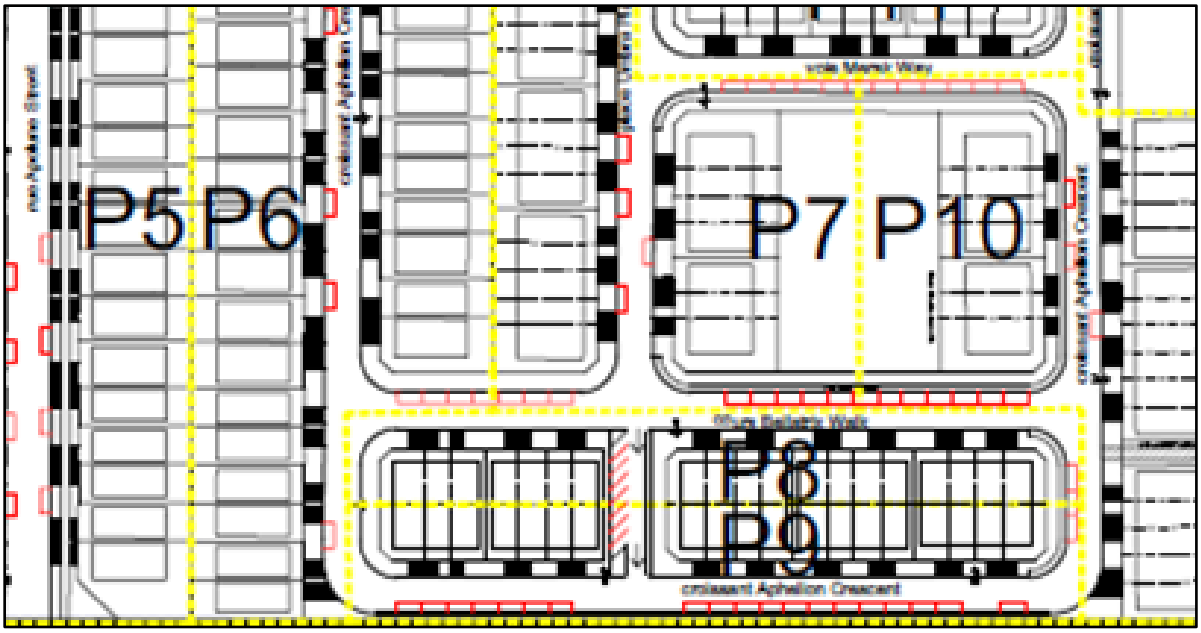
The Parking Plan only applies to new or revised plans of subdivision with public streets.

3. Contents

The Parking Plan is a separate stand-alone document that builds on the draft plan of subdivision. In addition to the streets, blocks, and lot lines in a draft plan of subdivision, the Parking Plan adds the following information relevant to on-street parking:

- Maximum building footprints where possible, the location and size of driveways and/or curb cuts (all to scale), and the approximate location of fire hydrants and bus stops.
- The boundaries of all on-street parking areas are to be identified in dashed yellow boxes and labeled P1, P2, P3, etc. They are intended to capture one street segment where residents or visitors are likely to park in proximity to a given dwelling unit. Each on-street parking area should include both sides of the same street between two intersections (i.e. one block length), plus the flankage along the corner lot on the abutting intersecting street (i.e. wrapping around the corner along the corner lot).

For Example:



- Conceptual on-street parking spaces are to be outlined in red, with dimensions measuring 2.4 metres wide by 6.7 metres long, to scale. This means there must be at least 6 metres of continuous curb-side space in order to count as a conceptual on-street parking space, including between driveways. Besides these dimensions, each conceptual on-street parking space must respect existing parking by-laws, such as no parking in the following locations:
    - 3 metres from a point on the curb or edge of roadway opposite a fire hydrant
    - 9 metres from an intersection
    - 15 metres from a crosswalk that is controlled by a traffic control signal and not located at an intersection (e.g. pedestrian crossover)
    - 30 metres from an intersection controlled by a traffic control signal (e.g. traffic lights)
    - On-street parking spaces cannot block a midblock pedestrian walkway or multi-use trail that continues on the opposite side of the street, even if a pedestrian crossover is not in place.
- Other rules for counting on-street parking spaces include:
    - On-street parking spaces along school or park frontages will be discounted at a rate of 0.5 (i.e. only half the spaces can count) in order to account for time of use restrictions and no stopping or parking zones.

- On-street parking spaces on local streets cannot be located across the street from one another in order to maintain a 6 metre clearance for emergency vehicles.
- A double-car driveway that can accommodate two cars parked side-by-side, with a minimum width of 5.2 metres can count as 0.5 on-street parking space. While the wider driveway takes away curb-side on-street parking space, it also reduces some of the demand for on-street parking by providing additional private parking.

The Parking Plan must include a table to summarize the findings – either on the Parking Plan document if space allows or in a separate accompanying document, similar to the example below. Each on-street parking space can only be counted as part of one parking area (i.e. no double-counting between separate parking areas). The ratio is calculated for each individual on-street parking area, and not cumulatively as a total of multiple parking areas.

4. Evaluation Criteria

Ratios at or above 0.4 are considered sufficient, with no modifications required, and should be in green text. Ratios below 0.4 indicate deficient on-street parking areas and should be in red text.

For example:

On-Street Parking Area	Total number of on-street parking spaces	Total number of dwelling units	Ratio (number of on-street parking spaces divided by number of dwelling units)
P1	18	40	0.45
P2	15	48	0.31
P3	16	28	0.57

Slightly deficient ratios may be accepted where other mitigating factors are in place, such as if an abutting on-street parking area significantly surpasses the minimum ratio, with discretion to the City file lead.

Proponents with any on-street parking area with a ratio under 0.4 should review the Appendix: Parking Options to Increase On-Street Parking Ratios in New Plans of Subdivision at the end of this document, or determine their own appropriate solutions, in order to achieve a ratio of at least 0.4 in each on-street parking area or to the satisfaction of the City file lead. The necessary revisions must be made to the draft plan of subdivision and reflected in an updated Parking Plan.

On-street parking areas in new plans of subdivision typically meet or surpass the ratio of 0.4 without requiring any modifications to the draft plan of subdivision. Locations that tend to be deficient, with a ratio under 0.4, usually involve streets with townhouses or back-to-back townhouses on each side of the street facing each other, particularly if townhouse blocks contain an uneven number of units (usually five) that results in the inability to pair all driveways.

5. Roles and Responsibilities / Qualifications

The City's planning file lead has discretion over the acceptability of Parking Plan details and results. Parking Plan requirements are cleared as part of final engineering review prior to subdivision registration.

6. Submission Requirements

Final submission will include one PDF copy. Electronic document names should match the study/plan names and include the most recent date it was modified.

7. Appendix: Parking Options to Increase On-Street Parking Ratios in New Plans of Subdivision

This Appendix provides suggestions that could improve the supply of on-street parking in new subdivisions. Proponents of new plans of subdivision with deficient on-street parking areas in their Parking Plan may find these options helpful when considering revisions to their draft plans of subdivision in order to satisfy the requirements of the Parking Plan. These options are by no means exhaustive and may be adapted or used in combination with others in order to find locally-appropriate solutions.

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Option 1: Earlier and more deliberate consideration of mixing of dwelling types in new plans of subdivision

Purpose: Increase the supply of on-street parking by strategically mixing the location of dwelling types in new plans of subdivision.

Rationale: The highest concentration of parking complaints in suburban communities comes from areas of townhouses or back-to-back townhouses. A more diverse or strategic mix of dwelling types can reduce the concentration of townhouses and back-to-back townhouses and introduce other dwelling types nearby that allow for more on-street parking in order to absorb some “spill-over” parking demand.

Potential Implementation Methods: Local Plan, Plan of Subdivision and Parking Plan, Urban Design Guidelines, Zoning By-law.

Examples

- Townhouses at block ends backing onto the side of detached homes
- Townhouses that back onto semis or detached homes
- Stacked townhouses or low-rise apartment buildings across the street from townhouses or back-to-back townhouses (examples in images below: Kinghaven Cres, Bridlewood, Kanata; Royal Fern Way, Riverside South: Fieldfair Way, Orleans)

Pros:

- Identification of solutions early in the planning process, starting at the Local Plan and Plan of Subdivision
- Does not have to reduce the absolute number of townhouses in a subdivision, but instead focuses on their geographic distribution and relationship with other dwelling types

Cons:

- May reduce a proponent's flexibility to change unit type based on latest market demand
- Difficult for development review planners to require unless specified in zoning
- Recent substitution of stacked townhouses with back-to-back townhouses reduces options for providing dwelling types that free up on-street parking spaces

Option 2: Paired driveways and minimum distance between driveways for townhouse and back-to-back townhouse blocks

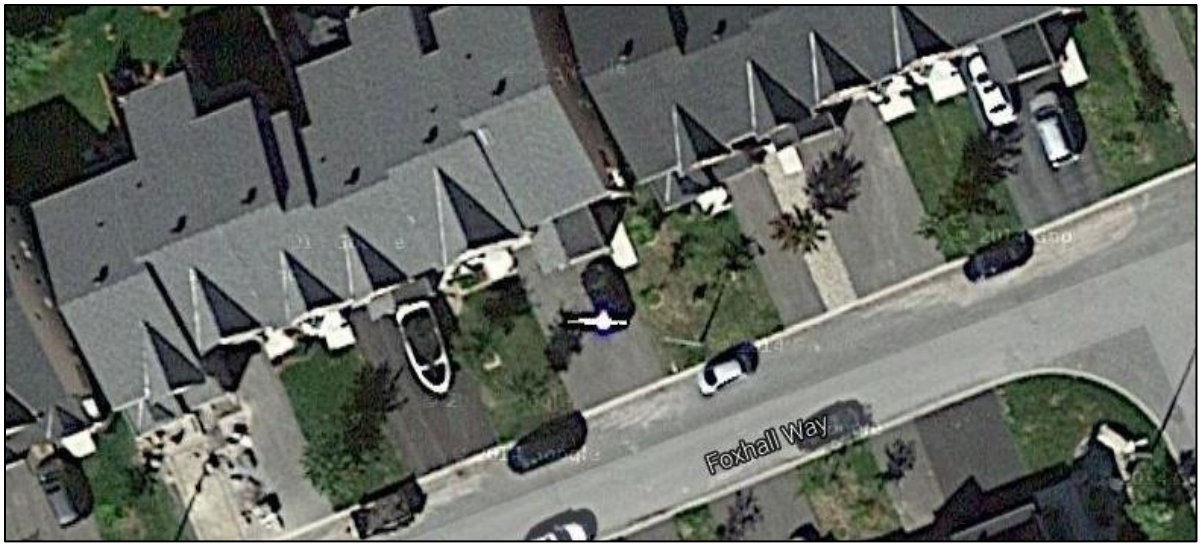
Purpose: Increase supply of on-street parking; make efficient use of infrastructure by maximizing on-street parking on local streets

Rationale: Where possible, townhouse blocks should contain either four or six units with only paired driveways and sufficient space to park a vehicle on the street between the paired driveways. This generally provides more on-street parking spaces than townhouse blocks with uneven number of units and/or single driveways and also provides greater soil volume for street trees between driveways.

Potential Implementation Methods: Local Plan, Plan of Subdivision and Parking Plan, Zoning By-law, Urban Design Guidelines.

Examples: Top left: local street in south Kanata where distance between most paired driveways is approximately 4.5 metres, resulting in very few on-street parking spaces. Top right: insufficient distance between driveways on a local street in Riverside South results in on-street parking that partially blocks a driveway.

Below: six-unit townhouse block with three paired driveways (left) provides one additional on-street parking space compared to townhouse block with five units (right).



Pros:

- Sufficient distance between driveways can increase number of on-street parking spaces and increase convenience for residents
- On-street parking can contribute to traffic calming and efficient use of infrastructure
- Already a common practice
- Generally, does not require revisions to unit designs, perhaps only a different configuration of townhouse blocks (i.e. one townhouse block with six units and the next with four instead of two townhouse blocks with five units)

Cons:

- Typically, developers and residents prefer single driveways over paired driveways

Option 3: Strategically locate and orient dwelling types to minimize driveways and maximize on-street parking across the street from busy traffic nodes

Purpose: Increase safety, improve conditions for snow storage, reduce bottlenecks from snow encroachment into the right-of-way, and maximize opportunities for on-street parking.

Rationale: Minimizing the number of driveways to the street across from busy traffic nodes (e.g. school bus lay-bys and vehicular access points to schools, parks, and community centre parking lots) can increase the supply of on-street parking, reduce potential collision and bottleneck points and reduce the likelihood that snow storage contributes to narrowing the roadway during the winter.

Potential Implementation Methods: Local Plan, Plan of Subdivision and Parking Plan, Zoning By-law, Urban Design Guidelines.

Example: Berrigan Drive, Barrhaven, between Longfields Drive and Claridge Drive.

- Between Longfields Drive and Croxley Way (1 in image below), the stacked townhouses facing Berrigan Drive and townhouses fronting Croxley Way allow for a single driveway off Berrigan Drive, which does not line up with any school driveways or lay-bys.
- Between Croxley Way and Claridge Drive (2 in image below), townhouses provide frequent driveways and curb cuts to Berrigan Drive, including locations directly across the street from access points to the schools. This causes numerous problems during peak school periods, especially during the winter, and contributes to unnecessary safety risks, traffic slow-downs, and costly snow removal.

Pros: Increased safety, better snow storage, improved traffic flow (especially during the winter), more on-street parking and slower vehicle speeds

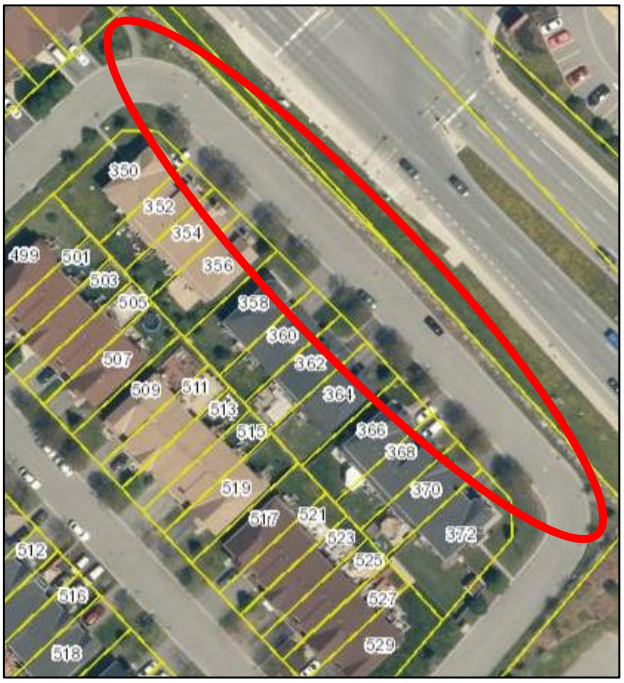
Cons: Requires additional forethought at Local Plan and Draft Plan of Subdivision to locate appropriate dwelling types across the street from busy traffic nodes

Option 4: Locate concentrations of townhouses and back-to-back townhouses on or near window streets

Purpose: Locate dwelling types that produce highest demand for on-street parking closest to street frontages that provide additional on-street parking supply in order to provide relief for “spill-over” parking from residential units.

Potential Implementation Methods: Local Plan, Plan of Subdivision and Parking Plan, Urban Design Guidelines.

Example: Images at top show townhouses and back-to-back townhouses that front onto window streets along arterial roads.



Pros:

- Already a common practice in Ottawa
- Provides on-street parking relief where it is most needed
- Reinforces preferred strategy of locating higher densities along arterial roads for proximity to transit

Cons:

- May require signage to restrict parking on one side of the street

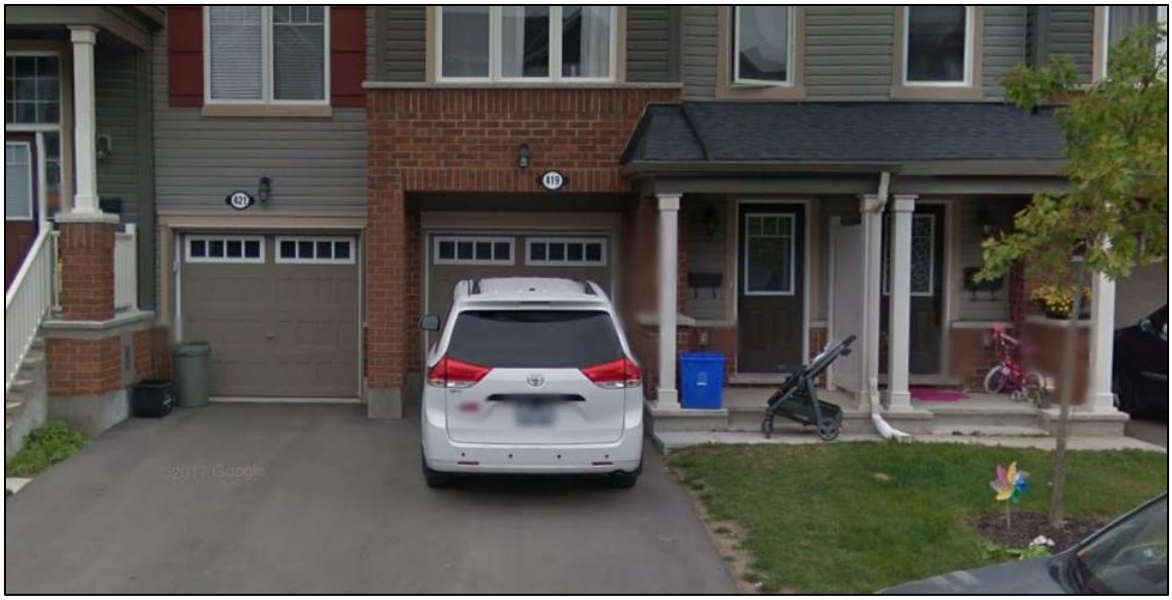
Option 5: Minimum parking space dimensions inside garages

Purpose: Increase supply of private parking, ensure that provided garages can in fact function for that intended purpose and reduce spill-over on-street parking.

Rationale: In order to count as a parking space, a garage should be large enough to fit a typical family vehicle, including space for an adult to reasonably enter and exit the vehicle in the garage. Currently, Ottawa's Zoning By-law (S.106 (4)) does not treat confined parking spaces any differently than other parking spaces, except to specify that those confined spaces may not be reduced in size as per S.106(3).

Garage widths are the biggest concern. New homes in Ottawa tend to have a garage width of at least (10') 3.05 metres. However, some townhouses have garages as narrow as 9' (2.74 metres) or 9'6" (2.9 metres). The table below shows the implications of these garage sizes on egress space for a range of common vehicles.

Vehicle	Width (without mirrors)	Length	Space to open door on each side of vehicle inside garage		
			9' garage (2.74m)	9'6" garage (2.9m)	10' garage (3.05m)
2021 Volkswagen Golf	1.80 m	4.26 m	0.47 m	0.55 m	0.63 m
2021 Honda CRV	1.85 m	4.63 m	0.45 m	0.52 m	0.60 m
2021 Ford Escape	1.88 m	4.58 m	0.43 m	0.51 m	0.59 m
2021 Chevrolet Traverse	2.00 m	5.19 m	0.40 m	0.48 m	0.55 m
2021 Toyota Sienna	2.00 m	5.19 m	0.40 m	0.48 m	0.55 m
2020 Dodge Ram 1500	2.09 m	6.14 m	0.33 m	0.41 m	0.48 m



Websites* for garage planning and home design typically suggest a minimum of 2'6" (0.76 metres) between a parked car and a wall in order to comfortably enter and exit a vehicle inside a garage, and a total interior garage width of at least 12 feet (3.66 metres). As the table shows, none of these garage sizes come close to providing this space between a parked car and a wall, even for a small car.

However, the common 10' (3.05 metres) garage seems to provide the bare minimum space to functionally use a garage as a parking space if there are no further obstructions, such as shovels, tools or bikes hanging or leaning against the garage walls. For example, a Honda CRV would have 0.6 metres on each side of the vehicle to open doors. Subtract the roughly 10 centimetres depth of the door and that leaves 50 centimetres for egress, which may barely be a sufficient minimum space to maneuver for a relatively slim, able-bodied adult.

Many municipalities already use this 3 metres width as a benchmark, with minimum parking space dimensions in garages in their Zoning By-law typically set at 3 meters wide and between 5.5-6 metres in depth, as noted in the table below.

City	Min. Width (m)	Min. Depth (m)	Reference in Zoning By-law
Ottawa	2.6	5.2	https://ottawa.ca/en/part-4-parking-queuing-and-loading-provisions-sections-100-114#parking-space-provisions-sec-106 Section 106
Toronto	3.2	5.6	http://www.toronto.ca/zoning/bylaw_amendments/ZBL_NewProvision_Chapter200.htm Chapter 200.5.1
Winnipeg	3.05	6.1	http://clkapps.winnipeg.ca/dmis/docext/viewdoc.asp?documenttypeid=1&docid=3943&doctype=c Table 5-12, p.134

Calgary	3.0	5.9	http://www.calgary.ca/PDA/pd/Documents/Calgary-Land-Use-bylaw-1P2007/bylaw_1p2007.pdf S.122, p.115
Edmonton	3.0	5.5	http://webdocs.edmonton.ca/InfraPlan/zoningbylaw/ZoningBylaw/Part1/Development/54_2_Required_Off-street_Vehicular_Accessory_Parking.htm
Surrey	3.2	6.1	http://www.surrey.ca/bylawsandcouncillibrary/BYL_Zoning_12000.pdf *Section 5.4*
Guelph	3.0	6.0	http://guelph.ca/wp-content/uploads/Section4GeneralProvisions.pdf Section 4.13.3.2.2
Burlington	3.0	6.0	http://www.burlington.ca/en/zoning/resources/Part-1---General-Conditions-and-Provisions-Dec-2015.pdf 2.26

Potential Implementation Method: Zoning By-law

Pros:

- A potential minimum 3 metere width would not affect the majority of new development since garages are typically 10’ or 3.05 metres wide, thereby only eliminating the smallest garages of 9’ (2.74 metres) and 9’6” (2.9 metres).
- Increased ability for residents to use their garage for its intended purpose could reduce pressure on on-street parking and illegal widening of driveways.

Cons:

- Would require proponents who offer dwelling types with garage sizes under 3 metres wide to use different unit designs or make design revisions.
- Larger garages will not necessarily result in more residents using their garages to park a vehicle (e.g. could still use their garage for storage) but it would increase the possibility of this occurring.

*References:

http://www.garaga.com/information/faq/garage-attached/

http://www.garageadvisor.co/garage-door-sizes/single-car-garage-dimensions/

http://www.houseplanshelper.com/garage-dimensions.html

http://www.rempros.com/dimensions/garage_sizes.html

Option 6: Preference for barrier curbs instead of mountable curbs

Purpose: Provide a disincentive for residents to illegally widen driveways and more clearly demarcate and protect on-street parking

Rationale: Where illegally widened driveways meet a mountable curb, that curb-side space tends to be treated as access to the driveway, which reduces curb-side space and in some cases eliminates on-street parking spaces.

Barrier curbs, on the other hand, can define the width of a driveway and help protect curb-side space for on-street parking. However, where there are barrier curbs, sidewalks and frequent driveways, there can be vertical undulations that can pose challenges for people with disabilities. As a result, consideration should be given to require the construction of barrier curbs instead of mountable curbs where there are no sidewalks.

Potential Implementation Methods: Standard tender drawings – road cross-sections, Local Plan, Draft Plan of Subdivision and Parking Plan, Urban Design Guidelines.

Examples: In the top two images below, the mountable curb allows a widened driveway to appear to take up the curb-side space in front of it, which reduces curb-side space for on-street parking. In the next two images below, the barrier curb does not eliminate driveway widening but makes the widened driveway more likely to remain close to the original driveway width at the street and forces the widened driveway to flair out as it approaches the home, which reduces the negative impact to on-street parking compared to mountable curbs.

Pros:

- Discourages illegal widening of driveways
- Demarcates and protects on-street parking spaces
- May help protect trees behind barrier curbs

Cons:

- Minor additional cost and construction time for barrier curb compared to mountable curb
- Given issue of undulating sidewalks, barrier curbs are not practical on local streets where there are both townhouses and sidewalks, which means this solution may not be applicable to sizeable portions of a subdivision

Option 7: Establish On-Street Permit Parking Zones as part of Draft Plan of Subdivision

Purpose: Allow residents to purchase monthly or annual on-street permit parking spaces on a cost-recovery basis.

Rationale: On-street permit parking zones could be established at Draft Plan of Subdivision to give residents the opportunity to purchase permits, which would allow them to be exempt from the 3 hour maximum parking period during the day and the overnight winter parking ban during snowfall events. This would help legitimize on-street parking as a long-term solution for residents who need an additional parking space, while allowing the City to recover the additional cost of snow clearing and signage.

Potential Implementation Methods: Draft Plan of Subdivision Conditions, street signage, By-laws and enforcement

Example:

Pros:

- Allows permit holders to park for periods in excess of the otherwise stipulated parking period for their street and to be exempt from overnight winter parking bans
- Increase convenience for those willing to pay for permit: more likely to find an available nearby on-street parking space and no need to move the car every three hours or during snowfall events
- Cost-recoverable for City: cost of permit includes additional snow clearing expenses

- Ability for residents to secure a nearby long-term parking space on the street may reduce the number of illegally widened driveways
- Established process with existing Permit Parking Regulations:

https://ottawa.ca/en/residents/transportation-and-parking/parking/parking-permits

Cons:

- Reduces supply of free on-street parking spaces
- Need for signage and enforcement
- Need to review and update process and rates for suburban on-street permit parking zones
- Additional voluntary cost for residents to use

Option 8: Wide/shallow townhouse units

Purpose: Increase supply of on-street parking through relatively wide townhouse lot and unit width that increases frontage for on-street parking.

Potential Implementation Methods: Developer-driven new dwelling unit designs, Plan of Subdivision and Parking Plan, Zoning By-law.

Examples: At left: Rue Henry Lauzon, Orleans; at right: Windeyer Crescent, Kanata

Pros:

- Increases supply of on-street parking
- Wider frontage to the street can result in more appealing façade (e.g. space for front porch, higher ratio of habitable living space to garage width)
- Eliminates need for tandem parking in driveway, allowing for shallower front yard setback and shorter lot depths

Cons:

- Potential slight reduction in density (depending on lot dimensions)
- Potential privacy and shadowing impacts where these units back onto each other as a result of shallower lot depths
- Increased infrastructure costs per unit as a result of fewer units per linear metre of street

Option 9: Angled parking in right-of-way at block ends

Purpose: Increase supply of on-street parking

Rationale: At block ends of local streets, where townhouse blocks are side-lotted to the local street in order to front the perpendicular street, additional parking can be provided in the right-of-way with angled parking where there are no sidewalks.

Potential Implementation Methods: Plan of Subdivision and Parking Plan, Urban Design Guidelines.

Example: Total of 10 angled parking spaces provided in an 18 metre local street at the block end where it meets a collector street. Block depth: 60 metres (30 metre lots)

Pros:

- Additional on-street parking spaces with minimal impact to right of way (while not in the roadway, in this case they are still considered on-street parking because they are completely within the right of way)
- Could be its own on-street permit parking zone reserved for permit holders

Cons:

- Although angled parking can conceptually fit in an 18 metre right of way, it may have to be flared out (e.g. to 20 metres) at block end to better accommodate angled parking
- May require deviation report or development of new right of way cross-sections

Option 10: Mid-block Parking Mews

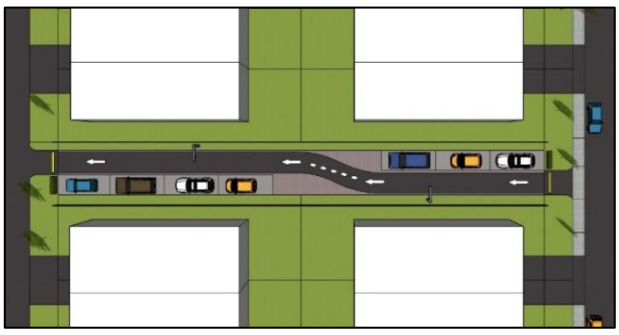
Purpose: Increase supply of on-street parking on blocks with townhouses without affecting existing unit designs or typical lot dimensions.

Rationale: Instead of a 6 metre wide walkway block, a 7.6 metre mid-block parking mews can introduce additional parking if carefully designed as a slow speed one-way laneway with parking for all modes of transportation.

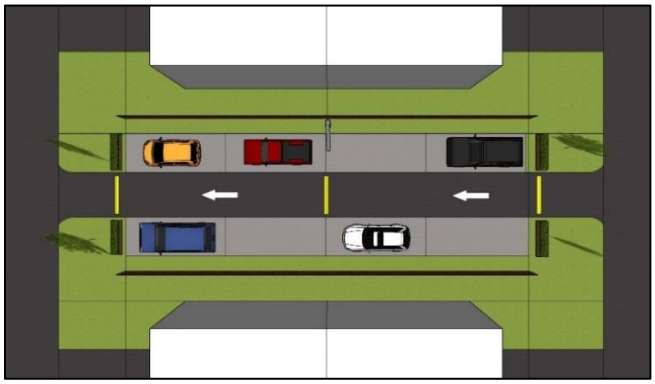
Potential Implementation Methods: Local Plan, Plan of Subdivision and Parking Plan, new lane cross-section.

Example: Mid-block mews combines the functionality of a walkway block and on-street parking. Concept below is 7.6 metre wide: one-way 3 metre drive lane, parallel parking spaces 2.6 metre x 6.7 metre, plus 1.0 metre buffer/snow storage on each side. A 60 metre deep block (30 metre lots) allows for seven parallel parking spaces.

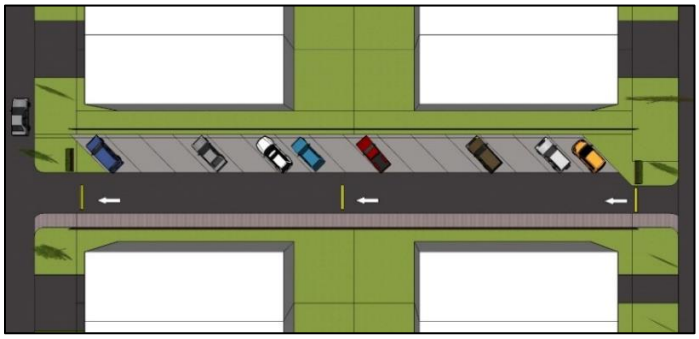
Given the shared space for all modes of transportation, it is imperative to ensure very slow vehicle speeds and discourage cut-through vehicular traffic. To achieve this, parking is arranged on alternating sides of the lane and a speed bump or hump is placed at each end of the lane. Where the laneway meets the street, there is a tight curb radii and a continuous sidewalk across the front of the laneway. In addition, a tree and/or low planters may be placed at each end of the lane in front of the parking to help demarcate the beginning and end of the parking lanes and offer a partial screen to visually narrow the laneway in order to further reinforce the slow speed environment.



Variations of the mid-block mews can provide even more parking spaces. In the example below, a 10.2m wide laneway (3m drive lane, 2.6m x 6.7m parking spaces on each side, plus 1.0m buffer/snow storage beyond each parking space) can accommodate eight parking spaces in a 27m deep back-to-back townhouse block. Locating parallel parking on both sides of the laneway may require an additional speed bump or hump at the centre of the laneway. In a 60m deep townhouse block, this configuration would result in 16 parking spaces.



In yet another variation below, a 10.3m wide laneway provides 15 angled parking spaces in a 60m deep townhouse block:



Pros:

- Additional on-street parking with minimal negative impacts to streetscape or density
- Narrowest option is minimally wider than a walkway block
- Could be a public laneway with its own on-street permit parking zone reserved for permit holders or a private lane if part of a condominium
- Marketing advantages: could expand market for townhouse units to households with more than two vehicles or need for frequent visitor parking

Cons:

- Slight reduction in net density
- Some additional initial construction costs compared to a walkway block
- Requires multiple strategies to achieve very slow vehicular speeds, discourage vehicular cut-through traffic, and ensure safety and comfort for pedestrians and cyclists

Option 11: New rear lane townhouse block model and rear lane cross-section with mid-block snow storage

Purpose: Provide new rear lane block model that solves challenges presented by existing typical rear lane cross-section and rear lane block model.

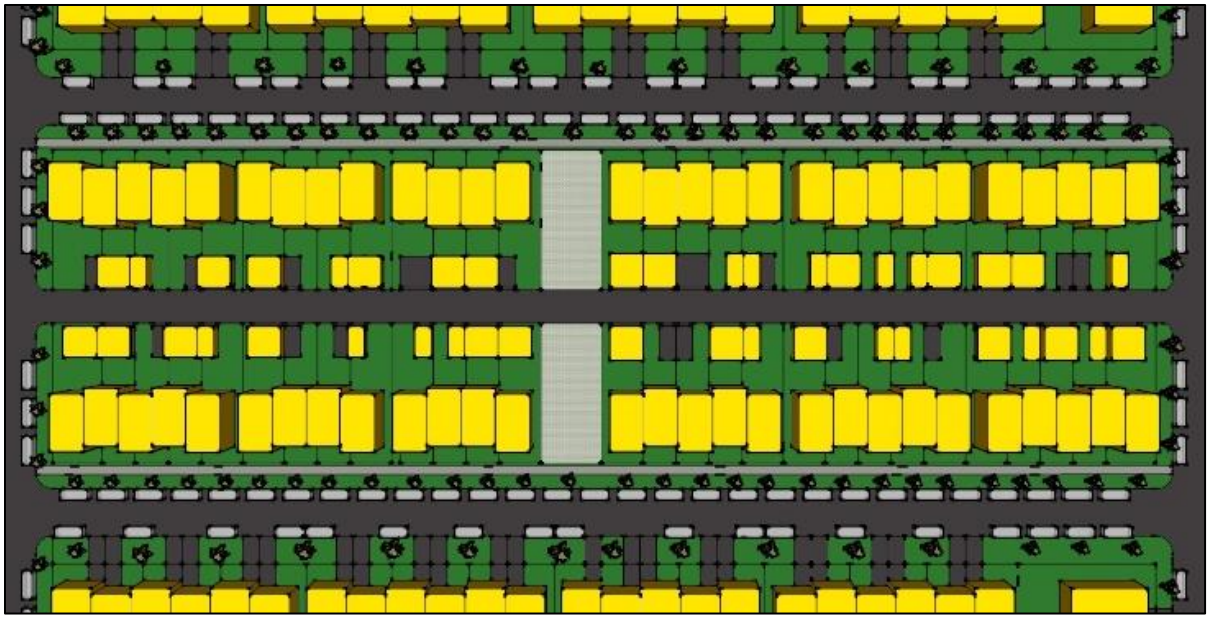
Rationale: Rear lane blocks provide a large amount of on-street parking from continuous frontages that are not interrupted by driveways. An improved rear lane model may support the use of these blocks, which would increase the supply of on-street parking in new subdivisions.

Existing rear lane townhouse blocks tend to have challenges around the provision of private amenity spaces and sufficient space for snow storage. In the proposed block, smaller building footprints and three storey townhouses allow for rear yards and a range of parking options from parking pads to double garage. A narrower one-way lane makes more efficient use of laneway space, while a mid-block snow storage space keeps snow removal costs to a minimum because snow can be pushed and piled to this space without specialized equipment – as opposed to the need to blow the snow into trucks at the end of the lane and have it hauled off-site.

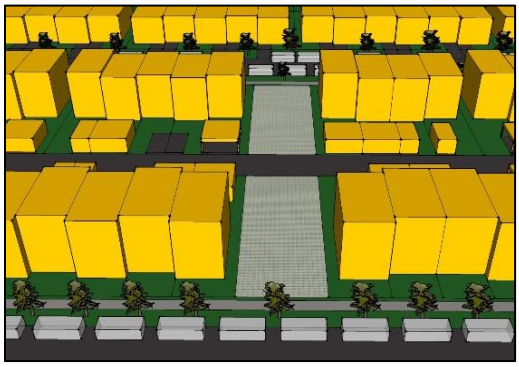
Potential Implementation Methods: Local plan, plan of subdivision and Parking Plan, new rear lane cross-section, new unit designs.

Example: In the image below, a conceptual city block with rear lane townhouses has approximately the same density as city block with traditional townhouses but provides 1.5 times the number of on-street parking spaces (represented by grey blocks).

Block dimensions: 56m x 200m with 6m wide one-way lane and two 11m x 25m snow storage spaces; lot sizes: 6.5-7.5m wide by 25m deep; townhouse unit footprint: 6m x 10m (at three storeys equals roughly 1750 sq. ft.); 56 units per block; density: 50 units per net ha (assumes private lane and snow storage space); estimated 62 on-street parking spaces.



Example: Image below to the left: mid-block snow storage space in grey colour. Image below to the right: rear lane perspective showing rear yards and variety of parking options (parking pads, carports and garages).



Pros:

- Similar density as townhouses with driveway to the street but 1.5 times more on-street parking
- At 50 u/ha, sufficient density to support relatively frequent transit service
- Addresses snow storage problem in typical rear lane block model and acts as pedestrian short-cut or flexible amenity space for residents during summer months
- Size of snow storage space is intended to accommodate more than half the average annual snow accumulation (pushed with a blade, not piled with a

loader), which should result in the need to truck away snow no more than one time in a typical winter, which reduces pressure on maintenance costs
- Addresses lack of rear yard in typical rear lane block model through smaller footprint and three storey townhouse design
- Adds variety to dwelling types in a plan of subdivision
- Multiple options for parking on private property (accessed via lane): single parking pad, double parking pad, single carport, double carport, single garage or double garage
- Improved streetscape because of relocation of garages to the laneway
- Increased safety for pedestrians and cyclists from uninterrupted sidewalk and lack of cars backing onto street from driveways
- Opportunity for all townhouse units to have separate exterior stairs to a second dwelling unit in the basement via rear lane and rear yard

Cons:

- Higher construction cost per unit because of third storey
- Greater shadow impacts on rear yard because of three storey units
- Even with freehold townhouse units, may require condominium fees for maintenance of lane and snow storage space

Option 12: One-way private lanes with angled parking and snow storage

Purpose: Provide another option for rear-lane townhouses that solves challenges presented by existing typical rear lane cross-section and rear lane block model.

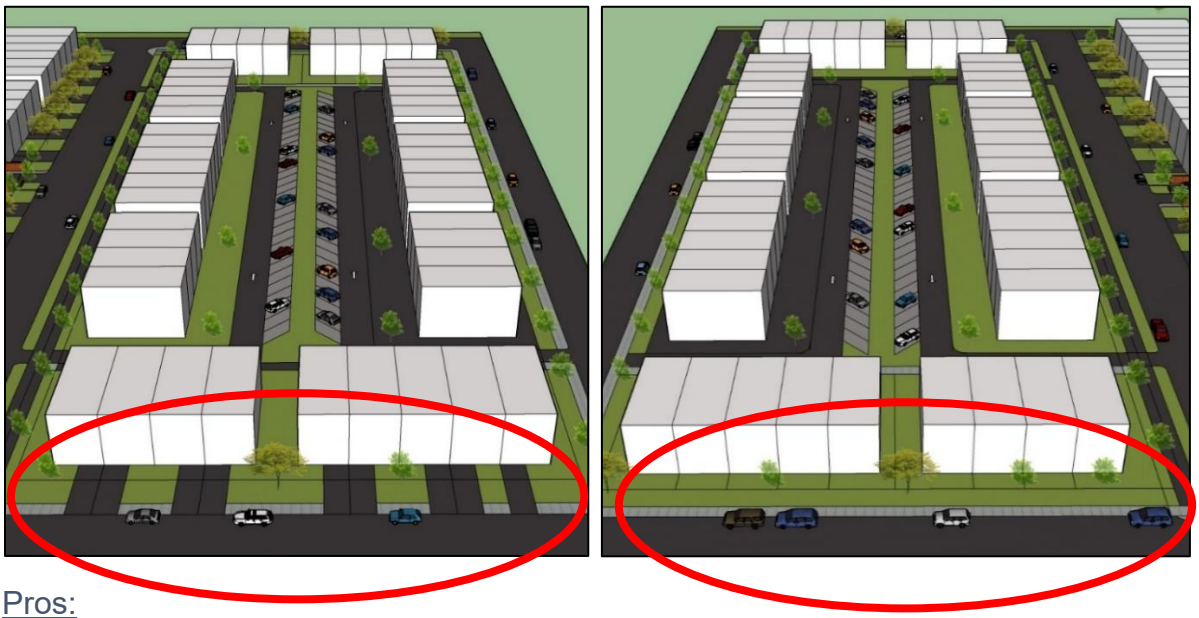
Rationale: One-way lane with angled parking for each side of the block simplifies laneway circulation, parking, and snow storage. It also allows for 25m deep lots with shallow front yard setbacks and rear yards and typical two storey townhouse unit designs.

Implementation Method: New rear lane cross-section, Plan of Subdivision

Example below: One-way laneways leading to angled parking at rear; lack of driveways to the street results in continuous frontage for on-street parking. Block dimensions: 72m x 180m or 1.3 ha; townhouse lot width: 6.5m interior, 8.5m and 10m end units, 25m depth; 50 units; 38 units per net hectare (assuming private ownership of lane); 62 parking spaces at centre of block or 1.2 spaces per unit.

Examples below: Opposite block ends illustrates two different townhouse models: one with driveways to the street like typical townhouses (left image) vs. continuous frontage like rear lane townhouses (right image). In the left image, a 3m front yard setback provides space for one car in the garage and one car in the driveway, plus an additional space at centre of the block for an additional vehicle or visitor parking space. In the right image, there would be one assigned parking space at centre of

the block per unit, plus a continuous frontage (uninterrupted by driveways) for on-street parking.



Pros:

- Parking at rear can be designated for each unit so as to be physically close to its unit while still providing a rear yard
- Affordability: cost savings from not having to build a garage, and for some developers, ability to use existing unit designs
- Better streetscape and more interior square footage from lack of garage
- Increased privacy from greater distance between units at the centre of the block
- Opportunity for non-corner townhouse units to have separate exterior stairs to a second dwelling unit in the basement via rear lane and rear yard
- Space for snow storage between one-way lanes

Cons:

- Requires deeper blocks: 72m compared to typical 60m with 25m deep lots (lack of driveways to the street allow for 3m front yard setbacks)
- Slight reduction in density: 39 units per net hectare (assuming entire block is private) compared to 43 units per net hectare for townhouse block with mid-block parking mews (Option 10)
- Need for common element condominium fee for surface parking and related maintenance like snow clearing