

KANATA-SUD ELEMENTARY SCHOOL TRANSPORTATION IMPACT ASSESSMENT FORECASTING REPORT

MARCH 17, 2022

DRAFT





KANATA-SUD ELEMENTARY SCHOOL TRANSPORTATION IMPACT ASSESSMENT FORECASTING REPORT

FORECASTING REPORT
DRAFT

PROJECT NO.: OUR REF. NO. 219-00014-00
CLIENT REF:
DATE: MARCH 17, 2022

WSP
SUITE 300
2611 QUEENSVIEW DRIVE
OTTAWA, ON, CANADA K2B 8K2

T: +1 613 829-2800
F: +1 613 829-8299
WSP.COM



TABLE OF CONTENTS

| | | |
|-------|--|----|
| 1 | SCREENING | 2 |
| 2 | SCOPING..... | 3 |
| 2.1 | Screening Form | 3 |
| 2.2 | Description of Proposed Development | 3 |
| 2.3 | Existing Conditions..... | 4 |
| 2.3.1 | Roadways | 4 |
| 2.3.2 | Intersections | 4 |
| 2.3.3 | Driveways | 5 |
| 2.3.4 | Pedestrian and Cycling Facilities | 6 |
| 2.3.5 | Transit Facilities | 6 |
| 2.3.6 | Area Traffic Management Measures..... | 7 |
| 2.3.7 | Peak Hour Travel Demands | 7 |
| 2.3.8 | Five-year Collision History | 10 |
| 2.4 | Planned Conditions..... | 10 |
| 2.4.1 | Changes to the Study Area Transportation Network..... | 10 |
| 2.4.2 | Other Study Area Developments..... | 11 |
| 2.5 | Study Area and Time Period | 13 |
| 2.6 | Horizon Years | 14 |
| 2.7 | Exemptions Review..... | 14 |
| 3 | FORECASTING | 1 |
| 3.1 | Development Generated Traffic | 1 |
| 3.1.1 | Trip Generation | 1 |
| 3.1.2 | Trip Distribution and Assignment | 4 |
| 3.2 | Background Network Traffic | 6 |
| 3.2.1 | Changes to the Background Transportation Network | 6 |
| 3.2.2 | General Background Growth Rates | 6 |
| 3.2.3 | Other Area Developments | 6 |
| 3.3 | Demand Rationalization..... | 10 |
| 3.3.1 | Description of Capacity Issues | 10 |
| 3.3.2 | Adjustment to Development Generated Travel Demands | 10 |
| 3.3.3 | Adjustments to Background Network Travel Demands | 10 |



| | | |
|---|---------------|----|
| 4 | STRATEGY..... | 13 |
|---|---------------|----|

TABLES

| | |
|--|----|
| TABLE 1-1. TRANSPORTATION IMPACT ASSESSMENT (TIA) SCREENING TRIGGERS | 2 |
| TABLE 2-1. DESCRIPTION OF STUDY AREA INTERSECTIONS..... | 4 |
| TABLE 2-2. PEAK HOUR TRIPS BY PRIMARY TRAVEL MODE – TRANS KANATA/STITTSVILLE | 7 |
| TABLE 2-3. TRAFFIC DATA DATES AND SOURCES .. | 8 |
| TABLE 2-4. FIVE-YEAR COLLISION HISTORY SUMMARY (2015-2019)..... | 10 |
| TABLE 2-5. EXEMPTIONS SUMMARY..... | 14 |
| TABLE 3-1: PROPOSED SCHOOL SITE PERSON TRIP GENERATION AND MODE SHARE ... | 2 |
| TABLE 3-2: TOTAL SITE VEHICLE TRIP GENERATION | 3 |

FIGURES

| | |
|--|----|
| FIGURE 2-1. SITE AREA CONTEXT | 3 |
| FIGURE 2-2: EXISTING CYCLING FACILITIES (SOURCE: GEOOTTAWA)..... | 6 |
| FIGURE 2-3: OC TRANSPO BUS STOPS AND ROUTES (SOURCE: OC TRANSPO WEBSITE) | 7 |
| FIGURE 2-4. EXISTING PEAK HOUR TRAFFIC VOLUMES | 9 |
| FIGURE 2-5: PLANNED ROADWAY NETWORK (SOURCE: FERNBANK COMMUNITY DESIGN PLAN (JULY 2006)) | 11 |
| FIGURE 2-6: STUDY AREA..... | 13 |
| FIGURE 3-1: DEVELOPMENT GENERATED AUTO TRIPS | 5 |
| FIGURE 3-2: 2023 BACKGROUND TRAFFIC VOLUMES | 8 |
| FIGURE 3-3: 2028 BACKGROUND TRAFFIC VOLUMES | 9 |
| FIGURE 3-4: 2023 TOTAL TRAFFIC VOLUMES | 11 |
| FIGURE 3-5: 2028 TOTAL TRAFFIC VOLUMES | 12 |

APPENDICES

| | |
|----------|----------------|
| A | SCREENING FORM |
|----------|----------------|



- B** DRAFT SITE PLAN
- C** TRANS O-D SURVEY
- D** COPE DRIVE CROSS-SECTION
- E** RELATED TIA EXCERPTS

1 SCREENING

This Transportation Impact Assessment (TIA) has been prepared to support the Site Plan Control application for the development at located at the northeast corner of Cope Drive and Dagenham Street municipally addressed as 755 Cope Drive in Ottawa. The TIA follows the City of Ottawa (the City) TIA Guidelines (2017) which include up to five steps:

- 1 Screening
- 2 Scoping
- 3 Forecasting
- 4 Analysis
- 5 TIA Submission

The Screening Step determines the need to continue with a Transportation Impact Assessment (TIA) Study. The development is assessed against three triggers: trip generation, location, and safety to identify the next step of the study. If one or more of the triggers is satisfied, the Scoping Step must be completed. If none of the triggers are satisfied, the TIA is deemed complete. If one or more triggers are satisfied, specific TIA components are required to be carried out depending on the combination of triggers (**Table 1-1**) that have been satisfied.

The proposed development at 755 Cope Drive **satisfies the Trip Generation and Location triggers** indicating that, as part of Steps Two through Five of the TIA process, the Design Review and Network Impact components should be completed. For reference, the completed Screening Form is provided in **Appendix A**.

Table 1-1. Transportation Impact Assessment (TIA) Screening Triggers

| Next Step of the TIA Process | TIA TRIGGERS SATISFIED | | |
|---|------------------------|----------|--------|
| | Trip Generation | Location | Safety |
| <i>Design Review and Network Impact</i> | Yes | Yes | No |

2 SCOPING

2.1 SCREENING FORM

The completed Screening Form is provided in **Appendix A**.

2.2 DESCRIPTION OF PROPOSED DEVELOPMENT

The Conseil des écoles publiques de l'Est Ontario (CEPEO) proposes to build a new elementary school located on the north side of Cope Drive and east of Dagenham Street on the property municipally addressed as 755 Cope Drive in Ottawa. The subject site is currently undeveloped greenfield with an area of approximately 2.88 hectares (28,889 m²) and zoned as Minor Institutional Zone, Sub-zone B (I1B) and Residential First Density, Sub-zone Z (R1Z). As per the I1B zone, a school and a daycare are permitted uses. The subject site is bordered by Cope Drive along the south side, Dagenham Street on the west side, and low-density residential dwellings on both north and east sides. Residential developments are planned south of the subject site, while a community park is planned to the west of the site. The future Ottawa-Carleton District School Board (OCDSB) Stittsville High School, which is planned to open in 2022, will be located southeast of the subject development site at 700 Cope Drive.

The proposed school will include a two-storey building, with a Gross Floor Area (GFA) of approximately 3,803 m², providing capacity for 800 students and consisting of one (1) library, one (1) gymnasium, one (1) multi-purpose room, 12 portable classrooms, and 20 classrooms among which five (5) classrooms will be for daycare use. The most up-to-date draft site plan (December 1, 2021) is attached as **Appendix B**. The proposed vehicle accesses include:

- a passenger vehicle access from Dagenham Street to the 60-space surface parking lot
- an access laneway off Cope Drive for delivery vehicles
- pick-up/drop-off laybys along the north side of Cope Drive and east side of Dagenham Street

Forty-eight parking spaces will be provided for bicycles within the subject site. **Figure 2-1** illustrates the Study Area Context. The development will be built as a single phase with an estimated date of completion in 2023.

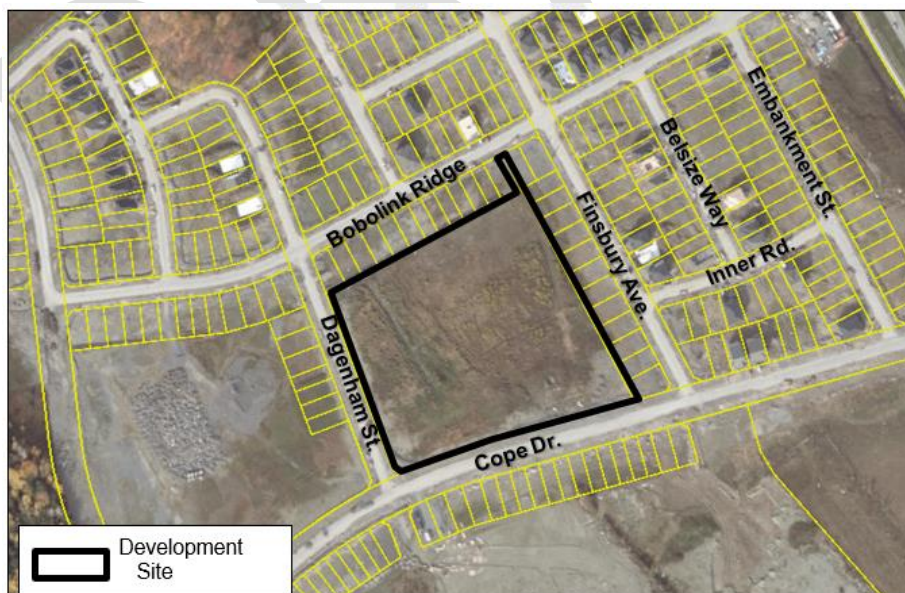


Figure 2-1. Site Area Context

2.3 EXISTING CONDITIONS

2.3.1 ROADWAYS

The existing roadways in proximity to the subject development site that will be considered in the TIA include the following. The road classification for City of Ottawa roadways is defined in the City of Ottawa Official Plan, 2021, Volume 1, Section 7, Annex 1 Road Classifications and Rights-of-Way.

Robert Grant Avenue is an urban municipal arterial roadway running on a north-south alignment between Fernbank Road and Abbott Street E. Robert Grant Avenue currently features an undivided two-lane cross-section with wide buffer and sidewalk on both sides. The road right-of-way is approximately 44.5m and the posted speed limit is 60 km/h.

Abbott Street E. is identified as a city-owned major collector road running on an east-west alignment between Terry Fox Drive and Stittsville Main Street with a posted speed limit of 50 km/h. It is an undivided two-lane collector road with sidewalk on the north side and on-street bike lanes on both sides.

Bobolink Ridge is identified as an east-west local road between Goldhawk Drive and Asturcon Street with a posted speed limit of 40 km/h.


Cope Drive is designated as a city-owned major collector road on the section west of Terry Fox Drive. Cope Drive runs on an east-west alignment with a two-lane cross-section and currently terminates at Goldhawk Drive on the west end. The speed limit is unposted and assumed to be 50 km/h.




Fernbank Road is a city-owned arterial road currently remains with a two-lane rural arterial cross-section and paved shoulders on both sides. The section of Fernbank Road designated as arterial road runs east-west between Eagleson Road and Stittsville Main Street with a posted speed limit of 60 km/h.

2.3.2 INTERSECTIONS

The TIA will assess four (4) intersections as described in Table 2-1. The unconstructed intersection of Cope Drive and Dagenham Street is not described in Table 2-1 but will be assessed in the TIA.

Table 2-1. Description of Study Area Intersections

| INTERSECTION (DESCRIPTION) | LANE CONFIGURATION |
|--|--|
| <p>Robert Grant Avenue @ Abbott Street E.</p> <ul style="list-style-type: none"> - Currently a three-leg roundabout with one travel lane for each direction - Level 2 Type D pedestrian crossover (PXO) installed over the south and west legs, and crosswalk over the east leg |  |

| INTERSECTION (DESCRIPTION) | LANE CONFIGURATION |
|--|--|
| <p>Robert Grant Avenue @ Bobolink Ridge</p> <ul style="list-style-type: none"> - A four-leg roundabout with one travel lane for each direction - Level 2 Type D PXO over each leg |  |
| <p>Robert Grant Avenue @ Cope Drive</p> <ul style="list-style-type: none"> - A four-leg roundabout with one travel lane for each direction - Level 2 Type D PXO over each leg |  |
| <p>Robert Grant Avenue @ Fernbank Road</p> <ul style="list-style-type: none"> - Signalized T-intersection - One left-turn lane and one right-turn lane for southbound direction - One left turn lane and one through lane for eastbound direction - One through lane and one right-turn lane for westbound direction - Crosswalks on all approaches with bi-directional cross-ride on the north approach |  |

2.3.3 DRIVEWAYS

The area within 200m of the subject development site is under construction, thus there are no existing active driveways nearby.

There will be residential driveways on the west side of Dagenham Street, south side of Cope Drive in vicinity of the subject site, two sides on Finsbury Avenue and Bobolink Ridge. The future OCDSB Stittsville High School located at 700 Cope Drive will have a two-way access and a one-way access from Cope Drive.

2.3.4 PEDESTRIAN AND CYCLING FACILITIES



Pathways and unidirectional cycle tracks are in place along both sides of Robert Grant Avenue, and the Trans Canada Trail runs along the south side of Abbott Street E. There are existing paved shoulders on both sides of Fernbank Road.

Cope Drive will include a MUP on the north side and a sidewalk on the south side based on the OCDSB Stittsville High School (700 Cope Drive) Traffic Plans approved on August 28, 2020, which is attached as **Appendix D**. **Figure 2-2** illustrates the existing cycling facilities in the vicinity of the subject development site.

Figure 2-2: Existing Cycling Facilities
(Source: GeoOttawa)

2.3.5 TRANSIT FACILITIES

OC Transpo Route 167 and Route 252 provide transit service along Robert Grant Avenue and Cope Drive.

- Route 167 is a Local Route running between Terry Fox and Cope Drive and providing service only on weekdays with a 30-minute frequency during weekday peak hours and 60-minute frequency during off-peak hours.
- Route 252 is a Connexion Route providing connection to the O-Train via Tunney's Pasture Station. Route 252 operates during peak hours on weekdays only at a 30-min frequency.

The bus stop closest to the subject development site is Stop #5527 located approximately 350m from the development site at the southeast corner of Robert Grant Avenue and Cope Drive intersection servicing Route 167 and Route 252.

Figure 2-3 highlights the OC Transpo bus routes and bus stops on adjacent roadways in proximity of the proposed development site.

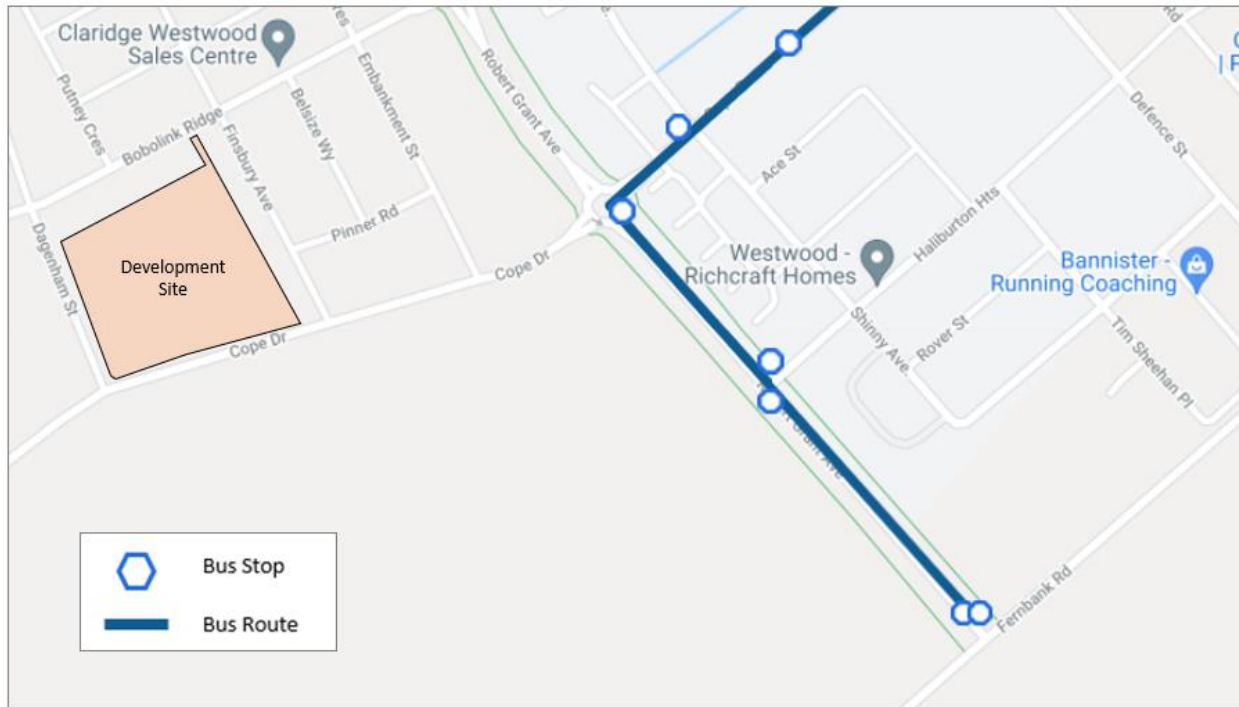


Figure 2-3: OC Transpo Bus Stops and Routes (Source: OC Transpo Website)

2.3.6 AREA TRAFFIC MANAGEMENT MEASURES

The subject site is within a subdivision area currently under construction. There are no existing traffic management measures being implemented in proximity of the subject site.

2.3.7 PEAK HOUR TRAVEL DEMANDS

The TRANS Committee was established to co-ordinate transportation planning efforts among various planning agencies located within the National Capital Region. The proposed development is located in Kanata/Stittsville. The complete TRANS O-D results (including a map of the district area) is provided in **Appendix C**. The most recent Origin-Destination (O-D) survey was completed by TRANS in the Fall of 2011. The TRANS trip data for South Nepean is summarized in **Table 2-2**.

Table 2-2. Peak Hour Trips by Primary Travel Mode – TRANS Kanata/Stittsville

| TRAVEL MODE | AM PEAK PERIOD (6:30 A.M. – 8:59 A.M.) | | | PM PEAK PERIOD (3:30 P.M. – 5:59 P.M.) | | |
|----------------|--|-------------|-----------------|--|-------------|-----------------|
| | FROM DISTRICT | TO DISTRICT | WITHIN DISTRICT | FROM DISTRICT | TO DISTRICT | WITHIN DISTRICT |
| Auto-Driver | 59% | 74% | 45% | 73% | 61% | 57% |
| Auto-Passenger | 9% | 7% | 17% | 17% | 15% | 23% |
| Transit | 24% | 8% | 4% | 7% | 21% | 2% |
| Bicycle | 0% | 1% | 1% | 0% | 0% | 1% |
| Walk | 0% | 0% | 19% | 0% | 0% | 12% |
| Other | 7% | 10% | 15% | 3% | 3% | 6% |

| TRAVEL MODE | AM PEAK PERIOD (6:30 A.M. – 8:59 A.M.) | | | PM PEAK PERIOD (3:30 P.M. – 5:59 P.M.) | | |
|-----------------------|--|---------------|-----------------|--|---------------|-----------------|
| | FROM DISTRICT | TO DISTRICT | WITHIN DISTRICT | FROM DISTRICT | TO DISTRICT | WITHIN DISTRICT |
| Total Vehicles | 25,970 | 15,660 | 30,350 | 18,960 | 28,920 | 37,470 |

Source: TRANS 2011 O-D Survey Report, Kanata/Stittsville

Reviewing the Trans 2011 O-D Survey, a majority of trips use personal vehicles as the main source of transport to and from the district. During both AM and PM peak hour periods, auto-driver and auto-passenger modes account for between 68% to 90% of the total vehicles that are travelling to and from the Kanata/Stittsville district. The remaining 10% to 22% are split between transit, bicycle, walk, or other unindicated modes of transportation.

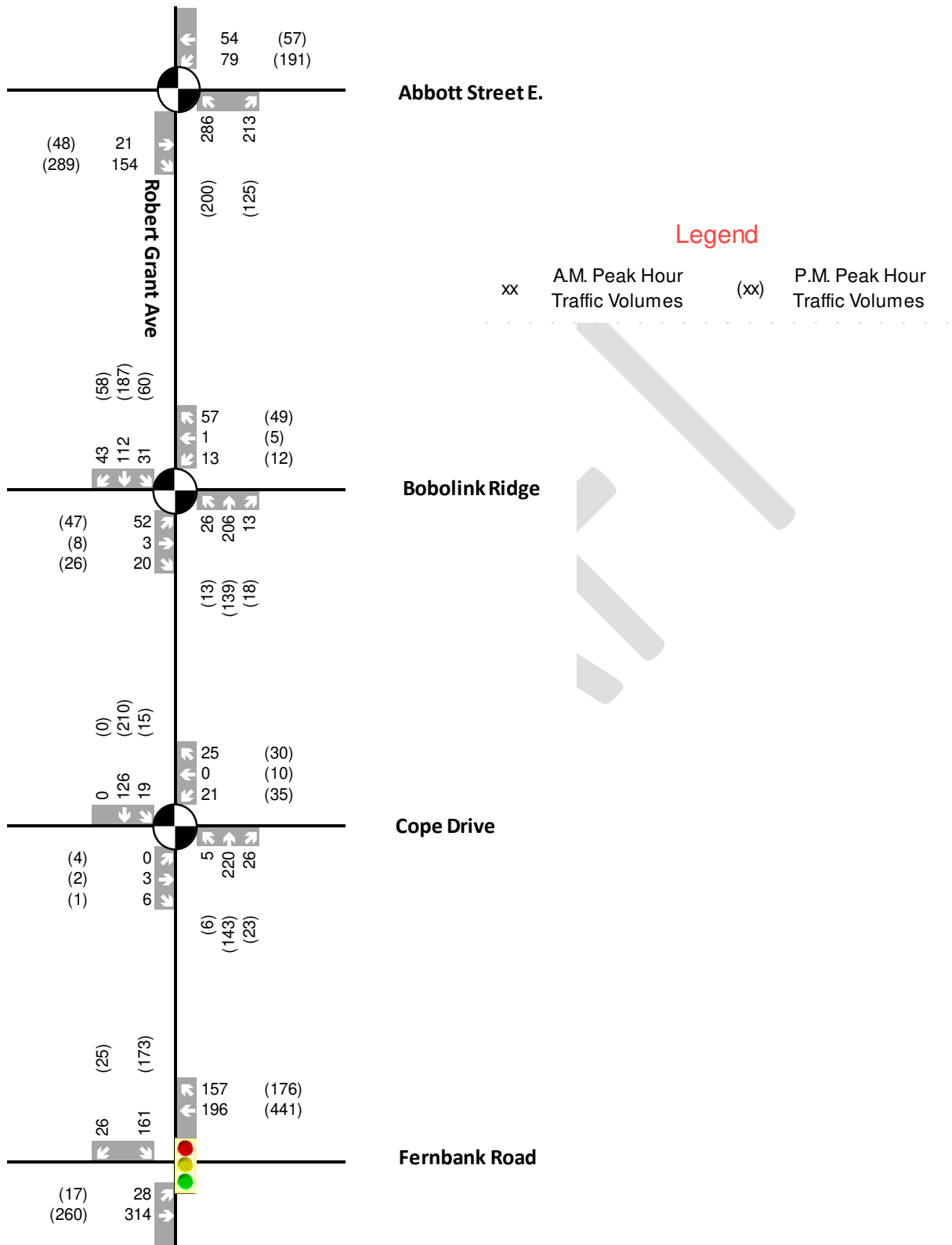
Within the district, travel modes are more diversified. Although auto trips still represent the majority (62% in AM peak, 80% in PM peak), more people tend to choose other modes especially by walking.

The existing peak hour turning movement counts of the intersections within the study area are illustrated in Figure 2-4. These were obtained from other approved TIAs for adjacent developments. The date and source of traffic counts are summarized in Table 2-3 and the relevant pages from other TIAs are included in **Appendix E**.

Table 2-3. Traffic Data Dates and Sources

| INTERSECTION | DATE | SOURCE |
|-----------------------------------|-------------|------------------------|
| Robert Grant Ave / Abbott St E | June 2019 | 700 Cope Drive TIA |
| Robert Grant Ave / Bobolink Ridge | March 2021 | 360 Bobolink Ridge TIA |
| Robert Grant Ave / Cope Dr | June 2019 | 700 Cope Drive TIA |
| Robert Grant Ave / Fernbank Rd | August 2018 | City of Ottawa |

Figure 2-4. Existing Peak Hour Traffic Volumes



2.3.8 FIVE-YEAR COLLISION HISTORY

The boundary road for the proposed development is Cope Drive and Dagenham Street, which either have not been constructed or have only been opened to public traffic for a short period.

The latest past five years (January 1, 2015 through December 31, 2019) collision history were reviewed. The collision history was obtained from the City of Ottawa Open Data website and provides yearly total collisions by locations. **Table 2-4** summarizes the five-year collision history for Robert Grant Avenue.

More detailed five-year collision data will be required to identify if any collision pattern and/or safety concern exists. A more thorough collision review will be conducted upon the request from the City.

Table 2-4. Five-Year Collision History Summary (2015-2019)

| Location | | Pedestrian Collision | Cyclists Collision | Total Collisions by Year | | | | |
|-----------------------------------|--|----------------------|--------------------|--------------------------|------|------|------|------|
| | | | | 2015 | 2016 | 2017 | 2018 | 2019 |
| Segment: | Robert Grant Avenue [Fernbank Road – Abbott Street E.] | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Intersection: | Robert Grant Avenue @ Fernbank Road | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Intersection: | Robert Grant Avenue @ Bobolink Ridge | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| Intersection: | Robert Grant Avenue @ Abbott Street E. | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Five-year Total Collisions | | | | 6 | | | | |

2.4 PLANNED CONDITIONS

2.4.1 CHANGES TO THE STUDY AREA TRANSPORTATION NETWORK

The City of Ottawa Official Plan, Transportation Master Plan (TMP) (2013), and the Fernbank Community Design Plan (July 2006) were reviewed to identify potential future roadway upgrades in the vicinity of the subject development site.

Robert Grant Avenue is identified as a future Transit Priority Corridor with isolated measures and ultimately a BRT route with at-grade crossings based on the Rapid Transit and Transit Priority Network – 2031 Affordable Network and 2031 Network Concept Network (Map 5 and Map 4 of TMP). Park and Ride facilities are proposed near the intersection of Abbott Street E. and Robert Grant Avenue and the intersection of Fernbank Road and Robert Grant Avenue. A concept design was completed for Robert Grant Avenue as part of the West Transitway Connections EA study. The section of Robert Grant Avenue between Fernbank Road and Abbott Street East will ultimately be widened to four lanes and include dedicated bus lanes running in the middle of the road. Robert Grant Avenue currently terminates at Abbott Street E and will be extended northwards to connect to Hazeldean Road. The extension was planned to be part of Phase 2 (2022 – 2025) network improvements per the TMP, however the timeline has been postponed to beyond 2030 due to funding limitations. The City and area developers have worked

collaboratively to explore alternative funding solutions and conducted a Development Charges Amendment Background Study in 2019. **Figure 2-5** shows the planned area transportation network.

Fernbank Road is identified on the Rapid Transit and Transit Priority Network – 2031 Network Concept Network (Map 4 of the TMP) as a future Transit Priority Corridor with isolated measures. Widening of Fernbank Road between Stittsville Main Street and Terry Fox Drive is anticipated in the future per the Road Network – 2031 Network Concept (Map 10 of TMP).

Cope Drive as an area collector road will be extended westwards to eventually connect to Shea Road. The extension is expected to be completed as part of Claridge Richcraft Tamarack (CRT) Westwood Phase 1 and Phase 2 subdivision.

There are no other major changes expected to the study area transportation network.

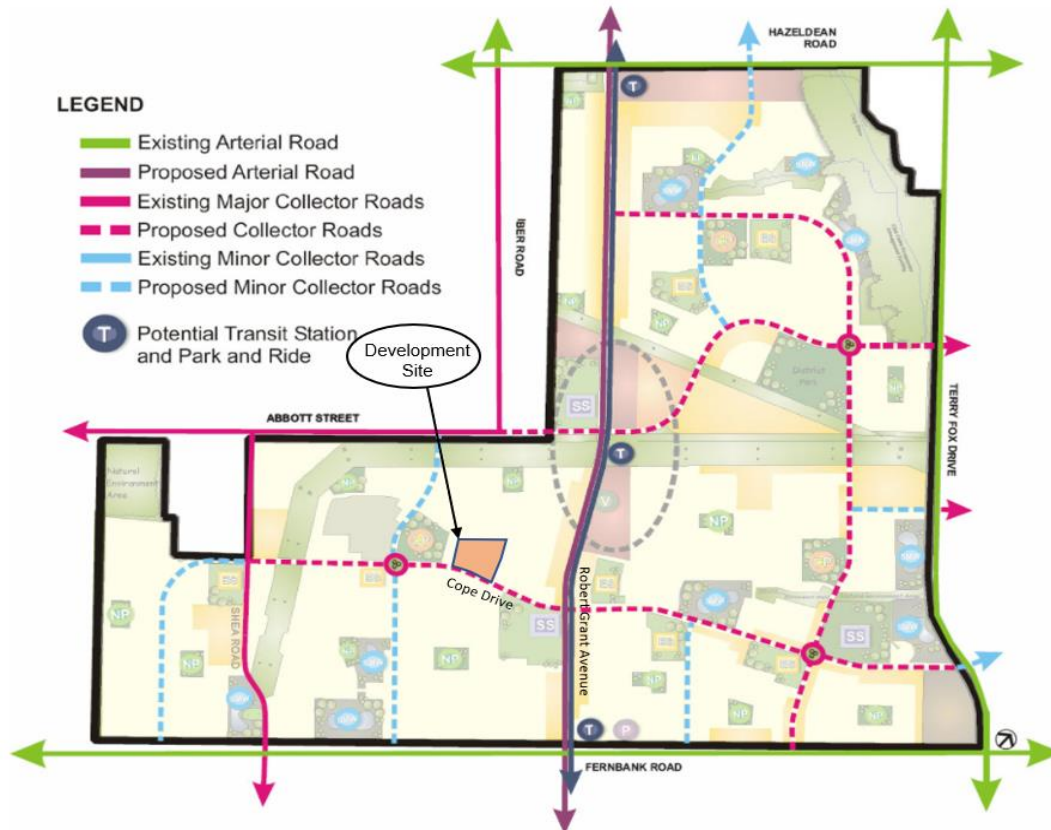


Figure 2-5: Planned Roadway Network (Source: Fernbank Community Design Plan (July 2006))

2.4.2 OTHER STUDY AREA DEVELOPMENTS

The subject school site is located within a new subdivision area where many new developments are occurring. Based on a search through the City of Ottawa’s Development Application Search tool, developments that will likely occur within the proposed horizon years of the subject development and could have direct influences on the study area are noted below:

- 600 Bobolink Ridge (D07-12-21-0107): An ongoing Site Plan Control application for development of seven stacked townhouse blocks each containing 12 units for a total of 84 units. The development forms part of the Claridge Richcraft Tamarack (CRT) Westwood subdivision (CRT Phase 1 &2). Build out of the development is expected in 2023.

- 360 Bobolink Ridge (App# D07-12-21-0163): A Site Plan Control application for four six-storey apartment buildings consisting of 354 total rental units and a two-storey building providing office space, ground-floor commercial units and tenant amenity. Full built-out horizon is anticipated to be 2024. The supporting TIA (August 30, 2021) was prepared by J.L Richards.
- 5725 Fernbank Road, CRT Phase 3 (App# D07-16-20-0033): A Zoning By-law Amendment and Subdivision application for 600 residential units with mix of detached and townhome dwellings and a park. CRT Phase 3 is anticipated to be constructed in a single phase with full occupancy by end of 2025. The supporting TIA (April 8, 2021) was prepared by IBI Group.
- 700 Cope Drive (App# D07-12-19-0144): A Site Plan Control application for the development of a four-storey OCDSB secondary school with approximately 8,415 m² area and a capacity to accommodate 1,460 students at full built-out anticipated in 2024. The development proposes two accesses from Cope Drive. The supporting TIA (December 4, 2019) was prepared by Parsons.
- 60 Defence Street (App# D07-12-21-0120): A Site Plan Control application for an elementary school and daycare with capacity for 507 students and 36 staff. Anticipated built-out year is 2023. The supporting TIA (August 2021) was prepared by Dillon Consulting.
- 5786 Fernbank Road, CRT Phase 1&2 (App# D07-16-11-0003): A Subdivision application for low density residential, minimal amount of medium density residential, open space, parks, institutional, and stormwater management pond. The land being subdivided is the parent property of the subject development site. The supporting Transportation Study (January 28, 2021) was prepared by IBI Group.
- 360 Haliburton Heights, Fernbank Crossing, Block 135, Phase 3: A Subdivision application for 58 units of townhomes. Full built-out horizon was anticipated to be 2021. The supporting TIA (March 2019) was prepared by Novatech.

2.5 STUDY AREA AND TIME PERIOD

The limits for the Transportation Impact Assessment (TIA) study area and study intersections are shown in **Figure 2-6**. The boundary roads Cope Drive and Dagenham Street will be reviewed. Three roundabouts and two intersections will be analyzed including:

- Robert Grant Avenue and Abbott Street E.
- Robert Grant Avenue and Bobolink Ridge
- Robert Grant Avenue and Cope Drive
- Robert Grant Avenue and Fernbank Road
- Cope Drive and Dagenham Street



Figure 2-6: Study Area

It is noted that the afternoon peak of elementary schools is usually earlier than the regular PM peak hour of the roadway network, but the school's morning peak will generally align with the AM peak hour of the roadway traffic. The study time periods identified for the traffic analysis are weekday AM and PM peak hours as these represent the time periods with the highest traffic volumes that would govern the design of study area roadways and intersections.

CEPEO has indicated that operation hours of the elementary school will be from 7:30 AM to 4:00 PM, and the daycare will operate between 6:00 AM to 5:00 PM. The start and end time of the school and daycare service generally align with the peak hours of the adjacent street traffic, but it is noted that the provided school operating hours may include before and after care times and may not align with concentrated trip arrivals and departures

around bell times. The identification of the alignment between commuter peak hours and school operations are assessed in more detail as part of the Forecasting analysis below.

2.6 HORIZON YEARS

The proposed facility is expected to be completed in one phase with a target build-out year of 2023. In accordance with the City of Ottawa TIA Guidelines (2017), the following horizons will be considered for analysis.

- 2023, which represents the anticipated buildout horizon,
- 2028, which represents the buildout year plus five years.

2.7 EXEMPTIONS REVIEW

Based on the review of the development and network conditions, the following elements shown in **Table 2-5** qualify for an exemption from this Transportation Impact Assessment.

Table 2-5. Exemptions Summary

| MODULE | ELEMENT | EXEMPTIONS |
|--------------------------------------|-------------------------------|---|
| DESIGN REVIEW COMPONENT | | |
| 4.1 Development Design | 4.1.2 Circulation and Access | Not Exempted. This element is only required for site plans. |
| | 4.1.3 New Street Networks | Exempted This element is only required for plans of subdivision. |
| 4.2 Parking | 4.2.1 Parking Supply | Not Exempted. This element is required for site plans. |
| | 4.2.2 Spillover Parking | Exempted This element is only required for site plans where parking supply is 15% below unconstrained demand. |
| NETWORK IMPACT COMPONENT | | |
| 4.5 Transportation Demand Management | All Elements | Not Exempted Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time. |
| 4.6 Neighborhood Traffic Management | 4.6.1 Adjacent Neighbourhoods | Not Exempted Required when the development relies on local or collector access and total volumes exceed ATM capacity threshold. |
| 4.8 Network Concept | | Exempted Required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning. |

Based on the above, the TIA report will include the following modules:

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.4: Access Design
- Module 4.5: Transportation Demand Management
- Module 4.6: Neighbourhood Traffic Management
- Module 4.7: Transit
- Module 4.9: Intersection Design

DRAFT

3 FORECASTING

3.1 DEVELOPMENT GENERATED TRAFFIC

3.1.1 TRIP GENERATION

The proposed development consists of two primary trip generator land uses which are elementary school and daycare services. Trips generated by the elementary school and daycare service have been estimated based on the most up-to-date information provided by the school board. The elementary school is anticipated to provide capacity for 751 students, while the daycare service will provide capacity for 49 children. A total of 51 staff, including teachers, custodians, and office staff, are expected to work for the school and daycare. There is a plan for future addition to the school providing extra capacity for 200 students, but this addition was not included in this TIA study as it is not part of the current Site Plan Application and no timeline has been defined.

SCHOOL PERSON TRIP GENERATION (STUDENTS)

Trip generation for the student population at the proposed school has been developed using first principles analysis based on information provided by CEPEO. The 2020 TRANS Trip Generation Manual does include mode share assumptions for elementary and high schools but recommends that mode shares be developed on a site-specific basis if additional information is available from the school or school board. Information from CEPEO indicates that approximately 85% of the student population is anticipated to arrive by school bus, with the remainder by other modes. These remaining trips have been split as 10% by auto and 5% by active transportation modes, recognizing a portion of the student population will be within walking distance of the school.

SCHOOL PERSON TRIP GENERATION (STAFF)

Staff trip generation to the proposed school is based on the anticipated 51 staff. The Mode share for these trips has been based on the Employment Generator Mode Shares from the 2020 TRANS Trip Generation Manual for the South Nepean District.

DAYCARE PERSON TRIP GENERATION

Daycare person Trip Generation is based on the capacity of 49 children provided by CEPEO. A 100% auto passenger mode share has been adopted for daycare children, assuming that all children will be dropped off by parents.

TOTAL PERSON TRIP GENERATION AND MODE SHARE

Table 3-1 provides a summary of the person trip generation for all of the uses on the site.

Table 3-1: Proposed School Site Person Trip Generation and Mode Share

| | AUTO DRIVER | AUTO PASSENGER | SCHOOL BUS | PUBLIC TRANSIT | WALKING & CYCLING |
|---------------------------|--------------------|-----------------------|-------------------|-----------------------|------------------------------|
| | Mode Shares | | | | |
| School Students | 0% | 10% | 85% | 0% | 5% |
| Staff | 80% | 10% | 0% | 5% | 5% |
| Daycare Children | 0% | 100% | 0% | 0% | 0% |
| | Person Trips | | | | |
| School Students | 0 | 75 | 638 | 0 | 38 |
| Staff | 41 | 5 | 0 | 3 | 3 |
| Daycare Children | 0 | 49 | 0 | 0 | 0 |
| TOTAL PERSON TRIPS | 41 | 129 | 638 | 3 | 41 |

CONVERSION TO VEHICLE TRIPS

The person trip generation above represents the student and staff trip generation in terms of arrivals to the school site in the morning and departures in the afternoon but do not reflect the vehicle volumes added to the surrounding road network. The conversion of the person trips to vehicle trips is based on the following:

- Auto passenger trips for student and daycare drop-offs represent one auto arrival and one auto departure from the site during the AM and PM peak hours. Vehicle trips were calculated from the auto passenger person trips assuming a vehicle occupancy of 1.2, reflecting some families who will drop off multiple children in one trip.
- Auto driver trips by staff represent one vehicle arrival in the morning and one departure in the afternoon. Staff auto trips have been calculated based on a vehicle occupancy of 1.0. No additional vehicle trips have been added to reflect staff auto passenger trips as it is anticipated these will be combined with staff auto driver arrivals (carpooling).
- School bus capacity ranges from 48-72 students based on 2-3 students per seat. School bus volumes have been estimated based on an average of 60 students per bus.

PEAK HOUR DISTRIBUTION

The person trip generation above is based on total trips made by the students and staff to and from the site. CEPEO has indicated that operation hours of the elementary school will be from 7:30 AM to 4:00 PM, and the daycare will operate between 6:00 AM to 5:00 PM. It is anticipated that the school hours provided represent before and after care in addition to classes; most CEPEO schools in Ottawa operate with morning and afternoon bell times at approximately 8:30-9:00 AM and 3:00 PM. While school student arrivals will be concentrated just before and after the opening and closing bells, trips by staff, before and after care students and daycare children may be more distributed. Given the commuter peak hours of 7:15-8:15 AM and 4:45-5:45 PM from the provided traffic count, the

proportions of the site generated vehicle trips falling within the commuter peak hours have been estimated based on the following:

- 80% of auto trips arriving during the AM peak hour, reflecting a portion of the staff arrivals, before school care and daycare drop-offs that arrive earlier in the morning.
- 50% of auto trips departing the school during the PM peak hour, reflecting a wider distribution of parent pickup between the end of the school day and end of daycare and after school programs and a wider distribution in staff departure times at the end of the day.
- 100% of school bus arrivals during the AM peak hour, corresponding with a concentration in drop-offs just before the morning bell.
- 0% of bus departures during the PM peak hour, reflecting that bus departures will occur at the end of the school day before the commuter PM peak hour.

DAYCARE DIVERTED TRIP ESTIMATION

In many cases, school and daycare drop-offs by parents will be planned as part of a parent’s commute; these diverted trips will be reflected in the background traffic volumes on the road network but will divert to the school before continuing on their original path. The Trip Generation Manual 3rd Edition indicates an average diverted trip proportion of 56% specific to daycare centres; this proportion has been applied as diverted trips in the site generated traffic. The same handbook does not indicate a diverted trip proportion for the elementary school land use; to be conservative, this analysis is based on all auto trips generated by the school to be primary trips added to the road network.

TOTAL VEHICLE TRIPS

The total peak hour vehicle trips generated by the proposed school are summarized in Table 3-2.

Table 3-2: Total Site Vehicle Trip Generation

| | AM PEAK HOUR | | PM PEAK HOUR | |
|--|--------------|-----|--------------|-----|
| | IN | OUT | IN | OUT |
| Auto Trips | 115 | 83 | 52 | 72 |
| School Buses | 11 | 11 | 0 | 0 |
| Diverted Auto Trips (included in auto total above) | 18 | 18 | 11 | 11 |

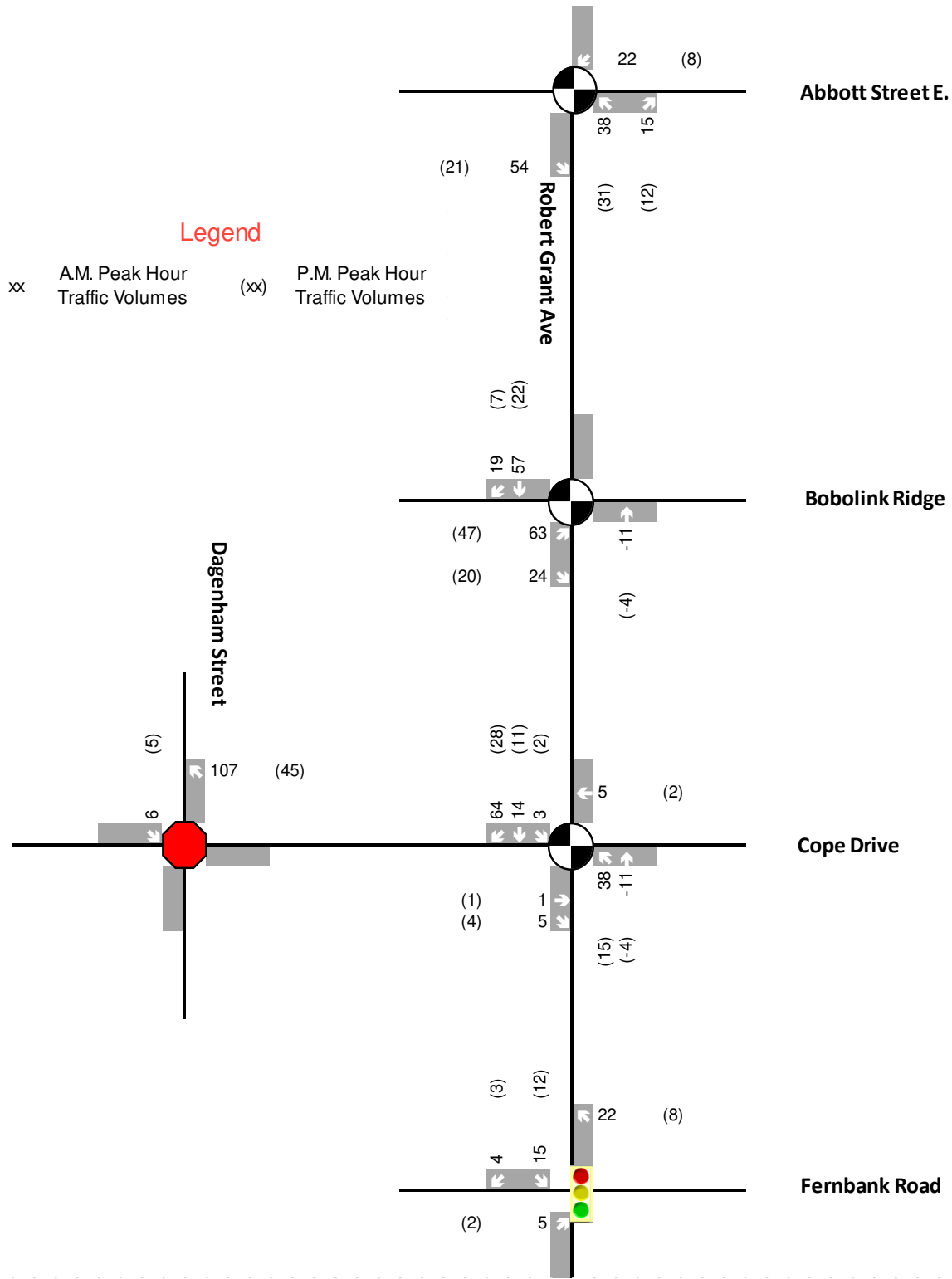
3.1.2 TRIP DISTRIBUTION AND ASSIGNMENT

The overall trip distribution of the site generated trips has been adopted from the TIA for the 700 Cope Road TIA immediately to the east of the subject site developed by Parsons, this trip generation is based on the TRANS 2011 travel survey distribution and is estimated at 45% of traffic to/from the north, 25% of traffic to/from the east, and 30% of traffic to/from the west. While the catchment of the proposed school was not provided, the prominence of students on school buses suggests that the catchment area will extend beyond the local neighbourhood, and thus trip distribution based on the TRANS district level distribution is an appropriate estimate. Based on the surrounding road network configuration and existing traffic patterns, the overall distribution has been assigned to the network as follows:

- 45% to/ from North
 - 25% to/from Iber via Abbot
 - 20% to/from Terry Fox via Abbott
- 25% to/from East
 - 5% to/from Cope
 - 20% to/from Fernbank
- 30% to/from West
 - 25% to/from Abbott
 - 5% to/from Fernbank
- Site Access Distribution
 - Inbound trips from Robert Grant NB and Cope Drive WB 100% via Cope WB to Dagenham NB (to align with car drop off area on east side)
 - Inbound trips from north 75% via Cope Drive (to align with car drop off area on east side), 25% via Bobolink Ridge (destined to school parking access).
 - Outbound Trips towards Abbott Street 100% via Bobolink Ridge.
 - Outbound Trips towards Cope / Fernbank 75% via Bobolink Ridge, 25% via Cope Road (reflecting that many parents will continue NB after pickup/drop-off).

The site generated trip distribution is illustrated in Figure 3.1.

Figure 3-1: Development Generated Auto Trips



3.2 BACKGROUND NETWORK TRAFFIC

3.2.1 CHANGES TO THE BACKGROUND TRANSPORTATION NETWORK

The Robert Grant Avenue extension from Abbott Street E. to Palladium Drive was identified as one of the Phase 2 (2022-2025) projects in the City of Ottawa Transportation Master Plan (2013), this project is not part of the City affordable network and is not anticipated until after 2031.

Due to the interests expressed by the area developers in working with the City explore alternative funding solutions, the City conducted a 2019 Development Charges Amendment Background Study and introduced an area specific charge to accelerate improvements in the Stittsville area including the extension of Robert Grant Avenue. In this study, it was assumed that Robert Grant Avenue extension would not be completed by the 2028 horizon.

The existing Cope Drive ends at a cul-de-sac at the location of the future intersection with Angel Heights / Goldhawk Drive. These roads and resulting intersection will be developed as the buildout of CRT Phases 1 and 2 continue. This study is based on the cul-de-sac remaining in place for the 2023 horizon, and the full intersection and connections to CRT phase 2 to the south of Cope Drive being in place by the 2028 horizon.

3.2.2 GENERAL BACKGROUND GROWTH RATES

A 2.0% annual growth in traffic on study area roads was adopted to account for traffic generated by future developments that are not currently under the development application process (Section 2.4.2). The 2.0% increase was consistent with the growth assumptions used in the approved TIA studies prepared supporting the other area developments.

3.2.3 OTHER AREA DEVELOPMENTS

Other study area developments identified in Section 2.4.2 were accounted in the estimation of future background traffic of 2023 and 2028 study horizons. The TIA approved in April 2021 for the development of CRT Phase 3 captured traffic generated by most of the identified area developments, including the following:

- CRT Phase 1&2 (5786 Fernbank Road) and Phase 3 (5725 Fernbank Road)
- Fernbank Crossing Phase 3 Block 129 and Block 135 (90% of Phase 3 was constructed in 2019 per Stantec's TIA, therefore associated development generated trips will be reflected in existing traffic counts)
- Fernbank Crossing Phase 4.
- Blackstone Phases 4 – 8
- Development (René's Court) at 1000 Robert Grant Avenue
- New Stittsville High School at 700 Cope Drive

The Fernbank Crossing Phase 3 Block 129 and Block 135 was not explicitly counted in this TIA, but it is noted that 90% of Phase 3 was constructed in 2019 per Stantec's TIA, therefore associated development generated trips will be reflected in existing traffic counts.

It is noted that traffic associated with the residential development at 360 Bobolink Ridge were not considered in the CRT Phase 3 TIA and have also been added to the background development traffic. The CRT Phase 3 TIA also did not include the intersection of Robert Grant Avenue and Abbott Street E, volumes at this intersection were based on the 700 Cope Drive (Stittsville High School) TIA. Volumes at the intersection of Bobolink Ridge and Robert Grant Avenue were based on a review of projected volumes in the 360 Bobolink Ridge TIA balanced to reflect the projected volumes at the adjacent intersections resulting from the projected development volumes in the area.

The proposed Stittsville High school is scheduled to begin classes in 2023, but the other area developments listed above are expected to be built-out either in or after 2023. For the purposes of this study, the 2023 background traffic volumes include the annual 2% background traffic growth and 700 Cope Drive developments only, while the 2028 background volumes consist of both the general annual growth and other developments generated traffic. 2023 background traffic is shown in Figure 3-2, and 2028 background traffic is shown in Figure 3-3.

DRAFT

Figure 3-2: 2023 Background Traffic Volumes

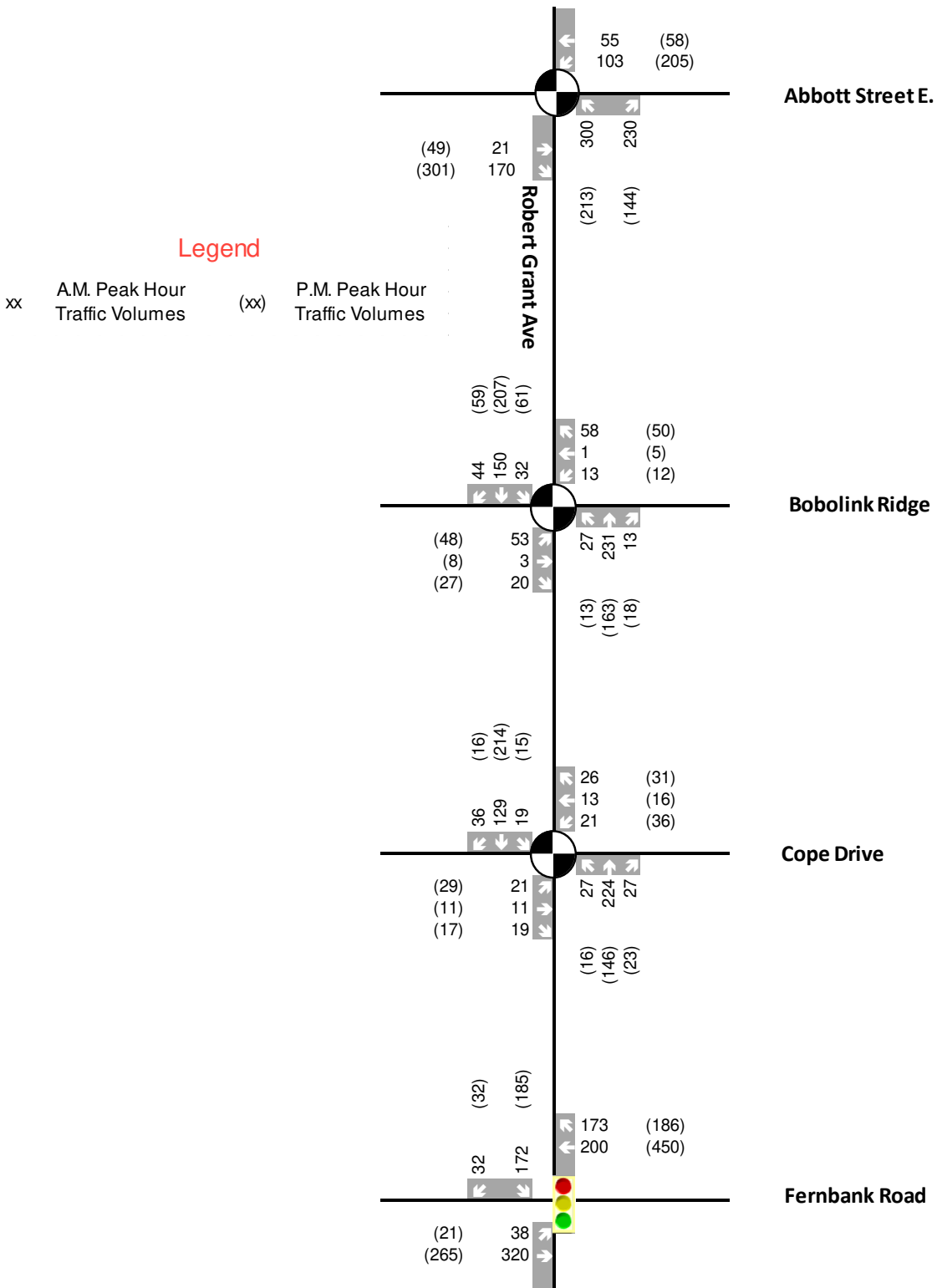
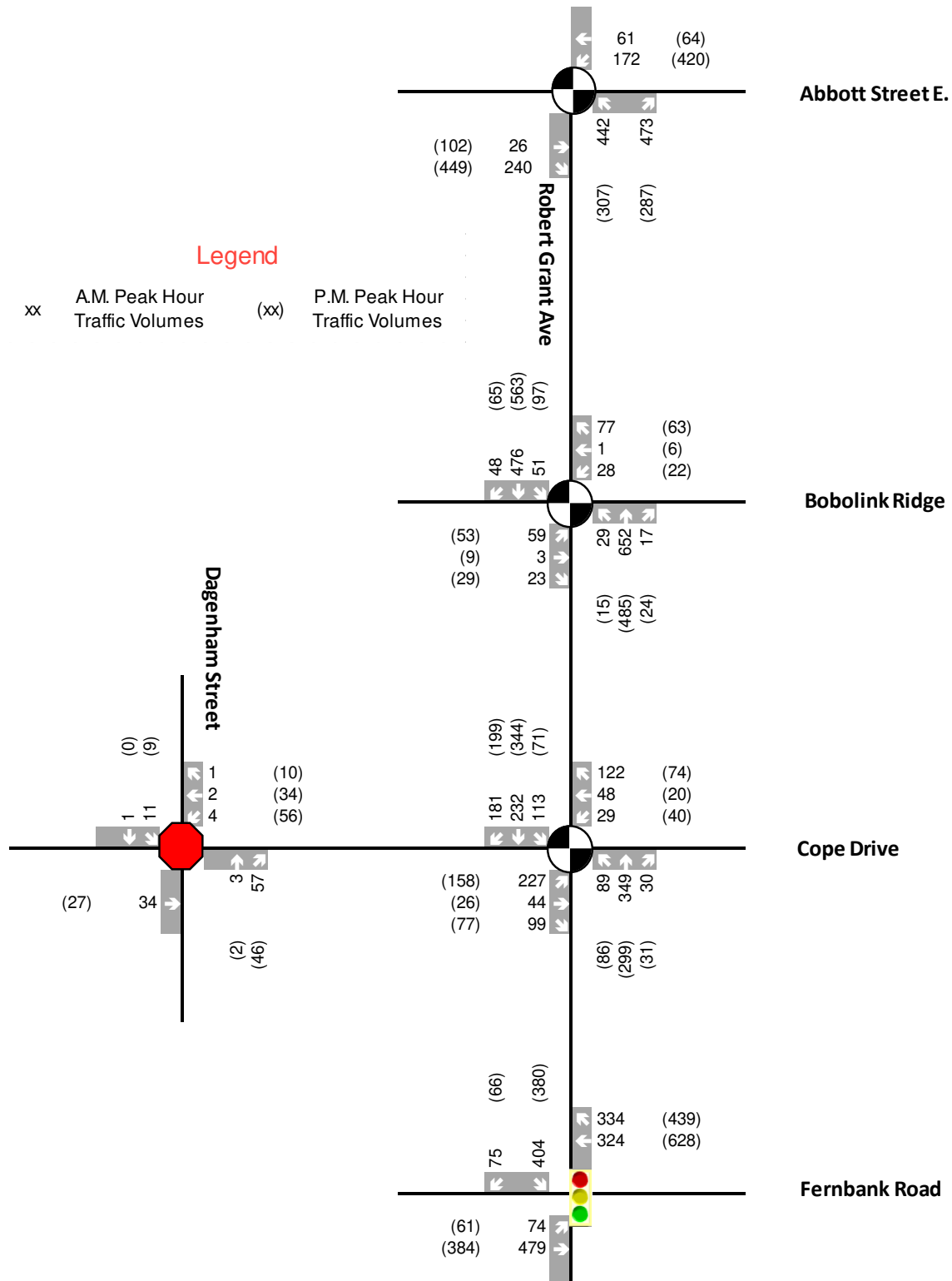


Figure 3-3: 2028 Background Traffic Volumes



3.3 DEMAND RATIONALIZATION

3.3.1 DESCRIPTION OF CAPACITY ISSUES

Total traffic volumes for the 2023 and 2028 study horizons were estimated by:

- Applying a 2% background annual growth to the existing traffic volumes.
- Adding trips generated by the proposed development on top of the general background growth to get 2023 total volumes
- Adding trips generated by other area developments and the proposed development on top of the general background growth to get 2028 total volumes

The estimated 2023 and 2028 total traffic volumes are presented in Figure 3-4 and Figure 3-5. A detailed assessment of intersection and roadway capacities by using Synchro (version 11) for 2023 and 2028 horizons will be carried out in Section 4 as upon the City's approval of the Forecasting Report.

3.3.2 ADJUSTMENT TO DEVELOPMENT GENERATED TRAVEL DEMANDS

The development generated trips are not anticipated to result in new over-capacity movements within the study area, therefore no adjustment to development generated traffic has been proposed yet. A detailed review will be carried out as part of the Strategy/Analysis Report and may include recommended adjustments as needed.

3.3.3 ADJUSTMENTS TO BACKGROUND NETWORK TRAVEL DEMANDS

Adjustments to background network demands have not been proposed since the projected future traffic are not expected to adversely impact the intersections and roadways within the study area. A detailed review will be carried out as part of the Strategy/Analysis Report (Section 4) and may include recommended adjustments as needed.

Figure 3-4: 2023 Total Traffic Volumes

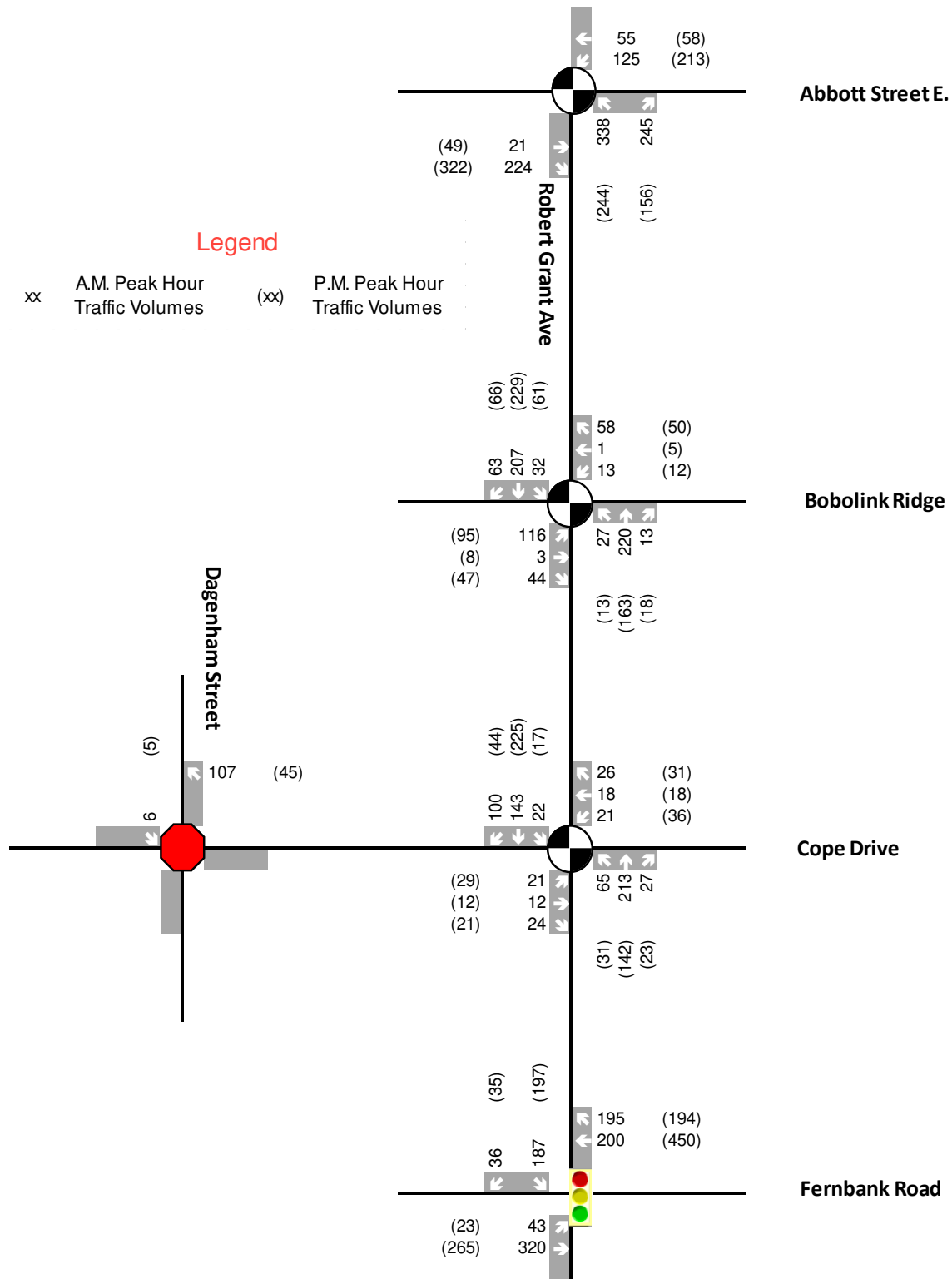
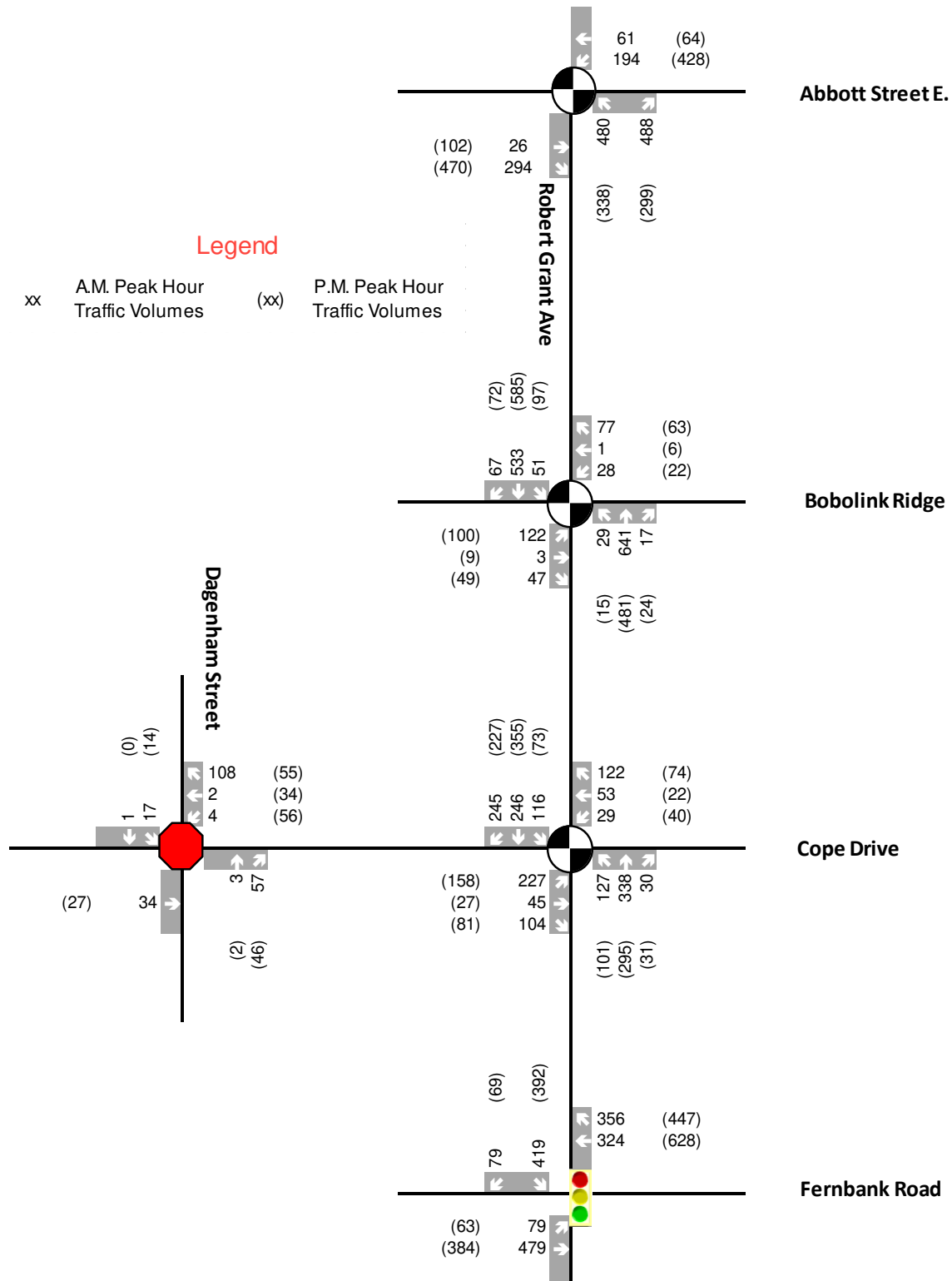


Figure 3-5: 2028 Total Traffic Volumes



4 STRATEGY

To be completed following approval of the Forecasting Report from City of Ottawa staff.

DRAFT

APPENDIX

A SCREENING FORM





City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

| | |
|------------------------------------|--|
| Municipal Address | 755 Cope Drive, Stittsville, Ontario, K2S 1S3 |
| Description of Location | Located at the north-east corner of Cope Dr and Dagenham St. |
| Land Use Classification | Institutional - School |
| Development Size (units) | 800 students and staff |
| Development Size (m ²) | 3,803 (building area) |
| Number of Accesses and Locations | Access from Dagenham Street, service access from Cope Drive |
| Phase of Development | Single Phase |
| Buildout Year | 2022 |

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

2. Trip Generation 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 |
|-------------------------------------|--------------------------|
| Single-family homes | 40 units |
| Townhomes or apartments | 90 units |
| Office | 3,500 m ² |
| Industrial | 5,000 m ² |
| Fast-food restaurant or coffee shop | 100 m ² |
| Destination retail | 1,000 m ² |
| Gas station or convenience market | 75 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.*

If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.

800 students and staff will generate > 60 vehicle trips, Trip Generation trigger is satisfied.



Transportation Impact Assessment Guidelines

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 Spine Bicycle Networks? | X | |
| Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?* | | X |

**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).*

If any of the above questions were answered with ‘Yes,’ the Location Trigger is satisfied.

4. Safety Triggers

| | Yes | No |
|---|-----|----|
| Are posted speed limits on a boundary street are 80 km/hr or greater? | | X |
| Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway? | | X |
| 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)? | | X |
| Is the proposed driveway within auxiliary lanes of an intersection? | | X |
| Does the proposed driveway make use of an existing median break that serves an existing site? | | X |
| Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development? | | X |
| Does the development include a drive-thru facility? | | X |

If any of the above questions were answered with ‘Yes,’ the Safety Trigger is satisfied.

5. Summary

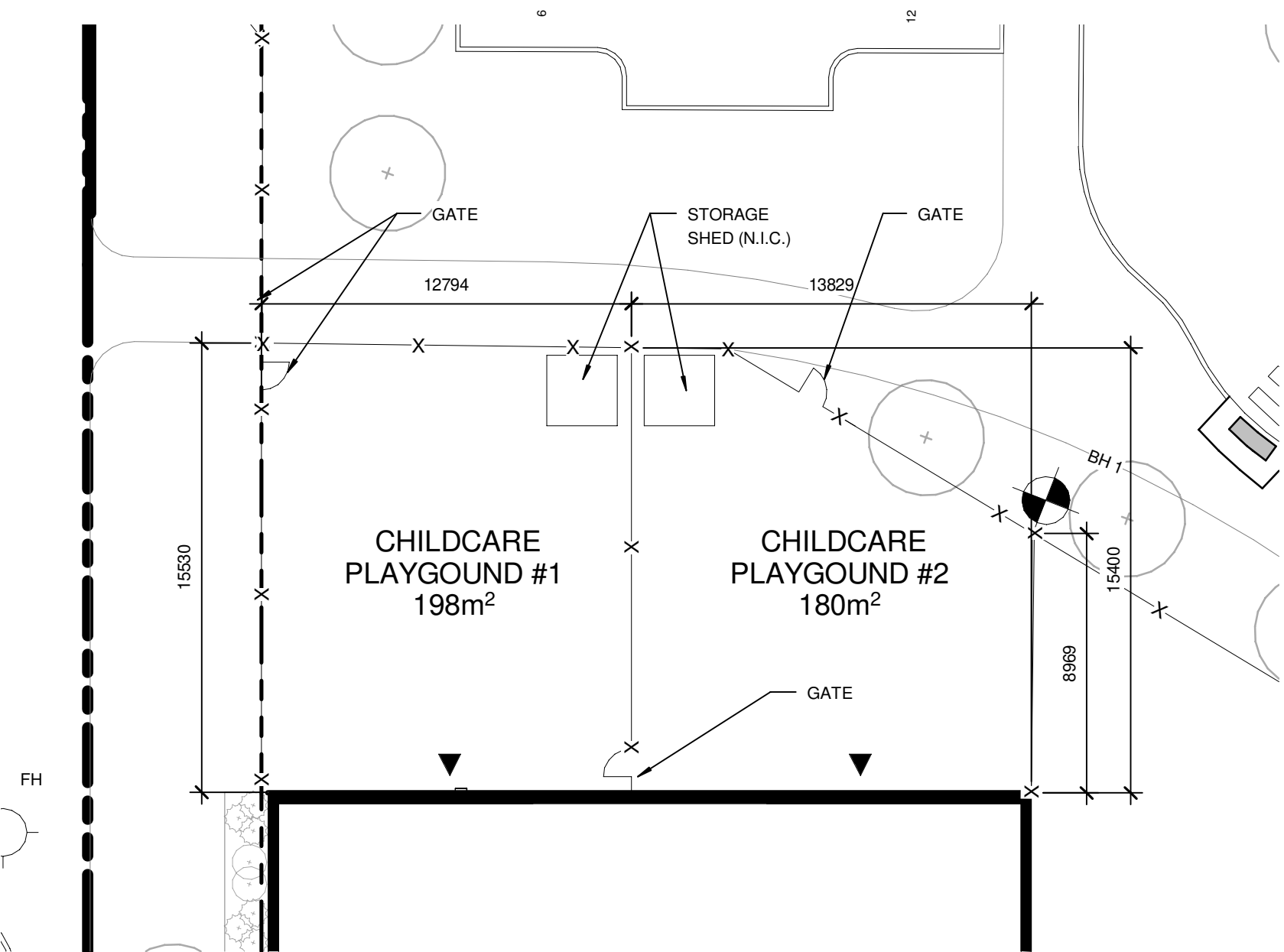
| | Yes | No |
|---|-----|----|
| Does the development satisfy the Trip Generation Trigger? | X | |
| Does the development satisfy the Location Trigger? | X | |
| Does the development satisfy the Safety Trigger? | | X |

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

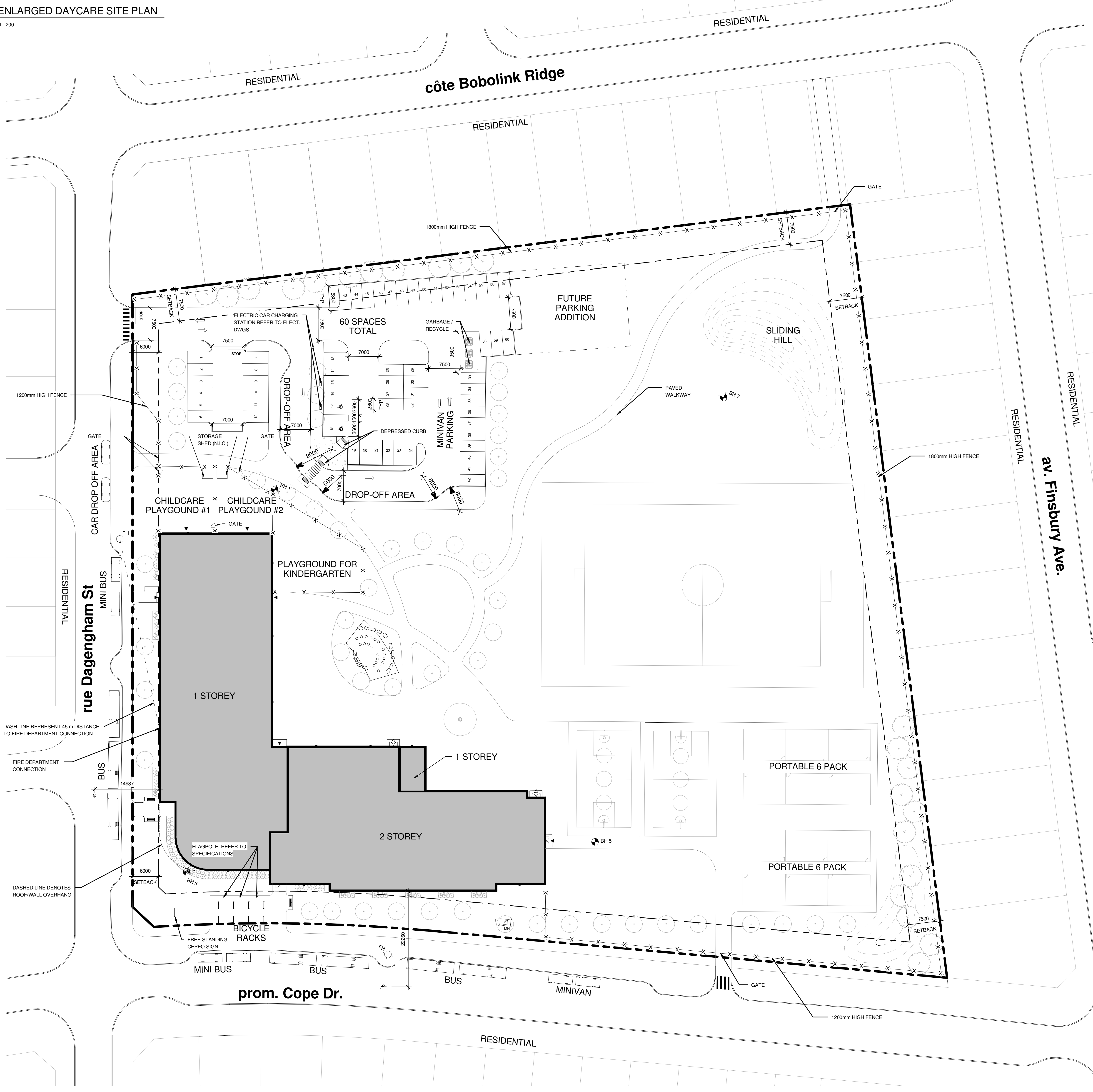
APPENDIX

B

**DRAFT SITE
PLAN**



2 ENLARGED DAYCARE SITE PLAN
A1.0
1:200



1 GENERAL SITE PLAN
A1.0
1:400

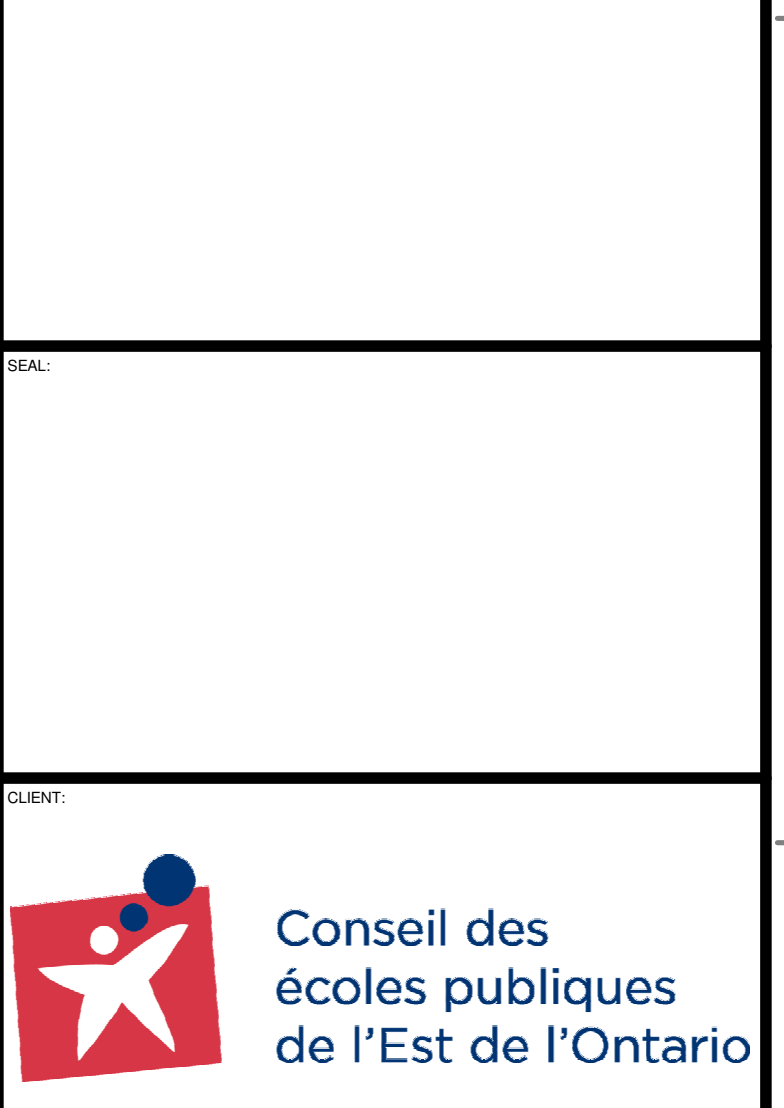
| SITE AND PARKING INFORMATION | | PARKING CALCULATION |
|---|--|---|
| TYPE OF BUILDING OR USE | SCHOOL (GROUP 2 OCCUPANCY) | 20 CLASSROOMS X 1.5 = 30 2 PERSON FOR ADMIN & 3 CHILD CARE X 1.5 = 7 TOTAL PARKING REQUIRED = 37 BARRIER-FREE PARKING SPACES REQUIRED = 1 BARRIER-FREE PARKING SPACES PROVIDED = 2 TOTAL PARKING PROVIDED = 39 |
| ZONING | MINOR INSTITUTIONAL ZONE, SUBZONE B/ R1Z RESIDENTIAL FIRST DENSITY, SUBZONE Z | BUILDING AREA = 3,802.079m² |
| MINIMUM LOT AREA: SEC. 170, TABLE 170B (b) | 1000m ² | SITE AREA |
| MINIMUM LOT FRONTAGE: SEC. 170, TABLE 170B (a) | 30.0m | SITE AREA = 28,889m² |
| MINIMUM FRONT YARD: SEC. 170, TABLE 170B (c) | 6.0m | |
| MINIMUM REAR YARD: SEC. 170, TABLE 170B (d) | 7.5m | |
| MINIMUM EXTERIOR SIDE YARD: | NO REQUIREMENT | |
| MINIMUM INTERIOR SIDE YARD: SEC. 170, TABLE 170B (a) | 7.5m | |
| MINIMUM CORNER SIDE YARD: SEC. 170, TABLE 170B (f) | 7.5m | |
| MINIMUM LANDSCAPED OPEN SPACE | NO REQUIREMENT | |
| MAXIMUM LOT COVERAGE | NO REQUIREMENT | |
| MAXIMUM BUILDING HEIGHT: SEC. 170, TABLE 170B (g) | 18.0m | |
| MINIMUM REQUIRED PARKING FOR NEW ELEMENTARY SCHOOL: SEC. 101, TABLE 101, NB1 | 1.5 PER CLASSROOM (w/ PORTABLES) | |
| MINIMUM REQ. WIDTH OF A LANDSCAPED BUFFER FOR PARKING LOT: SEC. 110, TABLE 110(a) | 3.0m | |
| MINIMUM NUMBER OF BARRIER-FREE PARKING SPACES: BY LAW NO. 2017-301, SECTION 111 | NO. OF REGULAR PARKING SPACES - MIN. NO. OF BARRIER-FREE PARKING SPACES - | |
| MINIMUM NUMBER OF BICYCLE PARKING SPACES: SEC. 111, TABLE 111A (b) | SCHOOL: 1 PER 100m ² OF GFA OFFICE: 474/1100 = 47/11 ROUNDED TO 47 DAY CARE: 1 PER 250m ² OF GFA = 327/250 = 1.3 ROUNDED TO 1 TOTAL = 48 | |
| BICYCLE PARKING DIMENSIONS: SEC. 111, TABLE 11B | HORIZONTAL: 0.5m by 1.8m VERTICAL: 0.5m by 1.5m | |

GENERAL SITE PLAN NOTES

- OBC 3.2.5.5 (1) LOCATION OF ACCESS ROUTES
ACCESS ROUTES REQUIRED BY ARTICLE 3.2.5.4 SHALL BE LOCATED SO THAT THE PRINCIPLE ENTRANCE AND EVERY ACCESS OPENING REQUIRED BY ARTICLE 3.2.5.1 AND 3.2.5.2 ARE LOCATED NOT LESS THAN 3M AND NOT MORE THAN 15M FROM THE CLOSEST PORTION OF THE ACCESS ROUTE REQUIRED FOR FIRE DEPARTMENT USE, MEASURED HORIZONTALLY FROM THE FACE OF THE BUILDING.
- OBC 3.2.5.6 (1) ACCESS ROUTE DESIGN
A PORTION OF A ROADWAY OR YARD PROVIDED AS A REQUIRED ACCESS ROUTE FOR FIRE DEPARTMENT USE SHALL: (a) HAVE A CLEAR WIDTH OF NOT LESS THAN 3M, UNLESS IT CAN BE SHOWN THAT A LESSER WIDTH IS SATISFACTORY; (b) HAVE A CENTERLINE RADIUS NOT LESS THAN 12M; (c) HAVE AN OVERHEAD CLEARANCE OF NOT LESS THAN 2M; (d) HAVE A CHANGE OF GRADIENT NOT MORE THAN 1% IN 12.5 OVER A MINIMUM DISTANCE OF 15M; (e) BE DESIGNED TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIRE FIGHTING EQUIPMENT AND BE SURFACED WITH CONCRETE ASPHALT OR OTHER MATERIAL DESIGNED TO PERMIT ACCESSIBILITY UNDER ALL CLIMATIC CONDITIONS.
- PROVIDE 75mm THK HI-40 UNDER ALL EXTERIOR CONCRETE SIDEWALK AT ALL ENTRANCES/EXITS. EXTEND RIGID INSULATION MIN 1200 PAST THE EDGE OF CONCRETE SIDEWALKS.
- FOR CONCRETE SIDEWALK EXPANSION AND CONTRACTION JOINTS, REFER TO CIVIL DETAIL AND SPECIFICATIONS.
- REFER TO LANDSCAPING PLAN AND CIVIL PLANS FOR LOCATION OF SOD. ALL REMAINING AREAS NOT SLATED FOR SOD TO RECEIVE TOPSOIL AND SEED.
- REFER TO CIVIL DRAWINGS FOR LOCATIONS OF FIRE ROUTE SIGNAGE.
- REFER TO CIVIL DRAWINGS FOR TACTILE INDICATORS.
- ALL CURBS ADJACENT TO PARKING AREAS AND CURBS FORMING PART OF SIDEWALKS ADJACENT TO PARKING AREAS TO BE PAINTED YELLOW.
- ENSURE FINAL PLACEMENT OF FIRE DEPARTMENT CONNECTION IS NOT MORE THAN 45 m FROM THE NEAREST FIRE HYDRANT AS PER OBC 3.2.5.16 (2).

SITE PLAN SYMBOLS LEGEND

- ▲ - ENTRANCE
- ▼ - EXIT
- ⊕ - MANHOLE, CATCH BASIN, ETC. REFER TO CIVIL
- ⚡ - LS, LIGHT STANDARD, REFER TO ELECTRICAL AND STRUCTURAL
- ▭ - DENOTES SLOPED GRADE, REFER TO CIVIL
- ⚡ - DENOTES FIRE TRUCK ACCESS ROUTE, REFER TO CIVIL DRAWINGS
- - PROPERTY LINE
- - SURVEY BAR
- - UTILITY POLE
- ⚡ - FIRE HYDRANT
- BN - BASKETBALL NET
- ▭ - SIDEWALK/ CONCRETE SURFACE
- ▭ - PEDESTRIAN WALKWAY
- S - SWALE, REFER TO CIVIL DRAWINGS
- - - - SETBACK LINE
- BH - BOREHOLE LOCATION
- GRASS
- X - FENCE LINE
- LANDSCAPING
- ASPHALT
- PAINTED LINES
- MH - NEW MANHOLE FOR PORTABLE
- TRANSFORMER



ÉCOLE ÉLÉMENTAIRE KANATA - STITTSVILLE

| NO. | DATE | DESCRIPTION |
|-----|-------------|-----------------------------|
| 6 | 14 JAN 2022 | ISSUED FOR 99% CD REVIEW |
| 5 | 10 NOV 2021 | ISSUED FOR 85% CD REVIEW |
| 4 | 20 SEP 2021 | ISSUED FOR INFORMATION |
| 3 | 24 SEP 2021 | ISSUED FOR 60% CD REVIEW |
| 2 | 27 AUG 2021 | RE-ISSUED FOR 30% CD REVIEW |
| 1 | 04 AUG 2021 | 30% CD REVIEW |

PROJECT NO. 219-2021-4-00
DATE: 13 JAN 2022
PROJECT SCALE: As Indicated
DESIGNED BY: NME SD/AS
DRAWN BY: NME SD/AS
CHECKED BY: NME SD/AS
APPROVED BY: NME SD/AS

| NO. | DATE | DESCRIPTION |
|-----|-------------|-----------------------------|
| 6 | 14 JAN 2022 | ISSUED FOR 99% CD REVIEW |
| 5 | 10 NOV 2021 | ISSUED FOR 85% CD REVIEW |
| 4 | 20 SEP 2021 | ISSUED FOR INFORMATION |
| 3 | 24 SEP 2021 | ISSUED FOR 60% CD REVIEW |
| 2 | 27 AUG 2021 | RE-ISSUED FOR 30% CD REVIEW |
| 1 | 04 AUG 2021 | 30% CD REVIEW |

PROJECT NO. 219-2021-4-00
DATE: 13 JAN 2022
PROJECT SCALE: As Indicated
DESIGNED BY: NME SD/AS
DRAWN BY: NME SD/AS
CHECKED BY: NME SD/AS
APPROVED BY: NME SD/AS

| NO. | DATE | DESCRIPTION |
|-----|-------------|-----------------------------|
| 6 | 14 JAN 2022 | ISSUED FOR 99% CD REVIEW |
| 5 | 10 NOV 2021 | ISSUED FOR 85% CD REVIEW |
| 4 | 20 SEP 2021 | ISSUED FOR INFORMATION |
| 3 | 24 SEP 2021 | ISSUED FOR 60% CD REVIEW |
| 2 | 27 AUG 2021 | RE-ISSUED FOR 30% CD REVIEW |
| 1 | 04 AUG 2021 | 30% CD REVIEW |

PROJECT NO. 219-2021-4-00
DATE: 13 JAN 2022
PROJECT SCALE: As Indicated
DESIGNED BY: NME SD/AS
DRAWN BY: NME SD/AS
CHECKED BY: NME SD/AS
APPROVED BY: NME SD/AS

| NO. | DATE | DESCRIPTION |
|-----|-------------|-----------------------------|
| 6 | 14 JAN 2022 | ISSUED FOR 99% CD REVIEW |
| 5 | 10 NOV 2021 | ISSUED FOR 85% CD REVIEW |
| 4 | 20 SEP 2021 | ISSUED FOR INFORMATION |
| 3 | 24 SEP 2021 | ISSUED FOR 60% CD REVIEW |
| 2 | 27 AUG 2021 | RE-ISSUED FOR 30% CD REVIEW |
| 1 | 04 AUG 2021 | 30% CD REVIEW |

PROJECT NO. 219-2021-4-00
DATE: 13 JAN 2022
PROJECT SCALE: As Indicated
DESIGNED BY: NME SD/AS
DRAWN BY: NME SD/AS
CHECKED BY: NME SD/AS
APPROVED BY: NME SD/AS

| NO. | DATE | DESCRIPTION |
|-----|-------------|-----------------------------|
| 6 | 14 JAN 2022 | ISSUED FOR 99% CD REVIEW |
| 5 | 10 NOV 2021 | ISSUED FOR 85% CD REVIEW |
| 4 | 20 SEP 2021 | ISSUED FOR INFORMATION |
| 3 | 24 SEP 2021 | ISSUED FOR 60% CD REVIEW |
| 2 | 27 AUG 2021 | RE-ISSUED FOR 30% CD REVIEW |
| 1 | 04 AUG 2021 | 30% CD REVIEW |

PROJECT NO. 219-2021-4-00
DATE: 13 JAN 2022
PROJECT SCALE: As Indicated
DESIGNED BY: NME SD/AS
DRAWN BY: NME SD/AS
CHECKED BY: NME SD/AS
APPROVED BY: NME SD/AS

| NO. | DATE | DESCRIPTION |
|-----|-------------|-----------------------------|
| 6 | 14 JAN 2022 | ISSUED FOR 99% CD REVIEW |
| 5 | 10 NOV 2021 | ISSUED FOR 85% CD REVIEW |
| 4 | 20 SEP 2021 | ISSUED FOR INFORMATION |
| 3 | 24 SEP 2021 | ISSUED FOR 60% CD REVIEW |
| 2 | 27 AUG 2021 | RE-ISSUED FOR 30% CD REVIEW |
| 1 | 04 AUG 2021 | 30% CD REVIEW |

PROJECT NO. 219-2021-4-00
DATE: 13 JAN 2022
PROJECT SCALE: As Indicated
DESIGNED BY: NME SD/AS
DRAWN BY: NME SD/AS
CHECKED BY: NME SD/AS
APPROVED BY: NME SD/AS

C TRANS O-D
SURVEY

Kanata - Stittsville

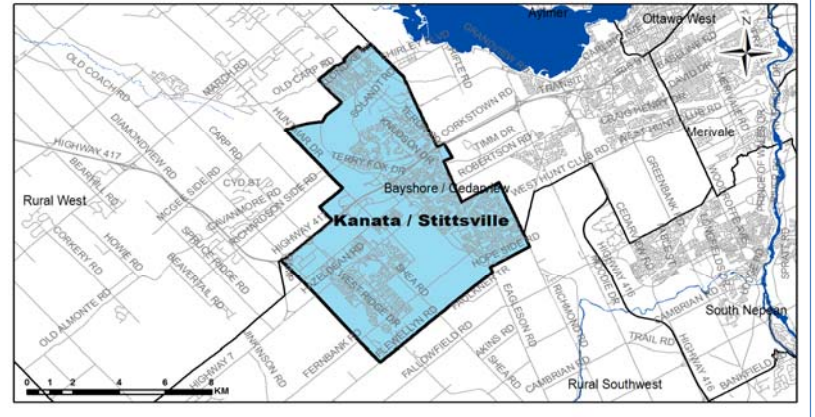
Demographic Characteristics

| | | | |
|---------------------|---------|-------------------------|--------|
| Population | 105,210 | Actively Travelled | 83,460 |
| Employed Population | 49,640 | Number of Vehicles | 64,540 |
| Households | 38,010 | Area (km ²) | 82.6 |

| Occupation Status (age 5+) | Male | Female | Total |
|----------------------------|---------------|---------------|---------------|
| Full Time Employed | 24,670 | 19,590 | 44,260 |
| Part Time Employed | 1,540 | 3,840 | 5,380 |
| Student | 13,630 | 13,410 | 27,040 |
| Retiree | 6,480 | 8,350 | 14,820 |
| Unemployed | 850 | 940 | 1,790 |
| Homemaker | 160 | 3,310 | 3,470 |
| Other | 350 | 1,010 | 1,360 |
| Total: | 47,690 | 50,440 | 98,120 |

| Traveller Characteristics | Male | Female | Total |
|---------------------------|---------|---------|---------|
| Transit Pass Holders | 5,940 | 6,920 | 12,860 |
| Licensed Drivers | 36,280 | 36,790 | 73,070 |
| Telecommuters | 200 | 380 | 580 |
| Trips made by residents | 135,300 | 143,330 | 278,630 |

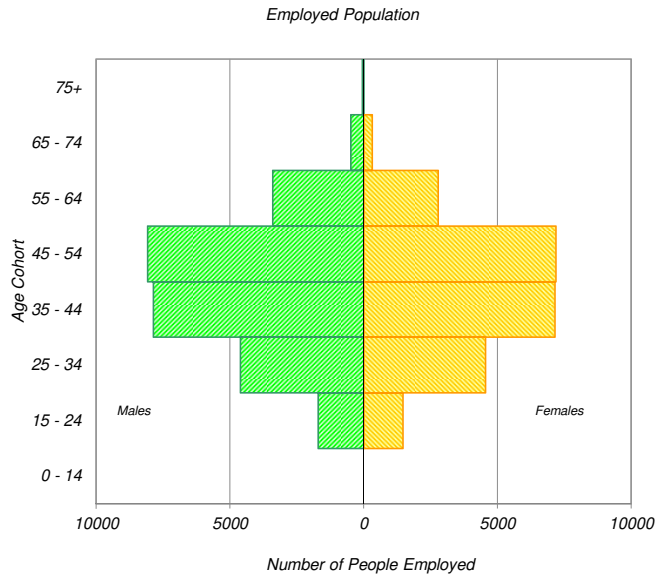
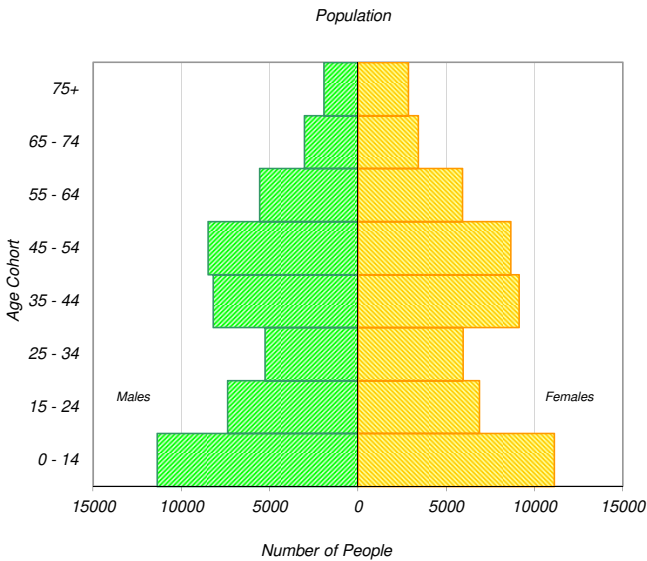
| Selected Indicators | |
|---|------|
| Daily Trips per Person (age 5+) | 2.84 |
| Vehicles per Person | 0.61 |
| Number of Persons per Household | 2.77 |
| Daily Trips per Household | 7.33 |
| Vehicles per Household | 1.70 |
| Workers per Household | 1.31 |
| Population Density (Pop/km ²) | 1270 |



| Household Size | | |
|----------------|---------------|-------------|
| 1 person | 5,810 | 15% |
| 2 persons | 11,660 | 31% |
| 3 persons | 7,490 | 20% |
| 4 persons | 8,890 | 23% |
| 5+ persons | 4,160 | 11% |
| Total: | 38,010 | 100% |

| Households by Vehicle Availability | | |
|------------------------------------|---------------|-------------|
| 0 vehicles | 1,050 | 3% |
| 1 vehicle | 14,090 | 37% |
| 2 vehicles | 19,110 | 50% |
| 3 vehicles | 3,000 | 8% |
| 4+ vehicles | 770 | 2% |
| Total: | 38,010 | 100% |

| Households by Dwelling Type | | |
|-----------------------------|---------------|-------------|
| Single-detached | 21,610 | 57% |
| Semi-detached | 3,890 | 10% |
| Townhouse | 10,550 | 28% |
| Apartment/Condo | 1,960 | 5% |
| Total: | 38,010 | 100% |

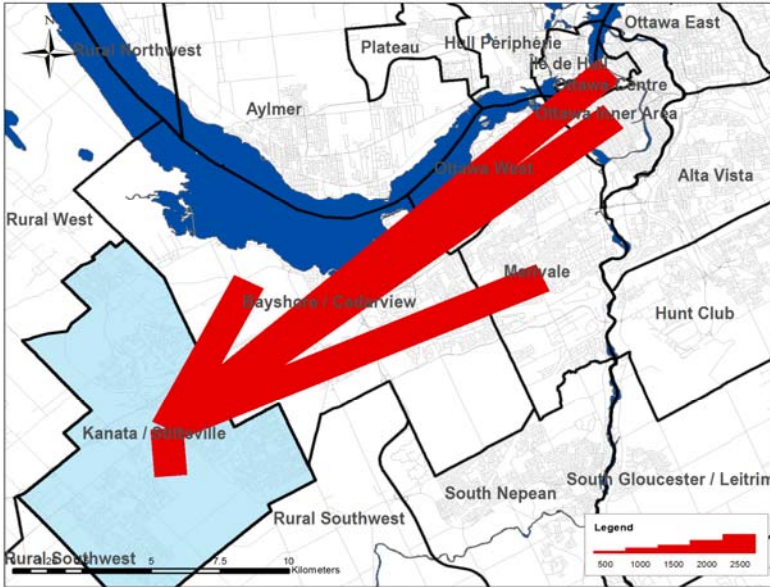


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

Travel Patterns

Top Five Destinations of Trips from Kanata - Stittsville

AM Peak Period



Summary of Trips to and from Kanata - Stittsville

AM Peak Period (6:30 - 8:59)

| Districts | Destinations of Trips From | | Origins of Trips To | |
|-----------------------------|----------------------------|-------------|---------------------|-------------|
| | District | % Total | District | % Total |
| Ottawa Centre | 4,560 | 8% | 140 | 0% |
| Ottawa Inner Area | 3,350 | 6% | 970 | 2% |
| Ottawa East | 660 | 1% | 260 | 1% |
| Beacon Hill | 280 | 0% | 170 | 0% |
| Alta Vista | 1,810 | 3% | 660 | 1% |
| Hunt Club | 490 | 1% | 420 | 1% |
| Merivale | 3,410 | 6% | 1,200 | 3% |
| Ottawa West | 2,020 | 4% | 840 | 2% |
| Bayshore / Cedarview | 5,010 | 9% | 2,420 | 5% |
| Orléans | 290 | 1% | 500 | 1% |
| Rural East | 100 | 0% | 30 | 0% |
| Rural Southeast | 50 | 0% | 260 | 1% |
| South Gloucester / Leirtrim | 60 | 0% | 140 | 0% |
| South Nepean | 690 | 1% | 1,800 | 4% |
| Rural Southwest | 1,130 | 2% | 1,850 | 4% |
| Kanata / Stittsville | 30,360 | 54% | 30,360 | 66% |
| Rural West | 1,050 | 2% | 3,250 | 7% |
| Île de Hull | 670 | 1% | 30 | 0% |
| Hull Périphérie | 160 | 0% | 30 | 0% |
| Plateau | 100 | 0% | 230 | 0% |
| Aylmer | 0 | 0% | 190 | 0% |
| Rural Northwest | 20 | 0% | 60 | 0% |
| Pointe Gatineau | 20 | 0% | 80 | 0% |
| Gatineau Est | 0 | 0% | 60 | 0% |
| Rural Northeast | 30 | 0% | 50 | 0% |
| Buckingham / Masson-Angers | 30 | 0% | 10 | 0% |
| Ontario Sub-Total: | 55,320 | 98% | 45,270 | 98% |
| Québec Sub-Total: | 1,030 | 2% | 740 | 2% |
| Total: | 56,350 | 100% | 46,010 | 100% |

Trips by Trip Purpose

| 24 Hours | From District | | To District | | Within District | |
|---------------------------|---------------|-------------|---------------|-------------|-----------------|-------------|
| Work or related | 27,180 | 29% | 17,020 | 18% | 14,550 | 9% |
| School | 7,070 | 7% | 2,500 | 3% | 15,110 | 9% |
| Shopping | 6,070 | 6% | 9,150 | 10% | 22,480 | 14% |
| Leisure | 8,450 | 9% | 10,590 | 11% | 17,090 | 11% |
| Medical | 2,520 | 3% | 1,170 | 1% | 2,660 | 2% |
| Pick-up / drive passenger | 6,570 | 7% | 5,470 | 6% | 15,190 | 9% |
| Return Home | 33,610 | 35% | 45,620 | 48% | 65,770 | 41% |
| Other | 3,560 | 4% | 3,590 | 4% | 8,440 | 5% |
| Total: | 95,030 | 100% | 95,110 | 100% | 161,290 | 100% |

| AM Peak (06:30 - 08:59) | From District | | To District | | Within District | |
|---------------------------|---------------|-------------|---------------|-------------|-----------------|-------------|
| Work or related | 18,030 | 69% | 11,020 | 70% | 7,430 | 24% |
| School | 4,890 | 19% | 2,280 | 15% | 11,740 | 39% |
| Shopping | 170 | 1% | 320 | 2% | 760 | 3% |
| Leisure | 340 | 1% | 400 | 3% | 780 | 3% |
| Medical | 330 | 1% | 230 | 1% | 350 | 1% |
| Pick-up / drive passenger | 1,260 | 5% | 580 | 4% | 4,760 | 16% |
| Return Home | 290 | 1% | 380 | 2% | 1,980 | 7% |
| Other | 670 | 3% | 430 | 3% | 2,560 | 8% |
| Total: | 25,980 | 100% | 15,640 | 100% | 30,360 | 100% |

| PM Peak (15:30 - 17:59) | From District | | To District | | Within District | |
|---------------------------|---------------|-------------|---------------|-------------|-----------------|-------------|
| Work or related | 390 | 2% | 350 | 1% | 930 | 2% |
| School | 370 | 2% | 0 | 0% | 90 | 0% |
| Shopping | 1,030 | 5% | 1,910 | 7% | 5,100 | 14% |
| Leisure | 2,140 | 11% | 3,080 | 11% | 4,130 | 11% |
| Medical | 230 | 1% | 180 | 1% | 400 | 1% |
| Pick-up / drive passenger | 1,980 | 10% | 1,980 | 7% | 3,410 | 9% |
| Return Home | 12,130 | 64% | 20,550 | 71% | 21,560 | 58% |
| Other | 680 | 4% | 860 | 3% | 1,850 | 5% |
| Total: | 18,950 | 100% | 28,910 | 100% | 37,470 | 100% |

| Peak Period (%) | Total: | % of 24 Hours | Within District (%) |
|-----------------|---------|---------------|---------------------|
| 24 Hours | 351,430 | | 46% |
| AM Peak Period | 71,980 | 20% | 42% |
| PM Peak Period | 85,330 | 24% | 44% |

Trips by Primary Travel Mode

| 24 Hours | From District | | To District | | Within District | |
|----------------|---------------|-------------|---------------|-------------|-----------------|-------------|
| Auto Driver | 63,470 | 67% | 63,830 | 67% | 92,190 | 57% |
| Auto Passenger | 15,220 | 16% | 14,920 | 16% | 31,880 | 20% |
| Transit | 12,200 | 13% | 12,270 | 13% | 4,050 | 3% |
| Bicycle | 360 | 0% | 410 | 0% | 960 | 1% |
| Walk | 40 | 0% | 50 | 0% | 21,080 | 13% |
| Other | 3,730 | 4% | 3,660 | 4% | 11,130 | 7% |
| Total: | 95,020 | 100% | 95,140 | 100% | 161,290 | 100% |

| AM Peak (06:30 - 08:59) | From District | | To District | | Within District | |
|-------------------------|---------------|-------------|---------------|-------------|-----------------|-------------|
| Auto Driver | 15,360 | 59% | 11,530 | 74% | 13,630 | 45% |
| Auto Passenger | 2,450 | 9% | 1,160 | 7% | 5,050 | 17% |
| Transit | 6,230 | 24% | 1,290 | 8% | 1,210 | 4% |
| Bicycle | 30 | 0% | 80 | 1% | 220 | 1% |
| Walk | 0 | 0% | 40 | 0% | 5,730 | 19% |
| Other | 1,900 | 7% | 1,560 | 10% | 4,510 | 15% |
| Total: | 25,970 | 100% | 15,660 | 100% | 30,350 | 100% |

| PM Peak (15:30 - 17:59) | From District | | To District | | Within District | |
|-------------------------|---------------|-------------|---------------|-------------|-----------------|-------------|
| Auto Driver | 13,850 | 73% | 17,660 | 61% | 21,240 | 57% |
| Auto Passenger | 3,240 | 17% | 4,270 | 15% | 8,570 | 23% |
| Transit | 1,270 | 7% | 5,980 | 21% | 670 | 2% |
| Bicycle | 40 | 0% | 100 | 0% | 260 | 1% |
| Walk | 40 | 0% | 0 | 0% | 4,570 | 12% |
| Other | 520 | 3% | 910 | 3% | 2,160 | 6% |
| Total: | 18,960 | 100% | 28,920 | 100% | 37,470 | 100% |

| Avg Vehicle Occupancy | From District | | To District | | Within District | |
|-----------------------|---------------|--|-------------|--|-----------------|--|
| 24 Hours | 1.24 | | 1.23 | | 1.35 | |
| AM Peak Period | 1.16 | | 1.10 | | 1.37 | |
| PM Peak Period | 1.23 | | 1.24 | | 1.40 | |

| Transit Modal Split | From District | | To District | | Within District | |
|---------------------|---------------|--|-------------|--|-----------------|--|
| 24 Hours | 13% | | 13% | | 3% | |
| AM Peak Period | 26% | | 9% | | 6% | |
| PM Peak Period | 7% | | 21% | | 2% | |

D COPE DRIVE
CROSS-SECTION

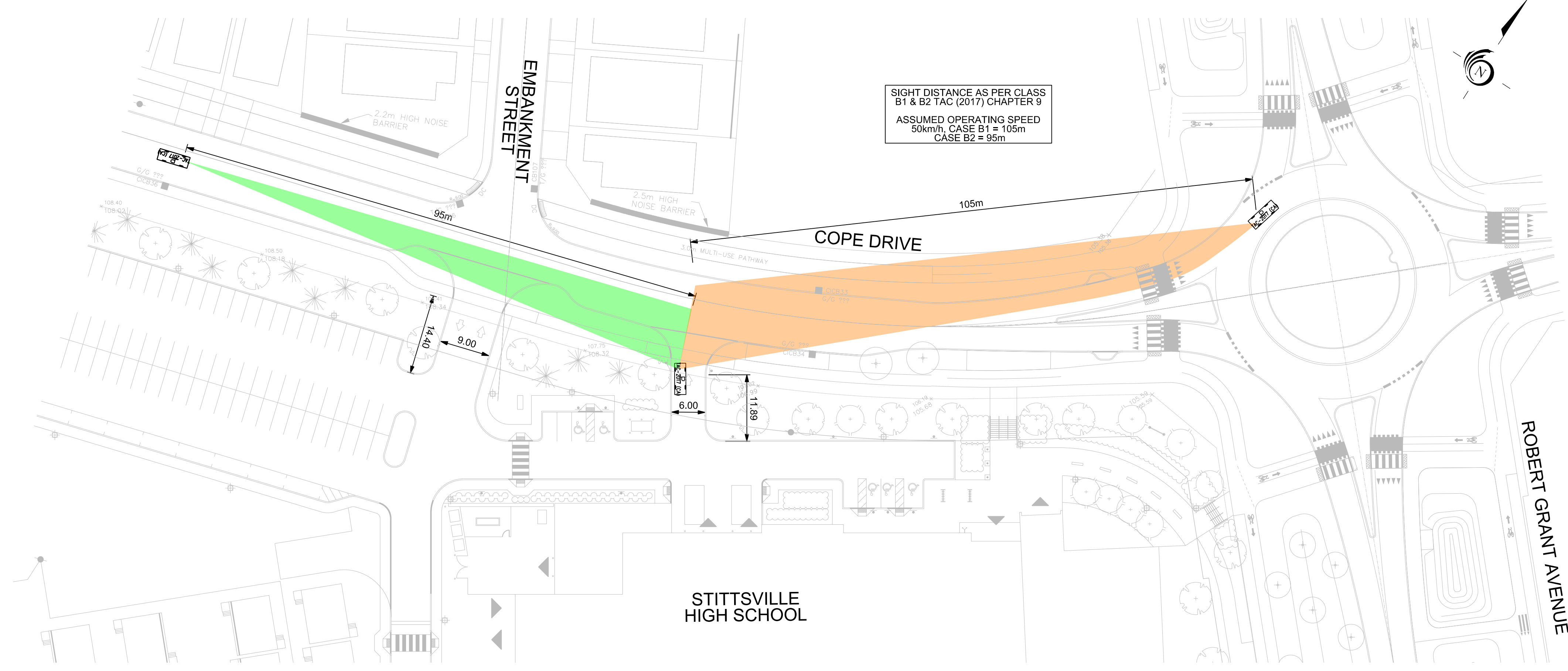
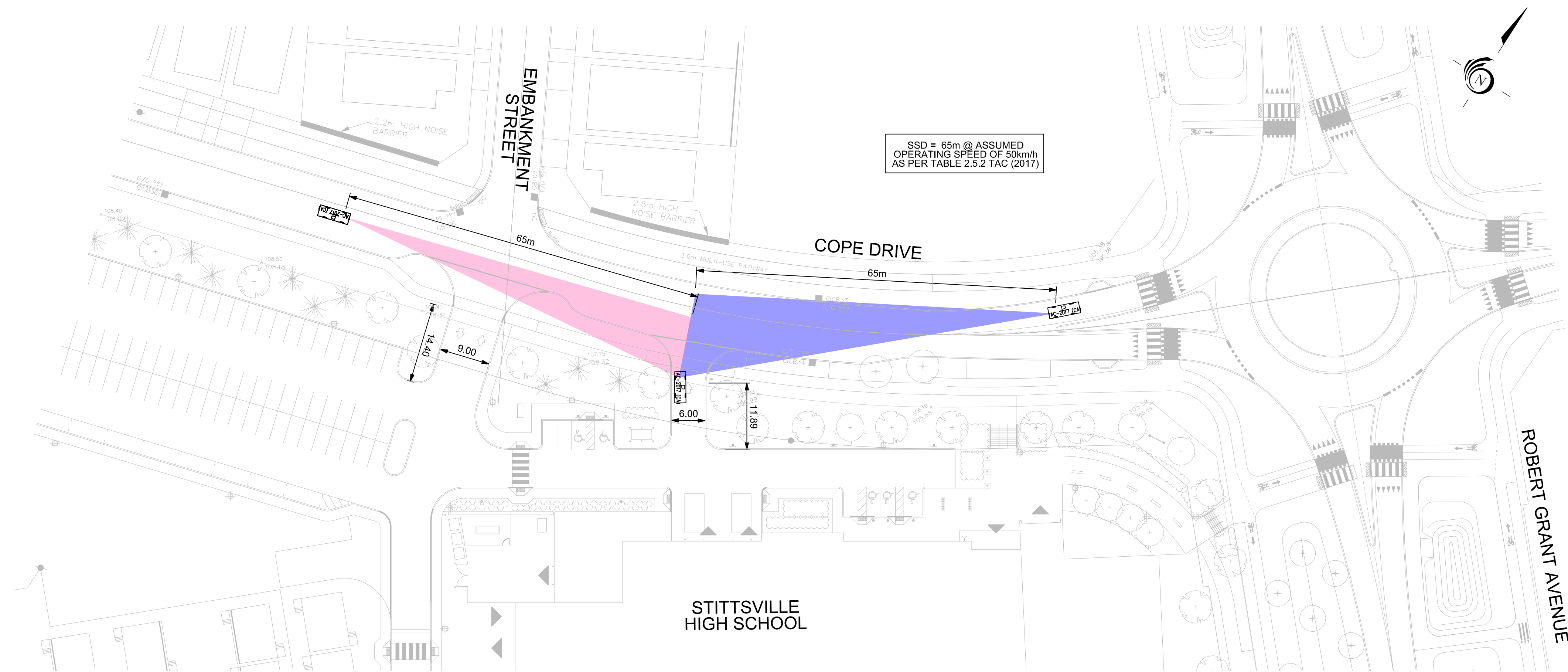
NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

| No. | Description | By | Date (dd/mm/yy) |
|-----|-------------|----|-----------------|
| | | | |
| | | | |
| | | | |

APPROVED REFUSED

THIS 28 DAY OF August, 2020

ERIN O'CONNELL, MCIP, RPP, MANAGER (A)
DEVELOPMENT REVIEW, WEST
PLANNING, INFRASTRUCTURE AND ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA



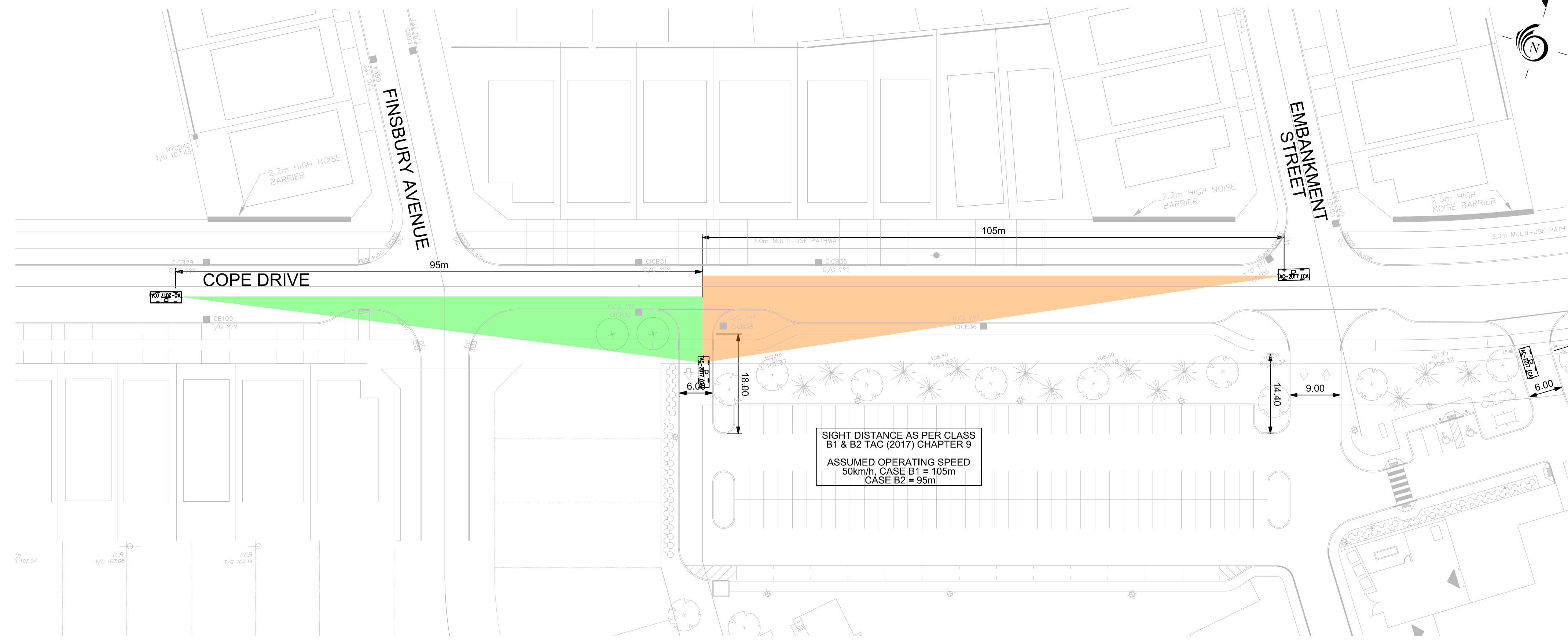
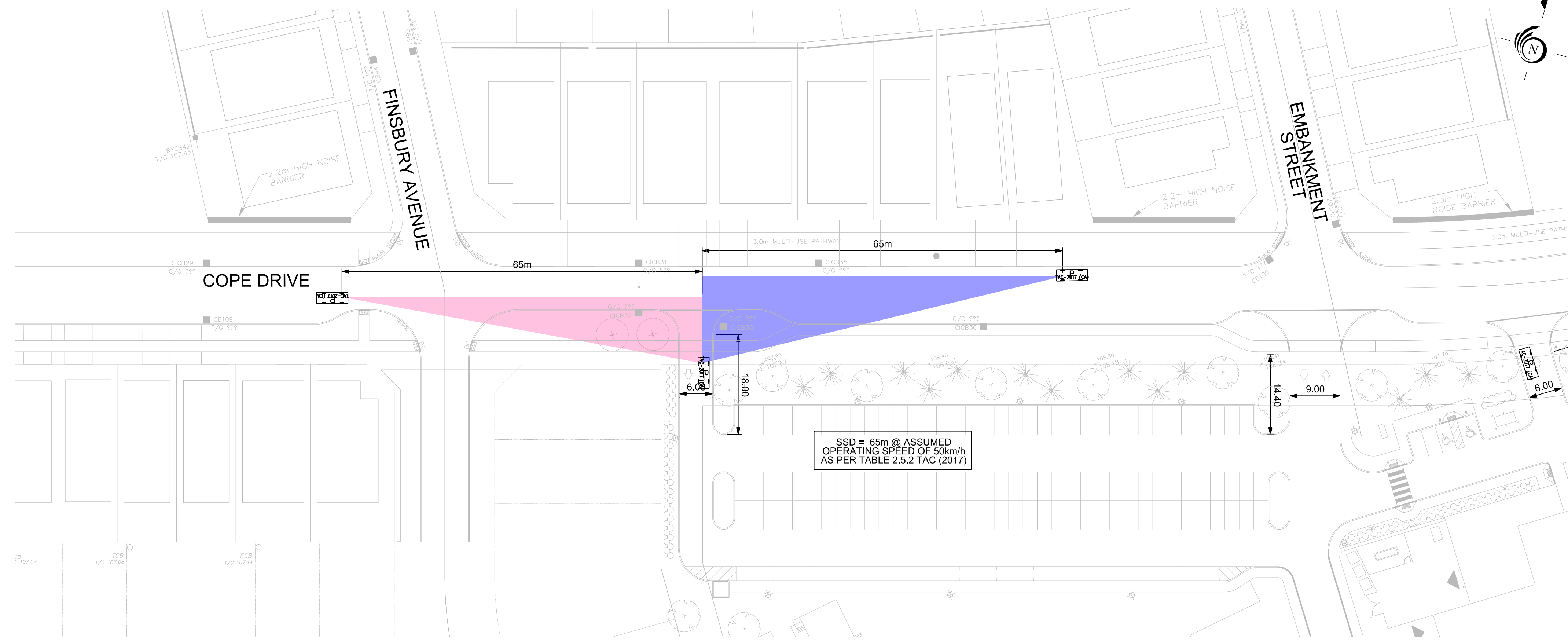
NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

| No. | Description | By | Date (dd/mm/yy) |
|-----|-------------|----|-----------------|
| | | | |
| | | | |
| | | | |

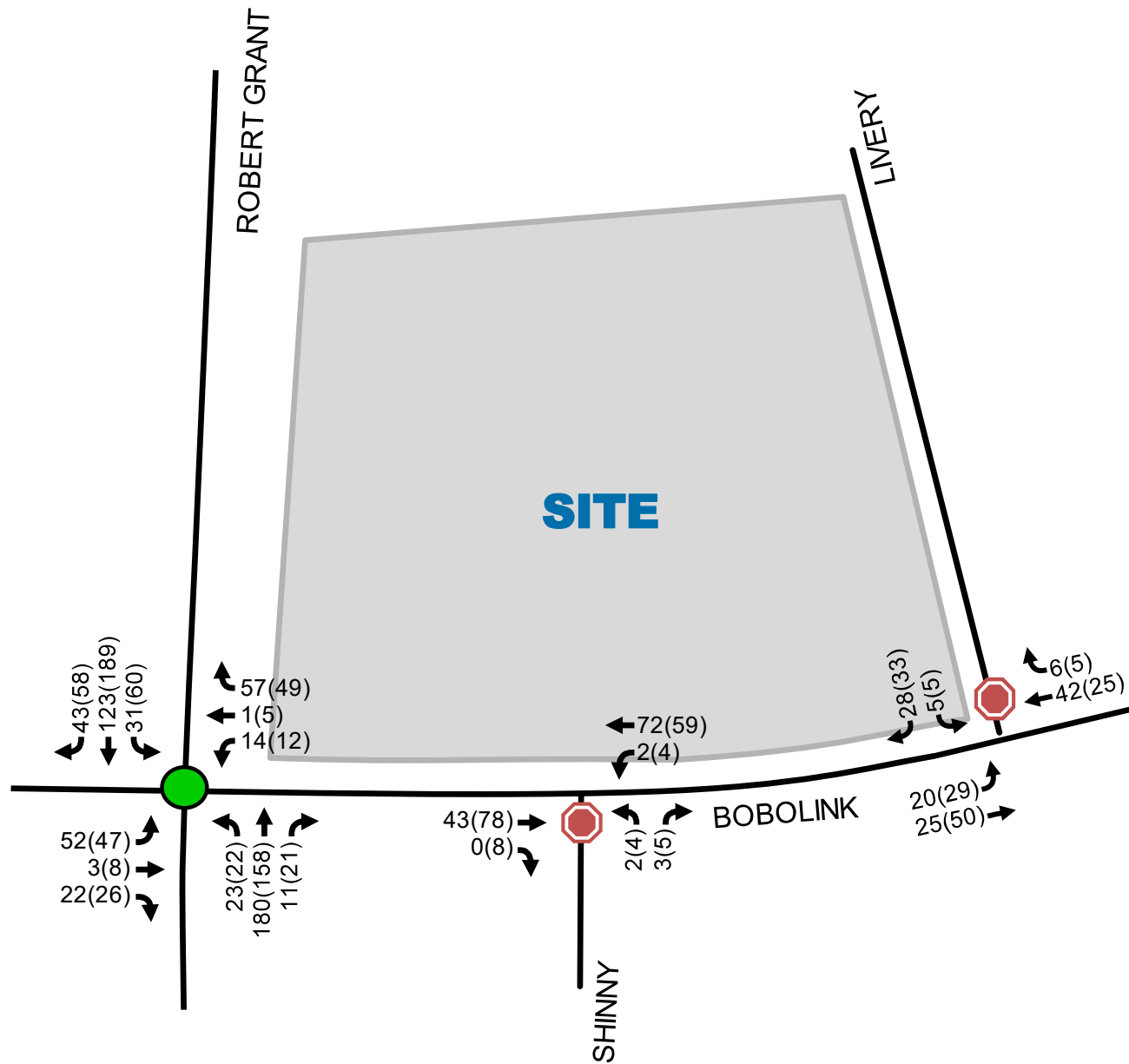
APPROVED REFUSED

THIS 28 DAY OF August, 2020

ERIN O'CONNELL, MCIP, RPP, MANAGER (A)
DEVELOPMENT REVIEW, WEST
PLANNING, INFRASTRUCTURE AND ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA



E RELATED TIA
EXCERPTS



LEGEND
 xx AM Peak Hour veh/h
 (yy) PM Peak Hour veh/h

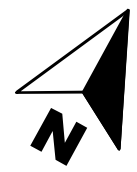


Figure 8: Existing Vehicular Volumes AM(PM)

Figure 9: 'New' 2022 Site Trip Generation

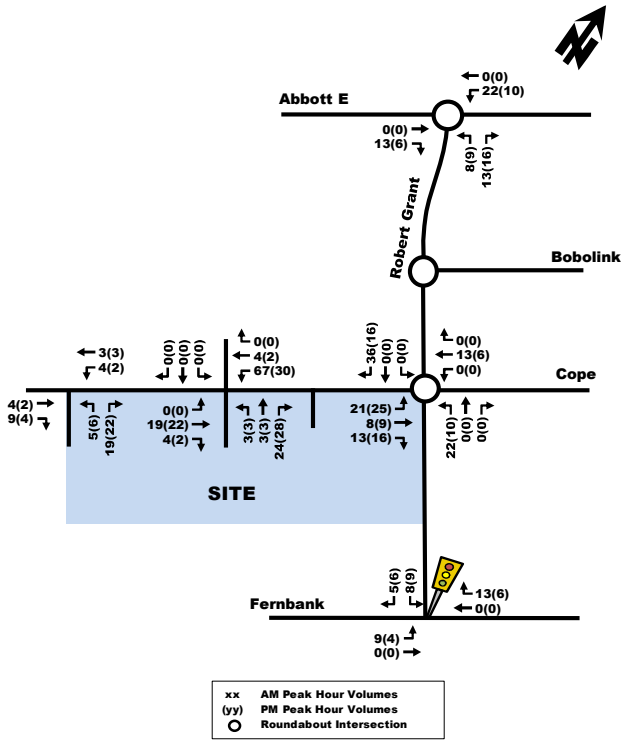


Figure 10: 'New' 2024 Site Trip Generation

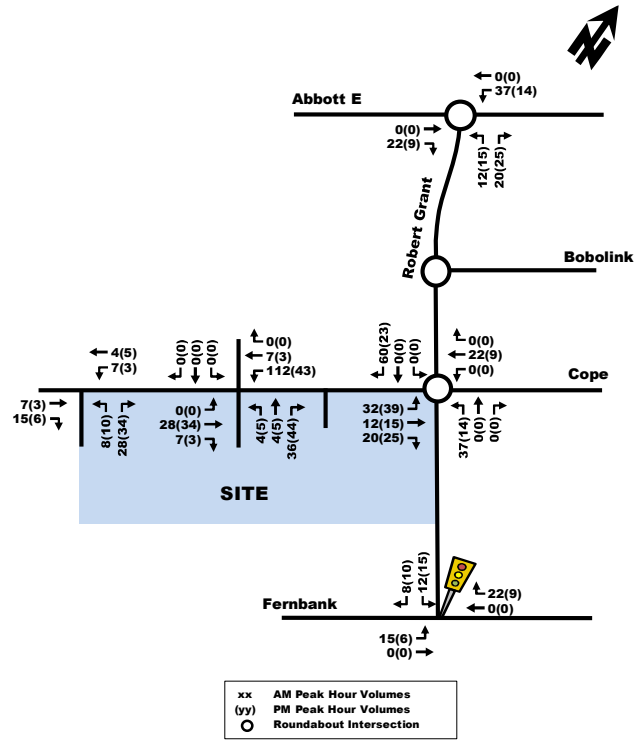


Figure 11: 'New' 2029 Site Trip Generation

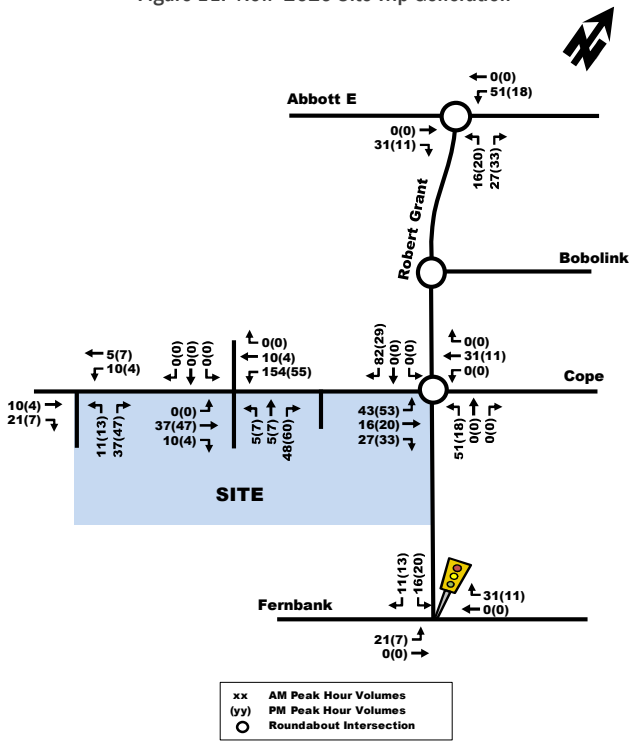


Figure 12: Future Background 2022

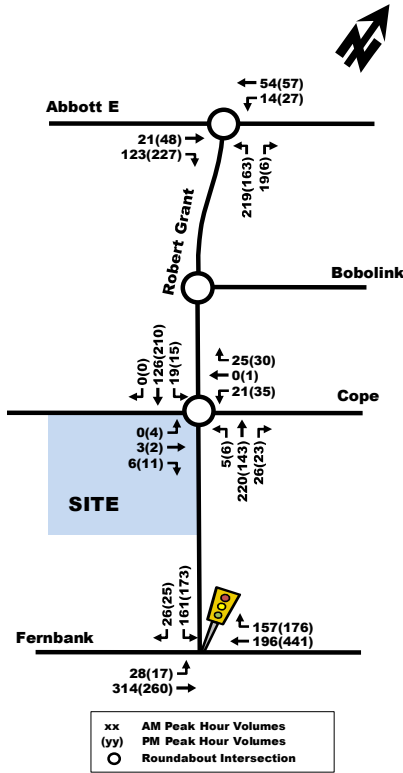


Figure 13: Future Background 2024

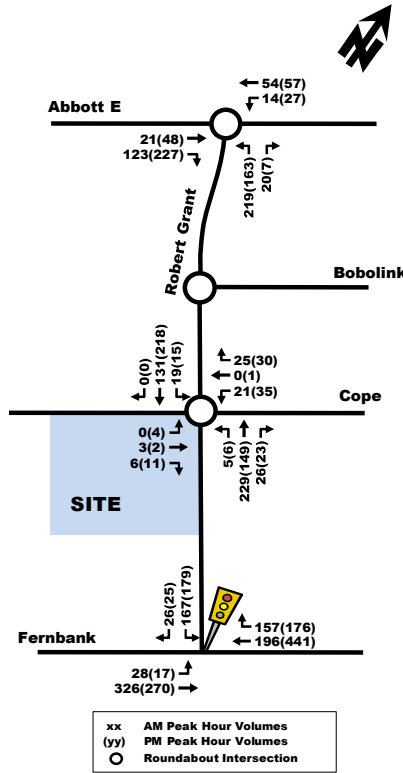
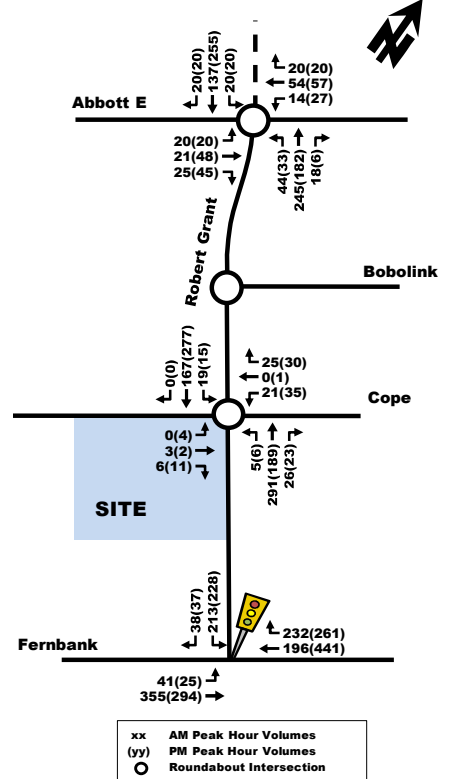


Figure 14: Future Background 2029



3.2.3. OTHER DEVELOPMENTS

The additional traffic associated with the surrounding developments mentioned above in Section 2.1.3 is shown below in Figure 15, Figure 16, Figure 17, and Figure 18. These trips will be included in the foregoing traffic analysis. As a conservative estimate of the build-out of the area it has been assumed that all of the developments would occur by the 2022 horizon. See Appendix F for the trip distribution analysis for Figure 15, Figure 16, and Figure 17 and Appendix G for the trip distribution analysis for Figure 18.

3.2.4. TOTAL BACKGROUND TRAFFIC

With the addition of the 2% background traffic growth rate and the other area development traffic, the resultant 2022, 2024, and 2029 background traffic volumes are depicted in Figure 19, Figure 20, and Figure 21 respectively.

3.3. DEMAND RATIONALIZATION

The study area road network is expected to accommodate projected volumes. There are currently no anticipated capacity issues. The capacity of the roadways will be further explored in a more detailed review of the total projected traffic volumes and intersection design in the ensuing Strategy Report.

Figure 15: Fernbank Crossing, Phases 3 and 4

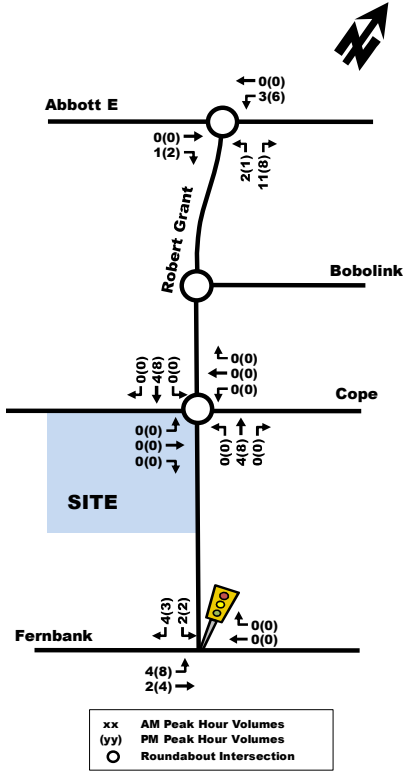


Figure 17: Lépine Fernbank, 1000 Robert Grant Ave

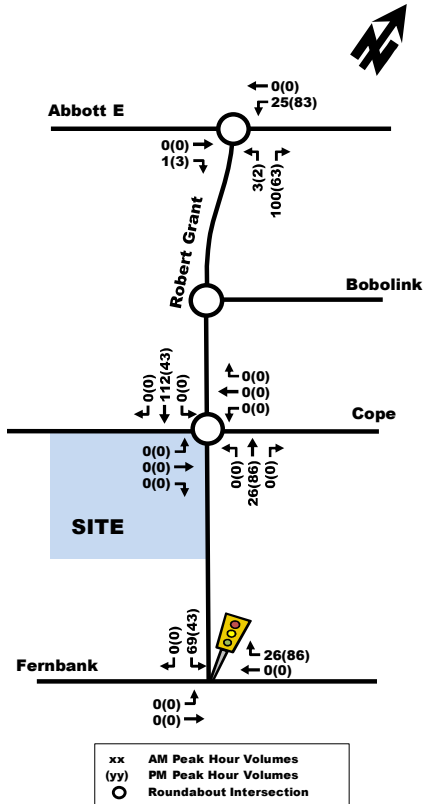


Figure 16: Blackstone Subdivision, Phases 4-8

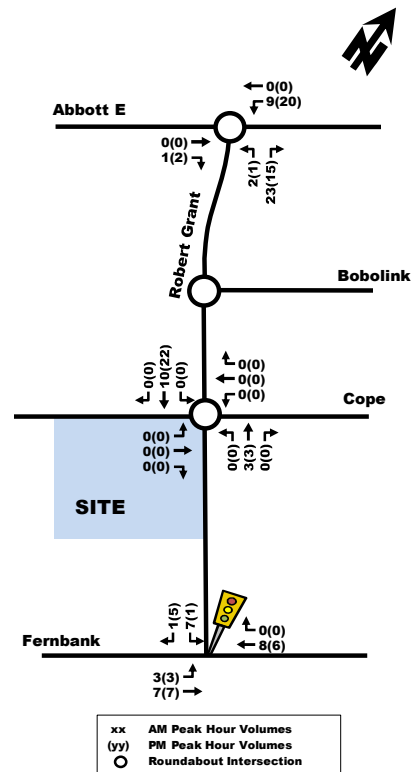
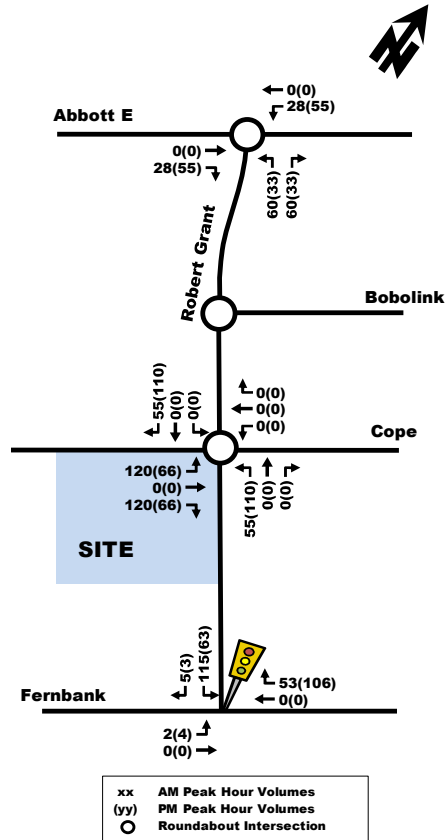


Figure 18: CRT Lands, Phases 1 and 2



Source: CRT Lands Phase 1 and 2 Fernbank Community Transportation Letter, IBI Group

Figure 19: 2022 Total Background Traffic Volume

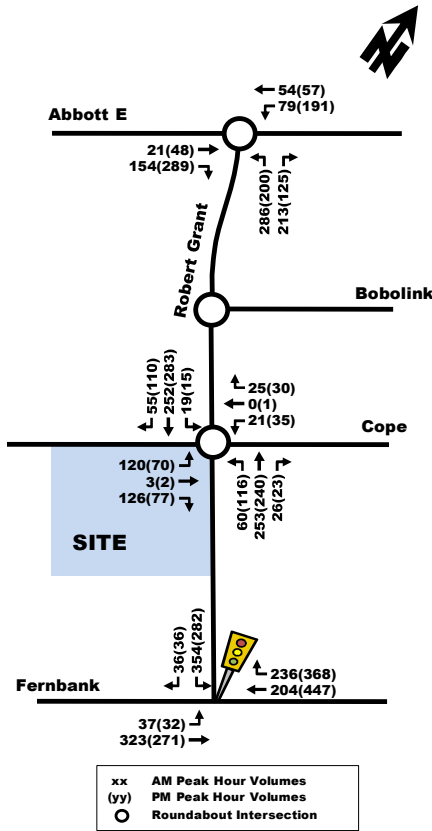


Figure 20: 2024 Total Background Traffic Volume

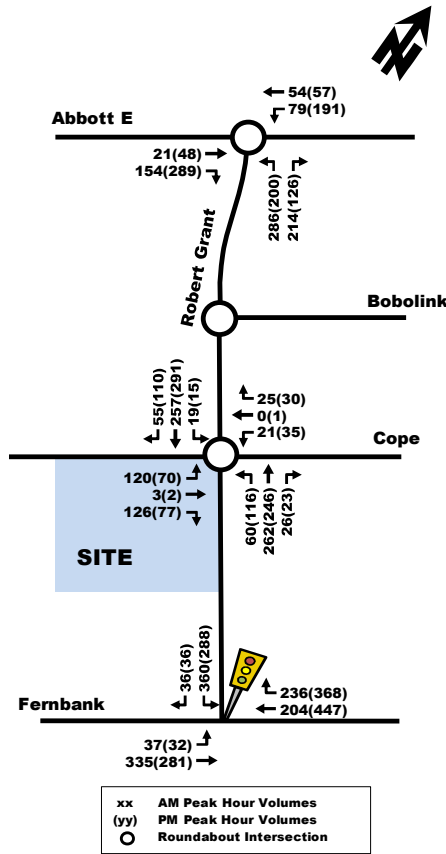
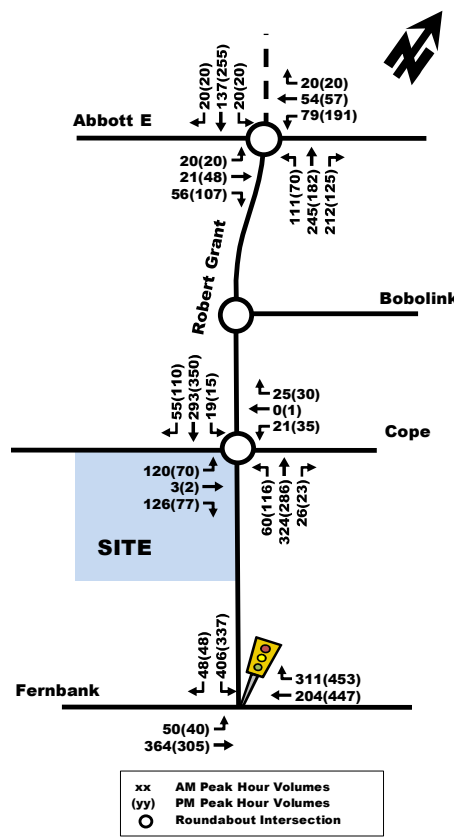


Figure 21: 2029 Total Background Traffic Volume



4. ANALYSIS

4.1. DEVELOPMENT DESIGN

Vehicle parking is proposed in a surface parking lot and bicycle parking is proposed in exterior bike racks. A total of 118 parking spaces will be provided at the initial build-out, meeting the minimum of spaces required outlined in the Parking By-Law. With regard to bicycle parking, 180 spaces will be provided which meets the City’s Bylaw Requirements. Additionally, an interim bus loop has been provided for school buses to pick-up/drop-off students and turn around on-site. Should the school expand and the road along the south frontage be built, the bus loop will be replaced with a through-roadway and additional parking lot.

Existing sidewalk facilities are provided along the Robert Grant Avenue frontage. The Cope Drive extension west of Robert Grant Avenue will include a sidewalk on the south side of the roadway and a MUP on the north side of the roadway.

Transit service within the area is provided by OC Transpo. Additional service and/or stop locations may be required as the school increases in size.

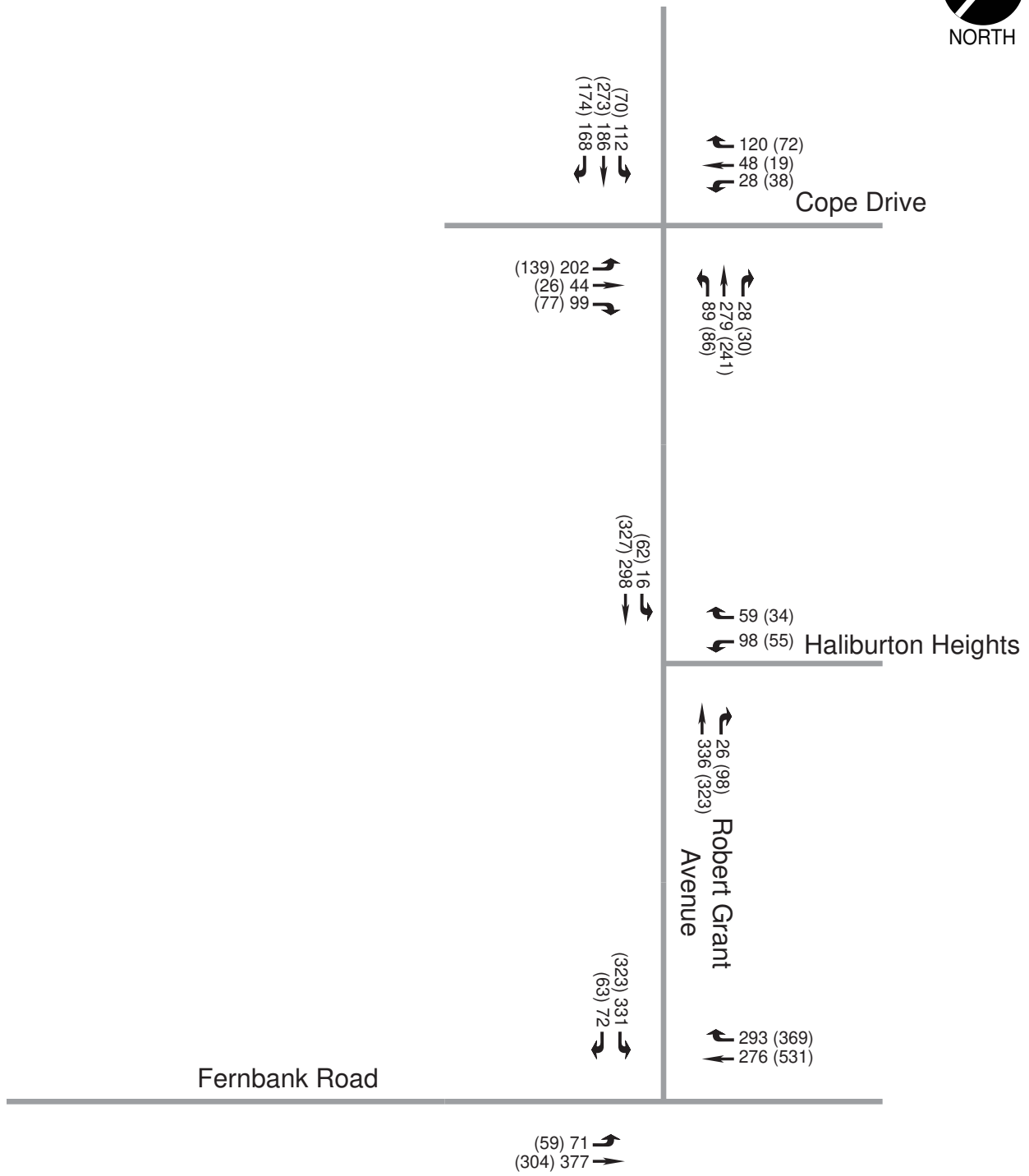
4.1.1. DESIGN FOR SUSTAINABLE MODES

Vehicle and Bicycle Parking

Refer to Section 4.2.1



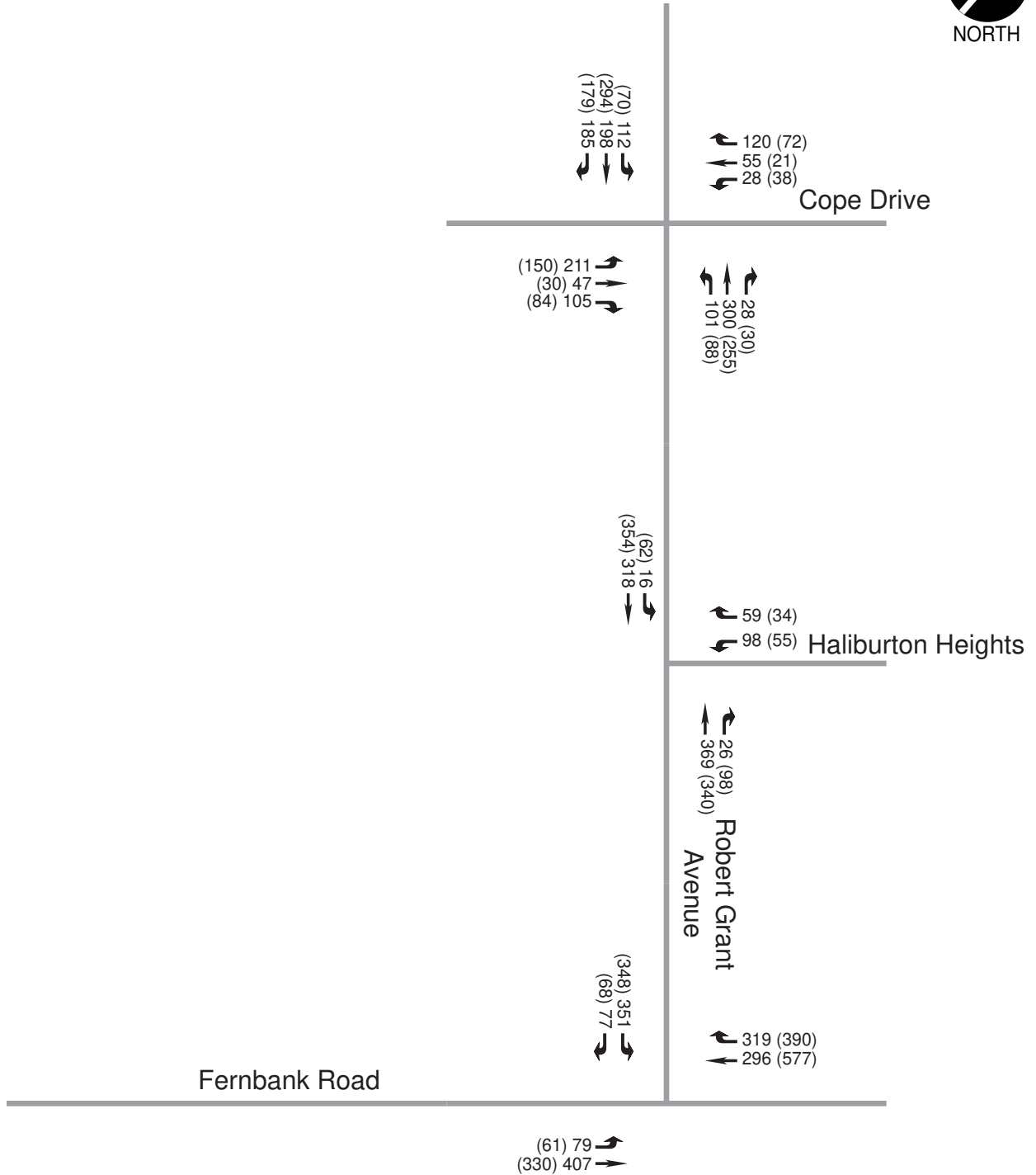
NORTH



LEGEND

- Permitted Movements
- xxx (xxx)
xxx (xxx)
xxx (xxx)
- Weekday AM (PM) Peak Hour Vehicular Volume



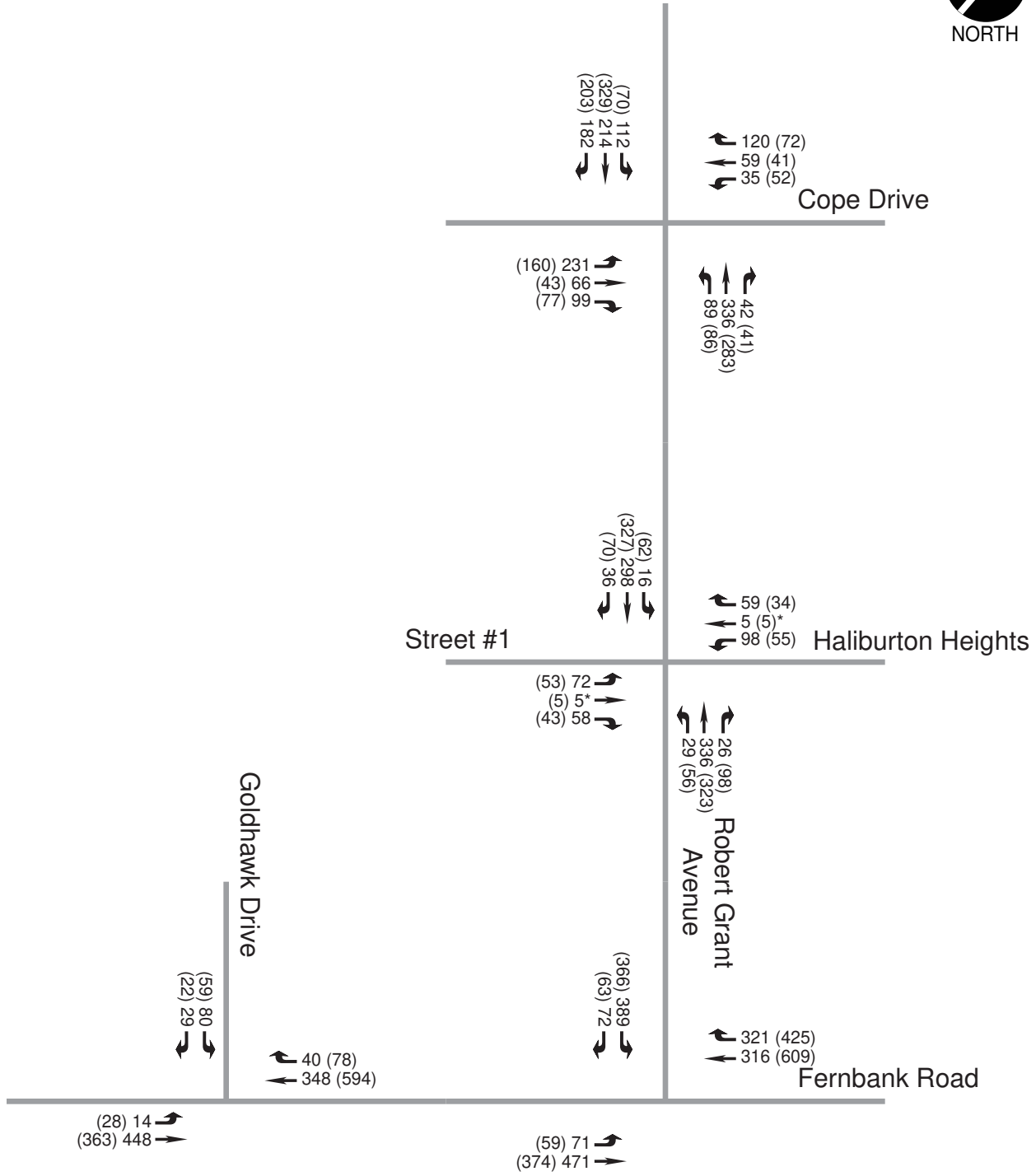


LEGEND

↶ ↷ ↸ Permitted Movements

xxx (xxx) Weekday AM (PM) Peak Hour Vehicular Volume





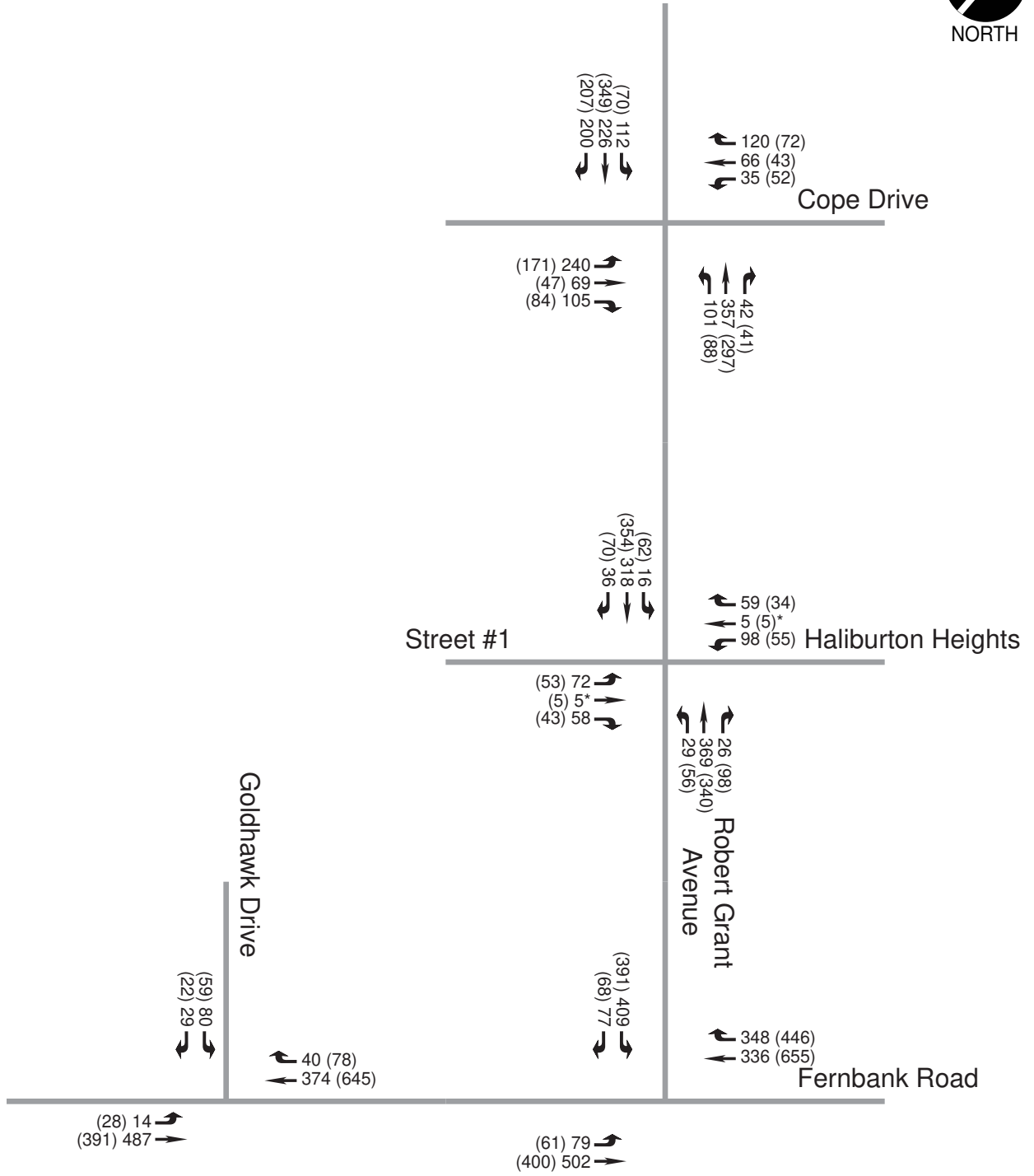
LEGEND

- Permitted Movements
- xxx (xxx)
xxx (xxx)
xxx (xxx)

Weekday AM (PM) Peak Hour Vehicular Volume

* Nominal volumes





* Nominal volumes

