

SUBJECT
298 Axis Way (Trails Edge Block 140)
Transportation Brief

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DEPARTMENT
Transportation Engineering

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OUR REF
\\147936 Trailsedge Block 140 - Internal
Documents\6.0_Technical\6.23_Traffic\03_Reports

PROJECT NUMBER
147936

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Arcadis has been retained by Minto Communities Inc. to prepare a Transportation Brief in support of a proposed residential townhome development located in the northwest quadrant of the Fern Casey Street & Axis Way intersection in Ottawa, Ontario. The municipal address of the site is now referred to as 298 Axis Way (formerly 6371 Renaud Road).

The following topics are discussed in this report:

1. Overview of the Proposed Development
2. Transportation Context
3. Trip Generation Estimate
4. Internal Traffic and Pedestrian Circulation
5. Site Access Review
6. Parking Supply Review

Proposed Development

The proposed development is located south of Brian Coburn Boulevard, north of Axis Way and west of Fern Casey Street. The municipal address of the property is 298 Axis Way (formerly known as 6371 Renaud Road).

It is anticipated that the proposed development will be constructed in a single phase.

Table 1 summarizes the proposed land uses included in this development.

Table 1 – Proposed Land Use

| Land Use | Size |
|------------------------|-----------|
| Stacked Townhomes | 160 units |
| Back-to-Back Townhomes | 40 units |

The draft site plan for the proposed development is illustrated in **Figure 1** and has been provided in **Appendix A** as well.



Figure 1 Proposed Development

Access to the site will be provided via a right-in/right-out access on Fern Casey Street, approximately 100m north of Axis Way/Couloir Road, and a full-movement access on Axis Way, approximately 200m west of Fern Casey Street. Approximately 25m of the access on Axis Way has already been partially constructed in a municipal road allowance with a 20m right-of-way, 8.5m of pavement width and no sidewalk. Despite the site having connectivity via a public road allowance, the internal road network will be private.

A total of 240 resident vehicle parking spaces (80 for the back-to-back townhouse dwellings and 160 for the stacked townhouse dwellings), 17 visitor vehicle parking spaces, and 80 bicycle parking spaces will be provided.

A TIA Screening Form was completed for the proposed development and has been provided in **Appendix B**. The initial screening concluded that, although the trip generation trigger is met, the overall traffic generation is not

expected to have a significant impact on the operation of the adjacent high-capacity roundabout at Brian Coburn & Fern Casey. Further justification for the reduced scope is provided in the trip generation section of the report. The Location trigger was not satisfied, but since the Safety trigger was satisfied, a review of the site's localized impact on the adjacent street network is warranted and thus reviewed as part of this reduced-scope Transportation Brief.

Transportation Network Context

Existing Conditions

In the vicinity of the proposed development there are the following streets:

- **Brian Coburn Boulevard** is a two-lane urban arterial road which extends east-west from Navan Road to Trim Road, has a posted speed limit of 70 km/h and is designated as a truck route. Adjacent to the site, the road has a multi-use path on the south side and an on-street bike lane on the north side.
- **Fern Casey Street** is a two-lane urban major collector road which extends north-south from Brian Coburn Boulevard to Renaud Road and has a posted speed limit of 60 km/h. Concrete sidewalks and on-street bike lanes are provided on both sides of the street.
- **Axis Way** is a two-lane urban local road which extends east-west from Compass Street to Fern Casey Street and has a posted speed limit of 40 km/h. There is a concrete sidewalk on the north side and an asphalt path on the south side.
- **Couloir Road** is a two-lane urban collector road which extends east-west from Fern Casey Street to Ascender Avenue and has an assumed speed limit of 40 km/h. Similar to Axis Way, there is a concrete sidewalk on the north side and an asphalt path on the south side.

The proposed development is located a 500m-600m walking distance from Collège catholique Mer Bleue and within a 400m-500m walking distance to two parks.

Route #32 is the only transit route accessible within a short walking distance of the site. Route #32 operates between the Chapel Hill Park & Ride and Blair Station, with 30-minute headways between buses. The nearest bus stops to the proposed development are located at the Fern Casey & Axis/Couloir intersection. The nearest pedestrian crossing of Fern Casey Street is located at Brian Coburn Boulevard, however, making the walking route to the bus stop on the east side of Fern Casey Street slightly circuitous. The transit route map for Route #32 has been provided in **Appendix C**.

Traffic volumes at the intersections of Brian Coburn & Fern Casey and Fern Casey & Axis/Couloir were collected on October 9, 2024. **Figure 2** illustrates existing traffic volumes at these two intersections.

** At the time of the traffic count, construction was underway on the lands north of Brian Coburn Boulevard*

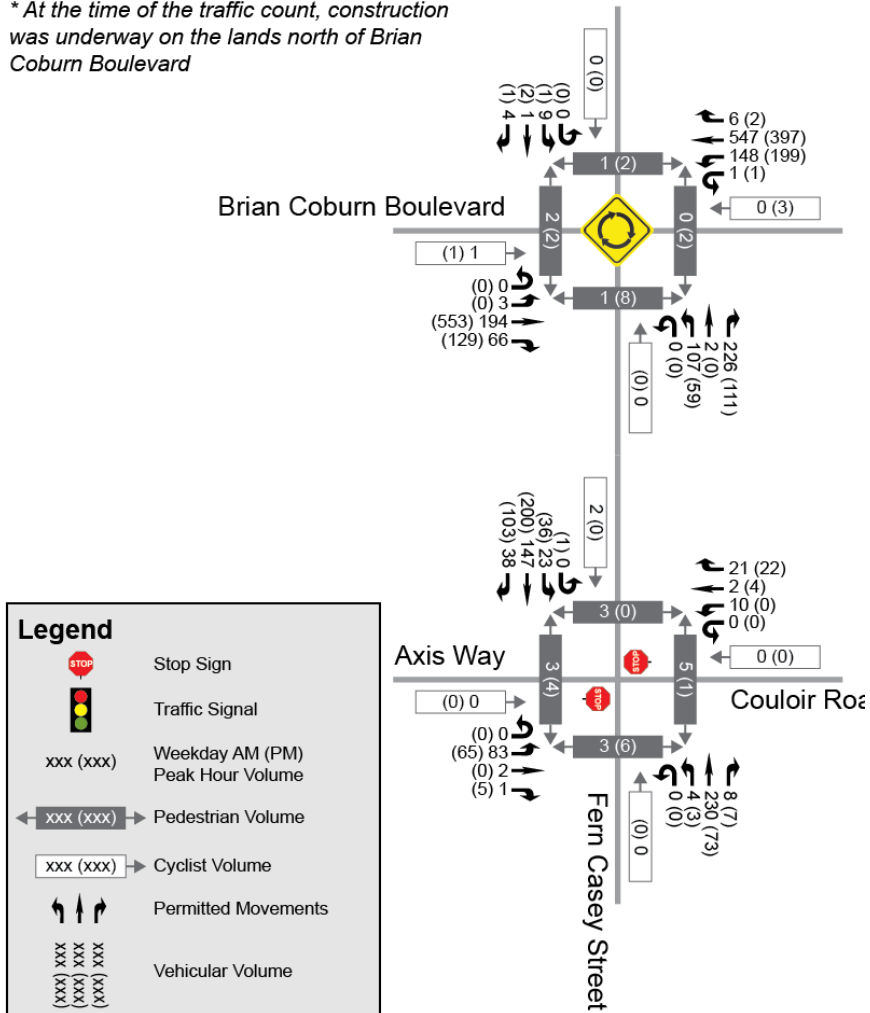


Figure 2 Existing Traffic

The lane configuration and traffic control at the intersections of Brian Coburn & Fern Casey and Fern Casey & Axis/Couloir is shown in **Figure 3**.

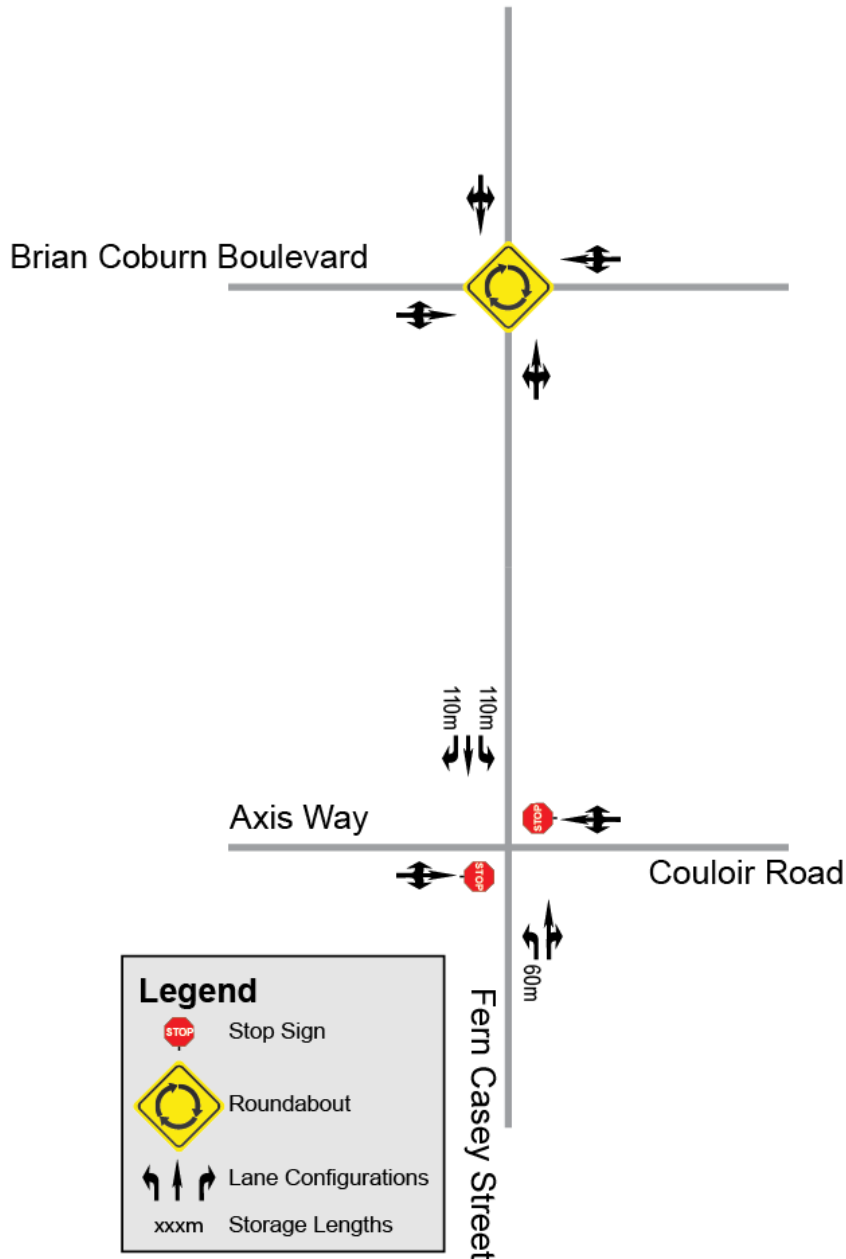


Figure 3 Existing Lane Configurations and Traffic Controls

Intersection capacity analysis was completed to assess traffic operations under Existing Traffic conditions and the results are summarized in **Table 2** below. Detailed intersection capacity analysis reports have been provided in **Appendix D**.

Table 2 Intersection Capacity Analysis Results: Existing Traffic

| Intersection | AM Peak Hour (PM Peak Hour) | | Lane Group | AM Peak Hour (PM Peak Hour) | | | | Storage Length |
|---|-----------------------------|------------------|------------|-----------------------------|----------|----------------|-----------------------|----------------|
| | Intersection Delay | Intersection LOS | | Delay | LOS | v/c Ratio | 95th Percentile Queue | |
| Fern Casey & Axis/Couloir (Two-Way Stop Control) | 15.0s (12.9s) | C (B) | NBL | 7.8s (8.4s) | A (A) | 0.00 (0.00) | 0.0m (0.0m) | 60m |
| | | | NBT | - (-) | - (-) | - (-) | - (-) | - |
| | | | EBTRL | 15.0s (12.9s) | C (B) | 0.21 (0.15) | 5.6m (3.5m) | - |
| | | | WBTRL | 11.4s (9.6s) | B (A) | 0.06 (0.04) | 1.4m (0.7m) | - |
| | | | SBL | 8.1s (7.5s) | A (A) | 0.02 (0.03) | 0.7m (0.7m) | 110m |
| | | | SBT | - (-) | - (-) | - (-) | - (-) | - |
| | | | SBR | - (-) | - (-) | - (-) | - (-) | 110m |
| Brian Coburn & Fern Casey (Roundabout) | 9.6s (11.1s) | A (B) | NBL | 7.2s (8.2s) | A (A) | 0.36 (0.27) | 15.1m (8.9m) | - |
| | | | NBT | 8.9s (8.0s) | A (A) | 0.36 (0.27) | 15.1m (8.9m) | - |
| | | | NBR | 7.2s (8.1s) | A (A) | 0.36 (0.27) | 15.1m (8.9m) | - |
| | | | WBL | 11.9s (8.6s) | B (A) | 0.66 (0.53) | 47.2m (32.0m) | - |
| | | | WBT | 11.9s (8.6s) | B (A) | 0.66 (0.53) | 47.2m (32.0m) | - |
| | | | WBR | 13.9s (8.6s) | B (A) | 0.66 (0.53) | 47.2m (32.0m) | - |
| | | | SBL | 13.2s (5.7s) | B (A) | 0.05 (0.01) | 1.3m (0.3m) | - |
| | | | SBT | 7.4s (8.5s) | A (A) | 0.05 (0.01) | 1.3m (0.3m) | - |
| | | | SBR | 10.7s (5.7s) | B (A) | 0.05 (0.01) | 1.3m (0.3m) | - |
| | | | EBL | 9.1s (14.1s) | A (B) | 0.28 (0.70) | 10.9m (86.0m) | - |
| | | | EBT | 6.1s (14.1s) | A (B) | 0.28 (0.70) | 10.9m (86.0m) | - |
| | | | EBR | 6.3s (14.1s) | A (B) | 0.28 (0.70) | 10.9m (86.0m) | - |

The results of the intersection capacity analysis indicate that both intersections are operating at an acceptable Level of Service (i.e., LOS 'E' or better) under Existing Traffic conditions.

Additionally, the projected queueing on the southbound approach of the Fern Casey & Axis/Couloir intersection is negligible. At this time, no site access blockages are to be expected.

The City of Ottawa TIA Guidelines require a safety review if at least six collisions for any one movement or of a discernible pattern, over a five-year period have occurred. **Table 3** summarizes all reported collisions between January 1, 2017, and December 31, 2022.

Table 3 Historical Collision Records

| Location | Number of Collisions | | | | | | |
|---|----------------------|-------|----------|-----------|------------------|----------------------|-------|
| | Approaching | Angle | Rear End | Sideswipe | Turning Movement | Single Motor Vehicle | Total |
| Brian Coburn & Fern Casey | - | 5 | 1 | - | - | 4 | 10 |
| Fern Casey & Axis/Couloir | - | 2 | - | - | 1 | - | 3 |
| Brian Coburn, Chapel Hill Park & Ride to Fern Casey | - | - | - | - | - | 1 | 1 |
| Brian Coburn, Fern Casey to Mer Bleue | 3 | - | 2 | 1 | 1 | 1 | 8 |
| Fern Casey, Brian Coburn to Axis/Couloir | - | - | - | - | - | - | 0 |
| Axis Way, full length | - | - | - | - | - | 3 | 3 |

Based on the collision records available, there are no locations that warrant further review.

Planned Conditions

The Cumberland Transitway is a bus rapid transit (BRT) facility which is expected to extend from the Blair Light Rail Transit (LRT) Station to Frank Kenny Road which will have a station located at the intersection of Brian Coburn Boulevard and Fern Casey Street. **Figure 4** illustrates the location of the proposed development relative to this future BRT facility. The 2024 Development Charges Background Study (Hemson, July 2024) suggests that this BRT facility will be constructed between 2031 and 2033. As such, in the long term the proposed development will be located immediately adjacent to a transitway station. This facility has also been identified as part of the Priority Transit Network in the Ottawa Transportation Master Plan (TMP) Update Transit Network Development report (March 31, 2025).

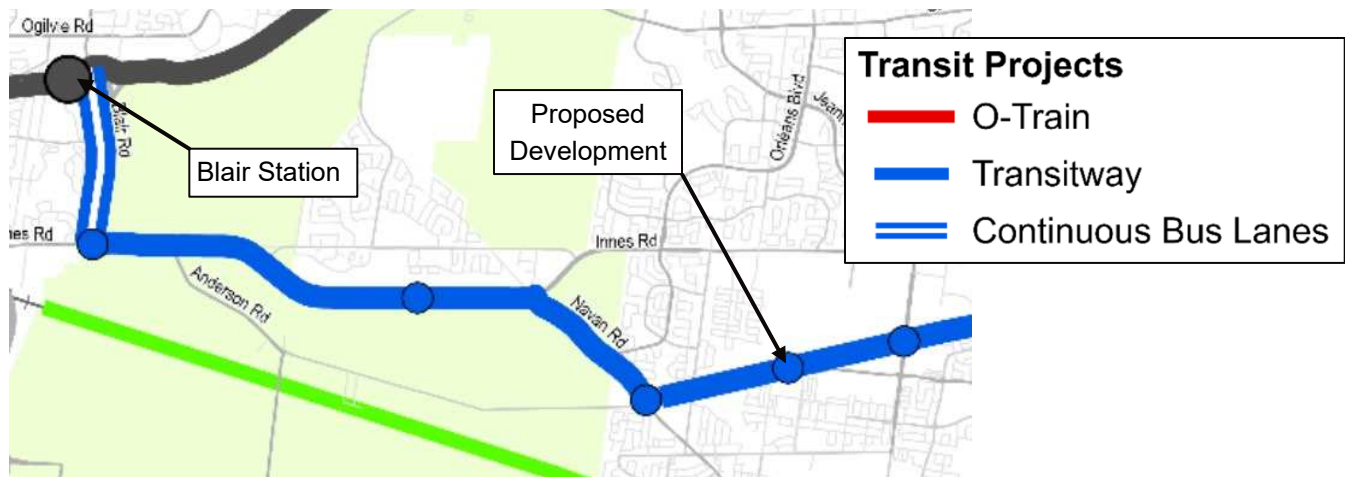


Figure 4 Priority Transit Network
(Source: Ottawa Transportation Master Plan Update Transit Network Development, accessed 2025-04-10)

In addition to the construction of the Cumberland Transitway, the Ottawa TMP Update's Road Network Development Report identifies the four-lane widening of Brian Coburn Boulevard between Navan Road and Tenth Line as a priority road network improvement. The Road Network Development Report also indicates that Renaud Road may be realigned to connect to Brian Coburn Boulevard at Navan Road, and that Navan Road may be widened to four lanes between Blackburn Hamlet Bypass and existing Renaud Road. **Figure 5** illustrates the above road network improvements.



Figure 5 Priority Road Network
(Source: Ottawa Transportation Master Plan Update Road Network Development Report, accessed 2025-04-10)

It should be noted that there are currently no plans for any improvements to pedestrian/cycling facilities within the vicinity of the proposed development.

On April 27, 2025, the New Ways to Bus initiative will be implemented by OC Transpo which will result in a number of changes to transit service in the vicinity of the proposed development, including:

- Adjustment to Route #32 to provide service to Place d'Orléans Station.
- Adjustment to Route #24 to provide service to Chapel Hill Park & Ride and in the vicinity of the proposed development.
- Adjustment to Route #226 to provide service to the communities of Blackburn Hamlet and Chapel Hill South.

Figure 6 illustrates the transit routes that will provide service to the proposed development following the implementation of the New Ways to Bus initiative.

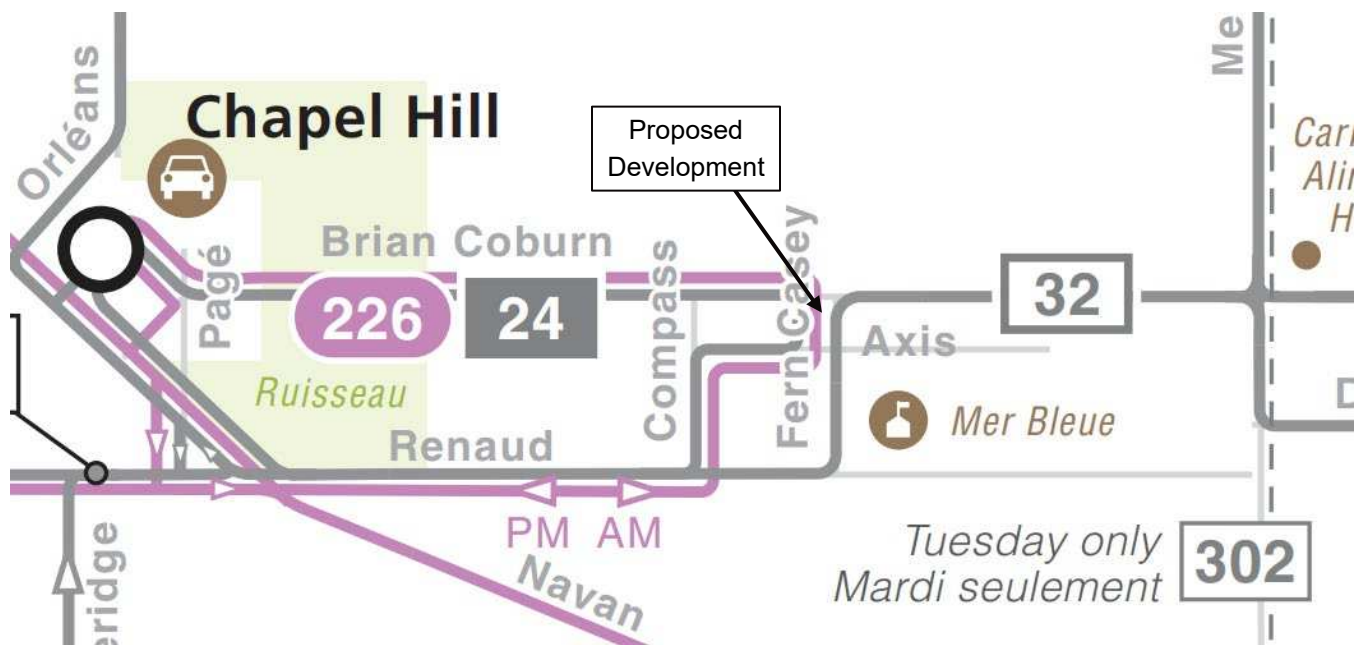


Figure 6 New Ways to Bus Network Map
(Source: OC Transpo, accessed 2025-04-10)

Adjacent Developments

In vicinity of the proposed development there are two future developments of significance:

- The Trailsedge Phase 5 subdivision is located to the north of Brian Coburn Boulevard and will include a total of 2,040 residential dwellings of various formats (single family, townhouses and apartments) and an employment area which will accommodate a projected 830 jobs. Buildout of this development will occur over a long timeframe with Phase 1 completion anticipated for 2037 and full buildout in 2047. Access to this subdivision would be provided via the future Vanguard & Mer Bleue intersection, a future extension of Frank Bender Street, a roadway connection to development to the west, and the Brian Coburn & Fern Casey roundabout. This development is expected to contribute traffic to Brian Coburn Boulevard and the future segment of Fern Casey Street north of Brian Coburn Boulevard but is not anticipated to contribute traffic on the existing portion of Fern Casey Street adjacent to the site. The TIA for this subdivision indicates that the Brian Coburn & Fern Casey roundabout is expected to operate at LOS 'B' in 2047 as a two-lane roundabout.
- In the southwest quadrant of the Fern Casey & Axis/Couloir intersection is an undeveloped block zoned I1A Minor Institutional. There is therefore the potential for a school to be constructed in this block which will

contribute traffic to the Fern Casey Street & Axis Way intersection. At this time, there is no active site plan application for this block.

Trip Generation

The peak period person-trip generation of the site has been estimated using appropriate rates from the 2020 TRANS Trip Generation Manual. The resulting peak period (7-9:30am and 3:30-6pm) trip generation is summarized in **Table 4**.

Table 4 Peak Period Person Trips

| Land Use | Size | AM Peak Period | | | PM Peak Period | | |
|-------------------|-----------|----------------|-----|-------|----------------|-----|-------|
| | | In | Out | Total | In | Out | Total |
| Townhomes | 40 units | 16 | 38 | 54 | 35 | 28 | 63 |
| Stacked Townhomes | 160 units | 40 | 88 | 128 | 84 | 60 | 144 |

The existing mode share distributions for multi-unit low-rise and high-rise¹ development in Orleans is summarized in **Table 5**.

Table 5 Existing Mode Share Distributions

| Travel Mode | Multi-Unit Low Rise | | Multi-Unit High-Rise | |
|----------------|---------------------|----------------|----------------------|----------------|
| | AM Peak Period | PM Peak Period | AM Peak Period | PM Peak Period |
| Auto Driver | 47% | 51% | 54% | 61% |
| Auto Passenger | 15% | 19% | 7% | 13% |
| Transit | 29% | 24% | 29% | 21% |
| Bicycle | 1% | 1% | 0% | 0% |
| Walk | 9% | 6% | 10% | 6% |

It should be noted that ultimately the transit mode share in the area is expected to increase significantly once rapid transit is implemented via the Cumberland Transitway along the Brian Coburn corridor.

¹ The 2020 TRANS Trip Generation Manual defines low-rise as multi-unit housing with two or fewer storeys and high-rise as multi-unit housing with three or more storeys.

The peak period person-trips from **Table 4** have been subdivided by mode based on the existing mode share distributions from **Table 5** and converted to peak hour person-trips using the conversion factors from the 2020 TRANS Trip Generation Manual. The resulting peak hour person-trips by mode are summarized in **Table 6**.

Table 6 Peak Hour Trips by Mode

| Travel Mode | AM Peak Period | | | PM Peak Period | | |
|--------------------|----------------|-----------|-----------|----------------|-----------|-----------|
| | In | Out | Total | In | Out | Total |
| Auto Driver | 14 | 31 | 45 | 30 | 22 | 52 |
| Auto Passenger | 2 | 6 | 8 | 8 | 6 | 14 |
| Transit | 9 | 20 | 29 | 12 | 9 | 21 |
| Bicycle | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk | 3 | 7 | 10 | 4 | 3 | 7 |
| Total | 28 | 64 | 92 | 54 | 40 | 94 |

The June 2023 revisions to the TIA Guidelines indicate that intersection capacity analysis and transit capacity analysis are only required for sites generating over 75 auto and transit trips, respectively. As such, the above trip generation results confirm that reduced scope of this study is justified.

Internal Circulation Review

Within the proposed development, a comprehensive pedestrian network will be provided with sidewalks provided:

- On all sides of the stacked townhouse buildings;
- On both sides of Street 1 (east of Street 2 only), Street 3, and Street 4; and
- On one side of Street 1 (west of Street 2 only).

Active transportation connectivity is oriented to the northeast area of the site to the Brian Coburn/Fern Casey intersection where multi-modal transportation facilities exist or are planned. Several direct sidewalk connections will be provided to existing pedestrian facilities on Brian Coburn Boulevard and Fern Casey Street.

Additionally, a short segment of sidewalk will be provided extending along the west side of Street 1 from Axis Way to the boundary of the site. Extending this sidewalk further along Street #1 is not recommended as it would create an attractive cut-through route for pedestrians travelling to/from Brian Coburn Boulevard. As a future private condo development, there are liability risks associated with the public using private pedestrian facilities and the only means of discouraging the public from cutting through the site is by not providing a continuous facility. A pedestrian connection along the southern boundary of the site is also not recommended as it would create a blind alley south of Block 12 which could create a safety risk at that location.

The TDM-Supportive Development Design and Infrastructure Checklist was completed and is provided in **Appendix E**. Key elements that will be provided include: providing direct sidewalk connections to Brian Coburn Boulevard, Fern Casey Street and Axis Way, locating buildings close to the street, and providing bicycle parking.

As noted previously, there are two parks and a school located within a relatively short walking distance of the site. The nearest bus stops are located at the intersection of Fern Casey Street and Axis Way/Couloir Road, placing all

residents well within 200m walking distance to transit. The site is located directly adjacent to the future Cumberland Transitway station at the intersection of Brian Coburn Boulevard and Fern Casey Street.

Given the site's proximity to a future Cumberland Transitway station, no post-development TDM program is currently proposed at this time as it is expected that proximity to transit will be sufficient to encourage low auto usage. Consideration may be given to distributing multi-modal travel information packages to new residents, however. A blank copy of the City of Ottawa's TDM Measures Checklist is provided in **Appendix E** for reference.

Swept path analysis was undertaken to confirm the functionality of the site using a fire truck, a front-loading waste collection vehicle, and a medium single-unit (MSU) truck. The results of the swept path analysis are provided in **Appendix F**.

Site Access Review

Sightlines

The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads indicates that the minimum intersection sight distance required for a single-unit truck to safely turn right from the site access on Fern Casey Street is 155m. This is based on an assumed operating speed of 60 km/h. It is not expected that operating speeds will exceed 60 km/h adjacent to the site access due to the proximity of the Brian Coburn & Fern Casey roundabout and the relatively low operating speeds within the roundabout.

Figure 7 illustrates the sightline towards the north. The approximate location of the nearest proposed building has been included in the sightline assessment to ensure that the building itself wouldn't block sightlines. All other buildings are set back further from Fern Casey Street and are therefore not a concern.

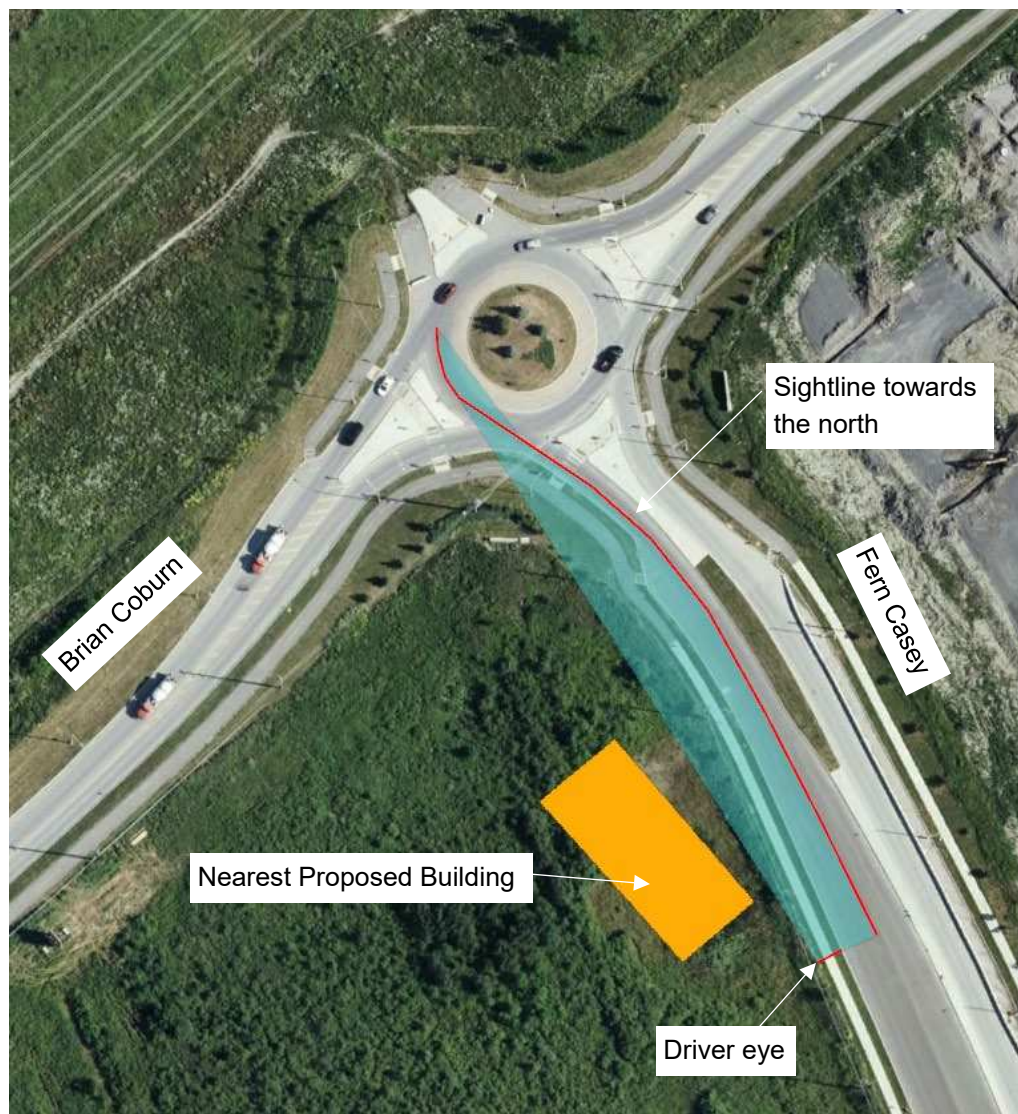


Figure 7 Intersection Sight Distance

Note: The area north of the site access has now been cleared of any vegetation that may obstruct driver sightlines.

The sightline towards the north also extends into the Brian Coburn & Fern Casey roundabout. The sightline requirement of 155m is based on an assumed vehicle speed of 60 km/h. Vehicles within the roundabout, however, will be travelling much slower than 60 km/h and therefore it is not necessary for the driver's view from the site access to extend beyond the roundabout.

The site access on Axis Way has already been constructed and is located on a straight road with a presumed low operating speed. There are no sightline issues at this site access.

Corner Clearances

The site provides two points of vehicular access: one on Fern Casey Street, and one on Axis Way. Based on the magnitude of the proposed development, a secondary access is required for redundancy, to facilitate circulation of heavy vehicles, and to ensure the site can be accessed by emergency vehicles from all directions.

TAC guidelines suggest that driveways should not be located within the functional area of an intersection. The functional area of an intersection includes the area of the intersection itself as well as longitudinal limits of the auxiliary lanes. The proposed driveway on Fern Casey Street is located within the auxiliary lanes of the Fern Casey & Axis/Couloir intersection and therefore falls within the functional area of the intersection. Although not ideal, the proposed driveway is located near the northern limits of the auxiliary lanes to avoid potential site access blockages upon future development of the institutional block to the south of the site, but sufficiently far from the Brian Coburn & Fern Casey roundabout.

To discourage residents from exiting via the Fern Casey Street driveway and making U-turns to go to Brian Coburn Boulevard, it is recommended that the City consider implementing U-turn prohibitions at the Fern Casey & Axis/Couloir intersection.

The site access on Axis Way has already been constructed and is located more than 15m from the adjacent stop-controlled intersections. As such, there are no concerns with the location of this site access.

Clear Throat Lengths

For a residential development with 200 units, a minimum clear throat length of 15m is required for site accesses on collector roads. A clear throat length of approximately 42m is proposed for the site access on Fern Casey Street, thereby exceeding this requirement.

There is no clear throat length requirement for driveways on local streets such as Axis Way.

Private Approach By-law Requirements

The draft site plan has been reviewed for conformance with the Private Approach By-law (2003-447) with particular confirmation of the following items:

- **Width:** A private approach shall have a minimum width of 2.4m and a maximum width of 9.0m.
 - The private approaches will be 6.0m and 8.5m wide. ✓
- **Quantity and Spacing of Private Approaches:** One (1) two-way private approach is permitted on Axis Way as the proposed development only has approximately 20m of frontage on that road. On Fern Casey Street, the site has approximately 172m of frontage and therefore one (1) two-way private approach and two (2) one-way private approaches or two (2) two-way private approaches are permitted. Any two private approaches must be separated by at least 9.0m, although this can be reduced to 2.0m in the case of two one-way driveways. On lots that abut more than one roadway, these provisions apply to each frontage separately.
 - A single two-way private approach is proposed on both Axis Way and on Fern Casey Street. ✓
- **Distance from Property Line:** Private approaches must be at least 3.0m from the abutting property line, however this requirement can be reduced to 0.3m provided that the access is a safe distance from the access serving the adjacent property, sight lines are adequate and that it does not create a traffic hazard.
 - The private approaches are more than 3.0m from the property lines. ✓

Parking Review

Vehicle Parking Requirements

Table 6 summarizes the number of parking spaces required by the Zoning By-law (2008-250) for Area C and the number of parking spaces proposed.

Table 7 Parking Review

| Land Use | Type of Space | Required | Proposed |
|----------------------------------|---------------|----------|-----------------|
| Back-to-back townhouse dwellings | Resident | 40 | 80 ¹ |
| Stacked townhouse dwellings | Resident | 192 | 160 |
| | Visitor | 32 | 17 |
| | Total | 224 | 176 |

¹ Two spaces per unit, including the driveway and garage

It should be noted that one of the 17 visitor parking spaces will be an accessible parking space. As a private development, the City of Ottawa Accessibility Design Standards do not apply and instead the Traffic and Parking By-law (2017-301) governs. The By-law states that for a parking lot with between one and 19 public parking spaces, no accessible parking spaces are required. As only the visitor parking spaces are available to the public and there are only 17 of them, the single accessible parking space exceeds the minimum By-law requirements.

The first draft of the new Zoning By-law was released on May 31, 2024, and features a number of revisions to the parking requirements outlined in the 2008 Zoning By-law (2008-250). The modifications include the elimination of minimum requirements for resident parking spaces and a reduction in the minimum visitor parking requirement to 0.1 spaces per unit. Furthermore, as the proposed development is located in Area C in Schedule A3 of the draft Zoning By-law, the visitor parking requirements do not apply to the first 12 dwelling units. Under the draft Zoning By-law, the only requirement for the site would be to provide 15 visitor parking spaces. As such, the proposed parking supply meets the parking requirements of the future Zoning By-law.

Once the Cumberland Transitway is constructed, it is expected that the stacked townhouse dwellings will only generate a peak parking demand of 162 vehicles² as many households will be able to rely on transit for commuting to/from work and visitors will be able to arrive via transit instead of personal vehicle. Thus the 176 spaces proposed will be sufficient to meet the expected demand.

It is therefore expected that the proposed parking supply is sufficient given that the proposed parking supply meets the minimum parking requirements of the future Zoning By-law and the peak parking demand of the stacked townhouse dwellings is not anticipated to exceed the proposed supply once the Cumberland Transitway is implemented.

² The ITE Parking Generation Manual only distinguishes between locations that are within ½ a mile (800m) from rail transit versus those that are beyond ½ a mile (800m) from rail transit. Although the Cumberland Transitway will be a BRT facility rather than an LRT facility, it is expected that the impact on parking demand will be similar.

A site-specific zoning exception is being sought to reduce the minimum parking requirements to one resident parking space and 0.1 visitor parking space per stacked townhouse unit. The proposed parking supply is consistent with the proposed site-specific zoning exception being sought.

Bicycle Parking Requirements

The Zoning By-law indicates that a minimum of 0.5 bicycle parking spaces per unit are required for stacked townhouse dwellings. This equates to a minimum requirement of 80 spaces. A total of 80 spaces will be provided, thereby meeting the requirements.

Minimum Dimension Requirements

The Zoning By-law and City of Ottawa Accessibility Design Standards specifies the following size requirements for parking facilities:

- Drive aisles must be a minimum of 6.0m in width.
- Regular parking spaces must be a minimum of 5.2m long and 2.6m wide.
- Type A parking spaces must be a minimum of 5.2m long, 3.4m wide and adjacent to a 1.5m wide access aisle

The proposed parking facility has been reviewed and meets the above requirements.

Conclusion

The proposed development is expected to generate up to 52 two-way vehicle trips during the weekday peak hours. Once the Cumberland Transitway is implemented it is expected that the vehicle-trip generation of the site will decrease as residents and visitors make use of the adjacent transitway.

Intersection capacity analysis has been completed for the intersections of Brian Coburn & Fern Casey and Fern Casey & Axis/Couloir. The results of the analysis indicate that both intersections are currently operating at LOS 'B' or 'C'. As such, there are currently no intersection capacity issues at those intersections.

Swept path analysis has been completed to confirm the functionality of the site. The results of the analysis indicate that fire trucks, waste collection vehicles and moving trucks will be able to circulate within the site.

Given the proximity of the proposed development to existing bus stops and a future Cumberland Transitway station, it is expected that this will naturally encourage low auto usage. As such, no post-occupancy TDM program is proposed for the site at this time, however, consideration may be given to distributing multi-modal travel information packages to new residents. The layout of the site has been designed to encourage the use of non-auto modes of travel by locating buildings close to the street, providing a comprehensive on-site pedestrian network, providing numerous pedestrian connections to Brian Coburn Boulevard, Fern Casey Street and Axis Way, and by providing bicycle parking in accordance with the Zoning By-law requirements.

The site accesses and drive aisles have been reviewed for conformance with applicable by-laws (e.g., Zoning and Private Approach By-laws) and technical standards/guidelines. No issues or concerns were identified with respect to corner clearances, throat lengths, or driveway and drive aisle widths. Furthermore, sightlines at the proposed site access were found to be sufficient.

The proposed parking supply does not meet the requirements of the current Zoning By-law (2008-250), however, the new draft Zoning By-law is expected to eliminate minimum resident parking requirements and reduce visitor parking requirements. Under the new draft Zoning By-law, the proposed parking supply will meet the minimum requirements. Considering the site's proximity to the future Cumberland Transitway, it is expected that many residents will travel by transit, thereby reducing the parking demand of the site. Based on the above, it is anticipated that the proposed parking supply will be sufficient. A site-specific zoning exception is being sought to reduce the minimum parking requirements to one resident parking space and 0.1 visitor parking space per stacked townhouse unit, in line with the amount of parking being proposed.

In conclusion, it is the overall opinion of Arcadis that the proposed development can be safely accommodated by the adjacent road network.



Appendix A: Site Plan

LEGEND

MAN ENTRANCE

BICYCLE PARKING, REFER TO LANDSCAPE DRAWINGS

BARRIER FREE PARKING

RESIDENT PARKING

VISITOR PARKING

5000

FREE HYDRANT, REFER TO CIVIL DRAWINGS

LIGHT POLE, REFER TO ELECTRICAL DRAWINGS

LIGHT BOLLARD, REFER TO ELECTRICAL DRAWINGS

MILL MARK, REFER TO SURVEY, REFER TO ELECTRICAL DWGS

FREE ROUTE SIGN AS PER CITY STANDARD

STOP SIGN

SILE FREE ZONE SIGN

POPS SIGN

TACTILE INDICATOR

TRANSFORMER

DISPERSED CURB

GAS METER

HYDRO METER

NON FREEZABLE HOSE BB

ELECTRIC VEHICLE CHARGING STATION

SHAWEE CONNECTION

SUITE NUMBER

FIRE BREAK BLOCK

LOWER LEVEL ELEVATION

FIRST FLOOR ELEVATION

AREA DRAIN

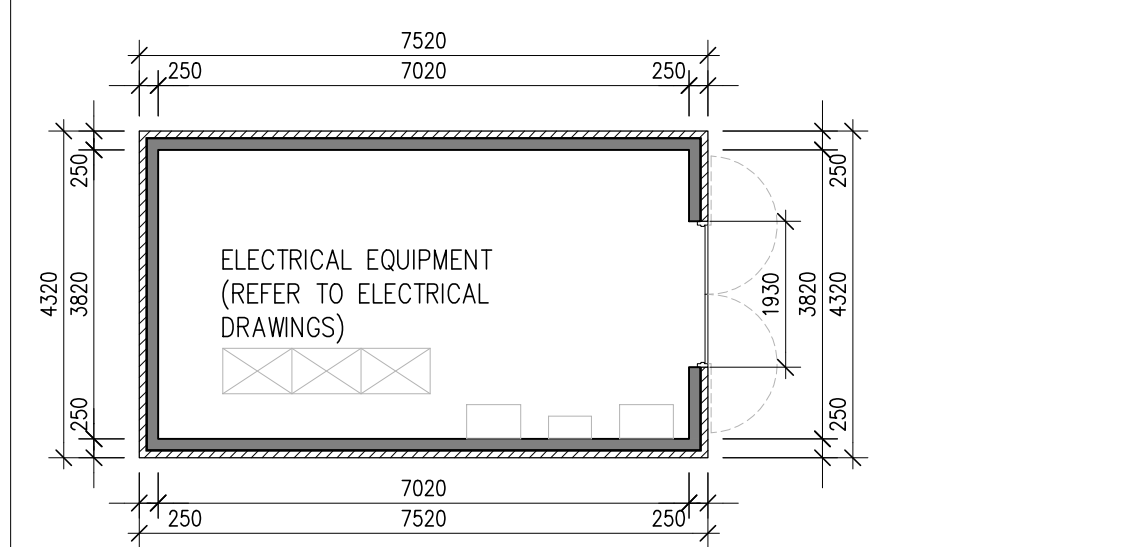
DENOTES FIRE MATE

DENOTES MOUNTY BROADWAY

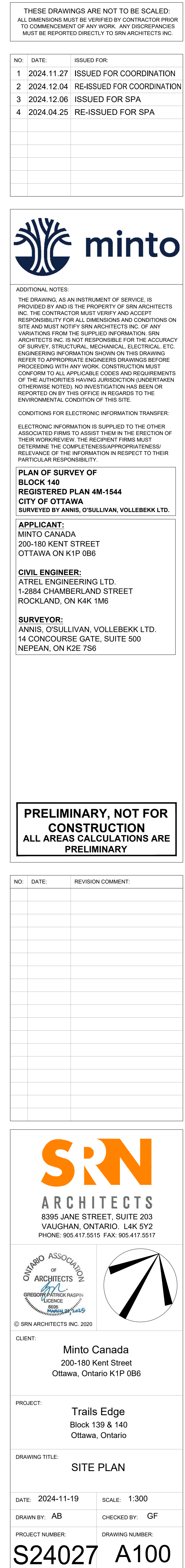
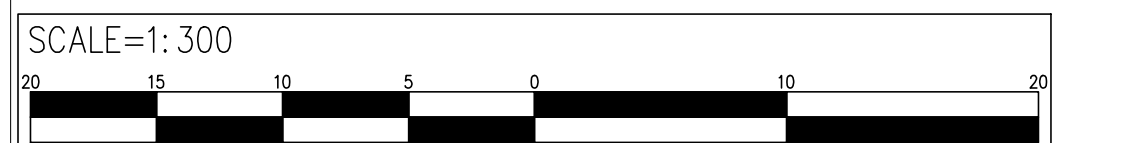
DENOTES PARKING LOT

DENOTES SUD LANDSCAPING AREA

DENOTES DECORATIVE FENCING



1 UTILITY BUILDING
A100 SCALE: 1:100



THESE DRAWINGS ARE NOT TO BE SCALED:
ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR PRIOR
TO COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES
MUST BE REPORTED DIRECTLY TO SRN ARCHITECTS INC.

| NO: | DATE: | ISSUED FOR: |
|-----|------------|----------------------------|
| 1 | 2024.11.27 | ISSUED FOR COORDINATION |
| 2 | 2024.12.04 | RE-ISSUED FOR COORDINATION |
| 3 | 2024.12.06 | ISSUED FOR SPA |
| 4 | 2024.04.25 | RE-ISSUED FOR SPA |
| | | |
| | | |
| | | |
| | | |
| | | |



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CONDITIONS FOR ELECTRONIC INFORMATION TRANSFER:

ELECTRONIC INFORMATION IS SUPPLIED TO THE OTHER ASSOCIATED FIRMS TO ASSIST THEM IN THE ERECTION OF THEIR WORK/REVIEW. THE RECIPIENT FIRMS MUST DETERMINE THE COMPLETENESS/APPROPRIATENESS/ RELEVANCE OF THE INFORMATION IN RESPECT TO THEIR PARTICULAR RESPONSIBILITIES.

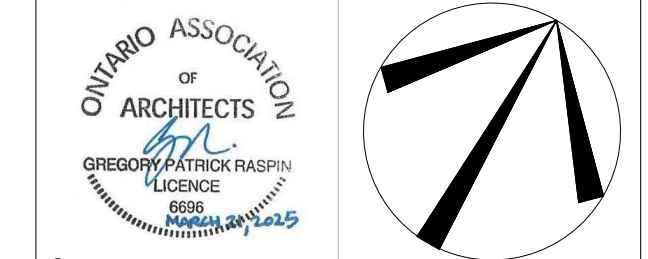
**PLAN OF SURVEY OF
BLOCK 140
REGISTERED PLAN 4M-1544
CITY OF OTTAWA
SURVEYED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.**

APPLICANT:
MINTO CANADA
200-180 KENT STREET
OTTAWA ON K1P 0B6

CIVIL ENGINEER:
ATREL ENGINEERING LTD.
1-2884 CHAMBERLAND STREET
ROCKLAND, ON K4K 1M6

SURVEYOR:
ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 CONCOURSE GATE, SUITE 500
NEPEAN, ON K2E 7S6

**PRELIMINARY, NOT FOR
CONSTRUCTION**
ALL AREAS CALCULATIONS ARE
PRELIMINARY

[illegible]

CLIENT:

Minto Canada
200-180 Kent Street
Ottawa, Ontario K1P 0B6

PROJECT: Trails Edge
Block 139 & 140
Ottawa, Ontario

DRAWING TITLE: SITE PLAN

| | |
|------------------|----------------|
| DATE: 2024-11-19 | SCALE: 1:300 |
| DRAWN BY: AB | CHECKED BY: GF |


| | |
|-----------------|-----------------|
| PROJECT NUMBER: | DRAWING NUMBER: |
| S24027 | A100 |

Appendix B: TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

*Revised per City of Ottawa update to the TIA Guidelines, effective June 14, 2023

1. Description of Proposed Development

| | |
|------------------------------------|---|
| Municipal Address | 6371 Renaud Road, Ottawa, Ontario |
| Description of Location | <p>The proposed development is located on the south-west corner of the Brian Coburn & Fern Casey roundabout. The site is bound by Brian Coburn Blvd to the north, Fern Casey St to the east, residential developments to the south and undeveloped greenland to the west.</p>  |
| Land Use Classification | DR - Development Reserve |
| Development Size (units) | 200 Units (40 Avenue Towns and 160 Metro Towns) |
| Development Size (m ²) | N/A |

| | |
|----------------------------------|---|
| Number of Accesses and Locations | One Right-in/Right-out access on Fern Casey St approx. 105m north of Axis Way One Full movement access on Axis Way approx. 190m west of Fern Casey |
| Phase of Development | TBD |
| Buildout Year | TBD |

If available, please attach a sketch of the development or site plan to this form.



2. Trip Gen Trigger

Considering the Development's Land Use Type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

| Land Use Type* | Minimum Development Size (60 person trips) | |
|--|--|---|
| Single-Detached ¹ | 60 units | |
| Multi-Use Family (Low-Rise) ¹ | 90 units | ✓ |
| Multi-Use Family (High-Rise) ¹ | 150 Units | |
| Office ² | 1,400 m ² | |
| Industrial ² | 7,000 m ² | |
| Fast-food restaurant or coffee shop ² | 110 m ² | |
| Destination Retail ² | 1,800 m ² | |
| Gas Station or convenience market ² | 90 m ² | |

*If the development has a land use type other than what is presented in the table above, estimates of person trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

¹ Table 2, Table 3 & Table 4 TRANS Trip Generation Summary Report

² ITE Trip Generation Manual 11.1 Ed.

As shown above, the proposed development does meet the minimum unit count, however a preliminary trip generation exercise was completed to show that the development will have a negligible impact on the surrounding transportation network. As shown in the table below, the development is expected to generate 45 and 52 two-way vehicle trips in the morning and afternoon peak hour, respectively.

| | AM | | | | PM | | |
|------------------|-----------|-----------|-----------|--|-----------|-----------|-----------|
| | In | Out | Total | | In | Out | Total |
| Auto Driver | 14 | 31 | 45 | | 30 | 22 | 52 |
| Auto Passenger | 2 | 6 | 8 | | 8 | 6 | 14 |
| Transit | 9 | 20 | 29 | | 12 | 9 | 21 |
| Bike | 0 | 0 | 0 | | 0 | 0 | 0 |
| Walk | 3 | 7 | 10 | | 4 | 3 | 7 |
| Subtotal: | 28 | 64 | 92 | | 54 | 40 | 94 |

A reduced scope study is therefore proposed that will include only existing conditions intersection capacity analysis and site access analysis.

Based on the above, the Trip Generation Trigger is satisfied.

3. Location Triggers

| | Yes | No |
|---|-----|----|
| Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Cross-Town Bikeways? | | ✓ |
| Is the development in a Design Priority Area (DPA), Transit-oriented Development (TOD) zone or Hub?* | | ✓ |

*DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6) See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

Hubs are identified as Protected Major Transit Station Areas (PMTSAs) and identified in Schedule C1-Protected Major Transit Station Areas (PMTSAs).

Based on the above, the Location Trigger is not satisfied.

4. Safety Triggers

| | Yes | No |
|--|-----|----|
| Are posted speed limits on a boundary street 80km/hr or greater? | | ✓ |
| Are there any horizontal/vertical curvatures on a boundary street that limit sight lines at a proposed driveway? | | ✓ |
| Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/suburban conditions?) | ✓ | |
| Is the proposed driveway within auxiliary lanes of an intersection? | ✓ | |
| Does the proposed driveway make use of an existing median break that serves an existing site? | | ✓ |
| Is there a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development? | | ✓ |
| Does the development include a drive-thru facility? | | ✓ |

The proposed right-in/right-out access on Fern Casey is within 150m of the Brian Coburn & Fern Casey roundabout and is within the auxiliary right-turn lane of the Fern Casey & Axis Way unsignalized intersection. The impacts of this placement will be examined within the reduced scope study proposed.

Based on the above, the Safety Trigger is satisfied.

5. Summary

| | Yes | No |
|---|-----|----|
| Does the development satisfy the Trip Generation Trigger? | ✓ | |
| Does the development satisfy the Location Trigger? | | ✓ |
| Does the development satisfy the Safety Trigger? | ✓ | |

Although the Trip Generation and Safety Triggers are met, a reduced scope TIA is proposed to examine the site specific impacts of the proposed development and to show the negligible vehicular impacts of the site generated traffic.

Appendix C: Transit Maps



32

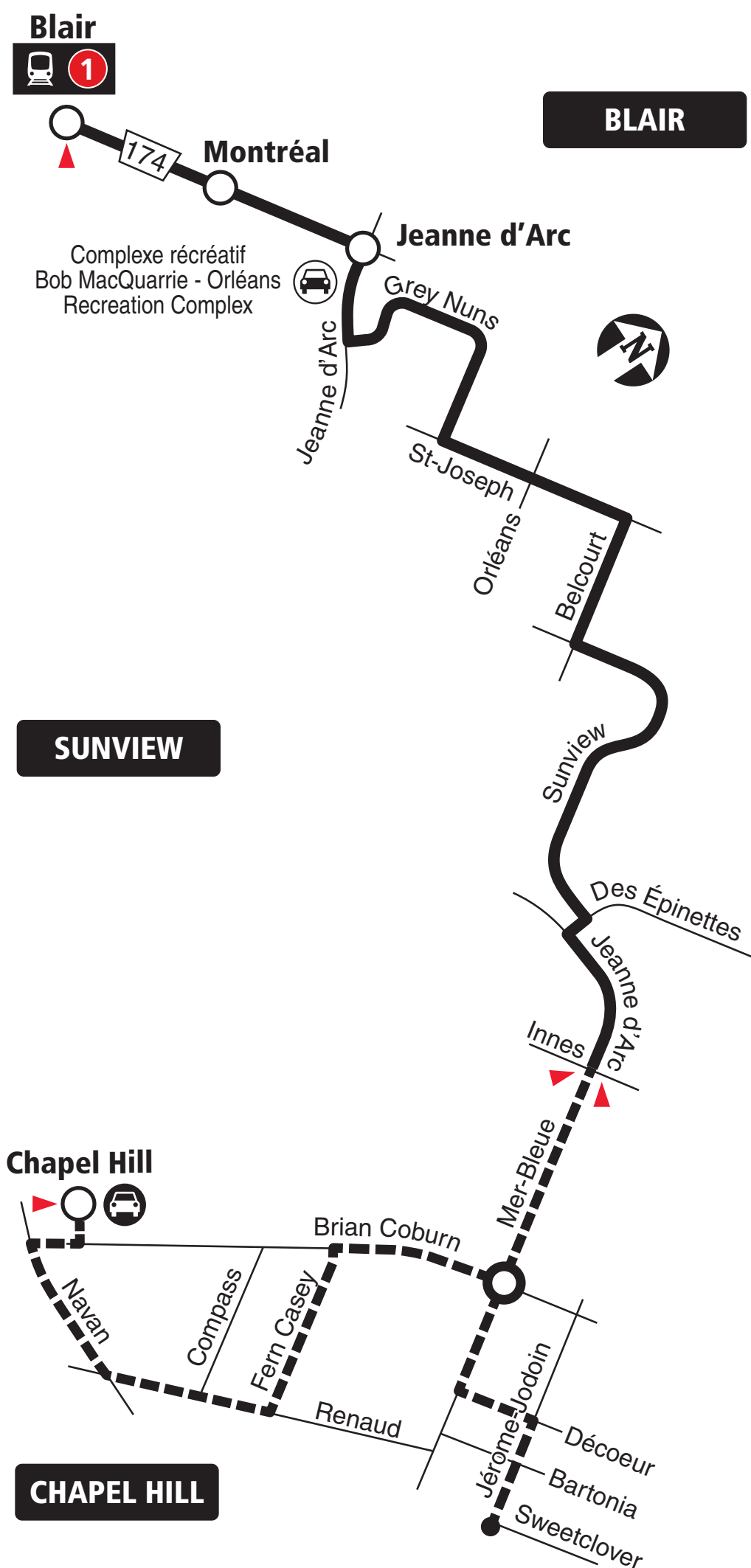
SUNVIEW CHAPEL HILL BLAIR

Local

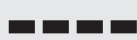
7 days a week / 7 jours par semaine

Selected time periods only

Périodes sélectionnées seulement



Station



No weekend service

Aucun service la fin de semaine



Park & Ride / Parc-o-bus



Timepoint / Postes d'attente

2021.09



Schedule / Horaire 613-560-1000

Text / Texto* 560560

plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service

Service à la clientèle **613-560-5000**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité **613-741-2478**

Effective September 5, 2021

En vigueur 5 septembre 2021



INFO 613-560-5000
octranspo.com

Appendix D: Intersection Capacity Analysis Reports

MOVEMENT SUMMARY

 **Site: 101 [Brian Coburn & Fern Casey (Site Folder: EX AM)]**

Brian Coburn Boulevard & Fern Casey Street
Existing Traffic
AM Peak Hour
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|--------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| South: Fern Casey Street | | | | | | | | | | | | | | |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.361 | 7.2 | LOS A | 2.0 | 15.1 | 0.50 | 0.39 | 0.50 | 55.1 |
| 3 | L2 | 107 | 2.0 | 119 | 2.0 | 0.361 | 7.2 | LOS A | 2.0 | 15.1 | 0.50 | 0.39 | 0.50 | 53.8 |
| 8 | T1 | 2 | 50.0 | 2 | 50.0 | 0.361 | 8.9 | LOS A | 2.0 | 15.1 | 0.50 | 0.39 | 0.50 | 52.5 |
| 18 | R2 | 226 | 2.0 | 251 | 2.0 | 0.361 | 7.2 | LOS A | 2.0 | 15.1 | 0.50 | 0.39 | 0.50 | 52.3 |
| Approach | | 336 | 2.3 | 373 | 2.3 | 0.361 | 7.2 | LOS A | 2.0 | 15.1 | 0.50 | 0.39 | 0.50 | 52.8 |
| East: Brian Coburn Boulevard | | | | | | | | | | | | | | |
| 1u | U | 1 | 0.0 | 1 | 0.0 | 0.657 | 11.9 | LOS B | 6.1 | 47.2 | 0.60 | 0.38 | 0.60 | 52.1 |
| 1 | L2 | 148 | 0.0 | 164 | 0.0 | 0.657 | 11.9 | LOS B | 6.1 | 47.2 | 0.60 | 0.38 | 0.60 | 51.1 |
| 6 | T1 | 547 | 1.0 | 608 | 1.0 | 0.657 | 11.9 | LOS B | 6.1 | 47.2 | 0.60 | 0.38 | 0.60 | 50.9 |
| 16 | R2 | 6 | 67.0 | 7 | 67.0 | 0.657 | 13.9 | LOS B | 6.1 | 47.2 | 0.60 | 0.38 | 0.60 | 47.6 |
| Approach | | 702 | 1.4 | 780 | 1.4 | 0.657 | 11.9 | LOS B | 6.1 | 47.2 | 0.60 | 0.38 | 0.60 | 50.9 |
| North: Fern Casey Street | | | | | | | | | | | | | | |
| 7u | U | 1 | 0.0 | 1 | 0.0 | 0.051 | 7.4 | LOS A | 0.1 | 1.3 | 0.63 | 0.61 | 0.63 | 51.2 |
| 7 | L2 | 9 | 89.0 | 10 | 89.0 | 0.051 | 13.2 | LOS B | 0.1 | 1.3 | 0.63 | 0.61 | 0.63 | 46.3 |
| 4 | T1 | 1 | 0.0 | 1 | 0.0 | 0.051 | 7.4 | LOS A | 0.1 | 1.3 | 0.63 | 0.61 | 0.63 | 50.0 |
| 14 | R2 | 4 | 50.0 | 4 | 50.0 | 0.051 | 10.7 | LOS B | 0.1 | 1.3 | 0.63 | 0.61 | 0.63 | 47.2 |
| Approach | | 15 | 66.7 | 17 | 66.7 | 0.051 | 11.8 | LOS B | 0.1 | 1.3 | 0.63 | 0.61 | 0.63 | 47.1 |
| West: Brian Coburn Boulevard | | | | | | | | | | | | | | |
| 5u | U | 1 | 0.0 | 1 | 0.0 | 0.281 | 5.9 | LOS A | 1.3 | 10.9 | 0.39 | 0.26 | 0.39 | 57.6 |
| 5 | L2 | 3 | 100.0 | 3 | 100.0 | 0.281 | 9.1 | LOS A | 1.3 | 10.9 | 0.39 | 0.26 | 0.39 | 50.9 |
| 2 | T1 | 194 | 7.0 | 216 | 7.0 | 0.281 | 6.1 | LOS A | 1.3 | 10.9 | 0.39 | 0.26 | 0.39 | 55.9 |
| 12 | R2 | 66 | 11.0 | 73 | 11.0 | 0.281 | 6.3 | LOS A | 1.3 | 10.9 | 0.39 | 0.26 | 0.39 | 54.1 |
| Approach | | 264 | 9.0 | 293 | 9.0 | 0.281 | 6.2 | LOS A | 1.3 | 10.9 | 0.39 | 0.26 | 0.39 | 55.4 |
| All Vehicles | | 1317 | 3.9 | 1463 | 3.9 | 0.657 | 9.6 | LOS A | 6.1 | 47.2 | 0.53 | 0.36 | 0.53 | 52.2 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Project: C:\Users\mclarene8596\ARCADIS\147936 Trailsedge Block 140 - Internal Documents\6.0_Technical\6.23_Traffic\05_Analytic Models
\TrailsEdgeBlock140_2024-11-05.sip9

MOVEMENT SUMMARY

 **Site: 101 [Brian Coburn & Fern Casey (Site Folder: EX PM)]**

Brian Coburn Boulevard & Fern Casey Street
Existing Traffic
PM Peak Hour
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|---------------|--------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] % | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| South: Fern Casey Street | | | | | | | | | | | | | | |
| 3u | U | 1 | 0.0 | 1 | 0.0 | 0.265 | 8.0 | LOS A | 1.2 | 8.9 | 0.63 | 0.63 | 0.63 | 54.3 |
| 3 | L2 | 59 | 3.0 | 66 | 3.0 | 0.265 | 8.2 | LOS A | 1.2 | 8.9 | 0.63 | 0.63 | 0.63 | 53.0 |
| 8 | T1 | 1 | 0.0 | 1 | 0.0 | 0.265 | 8.0 | LOS A | 1.2 | 8.9 | 0.63 | 0.63 | 0.63 | 53.0 |
| 18 | R2 | 111 | 1.0 | 123 | 1.0 | 0.265 | 8.1 | LOS A | 1.2 | 8.9 | 0.63 | 0.63 | 0.63 | 51.6 |
| Approach | | 172 | 1.7 | 191 | 1.7 | 0.265 | 8.1 | LOS A | 1.2 | 8.9 | 0.63 | 0.63 | 0.63 | 52.1 |
| East: Brian Coburn Boulevard | | | | | | | | | | | | | | |
| 1u | U | 1 | 0.0 | 1 | 0.0 | 0.527 | 8.6 | LOS A | 4.2 | 32.0 | 0.35 | 0.17 | 0.35 | 54.1 |
| 1 | L2 | 199 | 2.0 | 221 | 2.0 | 0.527 | 8.6 | LOS A | 4.2 | 32.0 | 0.35 | 0.17 | 0.35 | 52.9 |
| 6 | T1 | 397 | 1.0 | 441 | 1.0 | 0.527 | 8.6 | LOS A | 4.2 | 32.0 | 0.35 | 0.17 | 0.35 | 52.8 |
| 16 | R2 | 2 | 0.0 | 2 | 0.0 | 0.527 | 8.6 | LOS A | 4.2 | 32.0 | 0.35 | 0.17 | 0.35 | 51.5 |
| Approach | | 599 | 1.3 | 666 | 1.3 | 0.527 | 8.6 | LOS A | 4.2 | 32.0 | 0.35 | 0.17 | 0.35 | 52.9 |
| North: Fern Casey Street | | | | | | | | | | | | | | |
| 7u | U | 1 | 0.0 | 1 | 0.0 | 0.010 | 5.7 | LOS A | 0.0 | 0.3 | 0.59 | 0.45 | 0.59 | 54.4 |
| 7 | L2 | 1 | 0.0 | 1 | 0.0 | 0.010 | 5.7 | LOS A | 0.0 | 0.3 | 0.59 | 0.45 | 0.59 | 53.2 |
| 4 | T1 | 2 | 50.0 | 2 | 50.0 | 0.010 | 8.5 | LOS A | 0.0 | 0.3 | 0.59 | 0.45 | 0.59 | 51.8 |
| 14 | R2 | 1 | 0.0 | 1 | 0.0 | 0.010 | 5.7 | LOS A | 0.0 | 0.3 | 0.59 | 0.45 | 0.59 | 51.7 |
| Approach | | 5 | 20.0 | 6 | 20.0 | 0.010 | 6.8 | LOS A | 0.0 | 0.3 | 0.59 | 0.45 | 0.59 | 52.6 |
| West: Brian Coburn Boulevard | | | | | | | | | | | | | | |
| 5u | U | 1 | 0.0 | 1 | 0.0 | 0.699 | 14.1 | LOS B | 11.3 | 86.0 | 0.77 | 0.79 | 1.14 | 51.4 |
| 5 | L2 | 1 | 0.0 | 1 | 0.0 | 0.699 | 14.1 | LOS B | 11.3 | 86.0 | 0.77 | 0.79 | 1.14 | 50.3 |
| 2 | T1 | 553 | 0.0 | 614 | 0.0 | 0.699 | 14.1 | LOS B | 11.3 | 86.0 | 0.77 | 0.79 | 1.14 | 50.2 |
| 12 | R2 | 129 | 0.0 | 143 | 0.0 | 0.699 | 14.1 | LOS B | 11.3 | 86.0 | 0.77 | 0.79 | 1.14 | 49.0 |
| Approach | | 684 | 0.0 | 760 | 0.0 | 0.699 | 14.1 | LOS B | 11.3 | 86.0 | 0.77 | 0.79 | 1.14 | 50.0 |
| All Vehicles | | 1460 | 0.8 | 1622 | 0.8 | 0.699 | 11.1 | LOS B | 11.3 | 86.0 | 0.58 | 0.52 | 0.75 | 51.4 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Project: C:\Users\mclarene8596\ARCADIS\147936 Trailsedge Block 140 - Internal Documents\6.0_Technical\6.23_Traffic\05_Analytic Models
\TrailsEdgeBlock140_2024-11-05.sip9

2: Fern Casey Street & Axis Way/Couloir Road
Trails Edge Block 140

Existing Traffic
AM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↗ | ↖ | | ↗ | ↖ | ↗ |
| Traffic Vol, veh/h | 83 | 2 | 1 | 10 | 2 | 21 | 4 | 230 | 8 | 23 | 147 | 38 |
| Future Vol, veh/h | 83 | 2 | 1 | 10 | 2 | 21 | 4 | 230 | 8 | 23 | 147 | 38 |
| Conflicting Peds, #/hr | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 5 | 5 | 0 | 3 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 60 | - | - | 110 | - | 110 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 1 | 0 | 0 | 5 | 50 | 0 | 12 | 2 | 0 | 17 | 1 | 5 |
| Mvmt Flow | 92 | 2 | 1 | 11 | 2 | 23 | 4 | 256 | 9 | 26 | 163 | 42 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-----|--------|-------|--------|-----|--------|---|---|-------|---|---|
| Conflicting Flow All | 502 | 496 | 169 | 515 | 534 | 269 | 208 | 0 | 0 | 270 | 0 | 0 |
| Stage 1 | 218 | 218 | - | 274 | 274 | - | - | - | - | - | - | - |
| Stage 2 | 284 | 278 | - | 241 | 260 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.11 | 6.5 | 6.2 | 7.15 | 7 | 6.2 | 4.22 | - | - | 4.27 | - | - |
| Critical Hdwy Stg 1 | 6.11 | 5.5 | - | 6.15 | 6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.11 | 5.5 | - | 6.15 | 6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.509 | 4 | 3.3 | 3.545 | 4.45 | 3.3 | 2.308 | - | - | 2.353 | - | - |
| Pot Cap-1 Maneuver | 481 | 478 | 880 | 466 | 391 | 775 | 1306 | - | - | 1212 | - | - |
| Stage 1 | 787 | 726 | - | 726 | 604 | - | - | - | - | - | - | - |
| Stage 2 | 725 | 684 | - | 756 | 613 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 453 | 462 | 875 | 452 | 378 | 769 | 1302 | - | - | 1206 | - | - |
| Mov Cap-2 Maneuver | 453 | 462 | - | 452 | 378 | - | - | - | - | - | - | - |
| Stage 1 | 782 | 708 | - | 720 | 599 | - | - | - | - | - | - | - |
| Stage 2 | 696 | 679 | - | 734 | 598 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|----|--|------|--|-----|--|-----|--|
| HCM Control Delay, s | 15 | | 11.4 | | 0.1 | | 0.9 | |
| HCM LOS | C | | B | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|------------|-------|-----|-----|
| Capacity (veh/h) | 1302 | - | - | 456 603 | 1206 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | 0.21 0.061 | 0.021 | - | - |
| HCM Control Delay (s) | 7.8 | - | - | 15 11.4 | 8.1 | - | - |
| HCM Lane LOS | A | - | - | C B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.8 0.2 | 0.1 | - | - |

2: Fern Casey Street & Axis Way/Couloir Road
Trails Edge Block 140

Existing Traffic
PM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.8 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | ↕ | ↑ | | ↕ | ↑ | ↕ |
| Traffic Vol, veh/h | 65 | 0 | 5 | 0 | 4 | 22 | 3 | 73 | 7 | 36 | 200 | 103 |
| Future Vol, veh/h | 65 | 0 | 5 | 0 | 4 | 22 | 3 | 73 | 7 | 36 | 200 | 103 |
| Conflicting Peds, #/hr | 0 | 0 | 6 | 6 | 0 | 0 | 4 | 0 | 1 | 1 | 0 | 4 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 60 | - | - | 110 | - | 110 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 10 | 0 | 0 | 9 | 33 | 1 | 7 | 6 | 2 | 1 |
| Mvmt Flow | 72 | 0 | 6 | 0 | 4 | 24 | 3 | 81 | 8 | 40 | 222 | 114 |

| Major/Minor | Minor2 | | Minor1 | | Major1 | | Major2 | | | | | |
|----------------------|--------|-----|--------|-----|--------|-------|--------|---|---|-------|---|---|
| Conflicting Flow All | 411 | 402 | 232 | 460 | 512 | 86 | 340 | 0 | 0 | 90 | 0 | 0 |
| Stage 1 | 306 | 306 | - | 92 | 92 | - | - | - | - | - | - | - |
| Stage 2 | 105 | 96 | - | 368 | 420 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.1 | 6.5 | 6.3 | 7.1 | 6.5 | 6.29 | 4.43 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.1 | 5.5 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.1 | 5.5 | - | 6.1 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.39 | 3.5 | 4 | 3.381 | 2.497 | - | - | 2.254 | - | - |
| Pot Cap-1 Maneuver | 555 | 540 | 788 | 515 | 468 | 954 | 1065 | - | - | 1480 | - | - |
| Stage 1 | 708 | 665 | - | 920 | 823 | - | - | - | - | - | - | - |
| Stage 2 | 906 | 819 | - | 656 | 593 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | - | - | - |
| Mov Cap-1 Maneuver | 522 | 521 | 780 | 496 | 452 | 953 | 1061 | - | - | 1478 | - | - |
| Mov Cap-2 Maneuver | 522 | 521 | - | 496 | 452 | - | - | - | - | - | - | - |
| Stage 1 | 703 | 644 | - | 916 | 820 | - | - | - | - | - | - | - |
| Stage 2 | 875 | 816 | - | 630 | 575 | - | - | - | - | - | - | - |

| Approach | EB | | WB | | NB | | SB | |
|----------------------|------|--|-----|--|-----|--|-----|--|
| HCM Control Delay, s | 12.9 | | 9.6 | | 0.3 | | 0.8 | |
| HCM LOS | B | | A | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1WBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------------|-------|-----|-----|
| Capacity (veh/h) | 1061 | - | - | 535 814 | 1478 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | 0.145 0.035 | 0.027 | - | - |
| HCM Control Delay (s) | 8.4 | - | - | 12.9 9.6 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.5 0.1 | 0.1 | - | - |

Appendix E: Transportation Demand Management

TDM-Supportive Development Design and Infrastructure Checklist: *Residential Developments (multi-family or condominium)*

| Legend | |
|-----------------|--|
| REQUIRED | The Official Plan or Zoning By-law provides related guidance that must be followed |
| BASIC | The measure is generally feasible and effective, and in most cases would benefit the development and its users |
| BETTER | The measure could maximize support for users of sustainable modes, and optimize development performance |

| TDM-supportive design & infrastructure measures: <i>Residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|--|---|---|
| 1. WALKING & CYCLING: ROUTES | | |
| 1.1 Building location & access points | | |
| BASIC | 1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances | <input checked="" type="checkbox"/> |
| BASIC | 1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations | <input checked="" type="checkbox"/> |
| BASIC | 1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort | <input checked="" type="checkbox"/> |
| 1.2 Facilities for walking & cycling | | |
| REQUIRED | 1.2.1 Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (<i>see Official Plan policy 4.3.3</i>) | <input checked="" type="checkbox"/> Direct connections to sidewalks on Brian Coburn and Fern Casey are provided to minimize walking distances to the future BRT station |
| REQUIRED | 1.2.2 Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible (<i>see Official Plan policy 4.3.12</i>) | <input checked="" type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|---|--|--|
| REQUIRED | 1.2.3 Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (<i>see Official Plan policy 4.3.10</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 1.2.4 Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (<i>see Official Plan policy 4.3.10</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 1.2.5 Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians (<i>see Official Plan policy 4.3.11</i>) | <input checked="" type="checkbox"/> |
| BASIC | 1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops | <input checked="" type="checkbox"/> |
| BASIC | 1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible | <input type="checkbox"/> |
| BASIC | 1.2.8 Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility | <input type="checkbox"/> |
| 1.3 Amenities for walking & cycling | | |
| BASIC | 1.3.1 Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails | <input type="checkbox"/> |
| BASIC | 1.3.2 Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious) | <input type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|---|---|--|
| 2. WALKING & CYCLING: END-OF-TRIP FACILITIES | | |
| 2.1 Bicycle parking | | |
| REQUIRED | 2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (<i>see Official Plan policy 4.3.6</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (<i>see Zoning By-law Section 111</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (<i>see Zoning By-law Section 111</i>) | <input checked="" type="checkbox"/> |
| BASIC | 2.1.4 Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists | <input type="checkbox"/> |
| 2.2 Secure bicycle parking | | |
| REQUIRED | 2.2.1 Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (<i>see Zoning By-law Section 111</i>) | <input type="checkbox"/> N/A |
| BETTER | 2.2.2 Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments | <input type="checkbox"/> |
| 2.3 Bicycle repair station | | |
| BETTER | 2.3.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided) | <input type="checkbox"/> |
| 3. TRANSIT | | |
| 3.1 Customer amenities | | |
| BASIC | 3.1.1 Provide shelters, lighting and benches at any on-site transit stops | <input type="checkbox"/> |
| BASIC | 3.1.2 Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter | <input type="checkbox"/> |
| BETTER | 3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building | <input type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|---|---|--|
| 4. RIDESHARING | | |
| 4.1 Pick-up & drop-off facilities | | |
| BASIC | 4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones | <input type="checkbox"/> |
| 5. CARSHARING & BIKESHARING | | |
| 5.1 Carshare parking spaces | | |
| BETTER | 5.1.1 Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses (<i>see Zoning By-law Section 94</i>) | <input type="checkbox"/> |
| 5.2 Bikeshare station location | | |
| BETTER | 5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection | <input type="checkbox"/> |
| 6. PARKING | | |
| 6.1 Number of parking spaces | | |
| REQUIRED | 6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for | <input checked="" type="checkbox"/> A variation is being sought to reduce parking requirements |
| BASIC | 6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking | <input type="checkbox"/> |
| BASIC | 6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (<i>see Zoning By-law Section 104</i>) | <input type="checkbox"/> |
| BETTER | 6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking (<i>see Zoning By-law Section 111</i>) | <input type="checkbox"/> |
| 6.2 Separate long-term & short-term parking areas | | |
| BETTER | 6.2.1 Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa) | <input type="checkbox"/> |

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

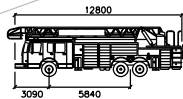
| Legend | |
|---------------|--|
| BASIC | The measure is generally feasible and effective, and in most cases would benefit the development and its users |
| BETTER | The measure could maximize support for users of sustainable modes, and optimize development performance |
| ★ | The measure is one of the most dependably effective tools to encourage the use of sustainable modes |

| TDM measures: <i>Residential developments</i> | | Check if proposed & add descriptions |
|---|---|---|
| 1. TDM PROGRAM MANAGEMENT | | |
| 1.1 Program coordinator | | |
| BASIC ★ | 1.1.1 Designate an internal coordinator, or contract with an external coordinator | <input type="checkbox"/> |
| 1.2 Travel surveys | | |
| BETTER | 1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress | <input type="checkbox"/> |
| 2. WALKING AND CYCLING | | |
| 2.1 Information on walking/cycling routes & destinations | | |
| BASIC | 2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances (<i>multi-family, condominium</i>) | <input type="checkbox"/> |
| 2.2 Bicycle skills training | | |
| BETTER | 2.2.1 Offer on-site cycling courses for residents, or subsidize off-site courses | <input type="checkbox"/> |

| TDM measures: <i>Residential developments</i> | | Check if proposed & add descriptions |
|---|--|--------------------------------------|
| 3. TRANSIT | | |
| 3.1 Transit information | | |
| BASIC | 3.1.1 Display relevant transit schedules and route maps at entrances (<i>multi-family, condominium</i>) | <input type="checkbox"/> |
| BETTER | 3.1.2 Provide real-time arrival information display at entrances (<i>multi-family, condominium</i>) | <input type="checkbox"/> |
| 3.2 Transit fare incentives | | |
| BASIC ★ | 3.2.1 Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit | <input type="checkbox"/> |
| BETTER | 3.2.2 Offer at least one year of free monthly transit passes on residence purchase/move-in | <input type="checkbox"/> |
| 3.3 Enhanced public transit service | | |
| BETTER ★ | 3.3.1 Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels (<i>subdivision</i>) | <input type="checkbox"/> |
| 3.4 Private transit service | | |
| BETTER | 3.4.1 Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs) | <input type="checkbox"/> |
| 4. CARSHARING & BIKESHARING | | |
| 4.1 Bikeshare stations & memberships | | |
| BETTER | 4.1.1 Contract with provider to install on-site bikeshare station (<i>multi-family</i>) | <input type="checkbox"/> |
| BETTER | 4.1.2 Provide residents with bikeshare memberships, either free or subsidized (<i>multi-family</i>) | <input type="checkbox"/> |
| 4.2 Carshare vehicles & memberships | | |
| BETTER | 4.2.1 Contract with provider to install on-site carshare vehicles and promote their use by residents | <input type="checkbox"/> |
| BETTER | 4.2.2 Provide residents with carshare memberships, either free or subsidized | <input type="checkbox"/> |
| 5. PARKING | | |
| 5.1 Priced parking | | |
| BASIC ★ | 5.1.1 Unbundle parking cost from purchase price (<i>condominium</i>) | <input type="checkbox"/> |
| BASIC ★ | 5.1.2 Unbundle parking cost from monthly rent (<i>multi-family</i>) | <input type="checkbox"/> |

| TDM measures: <i>Residential developments</i> | | Check if proposed & add descriptions |
|---|---|--------------------------------------|
| 6. TDM MARKETING & COMMUNICATIONS | | |
| 6.1 Multimodal travel information | | |
| BASIC ★ | 6.1.1 Provide a multimodal travel option information package to new residents | <input type="checkbox"/> |
| 6.2 Personalized trip planning | | |
| BETTER ★ | 6.2.1 Offer personalized trip planning to new residents | <input type="checkbox"/> |

Appendix F: Swept Path Analysis



Aerial Fire

mm
Width : 2540
Track : 2540
Lock to Lock Time : 6.0
Steering Angle : 37.0

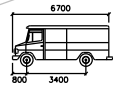
BRIAN COBURN BLVD



FERN CASEY STREET

AXIS WAY

See Detail



Chevy Express Cutaway 4500

Width: 800 mm
Track: 2200 mm
Lock to Lock Time: 4.5 s
Steering Angle: 40.8°

BRIAN COBURN BLVD



FERN CASEY STREET

AXIS WAY

See Detail

