

**Agenda for the 10:00 am Wednesday, July 17, 2024, Town of Qualicum Beach Regular Council Meeting to be held in the Council Chamber, Town Hall, 660 Primrose Street, Qualicum Beach, BC**

Page No.

*(This meeting may be recorded)*

- 1-6    **1. ADOPTION OF THE AGENDA**  
          **THAT Council adopts the July 17, 2024, regular Council meeting agenda.**
- 2. START OF CONSENT AGENDA**  
          **Staff Recommendation:**  
          **THAT the recommendations listed for items 2a) to 2c) in the July 17, 2024 Consent Agenda be adopted.**
- 7-8        a)    THAT the June 19, 2024, 10:00 am special Council meeting minutes be approved as presented.
- 9-14       b)    THAT the June 26, 2024, 10:00 am regular Council meeting minutes be approved as presented.
- 15-16      c)    THAT the Correspondence Log, dated for reference July 10, 2024, be approved, as presented.
- END OF CONSENT AGENDA**
- 3. RECOGNITION - Nil**
- 4. BUSINESS ARISING FROM THE MINUTES - Nil**
- 5. DELEGATIONS - Nil**
- 6. CORRESPONDENCE**
- 17-41      (1)    **Letter dated June 21, 2024 from B. Felker, Manager, CCBF Program Services | 2024-2034 Canada Community-Building Fund Agreement [Community Works Fund]**  
          Staff Recommendation  
          **THAT Council authorizes the Mayor and the Corporate Officer to execute the 2024-2034 Community Works Fund Agreement between the Town of Qualicum Beach and the Union of BC Municipalities.**
- 7. PUBLIC AND STATUTORY HEARINGS - Nil**
- 8. BYLAWS - Nil**
- 9. COMMITTEE & LIAISON REPORTS**
  - (1)    **General Government** (Mayor Teunis Westbroek)
  - (2)    **Public Safety** (Councillor Scott Harrison)

- (3) **Parks & Recreation** (Councillor Anne Skipsey)  
(a) Notice of Motions [to be made July 17<sup>th</sup>]| QB Airport  
i. **Whereas Qualicum Woods is located within the extended flight path of the Qualicum Beach Airport Runway 29;**

**BE IT RESOLVED THAT Council directs staff to investigate the viability, process and estimated budget for consideration during the 2025 Strategic Planning process, in order to identify if Qualicum Woods, The Evergreens, Aldous Road and Hemsworth Road areas could become a Noise Sensitive Area.**

- ii. **THAT Council directs staff to send a letter to Transport Canada and Environment Canada expressing the Town's support for approval of an alternative to non-leaded aviation fuel.**

- 42 (4) **Community Development** (Councillor Petronella Vander Valk)  
(5) **Arts & Culture** (Councillor Jean Young)  
(a) Notice of Motions [to be made July 17<sup>th</sup>]| Flowerstone Health Society  
i. **Whereas, Flowerstone Family Health Clinic is a community owned clinic operated by the Flowerstone Health Society that provides services to approximately 4,000 residents in the Oceanside area who find themselves without a family doctor; And Whereas, the Flowerstone Family Health Clinic has the capacity to increase the number of nurse practitioners from 5 to 9, who could provide much needed health care services to an increased number of residents if additional funding were available;**  
**BE IT RESOLVED, THAT Council approves the funding request of the Flowerstone Health Society by providing them with a one-time financial contribution in the amount of \$10,000 with monies being funded from Council's Strategic Initiative Reserve fund for the purpose of Flowerstone Family Health Clinic Nurse Practitioner recruitment.**  
  
ii. **THAT Council directs staff to inform Flowerstone Health Society of the opportunity to apply for future funding requests through the Regional District of Nanaimo Community Grants Program noting that this clinic services residents in the entire Oceanside area.**  
  
(6) **Committee of the Whole July 10, 2024 | Staff verbal update**



**10. STAFF REPORTS**

**(1) Chief Administrative Officer**

**(a) Service Review Update**

The Town's consultant, P. Murray, Brentwood Advisory Group to present virtually.

**(2) Financial Services**

43-61

**(a) First & Second Quarter Organizational Update - 2024  
Staff Recommendations**

**i. THAT the Report titled "First & Second Quarter Organizational Update – 2024" dated July 17, 2024 be received for information.**

**ii. THAT Council directs staff to postpone the time-line for completion of the Committee/Commission Review Phase 2 Strategic Initiative included in the 2024-2028 Financial Plan to the 2025 budget year.**

**iii. THAT Council directs staff to postpone the time-line for completion of the Comprehensive Policy Review Strategic Initiative included in the 2024-2028 Financial Plan to the 2025 budget year.**

**iv. THAT Council directs staff as follows: that the 2024 budget provision of \$10,000 for the Corporate and Community Emissions Report Strategic Initiative and the 2024 budget provision of \$20,000 for the Corporate Emission Inventory Strategic Initiative included in the 2024-2028 Financial Plan be combined and that these two Initiatives be renamed as the Corporate and Community Emissions Inventory and Report with a combined 2024 budget provision of \$30,000 with the project delivery anticipated for 2025.**

**v. THAT Council directs staff to reallocate the 2024 budget provision of \$100,000 for the Berwick 5 Well Connection included in the 2024-2028 Financial Plan to provide for the replacement of pumps, motors and drop pipes in the Berwick Wells 1 and 2 in 2024 and that the Berwick 5 Well Connection project budget be reconsidered in the 2025-2029 Financial Planning Process.**

**vi. THAT Council authorizes staff to reallocate the 2024 budget provision of \$40,000 included in the 2024-2028 Financial Plan for a spare standby pump for water wells to increase the 2024 budget provision for the Pump House Electronics Hardware Upgrade project thereby increasing the 2024 budget provision for this project from \$100,00 to \$140,000.**

(3) **Corporate Services**

(a) **Announcement of Closed Council Meeting Motions**

Pursuant to Section 117 of the *Community Charter*, Council authorized for release to the public the following motions:

- THAT Council appoints Councillor Jean Young as the Council liaison to the Flowerstone Family Health Society.
- THAT Council appoints Luke Sales as the Deputy Corporate Administrator for the Town of Qualicum Beach for an approximate six-month term ending September 15, 2024.
- THAT Council appoints Rob Dickinson as the Deputy Director of Planning for the Town of Qualicum Beach for an approximate six-month term ending September 15, 2024.
- THAT Council appoints Linda Feil to the Accessibility Advisory Team for an approximate 9-month term ending December 31, 2024.
- THAT Council authorizes staff to approve MKM to enter a sub lease at 124 Harlech Road to permit sewing; packaging and shipment of marine clothing.

62-63

(b) **Special Event Approval | Chartwell Day**

Staff Recommendation

**THAT the following special event be approved in principle, subject to event organizers working with Town staff to ensure Town requirements are met:**

**“Chartwell Day, Saturday, September 7, 2024 at Miraloma Park”.**

64-71

(4) **Planning, Community Development & Emergency Planning**

(a) **Development Variance Permit | 119 Fern Road East**

Staff Recommendation

**THAT Council directs staff to fulfill statutory notification requirements for Council consideration of issuance of a Development Variance Permit for 119 Fern Road East at a future meeting of Council.**

72-106

(b) **1085 Ravensbourne Lane | OCP & Zoning Amendments**

Staff Recommendations

1. **THAT Council directs staff to refer the OCP amendment application for 1085 Ravensbourne Lane to the 2025 Official Community Plan (OCP) Review for discussion, as detailed in the July 17, 2024 Planning report to Council.**
2. **THAT Council directs staff to postpone consideration of the zoning amendment application for 1085 Ravensbourne Lane following the conclusion of the 2025 Official Community Plan (OCP) Review.**

- 107-231 (c) **Bus Garage Final Report**  
Staff Recommendations
1. **THAT Council endorses the report titled “Bus Garage Final Report” dated May 1, 2024.**
  2. **THAT Council directs staff to prepare a report outlining next steps in the implementation of the Bus Garage Conceptual Design for consideration during the 2025-2029 Budget process.**
- 232-260 (d) **Saahtlam Park Plan**  
Staff Recommendations
1. **THAT Council endorses the report titled “Saahtlam Park Detailed Plan” dated April 19, 2024.**
  2. **THAT Council directs staff to prepare a report outlining next steps in the implementation of the Saahtlam Park Detailed Plan for consideration during the 2025-2029 Budget process.**
- 261-264 (e) **Extreme Weather Response**  
Staff Recommendation
- THAT Council receives, for information, the staff report attached to the July 17, 2024 agenda outlining the Town’s response to extreme heat events when thresholds for temperature are exceeded.**
- (5) **Municipal Operations**
- 265-267 (a) **Bay Street Slope Stabilization | RFQ Award**  
Staff Recommendation
- THAT Council approves the award of the Bay Street Slope Stabilization project to David Stalker Excavating in the amount of \$599,147.00 excluding GST.**
- (6) **Fire Rescue**
- 268-279 (a) **Fire Training Facility | Licence of Use Agreement**  
Staff Recommendation
- THAT Council authorizes staff to enter into a Licence of Use Agreement for the Fire Training Facility located at 130 Rupert Road, Qualicum Beach between the Town of Qualicum Beach, the Regional District of Nanaimo and the Dashwood Volunteer Fire Department for a five-year term.**
- 280-282 (b) **Fire Rescue - 2024 Quarter 2 Departmental Report**

**11. REVIEW OF COMMENTS FROM THE PUBLIC**

Comments for this regular Council meeting must be received no later than 12:00 pm two days following the meeting (**July 19, 2024**). Submissions must be regarding business discussed by Council at the meeting, be 300 words or fewer, and any submissions relating to closed public hearing topics, or unrelated to Council business discussed at the meeting, will not be distributed to Council. Submissions that meet these guidelines will be distributed to all Council members, posted on the Town's website, and a brief summary of the comments will be included in the meeting minutes. Comments must include a full name and address in order to be submitted for the record.

To submit a comment, please use one of the following options:

- Mail Box 130, Qualicum Beach, BC V9K 1S7
- Phone: 250.752.6921
- Email: [communications@qualicumbeach.com](mailto:communications@qualicumbeach.com)

**12. MOTION TO CLOSE – Nil**

**13. ADJOURNMENT**

**THAT Council adjourns the July 17, 2024, regular Council meeting.**

**NEXT SCHEDULED**

**REGULAR COUNCIL MEETING:** Wednesday, September 11, 2024, at 10:00 am

**Minutes of the 10:00 am Wednesday, June 19, 2024, Town of Qualicum Beach Special Council Meeting held in the Qualicum Beach Council Chamber, Town Hall, 660 Primrose Street, Qualicum Beach, BC**

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PRESENT: Council: Acting Mayor Scott Harrison  
Councillor Anne Skipsey  
Councillor Petronella Vander Valk  
Councillor Jean Young

Absent: Mayor Teunis Westbroek

ALSO PRESENT: Staff: Lou Varela, Chief Administrative Officer (CAO)  
Luke Sales, Director of Planning | Deputy Corporate Administrator  
Rebecca Augustyn, Senior Planner  
Trudy Coates, Corporate Services Support  
Twyla Slonski, Corporate Services Support

Acting Mayor Harrison called the meeting to order at 10:02 am acknowledging that the meeting is being held on the traditional lands of the Coast Salish people.

**ADOPTION OF THE AGENDA**

Council adopted, by unanimous consent, the June 19, 2024 special Council meeting agenda.

**STAFF REPORTS**

**(1) Appointment | RDN Fire Services Advisory Committee**

Councillor Vander Valk MOVED and Councillor Skipsey SECONDED, THAT Council appoints Mayor Westbroek to serve as the Town of Qualicum Beach's representative on the Regional District of Nanaimo Fire Services Advisory Committee for a term ending December 31, 2024.

**CARRIED UNANIMOUSLY | Resolution No. 24-183**

**MOTION TO CLOSE**

Councillor Vander Valk MOVED and Councillor Skipsey SECONDED, THAT the special meeting of Council be closed to the public, pursuant to sections 90 (1)(c) & (e) and 90 (2)(b) of the *Community Charter*, for the purpose of considering:

- (c) labour relations and other employee relations;
- (e) the acquisition, disposition or expropriation of land or improvements, if Council considers the disclosure could reasonably be expected to harm the interests of the municipality; and
- (b) the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both and a third party.

**CARRIED UNANIMOUSLY**

**MEETING CLOSED TO THE PUBLIC: 10:04 am**

R. Augustyn left the meeting at 10:04 am.

**MEETING REOPENED TO THE PUBLIC:** 11:49 am with Acting Mayor Harrison, and Councillors Skipsey, Vander Valk and Young in attendance. Also in attendance: L. Varela, Chief Administrative Officer, L. Sales, Director of Planning/Deputy Corporate Administrator, T. Coates & T. Slonski, Corporate Administration Support.

**ANNOUNCEMENT**

Staff announced the Council motion from the Closed portion of the meeting to release to the public the amendment to the lease between the Town of Qualicum Beach and the Qualicum & District Curling Club [QDCC] for the lands at 644 Memorial Avenue to expand the footprint of the leased area by permitting the QDCC to construct a 14' x 14'8" addition to the north side of the building and to authorize staff to process and issue the building permit.

**ADJOURNMENT**

Councillor Vander Valk MOVED and Councillor Skipsey SECONDED, THAT Council adjourns the meeting.

**CARRIED UNANIMOUSLY**

**MEETING ADJOURNED:** 11:50 am

Certified Correct:

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Luke Sales  
Deputy Corporate Administrator

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Scott Harrison  
Acting Mayor

**Minutes of the 10:00 am Wednesday, June 26, 2024, Town of Qualicum Beach Regular Council Meeting held in the Qualicum Beach Council Chamber, Town Hall, 660 Primrose Street, Qualicum Beach, BC**

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**PRESENT:**        **Council:**    Acting Mayor Scott Harrison  
                                         Councillor Anne Skipsey  
                                         Councillor Petronella Vander Valk  
                                         Councillor Jean Young

**ABSENT:**                            Mayor Teunis Westbroek

**ALSO PRESENT:** **Staff:**    Lou Varela, Chief Administrative Officer (CAO)  
                                         Luke Sales, Director of Planning | Deputy Corporate Administrator  
                                         Raj Hayre, Director of Finance  
                                         Peter Cornell, Fire Chief  
                                         Rob Dickinson, Director of Infrastructure Services  
                                         Oliver Watson, Capital Projects Manager  
                                         Rebecca Augustyn, Senior Planner  
                                         Jason Froats, Information Systems Analyst  
                                         Trudy Coates, Corporate Services Support  
                                         Twyla Slonski, Corporate Services Support  
                                         Matthew Shields, Diamond Head Consulting, Town Consultant

Acting Mayor Harrison called the meeting to order in the Council Chambers at 10:00 am acknowledging that the meeting was being held on the traditional lands of the Coast Salish people, and in particular, the Qualicum First Nation.

**ADOPTION OF THE AGENDA**

Council adopted, by unanimous consent, the June 26, 2024, regular Council meeting agenda, as distributed with Item 10(3)(a) Community Wildfire Resiliency Plan.

**START OF CONSENT AGENDA**

Councillor Skipsey MOVED, and Councillor Vander Valk SECONDED, THAT the recommendations listed for items 2a) to 2b) in the June 26, 2024, Consent Agenda be adopted.

- a)    THAT the May 29, 2024, 1:00 pm regular Council meeting minutes be approved as presented.

CARRIED BY CONSENT

- b)    THAT the Correspondence Log, dated for reference June 17, 2024, be approved, as presented.

CARRIED BY CONSENT

**CARRIED UNANIMOUSLY | Resolution No. 24-184**

**END OF CONSENT AGENDA**

**RECOGNITION - Nil**

**BUSINESS ARISING FROM THE MINUTES - Nil**

**DELEGATIONS**

1.    **Rosemary Graham, Flowerstone Health Society**, spoke in support of the Society's request for funding (\$10,000) for Flowerstone Family Health Clinic nurse practitioner recruitment.

## **CORRESPONDENCE – Nil**

## **PUBLIC AND STATUTORY HEARINGS - Nil**

## **BYLAWS**

### **1. Bylaw No. 900**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT the third reading of “Town of Qualicum Beach Zoning Bylaw No. 900, 2024” given May 29, 2024, be rescinded; AND FURTHER THAT “Town of Qualicum Beach Zoning Bylaw No. 900, 2024” be given third reading as amended as shown in the Town of Qualicum Beach Zoning Bylaw No. 900, 2024 Change Log in the June 26, 2024 agenda.

**CARRIED UNANIMOUSLY | Resolution No. 24-185**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT “Town of Qualicum Beach Zoning Bylaw No. 900, 2024” be adopted.

**CARRIED UNANIMOUSLY | Resolution No. 24-186**

### **2. Bylaw No. 901**

Councillor Vander Valk MOVED and Councillor Skipsey SECONDED, THAT “Town of Qualicum Beach Advisory Planning Commission Bylaw No. 901, 2024” be adopted.

**CARRIED UNANIMOUSLY | Resolution No. 24-187**

### **3. Bylaw No. 902**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT “Town of Qualicum Beach Board of Variance Bylaw No. 902, 2024” be adopted.

**CARRIED UNANIMOUSLY | Resolution No. 24-188**

## **COMMITTEE & LIAISON REPORTS**

### **1. General Government (Mayor Teunis Westbroek) – Nil**

### **2. Public Safety (Councillor Scott Harrison)**

Councillor Harrison commented on his portfolio activities.

### **3. Parks & Recreation (Councillor Anne Skipsey)**

#### **(1) Select Committee on Environment and Sustainability April 19, 2024**

#### **Recommendations from the Committee**

Councillor Skipsey MOVED and Acting Mayor Harrison SECONDED, THAT Council pause on the Bus Garage project public site and reassess the brief and renegotiate the design to include recommendations from the Sustainability Action Plan.

Opposed: Acting Mayor Harrison, Councillors Skipsey, Young and Vander Valk  
**DEFEATED UNANIMOUSLY**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT Council refer adoption and subsequent implementation of the Climate Mitigation Actions Matrix dated April 19, 2024, to its 2025 Strategic Planning process for analysis of resources and work planning.

**CARRIED UNANIMOUSLY | Resolution No. 24-189**



4. **Community Development** (Councillor Petronella Vander Valk)  
Councillor Vander Valk commented on her written report included in the agenda.
5. **Arts & Culture** (Councillor Jean Young)  
Councillor Young commented on her portfolio activities.

## STAFF REPORTS

### 1. **Corporate Services**

#### (1) **Annual Municipal Report**

Councillor Vander Valk MOVED and Councillor Skipsey SECONDED, THAT the 2023 Annual Report be accepted.

**CARRIED UNANIMOUSLY | Resolution No. 24-190**

#### (2) **Announcement of Closed Council Meeting Motions**

The following motions previously passed by Council during a Closed meeting, were released to the public, pursuant to Section 117 of the *Community Charter*:

- THAT Council directs staff to provide a letter of support for Island Hopper Air Training (IHAT) to operate a flight school from the Qualicum Beach Airport (CAT4), subject to approval by Transport Canada.

CAO Varella gave a verbal report noting: the flight school motion is an announcement of a motion made previously; the process for motions at closed meetings; Council's lack of authority to restrict airport operations; the Crown Grant provided the airport lands for the sole purpose of operating a public airport with associated uses; flight schools are a permitted use; flight schools are regulated by Transport Canada and permitted to fly in and out of the Airport regardless of where they are based; the Town's goal to balance airport operations and neighbourhood expectations; and Council will be considering development a Master Plan as part of Council's 2025 Strategic Planning.

- THAT Council appoints Tina Rasmussen representing Sources; and Mike Garland to the Select Committee on Beach Day for a two-year term ending December 31, 2025.
- THAT Council approves the draft five-year agreement between the Parksville Qualicum Beach Tourism Association and the Town of Qualicum Beach and authorizes the Mayor and Corporate Administrator to execute the agreement on behalf of the Town; AND FURTHER THAT, Council instructs staff to request that the PQBTA prepare an annual work plan to be shared with key stakeholders that including, but not limited to the Town of Qualicum Beach and the Qualicum Beach Chamber of Commerce; AND FURTHER THAT the St. Andrews Lodge Historical & Cultural Society be added to Section 10 of the Fee for Service Agreement.

## 2. **Municipal Operations**

### (1) **BC Hydro Leased Streetlights - Quote to Review Resubmitted Hydro Complaints**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT Council awards the review of 25 BC Hydro Leased Streetlights, identified on Appendix 1: BC Hydro Lease Lights – Map of Complaints between September 1, 2023 to May 1, 2024 to E2 Engineering for the quoted price of \$14,450 plus GST; AND FURTHER THAT E2 Engineering provide a report to Council summarizing its review, including recommendations for submission to BC Hydro's SLIM System, for the Utility's consideration.

**CARRIED UNANIMOUSLY | Resolution No. 24-191**

### (2) **Quatna Road Watermain Replacement - RFQ Award**

Councillor Vander Valk MOVED and Councillor Young SECONDED, THAT Council approves the award of the Quatna Road Watermain Replacement project to David Stalker Excavating in the amount of \$113,537 excluding GST.

**CARRIED UNANIMOUSLY | Resolution No. 24-192**

### (3) **Roundabout Art Proposal**

Councillor Vander Valk MOVED and Councillor Young SECONDED, THAT Council authorizes staff to proceed with the production, installation and placement of the art piece by Qualicum First Nation artist Jesse Recalma in the centre of the Highway 19A roundabout; AND FURTHER THAT the additional funding required to complete the art piece project in the amount of \$16,100 exclusive of GST be reallocated from the excess remaining budgeted funds for the 2023 Highway 19A Ditch Infill/Bike Lane/Parking – Phase 1 project for the 2023 Memorial Avenue Roundabout project.

**CARRIED UNANIMOUSLY | Resolution No. 24-193**

## 3. **Fire Rescue**

### (1) **Community Wildfire Resiliency Plan - June 2024**

The Town's consultant, Matthew Shields, Diamond Head Consulting gave a PowerPoint presentation on the Community Wildfire Resiliency Plan.

Councillor Skipsey MOVED and Councillor Young SECONDED, THAT Council adopts the Community Wildfire Resiliency Plan (CWRP) 2024 completed by Diamond Head Consulting, attached to the staff report dated June 26, 2024.

**CARRIED UNANIMOUSLY | Resolution No. 24-194**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT Council endorses the Action Plan contained within the Community Wildfire Resiliency Plan (CWRP) 2024 for consideration during Strategic Planning and within the 2026 Budget process.

**CARRIED UNANIMOUSLY | Resolution No. 24-195**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT Council directs staff to request an amendment to the grant received from the Union of BC Municipalities (UBCM) Community Resiliency Investment Program (CRI) – 2023 FireSmart Community Funding & Support Program to remove the Fuel Management Prescription for the Heritage Forest and to add a Fuel Management Prescription for the forested area behind the Qualicum Beach Fire Station.

**CARRIED UNANIMOUSLY | Resolution No. 24-196**

**(2) Regional District of Nanaimo Fire Services Agreement**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT Council authorizes the Mayor and the Corporate Officer to sign the Regional District of Nanaimo [RDN] Fire Services Agreement as approved by the RDN Board of Directors at its meeting held May 14, 2024 and scheduled to expire December 31, 2026; AND FURTHER THAT upon expiry of the agreement in December 2026 and prior to entering into a renewed agreement, staff are to collaborate with all parties to the agreement for the purpose of revisiting the way in which costs are calculated and apportioned, risks associated with the fire service boundary and identifying other revenue sources.

**CARRIED UNANIMOUSLY | Resolution No. 24-197**

**4. Financial Services**

**(1) 2023 Statement of Financial Information (SOFI) Report**

Councillor Skipsey MOVED and Councillor Vander Valk SECONDED, THAT the Town of Qualicum Beach 2023 Statement of Financial Information be received and approved by Council.

**CARRIED UNANIMOUSLY | Resolution No. 24-198**

**MOTION TO CLOSE – Nil**

**ADJOURNMENT**

Councillor Vander Valk MOVED and Councillor Young SECONDED, THAT Council adjourns the June 26, 2024, regular Council meeting.

**CARRIED UNANIMOUSLY**

**MEETING ADJOURNED: 11:52 am**

Certified Correct:

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Luke Sales  
Deputy Corporate Administrator

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Teunis Westbroek  
Mayor

## **REVIEW OF COMMENTS FROM THE PUBLIC**

*Comments for this regular Council meeting were received by 12:00 pm two business days following the meeting (June 28, 2024). Submissions were distributed to all Council members, and a brief summary of the comments are as follows:*

- Marlys Diamond, Flowerstone Health Society delegation.
- Jeffery Toews, Town of Qualicum Beach Zoning Bylaw No. 900, 2024.
- Marie Noel, Town of Qualicum Beach Zoning Bylaw No. 900, 2024, and Flowerstone Health Society delegation.
- Tim Pritchard, Flowerstone Health Society delegation, bus garage project, and meeting Chair.
- James Noel, Roundabout art project, and announcement of Closed Council meeting motions.

THE TOWN OF  
QUALICUM BEACH



### COUNCIL CORRESPONDENCE LOG

June 18 - July 10, 2024 (for July 21, 2024 Council Agenda)

\*Note: All correspondence on the log is compiled and distributed to Council

| DATE REC'D | TOPIC                                                               | ACTION                 | ITEM # |
|------------|---------------------------------------------------------------------|------------------------|--------|
| June 21    | Delegation Request for Development Permit for 3022 Island Highway W | Referred to staff      | 273    |
| June 21    | Airport Concerns - Resident A                                       | Referred to staff      | 274    |
| June 21    | Triathlon in forest – Opposed                                       | Distributed to Council | 275    |
| June 21    | New Flight School – Opposed - Resident A                            | Referred to staff      | 276    |
| June 22    | New Flight School – Opposed                                         | Referred to staff      | 278    |
| June 22    | Airport Noise Concerns                                              | Referred to staff      | 279    |
| June 21    | Airport Noise Concerns                                              | Referred to staff      | 280    |
| June 23    | New flight school - Opposed                                         | Referred to staff      | 281    |
| June 23    | New Flight School – Opposed                                         | Referred to staff      | 282    |
| June 23    | Airport Concerns                                                    | Referred to staff      | 283    |
| June 24    | New Flight School - Opposed                                         | Referred to staff      | 284    |
| June 24    | Prostate Cancer Awareness Month                                     | Distributed to Council | 285    |
| June 24    | Flowerstone Health Society Delegation Comments                      | Distributed to Council | 286    |
| June 24    | New Flight School - Opposed                                         | Referred to staff      | 288    |
| June 24    | Flowerstone Health Society Request for Funds & Airport – Support    | Distributed to Council | 289    |
| June 25    | Airport COW Meeting Participation Inquiry                           | Referred to staff      | 290    |
| June 22    | Tree Protection Bylaw - Dead Tree Replacement Question              | Distributed to Council | 291    |
| June 26    | New Flight School - Opposed – Resident A                            | Referred to staff      | 292    |
| June 28    | Flowerstone Health Society Delegation – Comments                    | Distributed to Council | 293    |
| July 2     | Airport Noise Concerns - Resident A                                 | Referred to staff      | 296    |
| July 2     | Traffic Safety Concerns During Community Events                     | Referred to staff      | 297    |
| July 3     | Route 19A Music Festival                                            | Distributed to Council | 298    |
| July 5     | New Flight School - Opposed                                         | Referred to staff      | 300    |
| July 7     | Public Safety Concerns                                              | Referred to staff      | 301    |
| July 5     | Airport Noise Concerns – Resident A                                 | Referred to staff      | 302    |
| July 5     | Airport Concerns                                                    | Referred to staff      | 303    |

|         |                                                          |                   |     |
|---------|----------------------------------------------------------|-------------------|-----|
| July 8  | Airplane Noise Concerns                                  | Referred to staff | 304 |
| July 8  | Airport Noise Concerns                                   | Referred to staff | 305 |
| July 10 | Airport Concerns                                         | Referred to staff | 306 |
| July 10 | New Flight School – Opposed                              | Referred to staff | 307 |
| July 10 | New Flight School – Opposed                              | Referred to staff | 308 |
| July 10 | New Flight School – Opposed                              | Referred to staff | 309 |
| July 10 | New Flight School – Opposed                              | Referred to staff | 310 |
| July 10 | Proclamation Request - National Drowning Prevention Week | Referred to staff | 311 |
| July 10 | District of Saanich - UBCM Resolution re BC Hydro        | Referred to staff | 312 |
| July 10 | Airport Concerns                                         | Referred to staff | 313 |

June 21, 2024

Lou Varela  
Chief Administrative Officer  
Town of Qualicum Beach  
Box 130  
Qualicum Beach, BC V9K 1S7

**SENT VIA E-MAIL:** [lvarela@qualicumbeach.com](mailto:lvarela@qualicumbeach.com)

Dear Lou Varela:

**RE: 2024-2034 CANADA COMMUNITY-BUILDING FUND AGREEMENT**

Please find enclosed the 2024-2034 Community Works Fund Agreement between the Town of Qualicum Beach and the Union of BC Municipalities. As part of the renewed Canada Community-Building Fund Agreement, the CWF will continue to provide dedicated and predictable funds to each local government in British Columbia for investments in local infrastructure and capacity-building priorities.

In order to receive your first CWF payment for the 2024/25 funding year, please review the Agreement, sign, and return to [ccbf@ubcm.ca](mailto:ccbf@ubcm.ca).

Once we have received the Agreement, we will return an executed version for your records.

Please also include a Council resolution authorizing the Mayor and Corporate Officer to sign on behalf of your local government.

We have provided a program guide, an information sheet, and estimated funding for the first five years of the program on our UBCM CCBF [website](#).

If you have any questions, please email us at [ccbf@ubcm.ca](mailto:ccbf@ubcm.ca) or call us at 250-356-5134.

Sincerely,



Brant Felker  
Manager, CCBF Program Services

## 2024-2034 COMMUNITY WORKS FUND AGREEMENT

under the

### ADMINISTRATIVE AGREEMENT ON THE CANADA COMMUNITY-BUILDING FUND

This Agreement made as of \_\_\_\_\_, 202\_\_

BETWEEN:

Town of Qualicum Beach (the Local Government)

AND

The **UNION OF BRITISH COLUMBIA MUNICIPALITIES (UBCM)** as continued by section 2 of the *Union of British Columbia Municipalities Act RSBC 2006, c.1*, as represented by the President (the "UBCM")

#### 1. PURPOSE

The purpose of this Community Works Fund Agreement is to set out the roles and responsibilities of the Local Government and UBCM related to any Community Works Fund funds that may be delivered to the Local Government by UBCM.

#### 2. SCHEDULES

The following annexes and schedules, originating in whole or part from the Agreement, are attached to and form part of this Community Works Fund Agreement:

|             |                                      |
|-------------|--------------------------------------|
| Schedule A: | Ultimate Recipient Requirements      |
| Schedule B: | Eligible Project Categories          |
| Schedule C: | Eligible and Ineligible Expenditures |
| Schedule D: | Program Reporting                    |
| Schedule E: | Communications Protocol              |
| Schedule F: | Asset Management                     |
| Schedule G: | Housing Report                       |

#### 3. ROLE OF UBCM

3.1 UBCM has, pursuant to the Agreement, agreed with Canada and British Columbia to:

- a) receive CCBF funding from Canada and allocate funds so received from Canada pursuant to the Agreement, including allocating Community Works Funds to the Local Government to be spent on Eligible Projects and Eligible Expenditures in accordance with the terms and conditions of this Community Works Fund Agreement;
- b) report to Canada and British Columbia, including Annual Reports and Outcome Reports, as required by the Agreement; and



- c) fulfill other roles and responsibilities as set out in the Agreement.

#### **4. CONTRIBUTION PROVISIONS**

- 4.1 Over the term of this Community Works Fund Agreement, UBCM will pay the Local Government its annual allocation within 30 days of receipt of such funds from Canada.
- 4.2 Payments under section 4.1 are subject to UBCM receiving sufficient CCBF funds from Canada, and Local Government compliance with this Community Works Fund Agreement and any other Funding Agreement under the Prior Agreement.
- 4.3 Annual allocation is based on a formula set out in section 1.1 of Annex B of the Agreement. In the first year of this Community Works Fund Agreement, the Local Government will receive \$243,507, in two equal instalments which, subject to section 4.2, are expected to be delivered in the month following July 15 and between November 15, 2024 and March 31, 2025.
- 4.4 Annual allocation to the Local Government for all subsequent years under this Community Works Fund Agreement continue to be based on the funding formula set out in the Agreement, but are subject to change by UBCM from the amount set out in section 1.1 of Annex B of the Agreement due to such circumstances as local government boundary changes and new Local Government incorporations, changes in Census populations and changes in amounts that may be received by UBCM from Canada.
- 4.5 Timing of payments in subsequent years under this Community Works Fund Agreement to the Local Government by UBCM are subject to change due to any changes in timing of payments to UBCM by Canada.

#### **5. USE OF FUNDS BY LOCAL GOVERNMENT**

- 5.1 Any CCBF funding that may be received by the Local Government and any Unspent Funds, and any interest earned thereon held by the Local Government must be used by the Local Government in accordance with this Community Works Fund Agreement, including specifically Section 6. (Commitments of the Local Government).
- 5.2 Any CCBF funding that may be received by the Local Government and any Unspent Funds, and any interest earned thereon held by the Local Government will be treated as federal funds with respect to other federal infrastructure programs.

#### **6. COMMITMENTS OF THE LOCAL GOVERNMENT**

- 6.1 The Local Government shall:
  - a) Be responsible for the completion of each Eligible Project in accordance with Schedule B (Eligible Project Categories) and Schedule C (Eligible and Ineligible Expenditures).
  - b) Comply with all requirements outlined in Schedule D (Program Reporting), Schedule E (Communications Protocol) and Schedule G (Housing Report).

- c) Continue to strengthen the development and implementation of asset management best practices over the course of the Agreement, in accordance with Schedule F.
- d) Invest, in a distinct account, Community Works Fund funding it receives from UBCM in advance of it paying Eligible Expenditures.
- e) With respect to Contracts, award and manage all Contracts in accordance with their relevant policies and procedures and, if applicable, in accordance with the Agreement on International Trade and applicable international trade agreements, and all other applicable laws.
- f) Invest into Eligible Projects, any revenue that is generated from the sale, lease, encumbrance or other disposal of an asset resulting from an Eligible Project where such disposal takes place within (5) years of the date of completion of the Eligible Project.
- g) Allow Canada and UBCM reasonable and timely access to all of its documentation, records and accounts and those of their respective agents or Third Parties related to the use of CWF funding and Unspent Funds, and any interest earned thereon, and all other relevant information and documentation requested by Canada or its designated representatives for the purposes of audit, evaluation, and ensuring compliance with this Administrative Agreement.
- h) Keep proper and accurate accounts and records in respect of all Eligible Projects for at least six (6) years after completion of the Eligible Project and, upon reasonable notice, make them available to Canada and UBCM. Keep proper and accurate accounts and records relevant to the CWF program for a period of at least six (6) years after the termination of this Administrative Agreement.
- i) Ensure your actions do not establish or be deemed to establish a partnership, joint venture, principal-agent relationship or employer-employee relationship in any way or for any purpose whatsoever between Canada and the Local Government, or between Canada and a Third-Party.
- j) Ensure that the Local Government do not represent themselves, including in any agreement with a Third Party, as a partner, employee or agent of Canada.
- k) Ensure that no current or former public servant or public office holder to whom any post-employment, ethics and conflict of interest legislation, guidelines, codes or policies of Canada applies will derive direct benefit from CCBF funding, Unspent Funds, and interest earned thereon, unless the provision or receipt of such benefits is in compliance with such legislation, guidelines, policies or codes.
- l) Ensure that the Local Government will not, at any time, hold the Government of Canada, British Columbia, or UBCM, its officers, servants, employees or agents responsible for any claims or losses of any kind that the Local Government, Third Parties or any other person or entity may suffer in relation to any matter related to CCBF funding or an Eligible Project and that the Local Government will, at all times, compensate the Government of Canada, British Columbia, or UBCM, its officers, servants, employees, and agents for any claims or losses of any kind that any of the Local Government may suffer in relation to any matter related to CCBF funding or an Eligible Project.
- m) Agree that any CCBF funding received will be treated as federal funds for the purpose of other federal infrastructure programs.
- n) Agree that the above requirements which, by their nature, should extend beyond the expiration or termination of this Administrative Agreement, will extend beyond such

expiration or termination.

**7. TERM**

This Community Works Fund Agreement will be effective as of April 1, 2024 and will be in effect until March 31, 2034 unless the Parties agree to renew it. In the event where this Community Works Fund Agreement is not renewed, any CCBF funding and Unspent Funds, and any interest earned thereon held by the Local Government, that have not been expended on Eligible Projects or other expenditures authorized by this Community Works Fund Agreement as of March 31, 2034 will nevertheless continue to be subject to this Community Works Fund Agreement until such time as may be determined by the Parties.

**8. SURVIVAL**

The rights and obligations, set out in Sections 5.1, 5.2 and 6.1 will survive the expiry or early termination of this Community Works Fund Agreement and any other section which is required to give effect to the termination or to its consequences shall survive the termination or early termination of this Community Works Fund Agreement.

**9. AMENDMENT**

The Local Government acknowledges that the Agreement may from time to time be amended by agreement of Canada, British Columbia and UBCM and if and whenever such amendments to the Agreement are made, the Local Government agrees that UBCM may require this Community Works Fund Agreement to be amended to reflect, at the sole discretion of UBCM, the amendments made to the Agreement. Where UBCM requires this Community Works Fund Agreement to be so amended, it will provide to the Local Government notice in writing of the amendments it requires. Such amendments shall form part of this Community Works Fund Agreement and be binding on the Local Government and UBCM thirty (30) days after such notice, unless before then the Local Government elects in writing to give written notice of termination of this Community Works Fund Agreement to UBCM.

**10. WAIVER**

No provision of this Community Works Fund Agreement shall be deemed to be waived by UBCM, unless waived in writing with express reference to the waived provisions and no excusing, condoning or earlier waiver of any default by the Local Government shall be operative as a waiver, or in any way limit the rights and remedies of UBCM or Canada.

**11. NO ASSIGNMENT**

This Community Works Fund Agreement is not assignable by the Local Government and the Local Government shall not assign, pledge, or otherwise transfer any entitlement to allocation of funds under this Community Works Fund Agreement to any person and shall upon receipt of any allocation of funds hereunder pay and expend such funds thereafter only in accordance with the terms of this Community Works Fund Agreement.

**12. NOTICE**

Any notice, information or document provided for under this Community Works Fund Agreement must be in writing and will be effectively given if delivered or sent by mail, postage or other charges prepaid, or by email. Any notice that is delivered will have been received on delivery; and any notice mailed will be deemed to have been received eight (8) calendar days after being mailed.

**Any notice to UBCM will be addressed to:**

Executive Director

525 Government Street

Victoria, British Columbia

V8V 0A8

Email: [ccbf@ubcm.ca](mailto:ccbf@ubcm.ca)

**Any notice to the Local Government will be addressed to:**

The Corporate Officer at the place designated as the Local Government office.

**SIGNATURES**

This Community Works Fund Agreement has been executed on behalf of the Local Government by those officers indicated below and each person signing the agreement represents and warrants that they are duly authorized and have the legal capacity to execute the agreement.

**Town of Qualicum Beach**

Original signed by:

\_\_\_\_\_  
Mayor\_\_\_\_\_  
Corporate Officer

Signed by Town of Qualicum Beach on the \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_.

**UNION OF BC MUNICIPALITIES**

Original signed by:

\_\_\_\_\_  
Corporate Officer\_\_\_\_\_  
General Manager, Victoria Operations

The Community Works Fund Agreement have been executed by UBCM on the \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_.

### Schedule A – Definitions

**“Affordable Housing”** means a dwelling unit where the cost of shelter, including rent and utilities, is a maximum of 30% of before-tax household income. The household income is defined as 80% or less of the Area Median Household Income (AMHI) for the metropolitan area or rural region of the Ultimate Recipient.

**“Administrative Agreement or Agreement”** means the 2024-2034 Administrative Agreement on the Canada Community-Building Fund in British Columbia and UBCM.

**“Asset Management”** means an integrated process, bringing together skills, expertise, and activities of people; with information about a community’s physical and natural assets; and finances; so that informed decisions can be made, supporting Sustainable Service Delivery.

**“Canada Community-Building Fund” (CCBF)** means the program established under section 161 of the *Keeping Canada’s Economy and Jobs Growing Act*, S.C. 2011, c. 24 as amended by section 233 of the *Economic Action Plan 2013 Act, No. 1*, S.C. 2013, c. 33, as the Gas Tax Fund and renamed the Canada Community-Building Fund in section 199 of *Budget Implementation Act, 2021, No. 1*.

**“Chief Financial Officer”** means in the case of a municipality, the officer assigned financial administration responsibility under S. 149 of the *Community Charter*, and in the case of a Regional District, the officer assigned financial administration responsibility under S. 199 of the *Local Government Act*, R.S.B.C. 1996, c.323.

**“Community Works Fund”** means the fund provided from the Canada Community-Building Fund to be dispersed to local governments based on a percentage of the per capita allocation for local spending priorities in accordance with the terms and conditions set out in the Agreement.

**“Community Works Fund Agreement”** means this Agreement made between UBCM and Local Government.

**“Contract”** means an agreement between an Ultimate Recipient and a Third Party whereby the latter agrees to supply a product or service to an Eligible Project in return for financial consideration.

**“Core Housing Need”** means a household living in an unsuitable, inadequate or unaffordable dwelling and cannot afford alternative housing in their community.

**“Eligible Expenditures”** means those expenditures described as eligible in Schedule C (Eligible and Ineligible Expenditures).

**“Eligible Projects”** means projects as described in Schedule B (Eligible Project Categories).

**“Funding Agreement”** means an agreement between British Columbia and UBCM and an Ultimate Recipient setting out the terms and conditions of the CCBF funding to be provided to the Ultimate Recipient, containing, at a minimum, the elements in Schedule A (Ultimate Recipient Requirements).

**“Gender Based Analysis Plus” (GBA Plus or GBA+)** is an analytical process that provides a rigorous method for the assessment of systemic inequalities, as well as a means to assess how diverse groups of women, men, and gender diverse people may experience policies, programs and initiatives. The “plus” in GBA Plus acknowledges that GBA Plus is not just about differences between biological (sexes) and socio-cultural (genders). GBA Plus considers many other identity factors such as race, ethnicity, religion, age, and mental or physical disability, and how the interaction between these factors influences the way we might experience government policies and initiatives. Conducting a GBA Plus analysis involves considering all intersecting identity factors as part of GBA Plus, not only sex and gender. GBA+ is a priority for the Government of Canada.

**“Housing Needs Assessment”** means a report informed by data and research describing the current and future housing needs of a municipality or community according to guidance provided by Canada.

**“Housing Report”** means the duly completed housing report to be prepared and delivered by British Columbia and UBCM to Canada annually by September 30, as described in Schedule G (Housing Report).

**“Ineligible Expenditures”** means those expenditures described as ineligible in Schedule C (Eligible and Ineligible Expenditures).

**“Infrastructure”** means municipal or regional, publicly or privately owned tangible capital assets, or natural assets, in British Columbia primarily for public use or benefit.

**“Local Government”** means a municipality as defined in the *Community Charter* [SBC 2003] Chapter 26, a regional district as defined in the *Local Government Act* [RSBC 1996] Chapter 323, and the City of Vancouver as continued under the *Vancouver Charter* [SBC 1953] Chapter 55.

**“Oversight Committee”** means the committee established to monitor the overall implementation of this Administrative Agreement as outlined in section 7 (Oversight Committee) of this Administrative Agreement.

**“Party”** means Canada, British Columbia or UBCM when referred to individually and collectively referred to as “Parties”.

**“Previous Agreements”** means any agreements between Canada, British Columbia and UBCM for the purposes of administering the Gas Tax Fund or Canada Community-Building Fund (CCBF).

**“Prior Community Works Fund Agreement”** means the 2014-2024 Community Works Fund Agreement between this Local Government and the UBCM.

**Third Party** means any person or legal entity, other than Canada, British Columbia and UBCM or an Ultimate Recipient, who participates in the implementation of an Eligible Project by means of a Contract.

**“Sustainable Service Delivery”** means ensuring that current community service needs, and how those services are delivered (in a socially, economically and environmentally responsible

manner), do not compromise the ability of future generations to meet their own needs. Sound asset management practices support Sustainable Service Delivery by considering community priorities, informed by an understanding of the trade-offs between the available resources and the desired services.

**“Ultimate Recipient”** means this Local Government

- (i) a Local Government or its agent (including its wholly owned corporation);
- (ii) a non-local government entity, including Indigenous recipients, non-governmental and not-for-profit organizations, on the condition that the Local Government(s) has (have) indicated support for the project through a formal resolution of its (their) council(s) or board(s) and that the entity receiving funds delivers a service typical of local government.
- (iii) TransLink, BC Transit, and Islands Trust

**“Unspent Funds”** means funds that have not been spent towards an Eligible Project or eligible costs in accordance with this Agreement or the Previous Agreements prior to the effective date of this Agreement.

## **SCHEDULE B - Eligible Project Categories**

Eligible Projects include investments in Infrastructure for its construction, renewal or material enhancement in each of the following categories (as defined in the current program terms and conditions):

1. Local roads and bridges – roads, bridges and active transportation infrastructure
2. Short-sea shipping – infrastructure related to the movement of cargo and passengers around the coast and on inland waterways, without directly crossing an ocean
3. Short-line rail – railway related infrastructure for carriage of passengers or freight
4. Regional and local airports – airport-related infrastructure (excludes the National Airport System)
5. Broadband connectivity – infrastructure that provides internet access to residents, businesses, and/or institutions in Canadian communities
6. Public transit – infrastructure which supports a shared passenger transport system which is



available for public use

7. Drinking water – infrastructure that supports drinking water conservation, collection, treatment and distribution systems
8. Wastewater – infrastructure that supports wastewater and storm water collection, treatment and management systems
9. Solid waste – infrastructure that supports solid waste management systems including the collection, diversion and disposal of recyclables, compostable materials and garbage
10. Community energy systems – infrastructure that generates or increases the efficient usage of energy
11. Brownfield Redevelopment - remediation or decontamination and redevelopment of a brownfield site within municipal boundaries, where the redevelopment includes:
  - the construction of public infrastructure as identified in the context of any other category under the Canada Community-Building Fund, and/or;
  - the construction of local government public parks and publicly-owned social housing.
12. Sport Infrastructure – amateur sport infrastructure (excludes facilities, including arenas, which would be used as the home of professional sports teams or major junior hockey teams (e.g. Western Hockey League))
13. Recreational Infrastructure – recreational facilities or networks
14. Cultural Infrastructure – infrastructure that supports arts, humanities, and heritage
15. Tourism Infrastructure – infrastructure that attract travelers for recreation, leisure, business or other purposes
16. Resilience – Infrastructure and systems that protect and strengthen the resilience of communities and withstand and sustain service in the face of climate change, natural disasters and extreme weather events.
17. Fire halls – fire halls and fire station infrastructure – including fire trucks
18. Capacity building - includes investments related to strengthening the ability of municipalities to develop long-term planning practices including: capital investment plans, integrated community sustainability plans, integrated regional plans, housing needs assessments and housing planning, and/or asset management plans, related to strengthening the ability of recipients to develop long-term planning practices.

Note: Investments in health infrastructure (hospitals, convalescent and senior centres) are not eligible.

**SCHEDULE C - Eligible and Ineligible Expenditures****1. Eligible Expenditures****1.1 Eligible Expenditures of Ultimate Recipients will be limited to the following:**

- a) the expenditures associated with acquiring, planning, designing, constructing or renewal and rehabilitation of infrastructure and any related debt financing charges specifically identified with that asset;
- b) for capacity building category only, the expenditures related to strengthening the ability of Local Governments to improve local and regional planning including capital investment plans, integrated community sustainability plans, integrated regional plans, housing needs assessments, and/or asset management plans. The expenditures could include developing and implementing:
  - i. studies, strategies, or systems related to asset management, which may include software acquisition and implementation;
  - ii. studies, strategies, or systems related to housing or land use, including Housing Needs Assessments;
  - iii. training directly related to asset management planning; and
  - iv. long-term infrastructure plans.
- c) the expenditures directly associated with joint federal communication activities and with federal project signage.

**1.2 Employee and Equipment Costs: The incremental costs of the Ultimate Recipient's employees or leasing of equipment may be included as Eligible Expenditures under the following conditions:**

- a) the Ultimate Recipient is able to demonstrate that it is not economically feasible to tender a Contract;
- b) the employee or equipment is engaged directly in respect of the work that would have been the subject of the Contract; and,
- c) the arrangement is approved in advance and in writing by UBCM.

**2. Ineligible Expenditures**

The following are deemed Ineligible Expenditures:

- a) project expenditures incurred before April 1, 2005;
- b) project expenditures incurred before April 1, 2014 for the following investment categories:
  - i. highways;
  - ii. regional and local airports;
  - iii. short-line rail;

- iv. short-sea shipping;
  - v. disaster mitigation;
  - vi. broadband connectivity;
  - vii. brownfield redevelopment;
  - viii. cultural infrastructure;
  - ix. tourism infrastructure;
  - x. sport infrastructure; and
  - xi. recreational infrastructure.
- c) Fire Hall project expenditures incurred before April 1, 2021;
  - d) Fire Truck purchases as stand-alone expenditures and expenditures under the Resilience Infrastructure category before April 1, 2024;
  - e) the cost of leasing of equipment by the Ultimate Recipient, any overhead costs, including salaries and other employment benefits of any employees of the Ultimate Recipient, its direct or indirect operating or administrative costs of Ultimate Recipients, and more specifically its costs related to planning, engineering, architecture, supervision, management and other activities normally carried out by its staff, except in accordance with Eligible Expenditures above;
  - f) taxes for which the Ultimate Recipient is eligible for a tax rebate and all other costs eligible for rebates;
  - g) purchase of land or any interest therein, and related costs;
  - h) legal fees;
  - i) routine repair or maintenance costs; and
  - j) costs associated with healthcare infrastructure or assets.

## **SCHEDULE D - Program Reporting**

### **Ultimate Recipient Reporting**

Ultimate Recipient requirements for program reporting under the CWF consist of the submission of an Annual Expenditure Report, and an outcomes report, which will be submitted to UBCM for review and acceptance. The reporting year is from January 1 to December 31. In addition to overall program reporting, specific asset management reporting and housing reporting obligations are described in Schedule F and G.

#### **1. Ultimate Recipient Annual Expenditure Report**

The Ultimate Recipient will provide UBCM an Annual Expenditure Report by June 1 of each year for the prior calendar year reporting which will include the following elements: unique project identifier, project title, project description, investment category, project start date, project end date, geo-location, total project cost, CCBF funding spent, closing balance, output indicator, and where applicable, a housing indicator and an outcomes indicator. A reporting template will be provided by UBCM.

The Annual Expenditure Report may also include a communications and signage report, and confirmation by the Ultimate Recipient's CFO that expenditures are eligible use of funds in accordance with the terms and conditions of this Agreement.

#### **2. Audited Financial Report**

The Ultimate Recipient must submit an Audited Financial Statement to British Columbia in order to receive funds in each reporting year.

##### **2.1 Independent Audit or Audit Based Attestation:**

UBCM will provide an independent audit opinion, or an attestation based on an independent audit and signed by a senior official designated in writing by UBCM, as to:

- a) the accuracy of the information submitted in the Financial Report Table; and
- b) that CCBF funding and Unspent Funds, and any interest earned thereon, were expended for the purposes intended.

##### **2.2 Ultimate Recipient audit:**

UBCM and Canada may perform an audit or of an Ultimate Recipient annually.

#### **3. Housing Report**

By September of 30 each year British Columbia and UBCM will provide to Canada a report on housing as outlined in Schedule G (Housing Report).

#### **4. Outcomes Report**

By March 31 of each year, British Columbia and UBCM will provide to Canada an outcomes report that will outline the following program benefits:

- a) beneficial impacts on communities of completed Eligible Projects, supported by specific outcomes examples in communities;
- b) the impact of CCBF as a predictable source of funding;
- c) progress made on improving Local Government planning and asset management, including development or update of Housing Needs Assessments; and
- d) a description of how CCBF funding has alleviated housing pressures tied to infrastructure gaps and contributed to housing supply and affordability outcomes (further details on this requirement may be found in Schedule G – Housing Report).

The outcomes report will present a narrative on how each program benefit is being met. A template and guidance document will be provided by Canada.

## **SCHEDULE E – Communications Protocol**

In support of transparency and accountability of the CCBF, the following communications protocol will apply to all communications activities undertaken regarding any CCBF funding and will apply to the Parties and Ultimate Recipients. Communicating to Canadians on the use of CCBF funding is clearly linked with our joint accountability to Canadians. Compliance with this protocol will inform the timing and flow of any CCBF funding and is critical to meeting our joint commitment to transparency.

### **1. Purpose**

- 1.1 The Communications Protocol applies to all communications activities related to any CCBF funding, including annual allocations and the identification and communication of projects under this Administrative Agreement. Communications activities may include, but are not limited to: public or media events, news releases, reports, digital and social media products, project signs, digital signs, publications, success stories and vignettes, photo compilations, videos, advertising campaigns, awareness campaigns, editorials, awards programs, and multi-media products.
- 1.2 Through collaboration, Canada, British Columbia and UBCM agree to work to ensure consistency in the communications activities meant for the public. This will include the importance of managing the delivery of communications activities based on the principle of transparent and open discussion.
- 1.3 Failure by British Columbia, UBCM or its Ultimate Recipient to adhere to this communication protocol may affect the timing and flow of any CCBF funding that may be transferred by Canada.

### **2. Joint communications approach**

- a. British Columbia and UBCM agree to work in collaboration with Canada to develop a joint communications approach to ensure visibility for the program, the provision of upfront project information and planned communications activities throughout the year.

Canada will provide a “Communications Approach” template to be completed by British Columbia and UBCM. This approach will then be reviewed and approved by Canada as well as British Columbia and UBCM.

This joint communications approach will have the objective of ensuring that proactive communications activities are undertaken each year to communicate the annual allocations and key projects, as identified in the communications approach, located in both large and small communities by using a wide range of communications tools to ensure local visibility.

To accomplish this, Canada, British Columbia and UBCM agree to establish a communications subcommittee that will meet biannually. This committee will review and approve a communications plan at the beginning of each year.

- b. Canada, British Columbia and UBCM will work together on the initial annual joint communications approach, which will be finalized and approved by Canada's Co-Chair and British Columbia and UBCM agree that achievements under the joint communications approaches will be reported to the

Oversight Committee once a year.

- c. Through the communications subcommittee, British Columbia and UBCM agree to assess, with Canada, the effectiveness of communications approaches on an annual basis and, as required, update and modify the joint communications approach, as required. Any modifications will be brought to Canada's Co-Chair, British Columbia's Co-Chair and UBCM's Co-Chair, as appropriate for approval.
- d. If informed of a communications opportunity (ex. milestone event, news release) by an Ultimate Recipient, Canada, British Columbia and UBCM agree to share information promptly and coordinate participation in alignment with section 4.3, 4.5 and 5.2 of this communications protocol.
- e. Canada, British Columbia and UBCM agree to ensure the timely sharing of information, products (ex. news releases, media advisories), and approvals in support of communications delivery.

### **3. Inform Canada on allocation and intended use of CCBF funding for communications planning purposes**

- 3.1 British Columbia and UBCM to provide to Canada upfront information on planned Eligible Projects and Eligible Projects in progress on an annual basis, prior to the construction season. Canada, British Columbia and UBCM will each agree, in this joint communications approach, on the date this information will be provided. Through the creation of a sub-committee, Canada, British Columbia and UBCM will be required to enact a communications approach that will be assessed bi-annually through the sub-committee mechanism.

In this agreement the information will include, at a minimum:

- Ultimate Recipient name; Eligible Project name; Eligible Project category, a brief but meaningful Eligible Project description; expected project outcomes including housing (if applicable); federal contribution; anticipated start date; anticipated end date; and a status indicator: not started, underway, completed.

Canada will link to the UBCM's CCBF website where this information will be accessible to the general public.

- 3.2 British Columbia and UBCM agree that the above information will be delivered to Canada in an electronic format deemed acceptable by Canada.
- 3.3 Canada, British Columbia and UBCM each agree that their joint communications approach will ensure the most up-to-date Eligible Project information is available to Canada to support media events and announcements (see 4.2 for full definition) for Eligible Projects.

### **4. Announcements and media events for Eligible Projects**

- 4.1 At Canada's request, Canada, British Columbia and UBCM agree to coordinate an announcement regarding annual allocations of CCBF funding.

- 4.2 Media events and announcements include, but are not limited to: news conferences, public announcements, and the issuing of news releases to communicate funding of projects or key milestones (e.g. ground breaking ceremonies, completions).
- 4.3 Key milestones events and announcements (such as ground breaking ceremonies and grand openings) may also be marked by media events and announcements, news releases, or through other communications activities. Ultimate recipients, Canada, British Columbia and UBCM will have equal visibility through quotes and will follow the Table of Precedence for Canada.
- 4.4 Media events and announcements related to Eligible Projects will not occur without the prior knowledge and agreement of British Columbia and UBCM, as appropriate, Canada and the Ultimate Recipient.
- 4.5 The requester of a media event or an announcement will provide at least 15 working days' notice to other parties of their intention to undertake such an event or announcement. An event will take place at a mutually agreed date and location. British Columbia and UBCM, and, as appropriate, Canada and the Ultimate Recipient will have the opportunity to participate in such events through a designated representative. If communications is proposed through the issuing of a news release (with no supporting event), Canada requires at least 15 working days' notice and 5 working days with the draft news release to secure approvals and confirm the federal representative's quote.
- 4.6 For media events, each participant will choose its own designated representative. UBCM and Ultimate Recipients are responsible for coordinating all onsite logistics.
- 4.7 British Columbia and UBCM shall not unreasonably delay the announcement of opportunities identified in annual communications plans that have been pre-approved in advance.
- 4.8 The conduct of all joint media events, announcements for project funding, and supporting communications materials (ex. News releases, media advisories) will follow the Table of Precedence for Canada.
- 4.9 All joint communications material related to media events and announcements must be approved by Canada and recognize the funding of the parties.
- 4.10 All joint communications material for funding announcements must reflect Canada's Policy on Official Languages and the Policy on Communications and Federal Identity.
- 4.11 Canada, British Columbia and UBCM and Ultimate Recipients agree to ensure equal visibility in all communications activities.

## **5. Program communications**

- 4.1 Canada, British Columbia, UBCM and Ultimate Recipients may include messaging in their own communications products and activities with regard to the CCBF.



- 4.2 The party undertaking these activities will recognize the funding of all contributors.
- 4.3 The conduct of all joint events and delivery of supporting communications materials (ex. News releases) that support program communications (ex. Such as intake launches) will follow the Table of Precedence for Canada.
- 4.4 Canada, British Columbia and UBCM agree that they will not unreasonably restrict the other parties from using, for their own purposes, public communications products related to the CCBF prepared by Canada, British Columbia and UBCM or Ultimate Recipients, or, if web-based, from linking to it.
- 4.5 Notwithstanding Section 4 of Schedule E (Communications Protocol), Canada retains the right to meet its obligations to communicate to Canadians about the CCBF and the use of funding.

## **6. Operational communications**

- 6.1 British Columbia, UBCM or the Ultimate Recipient is solely responsible for operational communications with respect to Eligible Projects, including but not limited to, calls for tender, construction, and public safety notices. Operational communications as described above are not subject to the federal official language policy.
- 6.2 Canada does not need to be informed on operational communications. However, such products should include, where appropriate, the following statement, "This project is funded in part by the Government of Canada" or "This project is funded by the Government of Canada", as applicable.
- 6.3 British Columbia, UBCM and the Ultimate Recipient will share information as available with Canada should significant emerging media or stakeholder issues relating to an Eligible Project arise. Canada, British Columbia and UBCM will advise Ultimate Recipients, when appropriate, about media inquiries received concerning an Eligible Project.

## **7. Communicating success stories**

- 7.1 British Columbia and UBCM to facilitate communications between Canada and Ultimate Recipients for the purposes of collaborating on communications activities and products including, but not limited to Eligible Project success stories, including the positive impacts on housing, Eligible Project vignettes, and Eligible Project start-to-finish features.

## **8. Advertising campaigns**

- 8.1 Canada, British Columbia, UBCM or an Ultimate Recipient may, at their own cost, organize an advertising or public information campaign related to the CCBF or Eligible Projects. However, such a campaign must respect the provisions of this Administrative Agreement. In the event of such a campaign, the sponsoring party or Ultimate Recipient agrees to inform the other parties of its intention, and to inform them no less than 21 working days prior to the campaign launch.

## **9. Digital Communications, Websites and webpages**

- 9.1 Where British Columbia and UBCM produce social media content to provide visibility to CCBF programs or projects, they shall @mention the relevant Infrastructure Canada official social media account.
- 9.2 Where a website or webpage is created to promote or communicate progress on an Eligible Project or Projects, it must recognize federal funding through the use of a digital sign or through the use of the Canada wordmark and the following wording, "This project is funded in part by the Government of Canada" or "This project is funded by the Government of Canada", as applicable. The Canada wordmark or digital sign must link to Canada's website, at [www.infrastructure.gc.ca](http://www.infrastructure.gc.ca). The guidelines for how this recognition is to appear and language requirements are published on Canada's website, at <http://www.infrastructure.gc.ca/pub/signage-panneaux/intro-eng.html>.

## **10. Project signage**

- 10.1 Unless otherwise approved by Canada, British Columbia, UBCM or Ultimate Recipients will install a federal sign to recognize federal funding at Eligible Project site(s). Federal sign design, content, and installation guidelines will be provided by Canada and included in the joint communications approach.
- 10.2 Where British Columbia, UBCM or an Ultimate Recipient decides to install a sign, a permanent plaque or other suitable marker recognizing their contribution with respect to an Eligible Project, it must recognize the federal contribution to the Eligible Project(s) and be approved by Canada.
- 10.3 British Columbia, UBCM or the Ultimate Recipient is responsible for the production and installation of Eligible Project signage, or as otherwise agreed upon.
- 10.4 British Columbia and UBCM to inform Canada of signage installations on a basis mutually agreed upon in the joint communications approaches.

## **11. Communication Costs**

- 11.1 The eligibility of costs related to communication activities that provide public information on this Administrative Agreement will be subject to Schedule C (Eligible and Ineligible Expenditures).

**SCHEDULE F – Asset Management**

Canada, British Columbia and UBCM agree that the measures contained in the Previous Agreements to create and foster a culture of asset management planning were effective in increasing the capacity of the diverse range of Ultimate Recipients in British Columbia and UBCM to enhance their community's sustainability.

Under the previous Agreement (2014-2024), local governments in BC demonstrated a commitment to improving asset management practices within their respective communities. As awareness and knowledge has grown, asset management practices and culture has matured. However, as noted in the *2022 Status of Asset Management in BC Report*, while moving in the right direction, there remains significant gaps and priority areas where local governments need to improve if they are to realize the full benefits of asset management.

Using the results from the *2022 Status of Asset Management in BC Report* as a guide, the Oversight Committee will develop and approve Asset Management Commitments, over the duration of this Agreement for ultimate recipients, consistent with the Asset Management for Sustainable Service Delivery: A BC Framework. Asset Management BC will be asked to provide expertise and input where appropriate.

All Ultimate Recipients will be required to meet the Asset Management Commitments. Asset Management Commitments may vary depending on whether the Ultimate Recipient is; a Local Government, a non-local government entity, Translink, and/or BC Transit. Asset Management Commitments will focus on strengthening asset management capacity over the term of the Agreement while continuing to recognize the varying capacities of Ultimate Recipients and the range of ongoing asset management activities.

The Oversight Committee will consider Asset Management Commitments under the following areas;

- Reporting on continuous improvement of Asset Management practices over the duration of the Agreement, including reporting through the Ministry of Municipal Affairs Local Government Data Entry (LGDE) System,
- Development and implementation of Long-term Financial Plans
- Ongoing Asset Management education and training, and
- Implementing asset management performance measurement.

## **SCHEDULE G – Housing Report**

### **1. Housing Needs Assessments**

- 1.1 By March 31, 2025, or as otherwise agreed upon by Canada and British Columbia, municipalities with a 2021 Census population of 30,000 or more are required to complete and make available to Canada a Housing Needs Assessment (HNA) prepared in accordance with provincial legislation and additional details provided, as agreed to by Canada and British Columbia, which together align with the information requirements, spirit and intent of the federal Housing Needs Assessment template and the guidance document.
- 1.2 HNAs should be used by British Columbia and UBCM in preparing the Project-Level Housing Report and the Housing Narrative in the CCBF Outcomes Report in order to identify housing pressures related to infrastructure. HNAs should also be used by municipalities to prioritize infrastructure projects that support increased housing supply where it makes sense to do so.
- 1.3 HNAs must be made publicly available on the municipal website and municipalities are to provide links to the page where the HNAs are posted to Canada for all Ultimate Recipients in their jurisdiction that have a 2021 Census population of 30,000 or more.
- 1.4 A separate HNA Guidance Document has been provided by Canada.

### **2. Project-Level Housing Report**

By September 30 of each year, starting in 2025, British Columbia and UBCM will provide Canada a Housing Report in an electronic format deemed acceptable by Canada consisting of the following:

#### **2.1 Methodology**

British Columbia and UBCM will provide a description of the process used to collect data and information presented in the Housing Report. The methodology section should include the following information:

- Scope of the report and related rationale.
- Reporting process used to collect data from Ultimate Recipients.
- Identification of baseline data and other data sets used for the purposes of the report and which data has been excluded.
- How performance indicators were assessed in British Columbia.

## 2.2 Municipalities Identified for Project-Level Reporting

### Criteria for Project-Level Reporting

Municipalities with a population of 30,000 or more, outside of the Metro Vancouver Region, that have housing pressures that can be addressed through closing infrastructure gaps or building capacity where it makes sense to do so, must:

- be included in Table 1 (below); and,
- provide project-level data on housing requirements to British Columbia and UBCM, for inclusion in the Housing Report that will be submitted by British Columbia and UBCM to Canada.

HNA and project-level reporting requirements can also be applied to other municipalities as agreed to by Canada, British Columbia and UBCM. Municipalities that do not meet these criteria may additionally be included at the discretion of British Columbia and UBCM, but are not required by Canada to include project-level data in the annual Housing Report.

British Columbia and UBCM will be expected to summarize project-level information from the municipalities identified by the above criteria to report to Canada annually.

The following table (Table 1) is to be used as a template to identify municipalities required to provide project-level reporting and to identify housing pressures related to infrastructure needs. Housing pressures should be consistent with needs and pressures identified by Ultimate Recipients in their HNAs. British Columbia and UBCM will provide an aggregate of this table to Canada in their annual Housing Report.

| <b>Ultimate Recipient</b>       | <b>Project Level Reporting Criteria</b>               | <b>Key Infrastructure-Related Housing Pressures</b>                           |
|---------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------|
| <i>Name of the municipality</i> | <i>Identify which criteria as noted above applies</i> | <i>Identify key housing gaps and needs that are related to infrastructure</i> |

**Table 1: Ultimate Recipients Identified for Project Level Reporting**

## 2.3 Project-Level Housing Outcomes

For municipalities required to provide project-level reporting, British Columbia and UBCM are required to collect project-level data on housing outcomes and to complete the table below (Table 2) on an annual basis.

Table 2 is intended to link the housing pressures identified in Table 1 and in HNAs with outcomes supported by CCBF projects that can help Ultimate Recipients to address their specific housing pressures. More specifically, Table 2 is to be completed by Ultimate Recipients outlined in Section 1.2. It will include a subset of the projects from the above project list and this subset represents projects with housing outcomes.

| Project ID                                           | Ultimate Recipient            | Project Title                                        | Project Description                               | Investment Category                                         | Housing Outcomes and Indicators                                                                         |
|------------------------------------------------------|-------------------------------|------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <i>As provided in program reporting (Schedule D)</i> | <i>As provided in Table 1</i> | <i>As provided in program reporting (Schedule D)</i> | <i>Provide a brief description of the project</i> | <i>Indicate which CCBF category the project falls under</i> | <i>Identify key housing outcomes and indicators (section 2.3) that will be used to measure success.</i> |

**Table 2: Project-Level Reporting on Housing Outcomes**

### 2.3.1 Housing Outcome Indicators

For each of the projects listed in Table 2, British Columbia and UBCM shall report on the following core indicators, as relevant to each investment category.

- # of housing units supported or preserved; and
- # of affordable housing units supported or preserved.

Units enabled is a measure of increased capacity for potential housing development as a result of the infrastructure investment made and, in some cases, where CCBF funding contributed directly to housing development (e.g., building social housing as part of brownfield remediation category, may include new units directly supported by CCBF funding).

## 3. Housing Narrative in the CCBF Outcomes Report

By March 31st each year, starting in 2026, British Columbia and UBCM shall provide Canada with a narrative report on program-level housing outcomes. This narrative report will be aligned with and incorporated into the annual CCBF Outcomes Report.

The housing narrative should outline how CCBF has supported housing supply and affordability pressures within British Columbia and UBCM's jurisdiction, over the reporting period, and measures taken between British Columbia, UBCM and Ultimate Recipients to improve housing supply and improve housing affordability for Canadians. It should also align with identified needs within Ultimate Recipients Housing Needs Assessments once they have been developed.

Further, British Columbia and UBCM must include in their Outcomes Report a narrative assessment of measures they have taken to improve housing outcomes through CCBF funded infrastructure projects. This should include:

- How Ultimate Recipients have prioritized specific infrastructure investments, where it made sense to do so, that support an increased supply of housing (e.g., upgrading pipes to support densification rather than sprawl, or remediating a brownfield site that could then be used for affordable housing);
- How Ultimate Recipients are utilizing CCBF funding to build local capacity for sound land use and development planning (e.g., through the capacity building category).
- Any measures taken to preserve and/or increase supply and mix of affordable housing (e.g., minimizing displacement, making land available for non-market housing, minimum affordability requirements for private developers); and

This housing narrative must also include responses to the following questions:

- How many or what percentage of projects from the total CCBF project list contribute to an increase in housing supply and how many housing units were supported or preserved (as outlined in 2.3.1)?
- What percentage of total housing units supported or preserved are affordable?
- How many communities have published a new Housing Needs Assessment or an updated one within the last 5 years?

For further information and details on the housing narrative portion of the Outcomes Report please refer to the Housing Report Template and Guidance document.

#### **4. Assessment of the Housing Reports and Compliance**

##### **4.1 Assessment of Housing Reports**

Both the project-level housing report and the housing narrative on program-level housing outcomes will be assessed against the Government of Canada's Evaluation Framework as well as HNAs.

##### **4.2 Compliance**

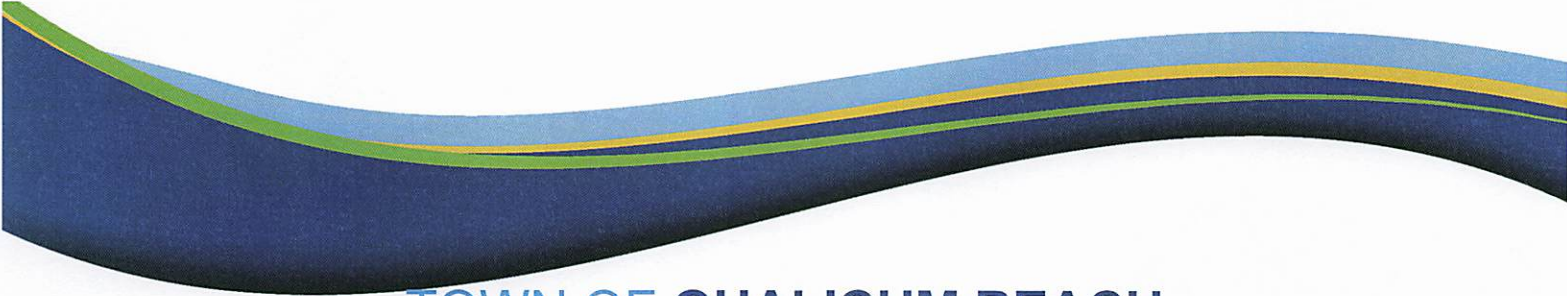
Failure by British Columbia, UBCM or its Ultimate Recipient to adhere to this Schedule may affect the timing and flow of any CCBF funding that may be transferred by Canada. Repeated or sustained failures to comply with the terms of this Schedule could result in downward adjustment of allocations for British Columbia, UBCM or Ultimate Recipient for future Infrastructure Canada programs.

## **REPORT TO COUNCIL: JUNE 17TH TO JULY 8<sup>TH</sup> 2024**

### **COUNCILLOR VANDER VALK**

1. **21<sup>st</sup> of June:** attended the meeting of the Board of the Qualicum Beach Chamber of Commerce
2. **25<sup>th</sup> of June:** attended the meeting of the Board of the Chartwell Residents Association
3. **26<sup>th</sup> of June:** attended the meeting of the Board of the Parksville Qualicum Beach Tourism Association meeting
4. **1<sup>st</sup> of July:** attended the Canada Day festivities, including cycling in the parade
5. **8<sup>th</sup> of July:** attended the Public Open House. Many topics were discussed including: a mention to residents re: the completion of the golf course bridge, the Town website and its review, an organizational chart, landscaping at the Telus cell tower, service level reviews, airport finances, public safety - specifically at Railway and Memorial and Bay Street, Council Corner, Qualicum Commons, and traffic flow and parking.





## TOWN OF QUALICUM BEACH STAFF REPORT

**TO:** Lou Varela, Chief Administrative Officer

**FOR:** Regular Council Meeting

**DATE:** July 17, 2024

**FROM:** Raj Hayre, Director of Finance

**SUBJECT:** First & Second Quarter Organizational Update - 2024

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### RECOMMENDATION

1. THAT the Report titled "First & Second Quarter Organizational Update - 2024" dated July 17, 2024, be received for information.
  2. THAT Council directs staff to postpone the time-line for completion of the Committee/Commission Review Phase 2 Strategic Initiative included in the 2024-2028 Financial Plan to the 2025 budget year.
  3. THAT Council directs staff to postpone the time-line for completion of the Comprehensive Policy Review Strategic Initiative included in the 2024-2028 Financial Plan to the 2025 budget year.
  4. THAT Council directs staff as follows: that the 2024 budget provision of \$10,000 for the Corporate and Community Emissions Report Strategic Initiative and the 2024 budget provision of \$20,000 for the Corporate Emission Inventory Strategic Initiative included in the 2024-2028 Financial Plan be combined and that these two Initiatives be renamed as the Corporate and Community Emissions Inventory and Report with a combined 2024 budget provision of \$30,000 with the project delivery anticipated for 2025.
  5. THAT Council directs staff to reallocate the 2024 budget provision of \$100,000 for the Berwick 5 Well Connection included in the 2024-2028 Financial Plan to provide for the replacement of pumps, motors and drop pipes in the Berwick Wells 1 and 2 in 2024 and that the Berwick 5 Well Connection project budget be reconsidered in the 2025-2029 Financial Planning Process.
  6. THAT Council authorizes staff to reallocate the 2024 budget provision of \$40,000 included in the 2024-2028 Financial Plan for a spare standby pump for water wells to increase the 2024 budget provision for the Pump House Electronics Hardware Upgrade project thereby increasing the 2024 budget provision for this project from \$100,00 to \$140,000.
- 

### PURPOSE

The First & Second Quarter Organizational Update - 2024 represents a critical component of the reporting process, allowing for the transparent communication of progress on Council's Strategic Initiatives, as well as an overview of the performance of the Operating Budget and Capital Programs.

## **BACKGROUND**

Looking back, the strategic direction of Council for the year 2024 was established through two comprehensive public Strategic Planning sessions held in Q4 of 2023. Subsequently, Council confirmed their Strategic Initiatives and chosen approaches to governance, through adoption of the 2024-2028 Strategic Plan and the 2024-2028 Financial Plan Bylaw. Council also approved the Operating Budget and Capital Programs for the fiscal year 2024 as integral components of the 2024-2028 Financial Plan.

## **DISCUSSION**

This report serves as a key instrument in fostering accountability and ensuring that the community remains informed about the status of Council's Strategic Initiatives and financial allocations. The First & Second Quarter Organizational Update reflects the Town's financial performance to June 30, 2024, and expenditures and revenues detailed in Attachments 1 through 4 are reflective of progress at this "point in time".

## **COUNCIL STRATEGIC INITIATIVES PROGRESS**

The Strategic Initiatives identified by Council in late 2023 support Council's six Focus Areas:

- ✓ **Good Governance:** To govern for the public interest of our community while managing competing interests, ensuring availability of transparent and accessible information, fostering respectful public engagement, and demonstrating ethical values.
- ✓ **Community Health & Wellbeing:** To improve the health and wellbeing of people who live, work, and play in the Town.
- ✓ **Housing:** To ensure residents have access to housing alternatives that meet a diversity of needs, lifestyles and income levels.
- ✓ **Climate Action:** To reduce GHG emissions and energy consumption and promote adaptive mitigative measures to prepare for climate change impacts.
- ✓ **Progressive Infrastructure:** To ensure infrastructure for energy, water, wastewater & storm water, solid waste and multi-modal transportation is efficient and effective at advancing the Town's sustainability goals.
- ✓ **Economic Prosperity:** To pursue economic opportunities based on sustainable growth, development and investment that meets the needs of the community.

First and second quarter results have been marked by significant progress in advancing Council's 22 Strategic Initiatives approved for 2024 as part of the Strategic Plan 2024-2028 adopted by Council on December 6, 2023. Please refer to Attachment 1 for a comprehensive overview of the financial progress made on Council's Strategic Initiatives outlined in the 2024-2028 Financial Plan. In summary, of the 22 Strategic Initiatives approved by Council for 2024, 2 are complete, 16 are in progress and 4 have not been started as of the second quarter due to lack of staff capacity, timing in relation to other projects and required discretionary Council decision-making.

Staff look forward to continuing this momentum into the third and fourth quarters of 2024.

## **CAPITAL BUDGET PROGRESS**

The Capital Program approved by Council for 2024 is essential to replace aging assets and ensure continuity of community services while also advancing investments in new projects that enhance the community.



Capital project categories include: Transportation; Building Facilities; Parks and Trails; Equipment & Vehicles; Airport; Water Infrastructure; and Sewer Infrastructure. Please refer to Attachment 2 to review progress on the complete Capital Program for 2024. Works for the majority of capital projects budgeted and planned for 2024 are in progress. For projects which are in progress and not completed by year end, the remaining budget will be carried forward into the 2025 fiscal year as part of the year end accounting process. The 2024 budget provision for any capital projects that are not started at year end will not be automatically carried forward to the subsequent year. Council decision-making on these projects will become part of the 2025–2029 Financial Plan process.

### GENERAL FUND OPERATING BUDGET PERFORMANCE

The Operating Budget facilitates the day-to-day operations of the Town in alignment with Council's Focus Areas and Strategic Initiatives. The financial results for the first and second quarter indicate that the Town has demonstrated effective fiscal management, with both operating revenues and expenditures aligned closely with the budgeted figures. The revenues (which include property taxes, development and building fees, property lease revenues and other sources of municipal income), are meeting expectations set in the Budget. This indicates effective revenue recognition and collection strategies.

On the expenditure side, costs associated with operations, infrastructure maintenance, and administrative expenses are being effectively managed, with all major categories of spending staying within the budgeted limits. Financial performance for the first and second quarter underscore the Municipality's commitment to fiscal responsibility and sustainability, setting a positive tone for the third and fourth quarter of the fiscal year. For a summary of the General Fund operating results for the first and second quarter of 2024 please see Attachment 3 which provides a breakdown of revenues by major category and expenditures by service area.

### WATER AND SEWER OPERATING BUDGET PERFORMANCE

The Water and Sewer Utilities are stand-alone funds and the expenditures of each Utility, including the contribution to Water Infrastructure Reserve Fund and the Sewer Infrastructure Reserve Fund for infrastructure investment, renewal and maintenance, are funded through user fees and a parcel tax collected from users. A comparison of budgeted to actual results for each Utility is attached to this report as Attachment 4. Revenues and Expenditures are trending on budget and anticipated to be on budget at year end.

### **PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)**

*Public Participation Framework developed by the International Association for Public Participation – IAP<sup>2</sup> International.*

| INFORM                                                                                                                                                              | CONSULT                                                                                                       | INVOLVE                                                                                                                                            | COLLABORATE                                                                                                                                                                        | EMPOWER                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li></ul> | <ul style="list-style-type: none"><li>• Obtain feedback on analysis, alternatives, and/or decisions</li></ul> | <ul style="list-style-type: none"><li>• Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li></ul> | <ul style="list-style-type: none"><li>• Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li></ul> | <ul style="list-style-type: none"><li>• Final decision making in the hands of the stakeholders</li></ul> |

**INFORM:**

- Annual and quarterly reporting to Council supports transparency, and assists Council to govern more effectively by ensuring progress at mid-year is aligned with the allocation of resources in the Financial Plan.

**STRATEGIC PLAN ALIGNMENT**

- The contents of this report are aligned with the quarterly reporting required in the adopted Strategic Plan 2024-2028.

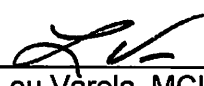
**SUMMARY**

This First & Second Quarter Update reflects the Town's commitment to transparency, accountability and effective financial management. Changes to the practice for budgeting of, and reporting on, capital projects support this commitment. In addition, the progress made in implementing Strategic Initiatives, and the responsible execution of the Operating Budget and Capital Programs, underscore the Town's dedication to supporting the wellbeing and prosperity of the community and reflects the goals set forth in the 2024–2028 Financial Plan.

**APPROVALS**

Report respectfully submitted by Raj Hayre, Director of Finance.

  
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Raj Hayre  
Director of Finance  
*Report Writer*

  
\_\_\_\_\_  
Lou Varela, MCIP, RPP  
CAO  
*Concurrence*

**REFERENCES**

- |              |                                                                                    |
|--------------|------------------------------------------------------------------------------------|
| Attachment 1 | Strategic Initiatives   First & Second Quarter Organizational Update 2024          |
| Attachment 2 | Capital Projects   First & Second Quarter Organizational Update 2024               |
| Attachment 3 | General Fund Operating Program   First & Second Quarter Organizational Update 2024 |
| Attachment 4 | Water & Sewer Utility Funds   First & Second Quarter Organizational Update 2024    |



# Strategic Initiatives 2024 First and Second Quarter Update

| FOCUS AREA/INITIATIVE | DETAILED DESCRIPTION | Target Completion | Status | % Complete | 2024 Budget | 2024 Spent | Q2 ACTIVITY and 2024 NEXT STEPS |
|-----------------------|----------------------|-------------------|--------|------------|-------------|------------|---------------------------------|
|-----------------------|----------------------|-------------------|--------|------------|-------------|------------|---------------------------------|

|                                                   |                                                                                                                                                                                                                                                                                      |                    |                                                                                      |      |         |        |                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------|------|---------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GOOD GOVERNANCE                                   |                                                                                                                                                                                                                                                                                      |                    |                                                                                      |      |         |        |                                                                                                                                                                                                                                                                                                                                                                           |
| Planner Position                                  | A three year term planner position to address capacity to advance Council's Strategic Initiatives for the 2023 to 2027 planning period.                                                                                                                                              | 2023               |    | 100% | 100,000 | 50,000 | Candidate hired July 2023.<br>Council approved converting position from 3 year term to permanent status in 2023. Position will be funded from Strategic Initiatives Reserve until mid 2026, and subsequently funded from property taxation.                                                                                                                               |
| Committee/Commission Review Phase 2               | Review of the terms of reference and/or establishing bylaws, mandate; alignment with best practices and current legislation; recommendations for orientation and training; and identifying what is working well and what could be improved upon with recommendations for next steps. | 2025               |    | -    | 15,000  | 9,600  | Request to defer to 2025 given lack of staff capacity                                                                                                                                                                                                                                                                                                                     |
| Collaboration - Qualicum First Nation and Saa'men | Placeholder for discretionary Council decision making regarding opportunities for collaboration with Qualicum First Nation and Saa'men.                                                                                                                                              | Council Discretion |    | -    | 15,000  | 500    | Honorarium – donation to Kidney Foundation on behalf of Chief Recalma for his gift of knowledge and his input on Town projects.                                                                                                                                                                                                                                           |
| Town Website Design                               | Update the Town's website by creating a new framework and design for a clear, easy to navigate website with concise content.                                                                                                                                                         | 2024-Q4            |   | 50%  | 50,000  | 29,800 | Wireframe, site map and site design have been completed with the assistance of the website design consultant. Content review and rewrite is underway. Next steps (Q3) will include populating the site pages and testing the functionality and usability. The site launch is anticipated for Q4 with an opportunity for the public to test the site and provide feedback. |
| Employer of Choice                                | Placeholder for staff development to optimize employee and department performance.                                                                                                                                                                                                   | 2024-Q4            |  | 50%  | 20,000  | 10,000 | Staff participated in an Insights Discovery workshop with goal of maximizing departmental and individual performance by enhancing self-awareness and improving interpersonal skills. Training focused on key areas such as effective communication, conflict resolution and decision-making.                                                                              |
| Comprehensive Policy Review                       | The Town of Qualicum Beach has a comprehensive set of policies covering numerous aspects of municipal governance.<br><br>Many of these policies have been established over the past three decades, and some are outdated or                                                          | 2025               |  | -    | 30,000  | -      | Request to defer to 2025, given lack of staff capacity.                                                                                                                                                                                                                                                                                                                   |



| FOCUS AREA/INITIATIVE                                                            | DETAILED DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Target Completion | Status                                                                               | % Complete | 2024 Budget | 2024 Spent | Q2 ACTIVITY and 2024 NEXT STEPS                                                       |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------|------------|-------------|------------|---------------------------------------------------------------------------------------|
|                                                                                  | no longer relevant.<br>As the Town is required to adhere to its own policies for risk management purposes, maintaining outdated or irrelevant policies that are not being followed poses potential risks. This provision is for a consultant to support staff to review these policies, identifying which ones need updating, rescinding unnecessary policies and preparing a schedule and process for policy updates.                                                                 |                   |                                                                                      |            |             |            |                                                                                       |
| Visual Identity Refresh                                                          | As the Town works toward a new website as the main portal of information to the public in 2024, it raises an opportunity/necessity to align the Town's current wordmark and crest usage to create an overall visual identity. Refreshing the Town's visual identity will allow for a consistent look and feel across all Town assets (physical and digital). A strong visual identity supports a strong presence with the public and reinforces the Town's work/role in the community. | 2025              | ▲                                                                                    | -          | 30,000      | -          | Planning work for this initiative will commence once the website is live (2024 – Q4). |
| COMMUNITY HEALTH AND WELLBEING                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                                                                                      |            |             |            |                                                                                       |
| Organizational Service Review including Parks & Green Space Service Level Review | CAO led initiatives based on Council approved budget, including strategic planning, remuneration and benefits review, service review and other organizational improvements. Initiative works started in 2023 with remaining budget and works carried forward to 2024.                                                                                                                                                                                                                  | 2024-Q4           |  | 90%        | 32,000      | -          | A report with recommendations for Council's consideration is being developed.         |
| Healthcare - Property Space                                                      | Property leased for possibility of attracting physicians to the community.                                                                                                                                                                                                                                                                                                                                                                                                             | 2024              |  | 100%       | 7,500       |            | The lease agreement has expired.                                                      |





## Strategic Initiatives 2024 First and Second Quarter Update

| FOCUS AREA/INITIATIVE                    | DETAILED DESCRIPTION                                                                                                                                                                                                                                                                          |                          |                            | 2024   |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2024 |  | Q2 ACTIVITY and 2024 NEXT STEPS |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------|--------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--|---------------------------------|
|                                          | Target Completion                                                                                                                                                                                                                                                                             | Status                   | % Complete                 | Budget | Spent  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |  |                                 |
| OCP - Quality of Life Survey             | To be conducted to support the OCP review to monitor and report on resident satisfaction with municipal services, shifting trends and provide feedback on key issues to assist with the OCP review.                                                                                           | 2024-Q4<br>Or<br>2025-Q1 | <div><div></div></div> 5%  | 20,000 |        | Staff preparing to reissue RFP for consultant to support Quality of Life Survey, to be completed in Q4 2024 or Q1 2025.                                                                                                                                                                                                                                                                                                                                                       |      |  |                                 |
| Community Volunteerism                   | For Council discretionary decision making with respect to community volunteer initiatives.                                                                                                                                                                                                    | Council Discretion       | <div><div></div></div> -   | 10,000 | 2,000  | Arrowsmith Naturalists Sponsorship per Council Resolution 24-123. Future action on this initiative will be determined by Council resolution.                                                                                                                                                                                                                                                                                                                                  |      |  |                                 |
| CLIMATE ACTION                           |                                                                                                                                                                                                                                                                                               |                          |                            |        |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |  |                                 |
| Tree Canopy Update                       | Data collection, aerial photography and mapping of the Town's tree canopy.                                                                                                                                                                                                                    | 2024-Q3                  | <div><div></div></div> 50% | 30,000 | -      | The Town has received the initial analysis of tree canopy coverage for the 2022 aerial photo. Staff are currently exploring next steps. Additional consulting work may be required to provide insights on the data as well as how to reconcile the current results with the results using different technology.                                                                                                                                                               |      |  |                                 |
| Community Wildfire Resilience Plan       | To increase the community's understanding of the risk of wildfires as well as developing actionable items used to decrease the severity of wildfires in the community.                                                                                                                        | 2024-Q4                  | <div><div></div></div> 80% | 71,900 | 59,300 | The Community Wildfire Resiliency Plan (CWRP) is complete and was presented to Council in June with the two Fuel Management Prescriptions planned for completion by the 4 <sup>th</sup> quarter of 2024                                                                                                                                                                                                                                                                       |      |  |                                 |
| Corporate and Community Emissions Report | Development of a corporate emissions report to provide transparency, regulatory compliance, risk management, strategic planning, and stakeholder engagement, aiding in environmental impact assessment and sustainability. The community emissions initiative is being undertaken by the RDN. | 2025-Q1                  | <div><div></div></div> 70% | 10,000 | -      | Community Emissions: this was coordinated by the RDN and the report is complete.<br><br>Corporate Emissions Reporting underway, with most of the work done in-house. A consultant is investigating options to reduce GHG emissions with Town facilities utilizing a portion of this budget.<br><br>This work is being done in conjunction with the Corporate and Community Emissions Report and staff recommend combining the budget and reporting for these two initiatives. |      |  |                                 |



# Strategic Initiatives 2024 First and Second Quarter Update

## ATTACHMENT 1

| FOCUS AREA/INITIATIVE                                 |   | DETAILED DESCRIPTION |                        |            |             | 2024       |                                                                                                                                                                                                                                                                                                                                 | 2024 |  | Q2 ACTIVITY and 2024 NEXT STEPS |  |
|-------------------------------------------------------|---|----------------------|------------------------|------------|-------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--|---------------------------------|--|
|                                                       |   | Target Completion    | Status                 | % Complete | 2024 Budget | 2024 Spent |                                                                                                                                                                                                                                                                                                                                 |      |  |                                 |  |
| Fleet Right Sizing & Electrification Policy           |   | 2025-Q1              | <div><div></div></div> | 15%        | 27,000      | -          | RFP issued and a consultant has been selected. Work will be started soon with completion anticipated in Q1 2025.                                                                                                                                                                                                                |      |  |                                 |  |
| Corporate Emission Inventory                          | ★ | 2024-Q3              | <div><div></div></div> | 70%        | 20,000      | 5,900      | This work is being done in conjunction with the Corporate and Community Emissions Report and staff recommend combining the budget and reporting for these two initiatives. A Council resolution is being requested.                                                                                                             |      |  |                                 |  |
| Community Outreach and Support                        |   | 2025-Q1              | <div><div></div></div> | 20%        | 15,000      | 100        | Several initiatives underway:<br><br>1. Staff investigating options to work with a specialized firm to prepare a climate action outreach strategy and communications materials.<br><br>2. Town is participating with the RDN on the Home Energy Navigator and Cool It programs. Costs to be finalized based on resident uptake. |      |  |                                 |  |
| HOUSING                                               |   |                      |                        |            |             |            |                                                                                                                                                                                                                                                                                                                                 |      |  |                                 |  |
| Housing Announcement Implementation- November 1, 2023 |   | 2025-Q1              | <div><div></div></div> | 70%        | 55,000      | 12,400     | The first phase of the bylaw updates is complete. Future work includes a housekeeping amendment this fall, engineering analysis around rainwater management, boulevard design work, review of financing tools, housing needs report and other related follow-up projects.                                                       |      |  |                                 |  |



| FOCUS AREA/INITIATIVE                                               |                                                                                                                                                                                                                                         | DETAILED DESCRIPTION |                                                                                     | Target Completion | Status | % Complete | 2024 Budget                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2024 Spent | Q2 ACTIVITY and 2024 NEXT STEPS |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|-------------------|--------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------|
| ECONOMIC PROSPERITY                                                 |                                                                                                                                                                                                                                         |                      |                                                                                     |                   |        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                 |
| Tourism & Small Business Promotion                                  | Discretionary Council decision making as related to Tourism and Small Business Promotion.                                                                                                                                               | TBD                  |    | -                 | 10,000 | -          | Future action on this Initiative will be determined by Council Resolution.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                                 |
| Pathways to Sustainable Economic Development in Qualicum Beach      | Economic development strategy to outline a strategic pathway to transition from the existing economic situation to the sustainable future envisioned in the Town's Sustainability Plan.                                                 | Q1-2026              |    | 5%                | 32,500 | -          | The RFP is currently being prepared to identify a consultant to undertake this work. Staff anticipate that the project will begin in Q4 2024 with completion by Q1 2026.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                                 |
| PROGRESSIVE INFRASTRUCTURE                                          |                                                                                                                                                                                                                                         |                      |                                                                                     |                   |        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                 |
| BC Hydro Leased Light Replacement                                   | Remaining budget from 2023 change out of leased street lights replacement (BC Hydro)..                                                                                                                                                  | 2024                 |    | 100%              | 31,800 | -          | On May 29, 2024 Council adopted the following resolutions:<br>1. THAT staff be directed to obtain a quote by a third-party illumination expert to consider further adjustments to select lights listed in Appendix 1 – BC Hydro Lease Lights – Map of Complaints between September 1, 2023 to May 1, 2024, to the staff report dated May 29, 2023, and identified as "Returning complaints after the wattage and colour change implemented (25).<br>2. THAT staff be directed to advise the public that the Town has concluded the luminaire change out of BC Hydro Leased Streetlights to reduce wattage a colour temperature, and no further intakes will be accepted.<br>3. THAT staff be directed to respond to future resident requests for the installation of new BC Hydro Leased Streetlights as an operational matter.<br><br>The intakes for change out of BC Hydro leased lighting have closed. Council awarded the review of 25 BC Hydro Street light complaints between September 1, 2023 to May1, 2024 to E2 Engineering. |            |                                 |
| Asset Replacement Plan (2023) and Asset Replacement Strategy (2024) | Identification of the annual funding investment required to replace assets within the risk profile and level of service that the community desires and a strategy to reach that desired funding level over a reasonable period of time. | 2024-Q4              |  | 60%               | 25,000 | -          | Sustainable financing strategy alternatives are under development for Council consideration. The Asset Management Plan and annual asset investment financing strategies will be presented to Council in Q4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |                                 |

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## Capital Projects 2024 First &amp; Second Quarter Update

| CAPITAL PROJECT                                                        |         | Estimated Completion   | Status | % Complete             | 2024 Budget | 2024 Spent                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Q2 ACTIVITY and STATUS DETAILS |
|------------------------------------------------------------------------|---------|------------------------|--------|------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| TRANSPORTATION                                                         |         |                        |        |                        |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |
| BAY STREET SLOPE STABILIZATION                                         | 2024 Q4 | <div><div></div></div> | 5%     | 4,978,000<br>1,785,600 | 73,200      | Design complete, tender closed July 3, 2024. Expected to complete this calendar year.<br><br>The 2024-2028 Financial Plan budget provision for this project was \$1,978,000. \$192,400 of the budget provision for this project was re-allocated to Beach Creek E. Crescent Culvert Replacement project per Council Resolution 24-116 March 7, 2024, leaving a remaining budget of \$1,785,600 to address project costs for the Bay Street Slope Stabilization. |                                |
| MEMORIAL AVE ROUNDABOUT<br>(2023 CARRY FORWARD)                        | 2025 Q1 | <div><div></div></div> | 25%    | 49,000                 | 18,900      | Roundabout infilled with gravels, rocks and driftwood. Art piece proposed for installation this Fall. Additional funding of \$16k required to complete the art piece will be reallocated from Phase 1 Waterfront Hwy 19A Ditch/Bike/ Parking 2023 budget as approved by Council on June 26, 2024.                                                                                                                                                               |                                |
| COMMUNITY TRANSPORTATION PLAN<br>IMPROVEMENTS                          | 2024 Q4 | <div><div></div></div> | 15%    | 100,000                | 29,800      | Solar powered rectangular rapid flashing crosswalk beacons (RRFB) to be installed on Bennett at Sunrise, Jones at Fern, and First at Rye. A speed hump for traffic calming will be included on First at Rye. LED RRFB lights have been installed on Laburnum at Claymore. Some funding earmarked for Community Transportation Plan costing analysis and engineering.                                                                                            |                                |
| PAVING MANAGEMENT PROGRAM                                              | 2025 Q1 | <div><div></div></div> | 50%    | 250,000                | 118,800     | Beach Ave. between 2 <sup>nd</sup> Ave and 1 <sup>st</sup> Ave. repaved. Remaining works in the 2024 program include regrading and reconstruction of the Berwick Laneway behind East Village and repair of pavement defects on Harlech Rd. between Memorial Ave. and Fir St.                                                                                                                                                                                    |                                |
| PH1 WATERFRONT HWY 19A<br>DITCH/BIKE/PARK 2023<br>(2023 CARRY FORWARD) | 2024 Q2 | <div><div></div></div> | 100%   | 85,000                 | 33,200      | Phase 1 is complete.                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                |
| SEACREST RD REPLACEMENT.<br>ENGINEERING 2023<br>(2023 CARRY FORWARD)   | 2024 Q4 | <div><div></div></div> | 15%    | 60,000                 | 2,400       | Design and geotechnical review in progress. This project is for design only. Construction anticipated in 2025. Currently, there is a placeholder of \$800k for construction in 2025.                                                                                                                                                                                                                                                                            |                                |
| PH2 WATERFRONT HWY 19A<br>DITCH/BIKE LANE/PARKING                      | 2025 Q1 | <div><div></div></div> | 5%     | 878,000                | 3,100       | Design is near completion. The project will be posted for tender after receipt of the Provincial Archaeological Site Alteration Permit. A Fall or Winter construction time frame is anticipated. This project is \$500k grant funded through a BC Active Transportation Grant.                                                                                                                                                                                  |                                |



Not Started



In Progress



Complete



Council Resolution Requested



## Capital Projects 2024 First &amp; Second Quarter Update

| CAPITAL PROJECT                                                                   |  | Estimated Completion | Status                 | % Complete | 2024 Budget            | 2024 Spent | Q2 ACTIVITY and STATUS DETAILS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------|--|----------------------|------------------------|------------|------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DRAINAGE                                                                          |  |                      |                        |            |                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| BEACH CREEK CULVERT REPLACEMENT                                                   |  | 2024 Q4              | <div><div></div></div> | 10%        | 4,875,000<br>2,067,400 | 129,900    | Project is underway, completion expected late September or early October 2024. The project consultant has estimated approximately 1,250m3 of additional excavation is required to ensure the geotechnical stability of the culvert and road. The will result in additional costs however the projects is still anticipated to be within the approved budget provision.<br><br>\$192,400 was re-allocated to this project from the Bay Street Slope Stabilization project per Council Resolution 24-116 March 7, 2024 |
| GRANDON CREEK CONFLUENCE - ENGINEERING 2023 (2023 CARRY FORWARD)                  |  | 2024 Q4              | <div><div></div></div> | 10%        | 45,000                 | -          | Design commenced and anticipated to be complete by year end.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| BUILDINGS                                                                         |  |                      |                        |            |                        |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| BUS GARAGE SITE PLANNING, PUBLIC ENGAGEMENT & CONSTRUCTION (July 17 Staff Report) |  | Multiyear            | <div><div></div></div> | 5%         | 1,000,000              | 24,500     | Bus Garage Conceptual Plan on agenda for adoption on July 17, 2024. Next steps are detailed design and costing.                                                                                                                                                                                                                                                                                                                                                                                                      |
| CURLING CLUB CAPITAL IMPROVEMENTS                                                 |  | 2024 Q4              | <div><div></div></div> | 5%         | 45,500                 | 1,500      | Works planned for 2024 include Refresh of Washrooms in Lounge, Mechanical Room Upgrades, Equipment Room Addition, Safety Railing on Roof, Ventilation System Upgrades, Architectural work for equipment room addition and ventilation system upgrades in progress.                                                                                                                                                                                                                                                   |
| FACILITIES MAINTENANCE - TOWN OWNED FACILITIES                                    |  | 2024 Q4              | <div><div></div></div> | 5%         | 254,500                | 17,300     | Required and in progress facilities works include the Vector Truck Bay rebuild., Parks HVAC and electrical upgrade, civic centre internal lighting replacement and upgrade and repair of the Town Hall Clock.                                                                                                                                                                                                                                                                                                        |
| OPERATIONS MODERNIZATION                                                          |  | TBD                  | <div><div></div></div> | -          | 100,000                | -          | Delayed. Further preliminary site assessments for potential locations for an operations facility are needed before the town can issue an RFP for consultant work. As such no funds have been spent on this project.                                                                                                                                                                                                                                                                                                  |



Not Started



In Progress



Complete



Council Resolution Requested



# Capital Projects 2024 First & Second Quarter Update

| CAPITAL PROJECT                                                   |         | Estimated Completion                                                                  | Status | % Complete | 2024 Budget | 2024 Spent                                                                                                                                                                                                                                                                                                                                                                                                                                      | Q2 ACTIVITY and STATUS DETAILS |
|-------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------|--------|------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| PUBLIC WORKS YARD FUEL SYSTEM                                     | 2025 Q3 |    | -      | 280,000    | -           | The Public Works fuel system is used to provide gasoline and diesel fuel to the public works, parks, airport and firehall fleet. Replacement of the fuel system was budgeted in 2024 to include addressing capacity so that there is sufficient fuel to get through a multi-day emergency event. This project is being put on hold this year to reassess required fuel tank capacities, and will be brought forward in the 2025 budget process. |                                |
| PARKS & TRAILS                                                    |         |                                                                                       |        |            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |
| ACCESSIBILITY IMPROVEMENTS                                        | 2024 Q4 |    | 5%     | 50,000     | -           | Sidewalk nodes and improved wheelchair let downs to be installed this fall on Primrose at Fern. Design in progress.                                                                                                                                                                                                                                                                                                                             |                                |
| BEACH CREEK VIEWING PLATFORM/WALKWAY 2023 CARRY FORWARD FROM 2023 | 2024 Q4 |    | 80%    | 305,000    | 158,000     | Paint touch ups of beams and pilings in progress. Delay of railing fabrication and delivery continue. Railings anticipated to be completed late summer with a grand opening tentatively planned for Fall.                                                                                                                                                                                                                                       |                                |
| BEACH CREEK VIEWING PLATFORM/WALKWAY ESTUARY                      | 2024 Q4 |    | 40%    | 520,000    | 8,600       | Rock work component complete. Plantings and landscaping set to begin in August. Benches and interpretive signs for the viewing platform will be installed after the railings have been installed.                                                                                                                                                                                                                                               |                                |
| CHARTWELL ELECTRICAL KIOSK                                        | 2024 Q4 |  | 5%     | 20,000     | -           | Installation issued for late summer – purchase order issued.                                                                                                                                                                                                                                                                                                                                                                                    |                                |
| PEDESTRIAN BRIDGE - MEMORIAL GOLF COURSE                          | 2024 Q2 |  | 95%    | 700,000    | 615,900     | The Bridge is a Golf Club led Capital Project that is cost shared with the Town as the golf Course is a municipally owned property. Bridge construction is complete and the bridge is operational.                                                                                                                                                                                                                                              |                                |
| PICKLE BALL COURTS                                                | TBD     |  | -      | 170,000    | -           | Awaiting fund-raising of 50% of the cost by the community advocacy group. Latest costing by the community group indicates that the cost may be much higher than the \$170,000 original estimate, so the \$85,000 that Council funded to contribute to the cost will likely not cover 50% of the actual cost. This will be addressed in the 2025 Financial Plan Process.                                                                         |                                |



# Capital Projects 2024 First & Second Quarter Update

| CAPITAL PROJECT                                      |         | Estimated Completion   | Status                 | % Complete | 2024 Budget | 2024 Spent | Q2 ACTIVITY and STATUS DETAILS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------|---------|------------------------|------------------------|------------|-------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SAAHTLAM PARK HITCHING POST FENCE STYLE INSTALLATION | 2025 Q1 | <div><div></div></div> | <div><div></div></div> | 50%        | 20,000      | 12,700     | Bocce ball courts removed. After receipt of the Archaeological Site Alteration Permit, staff will also reconstruct the hitching post style fence over the winter.                                                                                                                                                                                                                                                                                                                                                                                                  |
| STREET BANNER REPLACEMENT                            | 2024 Q4 | <div><div></div></div> | <div><div></div></div> | -          | 30,000      | 30,000     | Scheduled for Fall, 2025.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| AIRPORT                                              |         |                        |                        |            |             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ASPHALT OVERLAY (ACAP)                               | 2025 Q4 | <div><div></div></div> | <div><div></div></div> | 100%       | 50,000      | 31,900     | Engineering consulting and grant application complete. ACAP application was submitted June 1 <sup>st</sup> . ACAP program has acknowledged receipt of application. Decision on funding will be announced April 2025. The 2024-2028 Financial Plan includes a \$1,950,000 budget provision in the year 2025. The anticipated cost and grant application is for \$3.6 million. The additional budget provision and grant funding requested will be reflected in a 2024-2028 Financial Plan Amendment in Q4 of 2024. This project is dependant on 100% grant funding. |
| AVGAS FUEL REPLACEMENT.                              | 2024 Q2 | <div><div></div></div> | <div><div></div></div> | 100%       | 425,000     | 420,800    | Replacement of the AV Gas fuel system is complete and the system is fully operational. The old fuel system has been removed and decommissioned.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CCTV REPLACEMENT. & NEW CCTV GATE ENTRANCE           | 2024 Q2 | <div><div></div></div> | <div><div></div></div> | 100%       | 33,000      | 19,700     | The legacy CCTV systems have been fully replaced by new CCTVs, which are now operational. The resolution of the CCTV footage has been greatly improved, enabling the Airport Manager to effectively address airport-related issues, complaints, safety/security concerns, and other operational needs.                                                                                                                                                                                                                                                             |
| LOADER/SNOWBLOWER/PLATES/BLADE                       | 2025 Q4 | <div><div></div></div> | <div><div></div></div> | -          | 898,000     | -          | ACAP application was submitted June 1 <sup>st</sup> . ACAP program has acknowledged receipt of application. Decision on funding is anticipated to be announced April 2025.                                                                                                                                                                                                                                                                                                                                                                                         |
| EQUIPMENT & VEHICLES                                 |         |                        |                        |            |             |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CCTV TOWN HALL PARKADE                               | 2024 Q4 | <div><div></div></div> | <div><div></div></div> | 80%        | 15,000      | 11,400     | Additional ethernet and power was wired to the Town Hall parking lot parkade and there are now 8 cameras in total for surveillance of the parking lot, supporting security and safety at the Town Hall parking lot.                                                                                                                                                                                                                                                                                                                                                |



Not Started

In Progress

Complete

Council Resolution Requested

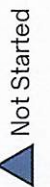
Capital Projects 2024 First & Second Quarter Update

| CAPITAL PROJECT                                            |          | Estimated Completion   | Status | % Complete | 2024 Budget | 2024 Spent                                                                                                                                                                                                                                              | Q2 ACTIVITY and STATUS DETAILS |
|------------------------------------------------------------|----------|------------------------|--------|------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| FIRE DEPT. COMMAND TRUCK REPLACEMENT (C50)                 | 2024 OCT | <div><div></div></div> | 20%    | 95,000     | -           | Trucks and emergency equipment were ordered with a late July 2024 delivery date. Emergency equipment installation is anticipated for August and September 2024, with an October 2024 in-service date.                                                   |                                |
| HYDRO VAC TRUCK REPLACEMENT (2023 CARRY FORWARD)           | 2024 Q2  | <div><div></div></div> | -      | 700,000    | -           | Delivery of the new truck anticipated in July/August 2024.                                                                                                                                                                                              |                                |
| NEW WELDING MACHINE FOR PW SHOP                            | 2024 Q2  | <div><div></div></div> | 100%   | 15,000     | 14,500      | Purchased and operational.                                                                                                                                                                                                                              |                                |
| OVERHEAD RAIL SYSTEM FOR PW SHOP                           | 2024 Q4  | <div><div></div></div> | 5%     | 10,000     | -           | Materials on order.                                                                                                                                                                                                                                     |                                |
| SERVER ROOM FIRE SUPPRESSION & COOLING SYSTEM INSTALLATION | 2024     | <div><div></div></div> | 25%    | 50,000     | -           | This project will see the relocation of the server room to a space adjacent to the Committee Room. Relocation of the server equipment is necessary to ensure sufficient fire suppression and temperature control. Planning and pricing are in progress. |                                |
| TECHNICAL RESCUE EQUIPMENT                                 | 2024 Q2  | <div><div></div></div> | 100%   | 15,000     | 13,000      | Equipment purchased and placed in-service in May of 2024.                                                                                                                                                                                               |                                |
| TOWN END OF SUPPORT NETWORK EQUIP. REPLACEMENT             | 2024 Q3  | <div><div></div></div> | 90%    | 40,000     | 20,300      | Eleven wireless access points (APs) and two network switches have been replaced. The only remaining item is the Community Hall Wireless AP, which is located at the top of the roof. Replacement anticipated this summer.                               |                                |



## Capital Projects 2024 First &amp; Second Quarter Update

| CAPITAL PROJECT                         |         | Estimated Completion                                                                  |      |         | Status | % Complete                                                                                                                                                                                                                                                                                                                 | 2024 Budget | 2024 Spent | Q2 ACTIVITY and STATUS DETAILS |
|-----------------------------------------|---------|---------------------------------------------------------------------------------------|------|---------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|--------------------------------|
| TOWN SERVER CLUSTER EXPANSION           | 2024 Q2 |    | 100% | 38,000  | 33,900 | Completed in May and running smoothly. The Town now has sufficient storage and RAM (memory) for important information systems hosted on the Town's server infrastructure. Every server can be backed up and running with good performance until the server replacement in 2026. The expansion unit can be used until 2028. |             |            |                                |
| SERVICE BODY (UNIT 113)                 | 2024 Q4 |    | -    | 21,000  | -      | Being priced.                                                                                                                                                                                                                                                                                                              |             |            |                                |
| UNIT 17 FORD F450 REPL. WITH HOOK TRUCK | 2024 Q4 |    | 10%  | 195,000 | -      | Ordered June 2024. Delivery expected this year.                                                                                                                                                                                                                                                                            |             |            |                                |
| TRAILER REPLACEMENT (UNIT #49)          | 2024 Q4 |    | 10%  | 13,000  | -      | Replacement ordered and is being fabricated.                                                                                                                                                                                                                                                                               |             |            |                                |
| CUBE VAN REPLACEMENT (UNIT #56)         | 2024 Q4 |    | 10%  | 85,000  | -      | Options being priced and replacement anticipated to be complete in 3 <sup>rd</sup> quarter.                                                                                                                                                                                                                                |             |            |                                |
| WILDLAND FIREFIGHTING SUPPRESSION UNIT  | 2024 Q2 |  | 100% | 40,000  | 5,700  | Wildland suppression unit was purchased and placed in-service in May 2024.                                                                                                                                                                                                                                                 |             |            |                                |
| CONTINGENCY                             |         |                                                                                       |      |         |        |                                                                                                                                                                                                                                                                                                                            |             |            |                                |
| GENERAL FUND CONTINGENCY                |         |                                                                                       |      | 100,000 | -      | For unanticipated events relating to capital works subject to Council decision-making..                                                                                                                                                                                                                                    |             |            |                                |
| WATER CAPITAL                           |         |                                                                                       |      |         |        |                                                                                                                                                                                                                                                                                                                            |             |            |                                |



Not Started



In Progress



Complete



Council Resolution Requested

## Capital Projects 2024 First &amp; Second Quarter Update

| CAPITAL PROJECT |                                                | Estimated Completion | Status                                                                                | % Complete | 2024 Budget | 2024 Spent | Q2 ACTIVITY and STATUS DETAILS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|------------------------------------------------|----------------------|---------------------------------------------------------------------------------------|------------|-------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ★               | BERWICK 5 WELL CONNECTION                      | 2024 Q4              |    | -          | 100,000     | -          | This provision is a placeholder for the engineering required to link the Berwick 5 well to the Town's water system as an additional production well. There is significant delay in receiving required permits from V/I-A which are required before proceeding. As a result of the delays, Staff recommend re-purposing this funding in 2024 to replace the 45-year-old pumps/motors and drop pipes in Berwick Well 2 & 3 instead and to complete this work late fall after the wells have been shut down for the season. The Berwick 5 Well Connection project will then be brought forward for approval in 2025. |
|                 | COMMUNITY SPORTS FIELD IRRIGATION BOOSTER PUMP | 2025 Q1              |    | 5%         | 65,000      | -          | Design underway. Installation planned for fall after the irrigation is turned off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                 | HYDRANT UPGRADES                               | 2024 Q4              |    | 10%        | 38,00       | 41,800     | Parts are on hand and scheduled for installation in 2024.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ★               | PUMP HOUSE ELECTRONICS HARDWARE UPGRADE        | 2024 Q4              |    | 75%        | 100,000     | 97,900     | Anticipated to be complete by year end. Costs for this project are anticipated to be \$140k. Staff recommend that the \$40k 2024 budget provision for a Spare Standby Pump for water wells be reallocated to address the anticipated cost in excess of the budget provision for this project.                                                                                                                                                                                                                                                                                                                     |
|                 | ABANDON AC MAIN 19A EAST OF CRESCENT RD WEST   | 2024 Q4              |   | 10%        | 75,000      | -          | Invitation for Tenders in progress for distribution.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | QUATNA RD WATERMAIN REPLACEMENT                | 2024 Q4              |  | 5%         | 150,000     | 2,000      | Tender awarded and watermain replacement is anticipated to be complete by Fall.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                 | RUPERT RD WATER LOOPING                        | 2024 Q4              |  | 5%         | 1,500,000   | 16,200     | Works commenced July 2nd and anticipated to be complete by late October, 2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



Not Started



In Progress



Complete



Council Resolution Requested



# Capital Projects 2024 First & Second Quarter Update

| CAPITAL PROJECT                    |   | Estimated Completion | Status      | % Complete | 2024 Budget | 2024 Spent | Q2 ACTIVITY and STATUS DETAILS                                                                                                                                                                                   |
|------------------------------------|---|----------------------|-------------|------------|-------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SPARE STANDBY PUMP FOR WATER WELLS | ★ | 2024 Q4              | ▲           |            | 40,000      | -          | Staff recommend that the budget provision for this project be repurposed to address the Pump House Electronics Hardware Upgrade Project for which costs are anticipated to be in excess of the budget provision. |
| STORZ FITTING ON HYDRANTS          |   | 2024 Q4              | <div></div> | 5%         | 38,000      | -          | Parts ordered, scheduled to be installed before year end.                                                                                                                                                        |
| WATER SYSTEM HARDWARE CONTROL      |   | 2024 Q4              | <div></div> | 75%        | 32,000      | -          | Parts assembled offsite – staff to install later this summer.                                                                                                                                                    |
| SEWER CAPITAL32.                   |   |                      |             |            |             |            |                                                                                                                                                                                                                  |
| HIGSON LIFT STATION                |   | 2024 Q3              | <div></div> | -          | 40,000      | 5%         | Scheduled to be completed by Fall, 2024.                                                                                                                                                                         |



Not Started



In Progress



Complete



Council Resolution Requested

**GENERAL FUND OPERATING PROGRAM  
2024 FIRST AND SECOND QUARTER UPDATE**

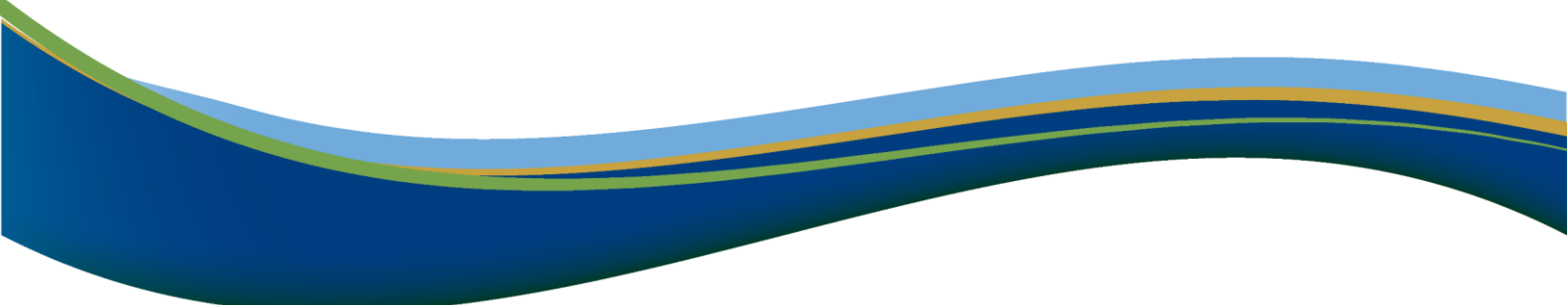
| GENERAL FUND REVENUE AND EXPENSE    | 2024<br>Budget      | 2024<br>Actual      | Remaining<br>Budget | %<br>Remaining | Comments                                                                                                                                                                                                                                                       |
|-------------------------------------|---------------------|---------------------|---------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Revenue</b>                      |                     |                     |                     |                |                                                                                                                                                                                                                                                                |
| Property Taxes                      | \$12,169,900        | \$12,120,100        | \$49,800            | 0%             | Property Tax Due Date was July 2, 2024. Actual property taxes levied were slightly lower than the budget provision, but were consistent with the details on page 30 of the Financial Plan which indicates a 7.7% increase in municipal property tax collected. |
| 1% In Lieu of Property Taxes        | \$390,000           | \$116,400           | \$273,600           | 70%            | The receipt of 1% in lieu is from utilities such as hydro, gas and fibre located on municipal property. This revenue is anticipated to be fully received by year end.                                                                                          |
| Library Levy                        | 715,300             | 715,200             | \$100               |                | The Library levy is collected on behalf of and remitted to Vancouver Island Regional Library.                                                                                                                                                                  |
| Parcel Taxes - Local Area Service   | 88,400              | 35,700              | \$52,700            | 60%            | The borrowing requirement for East Village Phase 2 was lower than budgeted as some of the parties paid their contribution to the project upfront, resulting in a lower parcel tax.                                                                             |
| Penalties and Interest              | 666,000             | 724,100             | -\$58,100           | -9%            | Interest revenue is favourable due to higher interest rates. Interest earned is allocated to the Reserves and Surplus on which it is earned.                                                                                                                   |
| Sale of Service and Other Revenue   | 530,400             | 354,200             | \$176,200           | 33%            | Building Permits, Business Licenses, Cemetery Services; revenue recorded as it is received.                                                                                                                                                                    |
| Rental and Lease Revenue            | 899,500             | 399,900             | \$499,600           | 56%            | Combination of annual and monthly lease payments. Annual payments are made at the beginning of the year.                                                                                                                                                       |
| Airport Fuel                        | 780,700             | 387,400             | \$393,300           | 50%            | Higher volume of fuel sold in the summer months. Anticipated to be on budget at year end.                                                                                                                                                                      |
| Solid Waste Revenue                 | 776,700             | 415,000             | \$361,700           | 47%            | Anticipated to be on budget at year end.                                                                                                                                                                                                                       |
| Government Grants and Contributions | 5,368,600           | 225,800             | \$5,142,800         | 96%            | This area is under budget due to the timing of receipt of grant funds and grant opportunities that were budgeted and applied for but for which confirmation has not yet been received.                                                                         |
| <b>Total Revenue</b>                | <b>\$22,385,500</b> | <b>\$15,493,800</b> | <b>\$6,891,700</b>  |                |                                                                                                                                                                                                                                                                |
| <b>Expenses</b>                     |                     |                     |                     |                |                                                                                                                                                                                                                                                                |
| Council and Office of the CAO       | \$723,600           | \$335,700           | \$387,900           | 54%            | Slightly under budget due to timing of operating project and conventions. Anticipated to be on budget at year end.                                                                                                                                             |
| Corporate Services                  | 1,258,200           | 537,300             | 720,900             | 57%            | Anticipated to be on budget at year end.                                                                                                                                                                                                                       |
| Community Development               | 1,076,400           | 504,400             | 572,000             | 53%            | More events occur in the summer. Anticipated to be on budget at year end.                                                                                                                                                                                      |
| Human Resources                     | 419,200             | 188,400             | 230,800             | 55%            | Projects and initiatives planned for Q3 & Q4, anticipated to be on budget at year end.                                                                                                                                                                         |
| Fiscal Services                     | -1,678,000 -        | 852,000 -           | 826,000             | 49%            | Relates to recovery of costs from water and sewer. Anticipated to be on budget at year end.                                                                                                                                                                    |
| Finance                             | 664,000             | 250,100             | 413,900             | 62%            | Staff vacancy in Q1 and Q2, anticipated to be on budget at year end.                                                                                                                                                                                           |
| Information Technology              | 938,100             | 454,300             | 483,800             | 52%            | Anticipated to be on budget at year end.                                                                                                                                                                                                                       |
| Police                              | 1,574,000           | 730,300             | 843,700             | 54%            | RCMP contract for 8 full time officers. One civic employee; Civilian disclosure clerk cost shared with City of Parksville.                                                                                                                                     |
| Fire Rescue                         | 1,333,000           | 642,800             | 690,200             | 52%            | Anticipated training and operations for Q1 & Q2 have occurred and remained on budget                                                                                                                                                                           |
| Emergency Planning Program          | 252,900             | 136,200             | 116,700             | 46%            | Over budget due to timing of projects. Anticipated to be on budget at year end.                                                                                                                                                                                |
| Planning & Development              | 854,700             | 351,600             | 503,100             | 59%            | Under budget due to unspent grant funds related to Bill 44, grant funds anticipated to be carried forward to 2025.                                                                                                                                             |
| Operations                          |                     |                     |                     |                |                                                                                                                                                                                                                                                                |
| Transportation Services             | 2,857,400           | 1,329,200           | 1,528,200           | 53%            | Trending slightly favourable to budget at this time. Anticipated to be on budget at year end.                                                                                                                                                                  |
| Airport                             | 1,125,200           | 458,200             | 667,000             | 59%            | Lower due to timing of airport fuel sales. Higher volume of fuel sold during the summer. Anticipated to be on budget at year end.                                                                                                                              |
| Parks                               | 1,601,600           | 605,300             | 996,300             | 62%            | Under budget due to staffing shortages. Existing staff are challenged but managing to maintain service levels. Temporary staff may be required.                                                                                                                |
| Buildings                           | 784,500             | 420,500             | 364,000             | 46%            | Over budget due to timing of maintenance and repair projects. Anticipated to be on budget at year end.                                                                                                                                                         |
| Solid Waste and Recycling           | 970,700             | 505,800             | 464,900             | 48%            | Regional waste costs paid to Regional District of Nanaimo and Solid Waste removal trending on budget.                                                                                                                                                          |
| Council Strategic Initiatives       | 637,700             | 282,600             | 355,100             | 56%            | Council Strategic Initiatives - Under separate report.                                                                                                                                                                                                         |
| Debt Servicing                      | 1,235,200           | 593,700             | 641,500             | 52%            | Debt for Firehall (debt retires 2025), Rescue Pumper Truck (debt retires 2027) and Ladder Truck (debt retires 2028).                                                                                                                                           |
| <b>Total Operating Expenses</b>     | <b>\$16,628,400</b> | <b>\$7,474,400</b>  | <b>\$9,154,000</b>  |                |                                                                                                                                                                                                                                                                |



**GENERAL FUND OPERATING PROGRAM  
2024 FIRST AND SECOND QUARTER UPDATE**

| WATER REVENUE AND EXPENSE                     | 2024<br>Budget     | 2024<br>Actual     | Remaining<br>Budget | %<br>Remaining | Comments                                                          |
|-----------------------------------------------|--------------------|--------------------|---------------------|----------------|-------------------------------------------------------------------|
| <b>Revenue</b>                                |                    |                    |                     |                |                                                                   |
| Water User Fees                               | \$1,754,100        | \$442,353          | \$1,311,747         | 75%            | Water user fee revenue to April 30. Next billing is October 2024. |
| Water Parcel Tax                              | 1,121,000          | 1,127,760          | (6,760)             | -1%            | Water parcel tax collected during property tax collection.        |
| Debt Servicing (General Fund to Water Fund)   | 85,000             | 85,000             | 0                   | 0%             | Transfer in from Water Infrastructure Reserve.                    |
| Transfer in from Water Infrastructure Reserve | 350,000            | 350,000            | 0                   | 0%             | Project related, transfer occurred at the beginning of the year.  |
| <b>Total Revenue</b>                          | <b>\$3,310,100</b> | <b>\$1,655,113</b> | <b>\$1,304,987</b>  |                |                                                                   |
| <b>Expenses</b>                               |                    |                    |                     |                |                                                                   |
| Water Operating                               | \$1,935,200        | \$840,500          | \$1,094,700         | 57%            | Water system maintenance plan is on budget.                       |
| Transfer to Water Infrastructure Reserve      | 1,024,900          | 512,500            | 512,400             | 50%            | Transfer to Water Infrastructure Reserve.                         |
| Transfer to General Fund (operating)          | 350,000            | 350,000            | -                   | 0%             | Project related, transfer occurred at the beginning of the year.  |
| <b>Total Operating Expenses</b>               | <b>\$3,310,100</b> | <b>\$1,703,000</b> | <b>\$1,607,100</b>  |                |                                                                   |

| SEWER REVENUE AND EXPENSE                | 2024<br>Budget     | 2024<br>Actual   | Remaining<br>Budget | %<br>Remaining | Comments                                                          |
|------------------------------------------|--------------------|------------------|---------------------|----------------|-------------------------------------------------------------------|
| <b>Revenue</b>                           |                    |                  |                     |                |                                                                   |
| Sewer User Fees                          | 751,700            | 272,800          | \$478,900           | 64%            | Sewer user fee revenue to April 30. Next billing is October 2024. |
| Sewer Parcel Tax                         | 262,000            | 263,000          | (1,000)             | 0%             | Sewer parcel tax collected during property tax collection.        |
| <b>Total Revenue</b>                     | <b>\$1,013,700</b> | <b>\$535,800</b> | <b>\$477,900</b>    |                |                                                                   |
| <b>Expenses</b>                          |                    |                  |                     |                |                                                                   |
| Sewer Operating                          | 819,200            | 360,600          | 458,600             | 56%            | Sewer system maintenance plan is on budget.                       |
| Transfer to Sewer Infrastructure Reserve | 194,500            | 97,300           | 97,200              | 50%            | Transfer to Sewer Infrastructure Reserve.                         |
| <b>Total Operating Expenses</b>          | <b>\$1,013,700</b> | <b>\$457,900</b> | <b>\$555,800</b>    |                |                                                                   |



## TOWN OF QUALICUM BEACH

### STAFF REPORT

**TO:** Lou Varela, Chief Administrative Officer

**FOR:** Regular Council Meeting

**DATE:** July 17, 2024

**FROM:** Luke Sales, Director of Planning

**SUBJECT:** Special Event Approval – Chartwell Day

---

#### RECOMMENDATION

1. THAT the following special event be approved in principle, subject to event organizers working with Town staff to ensure Town requirements are met:
    - a. Chartwell Day, September 7, 2024 (Miraloma Park)
- 

#### PURPOSE

Staff are seeking Council approval for “Chartwell Day” Special Event on September 7, 2024.

#### BACKGROUND

The Chartwell Residents’ Association has requested authorization from the Town of Qualicum Beach to facilitate a special event:

##### CHARTWELL DAY (September 7, 2024)

**Public Access**

- Non-exclusive use of Miraloma Park.

**Closures:**

(e.g. roads, sidewalks,  
public park land, etc.)

**Staff Services:**

- Consultation with staff to ensure Town requirements are met.
- Event set up and tear down (Town items only, e.g. delivery and pick up of waste bins, signs, barricades, etc.)
- Additional collection of waste after the event.

**Use of Town Items:**

- Barricades x 10
- Garbage, recycling, and compost bins (quantity to be determined)
- Event in Progress signs x 4

\* A mobile food vendor will be onsite during the event [subject to Island Health approval].

## FINANCIAL IMPLICATIONS

There are minimal financial implications anticipated from this report.

## PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)

*Public Participation Framework developed by the International Association for Public Participation – IAP<sup>2</sup> International.*

| INFORM                                                                                                                                                                | CONSULT                                                                                                         | INVOLVE                                                                                                                                              | COLLABORATE                                                                                                                                                                          | EMPOWER                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Obtain feedback on analysis, alternatives, and/or decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li> </ul> | <ul style="list-style-type: none"> <li>• Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Final decision making in the hands of the stakeholders</li> </ul> |

### INFORM:

- The public will be informed of Council's decision by resolution and the Chartwell Residents' Association will be advised accordingly.

## STRATEGIC PLAN ALIGNMENT

Good Governance

## ALTERNATIVE OPTIONS

1. Alternative direction to staff.

## APPROVALS

Report respectfully submitted by Luke Sales, Director of Planning.



\_\_\_\_\_  
 Luke Sales, MCIP, RPP  
 Director of Planning  
 Report Writer



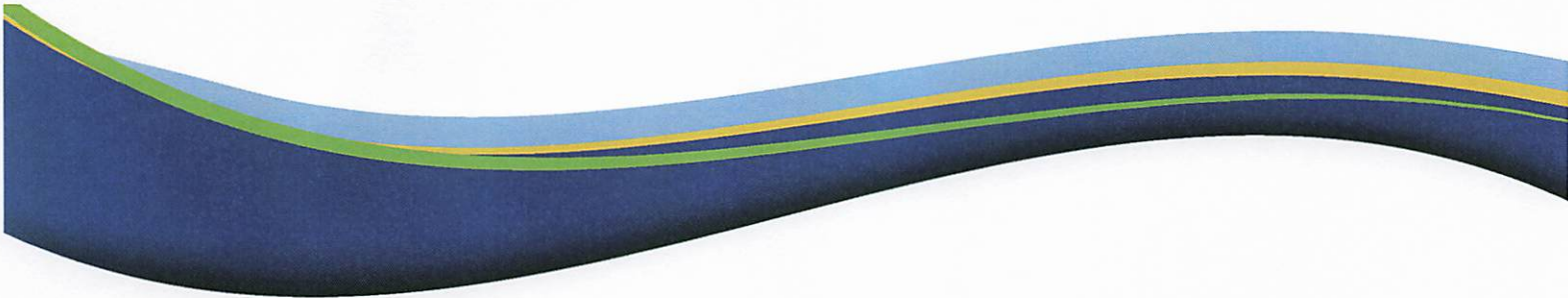
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 Lou Varela, MCIP, RPP  
 CAO  
 Concurrence

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## TOWN OF QUALICUM BEACH STAFF REPORT

**TO:** Luke Sales, Director of Planning

**FOR:** Regular Council Meeting

**DATE:** July 17, 2024

**FROM:** Rebecca Augustyn, Senior Planner

**SUBJECT:** Development Variance Permit: 119 Fern Road East

---

### RECOMMENDATIONS:

THAT Council directs staff to fulfill statutory notification requirements for Council's consideration of issuance of a Development Variance Permit for 119 Fern Road East at a future meeting of Council.

---

### PURPOSE

To consider a Development Variance Permit for the property located at 119 Fern Road East that would vary the font size of a proposed fascia sign.

### BACKGROUND

A Development Variance Permit has been requested for 119 Fern Road East. Development Variance Permits are often used to vary height or setback requirements, and the same process applies to signs that are not permitted by the "Town of Qualicum Beach Sign Bylaw No. 553, 1995". The applicant for 119 Fern Road East is proposing a fascia sign that has a font size of approximately 400mm, which is 200mm taller than the maximum font size of 200mm. The property is located in the light industrial portion of Qualicum Beach's uptown area.

In 2019, a Development Variance Permit application was made for 119 Fern Road East. At that time, the application was for an illuminated fascia sign that was 5.5m<sup>2</sup> with a font size of 900mm. The application, as presented to Council, was refused at that time. A revised application was made and went before Council on December 6, 2024. The application was for an illuminated fascia sign that was 3.47m<sup>2</sup> with a font size of 830mm. Council passed the following motion in response to the revised application:

- THAT staff be directed to work with the proponent for the Development Variance Permit for 119 Fern Road East to provide guidance on a more appropriate variance application.

A revised application has since been submitted by the applicant. The proposed sign is an illuminated fascia sign that is 0.77m<sup>2</sup> with a font size of 400mm. The area of the sign is within the Town's Sign Bylaw; however, the font size is 200mm taller than what is permitted in the Bylaw.



Figure 1: Subject Property

## DISCUSSION

The Sign Bylaw specifies that businesses with a road frontage over 16m are permitted to have a fascia sign that has a maximum sign area of 2.5m<sup>2</sup> and a maximum font size of 200mm. The Development Variance Permit application for 119 Fern Road East proposes a fascia sign that is approximately 0.77m<sup>2</sup> with a font size of 400mm.

|                   | Permitted | Proposed | Required Variance |
|-------------------|-----------|----------|-------------------|
| Maximum font size | 200mm     | 400mm    | 200mm             |

## FINANCIAL IMPLICATIONS

There are no financial implications anticipated from this report.

## PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)

| INFORM                                                                                                                                                              | CONSULT                                                                                                       | INVOLVE                                                                                                                                            | COLLABORATE                                                                                                                                                                        | EMPOWER                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li> </ul> | <ul style="list-style-type: none"> <li>Obtain feedback on analysis, alternatives, and/or decisions</li> </ul> | <ul style="list-style-type: none"> <li>Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li> </ul> | <ul style="list-style-type: none"> <li>Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li> </ul> | <ul style="list-style-type: none"> <li>Final decision making in the hands of the stakeholders</li> </ul> |

Public Participation Framework developed by the International Association for Public Participation – IAP<sup>2</sup> International.



**INFORM:**

- Notice of the Town's intention to issue a Development Variance Permit shall be delivered at least 10 days prior to adoption of a resolution to issue the permit, to the owners and/or tenants of any parcel within 100m of the subject property of the proposed permit.

**STRATEGIC PLAN ALIGNMENT**

N/A

**SUMMARY**

A Development Variance Permit application has been received for 119 Fern Road E. The proposed variance for 119 Fern Road E would vary the maximum font size from 200mm to 400mm [fascia sign]. Staff recommend Council authorize staff to issue statutory notification for future consideration of the Development Variance Permit.

**ALTERNATIVE OPTIONS**

1. Refuse the Development Variance Permit for 119 Fern Road East.
2. Provide alternative direction to staff.

**APPROVALS**

Report respectfully submitted by Rebecca Augustyn, MCIP, RPP Senior Planner.



Rebecca Augustyn, MCIP, RPP  
Senior Planner  
*Report Writer*



Luke Sales  
Director of Planning  
*Concurrence*

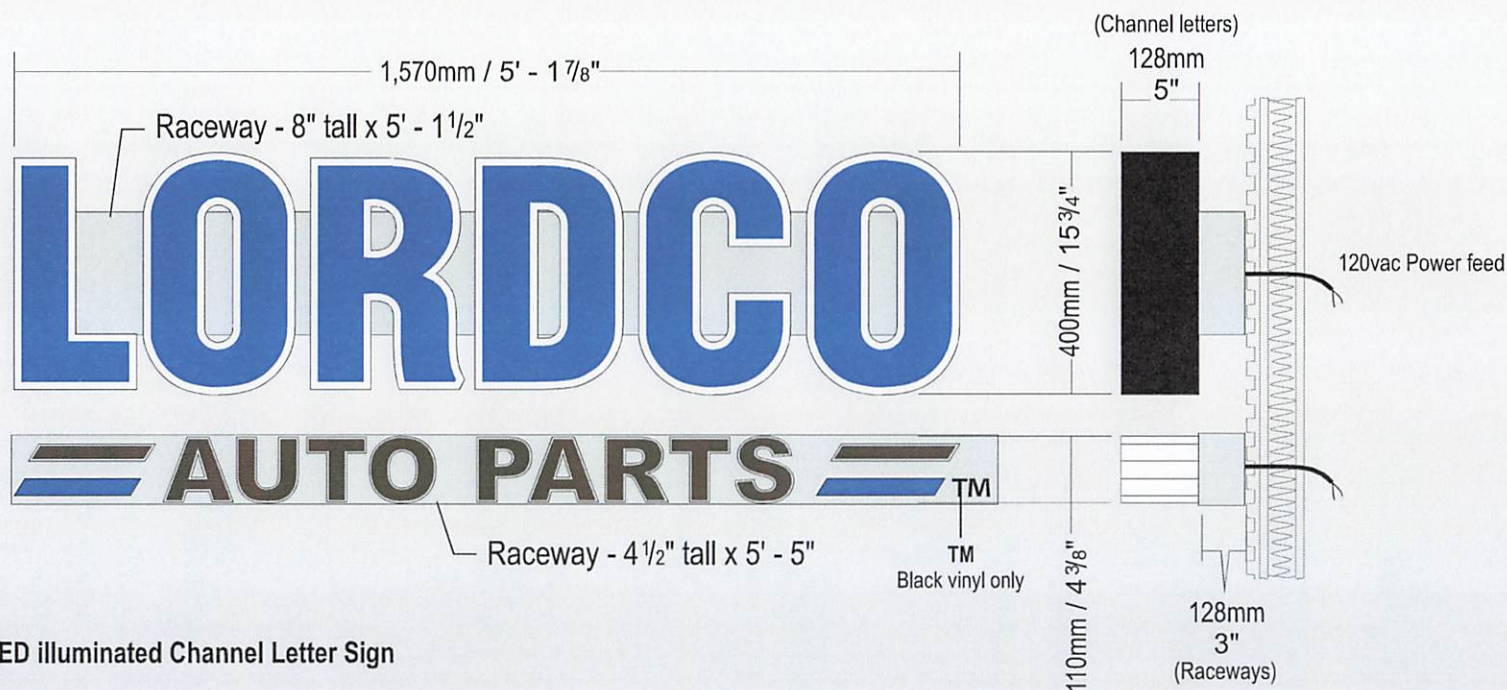


Lou Varela, MCIP, RPP  
CAO  
*Concurrence*

**REFERENCES**

Attachment 1: Submitted Plans for 119 Fern Road East Application

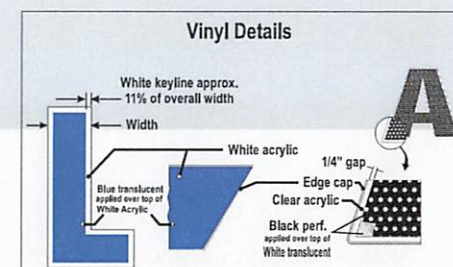
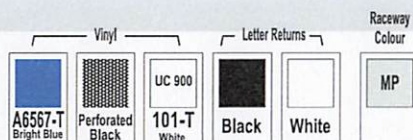
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### A LED illuminated Channel Letter Sign

ONE set of LED illuminated channel letters.

- 3/16" thick, white translucent acrylic faces with blue translucent & black perforated vinyl.
- 5" deep aluminum returns - **LORDCO** to have **Black returns**
- **Auto Parts & Bars** to have **White returns**.
- All channel letters mounted to 3" deep, aluminum raceways. Raceways painted to match colour of wall.
- The **TM** to be non-illuminated Black vinyl applied to face of backer panel.

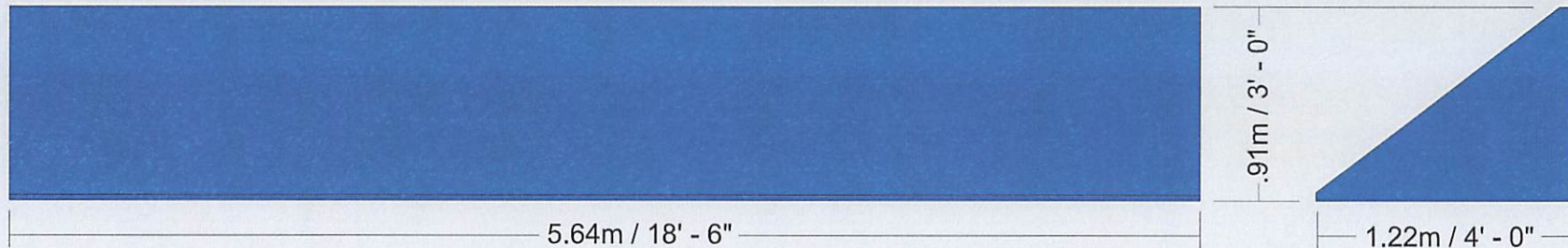


THE DESIGN SHOWN, IS THE SOLE PROPERTY OF LANDMARK SIGN, AND MAY NOT BE REPRODUCED IN WHOLE OR PART, WITHOUT WRITTEN CONSENT FROM LANDMARK SIGN.

|                                                                                                                                                                                                                                                                                                             |                                                                                                               |                                                                                                                                                                                         |                                                                            |                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  <p>SALES • SERVICE • LEASING</p> <p>Head Office: 1250 Glenshire Dr Victoria BC V9C3W7 250-478-8610<br/>Vancouver: Unit 400-6165 Hwy 17A Ladner BC V4K5B8 604-518-7578<br/>Toll Free 1-866-478-8610 Fax 250-478-8631</p> | <p><b>Client Name</b><br/>LORDCO</p> <p><b>Location:</b><br/>119 Fern Rd. East.,<br/>Qualicum Beach, B.C.</p> | <p><b>Start Date:</b> Sept. 20 / 2023<br/><b>Last Revision:</b> Dec. 8 / 2023<br/><b>Drawing#:</b><br/>LORDCO / Qualicum / Front Sign &amp; Canopy R3 . cdr<br/><b>Page:</b> 1 of 4</p> | <p><b>Corporate Approval</b> _____</p> <p><b>Client Approval</b> _____</p> | <p><b>Sales Rep:</b><br/>Ryan Shepherd</p> <p><b>Designer:</b><br/>Weldon Kidson</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|







- B** **ONE** non-illuminated fabric awning with an aluminum frame.
- Awning colour to match LORDCO blue.
  - Awning to replace the existing.

Vinyl



#### EXISTING SITE



THE DESIGN SHOWN, IS THE SOLE PROPERTY OF LANDMARK SIGN, AND MAY NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT FROM LANDMARK SIGN.

**Landmark Sign**  
SALES • SERVICE • LEASING

Head Office: 1250 Glenshire Dr Victoria BC V9C3W7 250-478-8610  
Vancouver: Unit 400-6165 Hwy 17A Ladner BC V4K5B8 604-518-7578  
Toll Free 1-866-478-8610 Fax 250-478-8631

**Client Name**  
LORDCO

**Location:**  
119 Fern Rd. East.,  
Qualicum Beach, B.C.

**Start Date:** Sept. 20 / 2023

**Last Revision:** Dec. 8 / 2023

**Drawing#:**

**LORDCO / Qualicum / Front Sign & Canopy R3 . cdr**

**Page:** 2 of 4

Corporate Approval \_\_\_\_\_

Client Approval \_\_\_\_\_



**Sales Rep:**  
Ryan Shepherd

**Designer:**  
Weldon Kidson





THE DESIGN SHOWN, IS THE SOLE PROPERTY OF LANDMARK SIGN, AND MAY NOT BE REPRODUCED IN WHOLE OR PART, WITHOUT WRITTEN CONSENT FROM LANDMARK SIGN.

|                                                                                                                                                                                                                                                                                                               |                                                                                                              |                                                                                                                                                                                             |                                                                            |                                                                                     |
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|  <p>SALES • SERVICE • LEASING</p> <p>Head Office: 1250 Glenshire Dr Victoria BC V9C3W7 250-478-8610<br/> Vancouver: Unit 400-6165 Hwy 17A Ladner BC V4K5B8 604-518-7578<br/> Toll Free 1-866-478-8610 Fax 250-478-8631</p> | <p><b>Client Name</b><br/>LORDCO</p> <p><b>Location:</b><br/>119 Fern Rd. East,<br/>Qualicum Beach, B.C.</p> | <p><b>Start Date:</b> Sept. 20 / 2023<br/> <b>Last Revision:</b> Dec. 8 / 2023<br/> <b>Drawing#:</b><br/> LORDCO / Qualicum / Front Sign &amp; Canopy R3 . cdr<br/> <b>Page:</b> 3 of 4</p> | <p><b>Corporate Approval</b> _____</p> <p><b>Client Approval</b> _____</p> | <p><b>Sales Rep:</b><br/>Ryan Shepherd</p> <p><b>Designer:</b><br/>Wendy Kidson</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------|







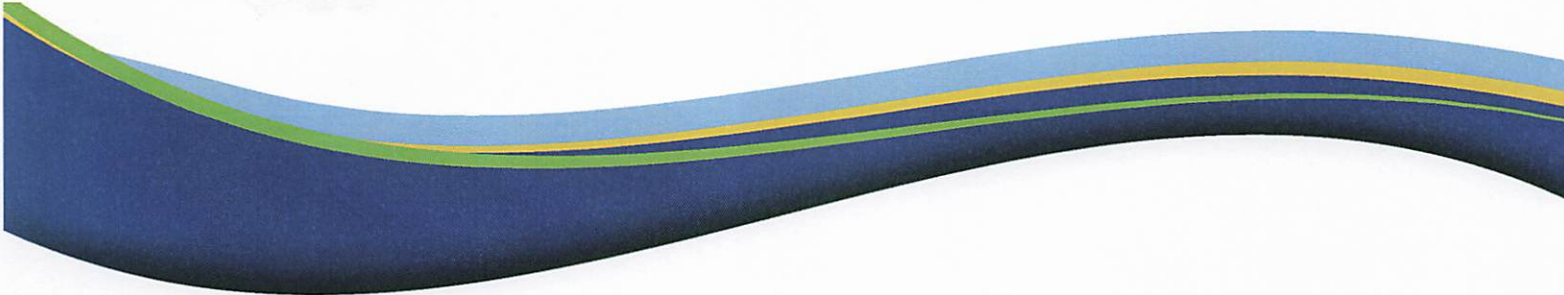
THE DESIGN SHOWN, IS THE SOLE PROPERTY OF LANDMARK SIGN, AND MAY NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT FROM LANDMARK SIGN.

|                                                                                                                                                                                                                                                                                                                                      |                                                                                                               |                                                                                                                                                                                         |                                                                            |                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  <p><b>Landmark Sign</b><br/>SALES • SERVICE • LEASING</p> <p>Head Office: 1250 Glenshire Dr Victoria BC V9C3W7 250-478-8610<br/>Vancouver: Unit 400-6165 Hwy 17A Ladner BC V4K5B8 604-518-7578<br/>Toll Free 1-866-478-8610 Fax 250-478-8631</p> | <p><b>Client Name</b><br/>LORDCO</p> <p><b>Location:</b><br/>119 Fern Rd. East.,<br/>Qualicum Beach, B.C.</p> | <p><b>Start Date:</b> Sept. 20 / 2023<br/><b>Last Revision:</b> Dec. 8 / 2023<br/><b>Drawing#:</b><br/>LORDCO / Qualicum / Front Sign &amp; Canopy R3 . cdr<br/><b>Page:</b> 4 of 4</p> | <p><b>Corporate Approval</b> _____</p> <p><b>Client Approval</b> _____</p> | <p><b>Sales Rep:</b><br/>Ryan Shepherd</p> <p><b>Designer:</b><br/>Wenden Kidson</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|



|                          | Length | Width | Sign Area          |
|--------------------------|--------|-------|--------------------|
| Old Sign - LORDCO        | 3.3m   | 1.2m  | 2.74m <sup>2</sup> |
| New Sign - LORDCO        | 1.5m   | 0.40m | 0.60m <sup>2</sup> |
|                          |        |       |                    |
| Old Sign - Auto Parts    | 3.3m   | 0.22m | 0.73m <sup>2</sup> |
| Old Sign - Auto Parts    | 1.5m   | 0.11m | 0.17m <sup>2</sup> |
|                          |        |       |                    |
| Old Signs - Total Area   |        |       | 3.47m <sup>2</sup> |
| New Signs - Total Area   |        |       | 0.77m <sup>2</sup> |
|                          |        |       |                    |
| No Changes to the Awning |        |       |                    |





## TOWN OF QUALICUM BEACH

### STAFF REPORT

**TO:** Luke Sales, Director of Planning

**FOR:** Regular Council Meeting

**DATE:** July 17, 2024

**FROM:** Rebecca Augustyn, Senior Planner

**SUBJECT:** Official Community Plan (OCP) & Zoning Amendments  
1085 Ravensbourne Lane

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#### RECOMMENDATIONS:

1. THAT Council directs staff to refer the OCP amendment application for 1085 Ravensbourne Lane to the 2025 Official Community Plan (OCP) Review for discussion, as detailed in the July 17, 2024 Planning memo to Council.
  2. THAT Council directs staff to postpone consideration of the zoning amendment application for 1085 Ravensbourne Lane following the conclusion of the 2025 Official Community Plan (OCP) Review.
- 

#### PURPOSE

To consider a zoning amendment and Official Community Plan (OCP) Amendment for 1085 Ravensbourne Lane that would facilitate the subdivision of the land into 29 parcels, with a mix of detached dwellings, duplexes and triplexes. A total of 46 units are proposed for the 29 parcels.

#### BACKGROUND

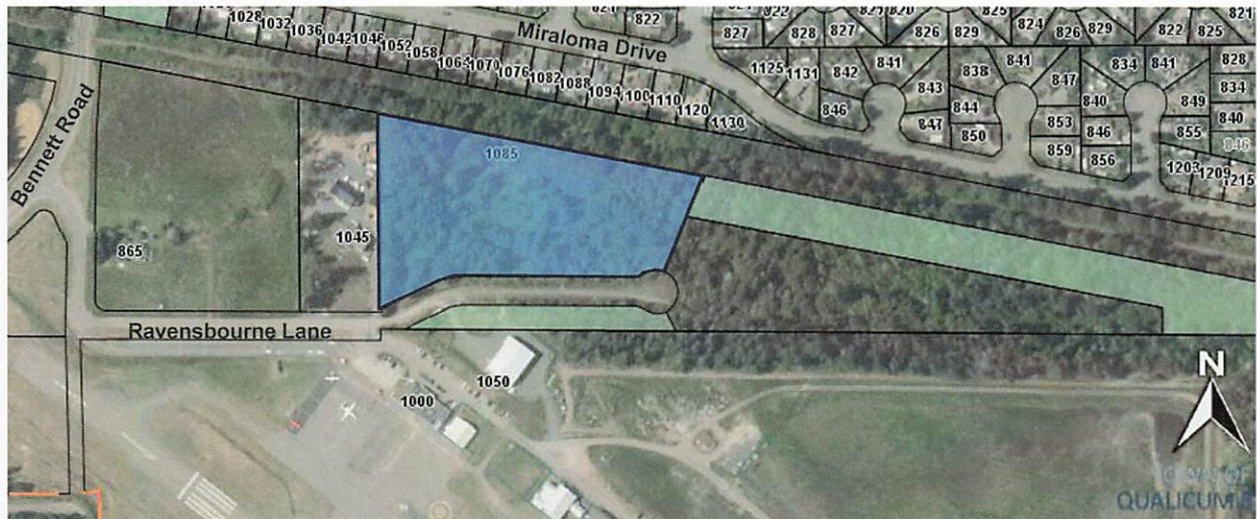
A zoning amendment and OCP amendment application has been made for 1085 Ravensbourne Lane. The applicant is proposing to subdivide the parcel into 29 parcels, with a total of 46 units being proposed and includes 15 single detached dwellings, 11 duplexes and three triplexes. The subject property is currently zoned Rural 1 (A1) and is designated as Rural in the OCP. The proposed residential project necessitates amendments to the Official Community Plan (OCP). Specifically, an OCP amendment is needed to:

1. Alter the property's designation from Rural to Single-family Residential.
2. Expand the Urban Containment Boundary to encompass the subject property.

The subject property is currently zoned Rural 1 (A1). The zoning amendment will amend the zoning classification from Rural 1 (A1) to Comprehensive Development Zone 22 (CD22). The CD22 zone would be a new, site-specific zone created in response to this application. No existing residential zones can accommodate the density and setbacks of the proposed development so a site-specific



zone would be required. As well, the zoning amendment bylaw would change the Subdivision District from Subdivision District "A" to Subdivision District "K". Subdivision District "A" has a minimum parcel size of 20.0 ha whereas Subdivision "K" has a minimum parcel size of 400m<sup>2</sup>. By changing the Subdivision District, an application to subdivide the parcel into 29 individual parcels will be able to move forward.



**Figure 1: Subject Property**

## DISCUSSION

The following table is a comparison of the existing and proposed zoning designation, as well as the actual building proposal.

| Zoning Provision             | Zoning Comparison                                       |                                                                                                                     |
|------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|                              | Existing                                                | Proposed Zoning                                                                                                     |
| <b>Zoning</b>                | Rural 1 (A1)                                            | Comprehensive Development Zone 22 (CD22)                                                                            |
| <b>Density</b>               | 1 detached dwelling unit and 1 ancillary dwelling unit. | 29 parcels that contain 15 detached dwellings, 11 duplexes and 3 triplexes                                          |
| <b>Height</b>                | 9.0m                                                    | The maximum height identified in their preferred zone, Small Lot Residential 1 (SLR1) is 9.0m                       |
| <b>Front Setback</b>         | 15.0m                                                   | To building face: 4.0m<br>To garage: 6.0m                                                                           |
| <b>Interior Side Setback</b> | 7.5m                                                    | 1.5m                                                                                                                |
| <b>Rear Setback</b>          | 7.5m                                                    | 3.0m                                                                                                                |
| <b>Parcel Coverage</b>       | 20%                                                     | Parcel coverage has not been provided. The maximum parcel coverage identified in the preferred zone of SLR1 is 45%. |
| <b>Parking (off-street)</b>  | 1 space per dwelling unit                               | 1 space per dwelling unit                                                                                           |



### 2018 Official Community Plan (OCP):

The subject property is currently designated as Rural in the 2018 Official Community Plan (OCP). However, many Rural policies are not applicable to this parcel because:

1. It is not within the Agricultural Land Reserve
2. It is not specifically identified within the existing Rural policies

Of the Rural policies that do apply to the property, there are numerous conflicts and therefore an OCP amendment would be necessary to advance this proposal. The proposed amendment would change the property's designation from Rural to Single-family Residential, aligning it with the proposed development.

There has been past discussion about potential residential development adjacent to the Airport. From the perspective of addressing the ongoing availability and affordability of housing, such development could be advantageous. However, it is important to note that the Town has policies supporting the ongoing operation and long-term viability of the Qualicum Beach Airport. Developing residential housing close to the Airport is not considered a best practice for airport operations, as it will likely generate noise complaints and land use conflicts. The merits of these two competing policy interests will have to be weighed by Council in the future. There may be opportunities to mitigate the future conflict between these two land uses, such as design considerations, construction requirements, notice on title and legal agreements. Should this project proceed, staff would recommend a detailed exploration of these options as part of a zoning amendment process.

As part of the application, two different site plans have been submitted, as well as an arborist report. Additional information is required for this application to move forward, including but not limited to: existing site plan, planning analysis, floor plans, elevation drawings, perspective drawings, landscape plan, and stormwater management plan. Staff are bringing the application before Council prior to requesting additional documents to receive direction from Council given the upcoming OCP Review occurring in 2025.

Staff recommend the application be referred to the 2025 OCP Review process for discussion on the land use change, as consideration of a site-specific OCP amendment immediately prior to a more comprehensive OCP Review would be a duplication of effects and potentially confusing for residents. Housing will be a major discussion topic during the 2025 OCP Review, and this proposal could be considered at that time.

### FINANCIAL IMPLICATIONS

There are no financial implications anticipated from this report.

### PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)

| INFORM                                                                                                                                                                | CONSULT                                                                                                         | INVOLVE                                                                                                                                              | COLLABORATE                                                                                                                                                                          | EMPOWER                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Obtain feedback on analysis, alternatives, and/or decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li> </ul> | <ul style="list-style-type: none"> <li>• Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Final decision making in the hands of the stakeholders</li> </ul> |

*Public Participation Framework developed by the International Association for Public Participation – IAP<sup>2</sup> International.*

**CONSULT / INFORM:**

- The public is informed of this proposal through the presentation of this staff report.
- Amending the Official Community Plan requires public consultation, at minimum at the “Consult” level.

**STRATEGIC PLAN ALIGNMENT**

Good Governance.

**SUMMARY**

An application has been received for a zoning amendment and OCP amendment for 1085 Ravensbourne Lane that would facilitate the subdivision of the parcel into 29 parcels, with a mix of detached dwellings, duplexes or triplexes. A total of 46 units, 15 single-family dwellings, 11 duplexes and three triplexes, are proposed. The zoning amendment would amend the zoning from Rural 1 (A1) to Comprehensive Development Zone 22 (CD22), and the Subdivision District from Subdivision District “A” to Subdivision District “K”. An OCP amendment is also required to amend the land use designation from Rural to Single-family Residential. The application is in the initial stages and additional information will be required should Council decide to move forward with the application. At this time, staff recommend the application be referred to the 2025 OCP Review for further discussion regarding the benefits and risks of residential development near the airport.

**ALTERNATIVE OPTIONS**

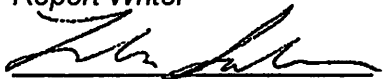
1. THAT additional information be requested from the applicant for the Official Community Plan (OCP) & Zoning Amendments for 1085 Ravensbourne Lane as required for a complete application; AND FURTHER THAT, staff be directed to present a revised application for 1085 Ravensbourne Lane at a future Committee of the Whole Meeting.
2. Provide alternative direction to staff.

**APPROVALS**

Report respectfully submitted by Rebecca Augustyn, MCIP, RPP Senior Planner.



Rebecca Augustyn, MCIP, RPP  
Senior Planner  
Report Writer



Luke Sales  
Director of Planning  
Concurrence



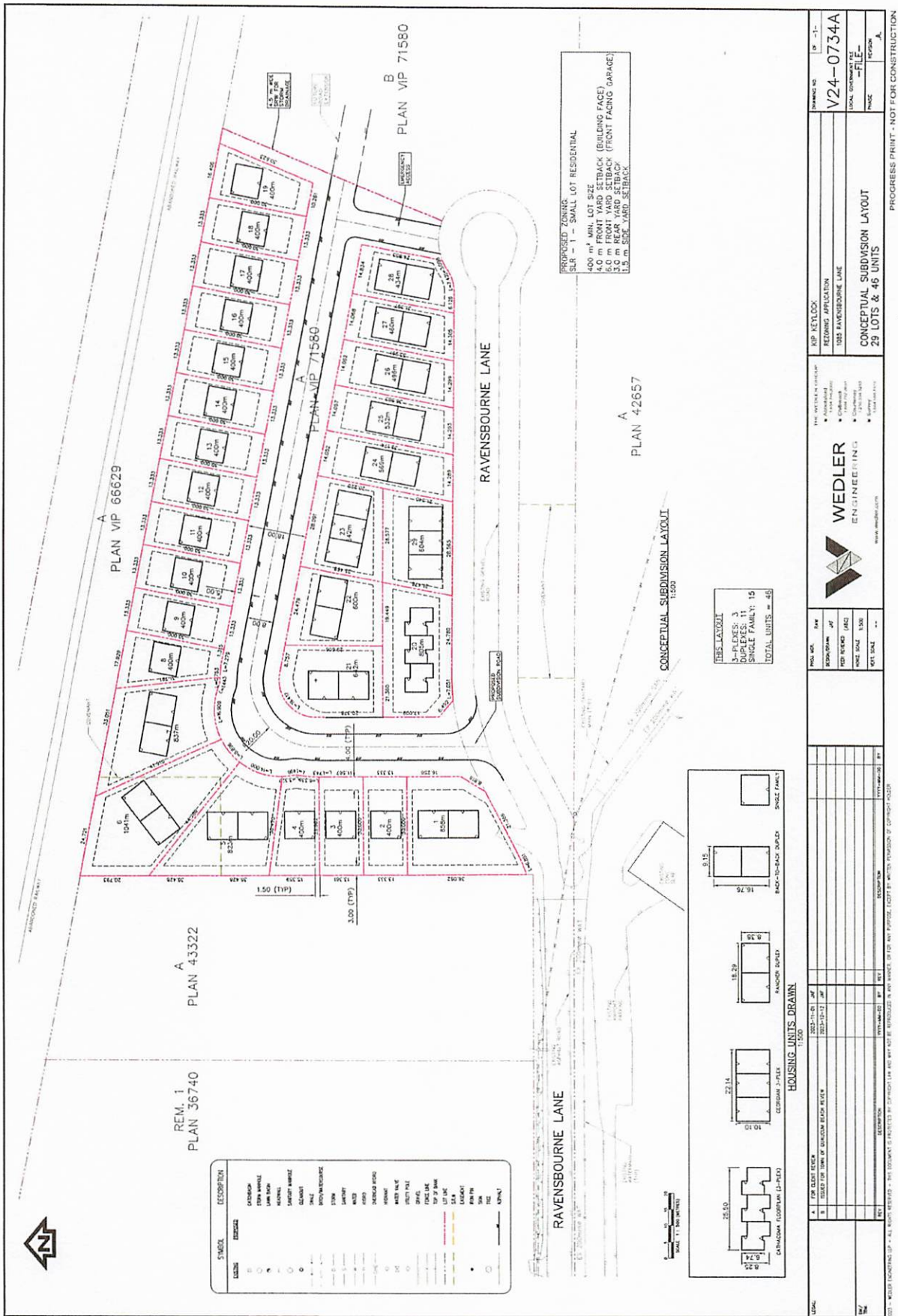
Lou Varela, MCIP, RPP  
CAO  
Concurrence

**REFERENCES**

Attachment 1: Submitted Plans for 1085 Ravensbourne Lane

File: 3030-20-DAICG-1085 Ravensbourne  
N:\0100-0699 ADMINISTRATION\0550 COUNCIL MEETINGS\0550-20 MEETINGS\2024\07 17 RC\2. DRAFTS FOR CAO  
REVIEW\memo.PLAN.1085RavensbourneLane.docx





**Attachment No. 1**  
**Staff Report to Council**  
**OCP & Zoning Amendments**  
**1085 Ravensbourne Lane**





# Arboricultural Inventory and Report

**For:**  
Kip Keylock  
Ocean Estates Developments

**Site Location:**  
1085 Ravensbourne Ln  
Qualicum Beach, BC  
V9K 1N1



424 – 775 Terminal Ave N, Nanaimo BC V9S 0B4  
T:604-838-8923 E:lemurtreebc@gmail.com

---

**Submitted to:**  
Kip Keylock  
Ocean Estates Developments  
9422 Martin Park Drive  
Black Creek, BC V9N 1C3

**Date: June 24, 2024**

**Submitted by:**

A handwritten signature in black ink, appearing to read "Liam Robertson".

Liam Robertson  
Owner/Operator, Lemur Tree Service  
ISA Certified Arborist # PN-8398A  
ISA Tree Risk Assessment Qualified  
Wildlife Dangerous Tree Assessor # P3210

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# 1.0 Introduction

This report has been prepared to ensure the proposed development is compliant with the Town of Qualicum Beach Tree Protection Bylaw No. 725. Trees over 30cm in diameter at breast height were assessed, including: species, diameter at breast height (dbh) measured to the nearest 1 cm at 1.4 m above natural grade (tree's base), estimated height and general health and defects. Critical root zones were calculated for each of the trees with the potential for development impacts. Tree hazards were assessed according to International Society of Arboriculture and WCB standards. Suitability for tree retention was evaluated based on the health of the trees and their location in relation to the proposed building envelopes and infrastructure. This report outlines the existing condition of the trees on and adjacent to the property, summarises the proposed tree removals and retention trees as well as suggested guidelines for protecting the remaining trees during the construction process.

## 1.1 Limits of Assignment

- Our investigation is based solely on visual inspection of the trees during our last site visit. This inspection is conducted from ground level. We do not conduct aerial inspections, soil tests or below grade root examinations to assess the condition of tree root systems unless specifically contracted to do so.
- Unless otherwise stated, tree risk assessments in this report are limited to trees with a high or extreme risk rating in their current condition, and in context of their surrounding land use at the time of assessment.
- The scope of work is primarily determined by site boundaries and local tree-related bylaws. Only trees specified in the scope of work were assessed.
- Beyond six months from the date of this report, the client must contact Lemur Tree Service to confirm its validity because site base plans and tree conditions may change beyond the original report's scope. Additional site visits and report revisions may be required after this point to ensure report accuracy for the municipality's development permit application process.



## 1.2 Report Objective

This report has been prepared to ensure the proposed development is compliant with the Town of Qualicum Beach Tree Protection Bylaw No. 725. The definition of a Protected Tree in Bylaw No. 725 is as follows:

- a) the following Tree species 50 centimetres (20inches) or more in height, or 5 centimetres (2inches) or more in diameter when measured 15 cm (6 inches) above natural grade:
  - i. Arbutus(Arbutus menziesii);
  - ii. Garry Oak (Quercus garryana);
  - iii. Pacific Dogwood (Cornus nuttallii);
  - iv. Pacific Yew (Taxus brevifolia);
  - v. Cascara (Rhamnus purshiana);
  - vi. Manzanita (Arcotostaphylos columbiana);
  - vii. Seaside Juniper (Juniperus maritima);
  - viii. Trembling Aspen (Populus tremuloides);
  - ix. Oregon Ash (Fraxinus latifolia);
- b) any Tree having a DBH that is 30 centimetres (12inches) or more;
- c) any Replacement Tree planted as a condition of a prior permit;
- d) any Tree within an Environmental or Hazard Development Permit Area as designated in "Town of Qualicum Beach Official Community Plan Bylaw No. 800";
- e) any Tree planted or retained as a requirement of a subdivision application, Development Permit or Building Permit;
- f) any Tree with evidence of a nest or use by:
  - i. raptors as defined in the Wildlife Act, R.S.B.C. 1996, c. 488;
  - ii. osprey; or
  - iii. a heron colony
  - iv. any cavity-nesting bird species

## 2.0 Observations

### 2.1 Site Overview

The site is a 2.01 hectare partially forested lot. There is an existing shop with concrete foundation near the Northwest corner of the lot. The lot is accessed from Ravensbourne Ln via an old driveway, which leads to the previously cleared area of the lot. The trees on this site are mostly Douglas-fir (*Pseudotsuga menziesii*) & Western Redcedar (*Thuja plicata*). Red Alder (*Alnus rubra*) and Scouler's Willow (*Salix scouleriana*) form a very small component of the forest on the site. There are a few trees planted in the cleared area of the property, these consist of mostly small fruit trees.

### 2.2 Tree Inventory

The following is an inventory of assessed trees, each of which is identified on the accompanying map. Tree species, characteristics, comments, recommendations and required Tree Protection Zones have been provided.

#### Overall Health and Structure Rating

**Excellent** = Tree of possible specimen quality, unique species or size with no discernible defects, or heritage tree.

**Normal** = Tree is in good condition with no significant structural weaknesses or health concerns, considering its growing environment and species.

**Moderate** = Tree has noted health and/or minor structural weaknesses, however, treatments may be recommended to improve the health or structural condition of the tree.

**Poor** = Tree is in serious decline from its typical growth habits and has multiple very definable health and/or structural weaknesses. These trees may have difficulty adapting to land use changes.

**Dead/Dying** = Tree was found to be dead, and/or has severe defects and is in severe decline.

## 2.3 Tree Retention Table

| Tree # | Species               | Common Name      | DBH (cm) | Height (m) | Condition | Protected? | Comments  | TPZ (m)** |
|--------|-----------------------|------------------|----------|------------|-----------|------------|-----------|-----------|
| 81     | Pseudotsuga menziesii | Douglas fir      | 36       | 11         | Normal    | Yes        | City tree | 5.76      |
| 82     | Pseudotsuga menziesii | Douglas fir      | 43       | 13         | Normal    | Yes        |           | 6.88      |
| 83     | Pseudotsuga menziesii | Douglas fir      | 33       | 11         | Normal    | Yes        |           | 5.28      |
| 84     | Pseudotsuga menziesii | Douglas fir      | 39       | 13         | Normal    | Yes        |           | 6.24      |
| 85     | Pseudotsuga menziesii | Douglas fir      | 39       | 12         | Normal    | Yes        |           | 6.24      |
| 86     | Pseudotsuga menziesii | Douglas fir      | 40       | 13         | Normal    | Yes        |           | 6.4       |
| 87     | Populus trichocarpa   | Black Cottonwood | 36       | 17         | Normal    | Yes        |           | 5.76      |
| 88     | Pseudotsuga menziesii | Douglas fir      | 30       | 11         | Normal    | Yes        |           | 4.8       |
| 89     | Pseudotsuga menziesii | Douglas fir      | 34       | 14         | Normal    | Yes        |           | 5.44      |
| 90     | Pseudotsuga menziesii | Douglas fir      | 39       | 14         | Normal    | Yes        |           | 6.24      |
| 91     | Pseudotsuga menziesii | Douglas fir      | 39       | 15         | Normal    | Yes        |           | 6.24      |
| 92     | Pseudotsuga menziesii | Douglas fir      | 37       | 14         | Normal    | Yes        |           | 5.92      |
| 93     | Pseudotsuga menziesii | Douglas fir      | 31       | 14         | Normal    | Yes        |           | 4.96      |
| 129    | Pseudotsuga menziesii | Douglas fir      | 30       | 14         | Normal    | Yes        |           | 4.8       |
| 130    | Thuja plicata         | Western redcedar | 33       | 13         | Moderate  | Yes        | Dead top  | 5.28      |
| 131    | Pseudotsuga menziesii | Douglas fir      | 31       | 15         | Normal    | Yes        |           | 4.96      |
| 132    | Pseudotsuga menziesii | Douglas fir      | 43       | 17         | Normal    | Yes        |           | 6.88      |
| 133    | Pseudotsuga menziesii | Douglas fir      | 44       | 17         | Normal    | Yes        |           | 7.04      |
| 134    | Pseudotsuga menziesii | Douglas fir      | 30       | 15         | Normal    | Yes        |           | 4.8       |
| 135    | Pseudotsuga menziesii | Douglas fir      | 39       | 16         | Normal    | Yes        |           | 6.24      |
| 136    | Pseudotsuga menziesii | Douglas fir      | 36       | 15         | Normal    | Yes        |           | 5.76      |
| 164    | Pseudotsuga menziesii | Douglas fir      | 33       | 16         | Normal    | Yes        |           | 5.28      |

|     |                       |                  |    |    |          |     |                                           |       |
|-----|-----------------------|------------------|----|----|----------|-----|-------------------------------------------|-------|
| 165 | Pseudotsuga menziesii | Douglas fir      | 31 | 15 | Normal   | Yes |                                           | 4.96  |
| 166 | Pseudotsuga menziesii | Douglas fir      | 42 | 17 | Normal   | Yes |                                           | 6.72  |
| 168 | Pseudotsuga menziesii | Douglas fir      | 38 | 16 | Normal   | Yes |                                           | 6.08  |
| 169 | Pseudotsuga menziesii | Douglas fir      | 31 | 15 | Normal   | Yes |                                           | 4.96  |
| 170 | Pseudotsuga menziesii | Douglas fir      | 41 | 17 | Normal   | Yes |                                           | 6.56  |
| 171 | Pseudotsuga menziesii | Douglas fir      | 53 | 18 | Normal   | Yes | Neighboring property                      | 8.48  |
| 172 | Pseudotsuga menziesii | Douglas fir      | 57 | 18 | Normal   | Yes | Neighboring property                      | 9.12  |
| 173 | Pseudotsuga menziesii | Douglas fir      | 34 | 17 | Normal   | Yes |                                           | 5.44  |
| 174 | Pseudotsuga menziesii | Douglas fir      | 51 | 18 | Normal   | Yes |                                           | 8.16  |
| 175 | Pseudotsuga menziesii | Douglas fir      | 55 | 18 | Normal   | Yes | Neighboring property                      | 8.8   |
| 176 | Pseudotsuga menziesii | Douglas fir      | 42 | 17 | Normal   | Yes | Neighboring property                      | 6.72  |
| 177 | Thuja plicata         | Western redcedar | 40 | 14 | Moderate | Yes |                                           | 6.4   |
| 178 | Pseudotsuga menziesii | Douglas fir      | 57 | 18 | Normal   | Yes |                                           | 9.12  |
| 179 | Pseudotsuga menziesii | Douglas fir      | 30 | 15 | Normal   | Yes | Neighboring property                      | 4.8   |
| 180 | Pseudotsuga menziesii | Douglas fir      | 40 | 15 | Normal   | Yes |                                           | 6.4   |
| 181 | Pseudotsuga menziesii | Douglas fir      | 69 | 18 | Normal   | Yes |                                           | 11.04 |
| 201 | Thuja plicata         | Western redcedar | 57 | 16 | Moderate | Yes | Dead top                                  | 9.12  |
| 202 | Pseudotsuga menziesii | Douglas fir      | 49 | 20 | Normal   | Yes |                                           | 7.84  |
| 203 | Thuja plicata         | Western redcedar | 48 | 16 | Normal   | Yes |                                           | 7.68  |
| 204 | Pseudotsuga menziesii | Douglas fir      | 51 | 20 | Normal   | Yes |                                           | 8.16  |
| 205 | Pseudotsuga menziesii | Douglas fir      | 54 | 21 | Normal   | Yes | Neighboring property                      | 8.64  |
| 206 | Pseudotsuga menziesii | Douglas fir      | 56 | 21 | Normal   | Yes | Neighboring property                      | 8.96  |
| 208 | Pseudotsuga menziesii | Douglas fir      | 47 | 22 | Normal   | Yes | Neighboring property.                     | 7.52  |
| 210 | Pseudotsuga menziesii | Douglas fir      | 60 | 22 | Normal   | Yes | Neighboring property (potentially shared) | 9.6   |
| 211 | Pseudotsuga menziesii | Douglas fir      | 54 | 21 | Normal   | Yes |                                           | 8.64  |



|     |                       |                  |     |    |          |     |                                                                          |       |
|-----|-----------------------|------------------|-----|----|----------|-----|--------------------------------------------------------------------------|-------|
| 212 | Thuja plicata         | Western redcedar | 33  | 12 | Poor     | Yes | >%50 dead. Low risk.                                                     | 5.28  |
| 213 | Pseudotsuga menziesii | Douglas fir      | 32  | 18 | Normal   | Yes | Neighboring property.                                                    | 5.12  |
| 215 | Thuja plicata         | Western redcedar | 43  | 15 | Moderate | Yes | ~%50 dead. Low risk.                                                     | 6.88  |
| 216 | Pseudotsuga menziesii | Douglas fir      | 65  | 23 | Normal   | Yes |                                                                          | 10.4  |
| 217 | Pseudotsuga menziesii | Douglas fir      | 48  | 20 | Normal   | Yes |                                                                          | 7.68  |
| 218 | Pseudotsuga menziesii | Douglas fir      | 47  | 20 | Normal   | Yes | Neighboring property.                                                    | 7.52  |
| 219 | Pseudotsuga menziesii | Douglas fir      | 62  | 23 | Normal   | Yes | Shared tree                                                              | 9.92  |
| 220 | Pseudotsuga menziesii | Douglas fir      | 53  | 20 | Normal   | Yes |                                                                          | 8.48  |
| 222 | Pseudotsuga menziesii | Douglas fir      | 53  | 21 | Normal   | Yes | Shared tree                                                              | 8.48  |
| 223 | Pseudotsuga menziesii | Douglas fir      | 35  | 20 | Normal   | Yes | Neighboring property.                                                    | 5.6   |
| 224 | Pseudotsuga menziesii | Douglas fir      | 44  | 19 | Normal   | Yes |                                                                          | 7.04  |
| 225 | Pseudotsuga menziesii | Douglas fir      | ~50 | 21 | Normal   | Yes | Overgrown with blackberry                                                | 0.16  |
| 226 | Pseudotsuga menziesii | Douglas fir      | 66  | 23 | Normal   | Yes | Neighboring property.                                                    | 10.56 |
| 227 | Pseudotsuga menziesii | Douglas fir      | 56  | 22 | Normal   | Yes | Neighboring property.                                                    | 8.96  |
| 228 | Pseudotsuga menziesii | Douglas fir      | 43  |    | Normal   | Yes | Neighboring property.                                                    | 6.88  |
| 229 | Pseudotsuga menziesii | Douglas fir      | 32  | 19 | Normal   | Yes |                                                                          | 5.12  |
| 230 | Pseudotsuga menziesii | Douglas fir      | 48  | 20 | Normal   | Yes |                                                                          | 7.68  |
| 233 | Thuja plicata         | Western redcedar | 45  | 12 | Poor     | Yes | Dying. Low risk.                                                         | 7.2   |
| 234 | Pseudotsuga menziesii | Douglas fir      | 45  | 19 | Poor     | Yes | Partially uprooted, leaning away from development. Neighboring property. | 7.2   |
| 235 | Pseudotsuga menziesii | Douglas fir      | 33  | 15 | Poor     | Yes | Partially uprooted, leaning away from development. Neighboring property. | 5.28  |
| 236 | Pseudotsuga menziesii | Douglas fir      | 57  | 22 | Normal   | Yes |                                                                          | 9.12  |
| 238 | Pseudotsuga menziesii | Douglas fir      | 56  | 22 | Normal   | Yes |                                                                          | 8.96  |
| 239 | Pseudotsuga menziesii | Douglas fir      | 56  | 21 | Normal   | Yes |                                                                          | 8.96  |

|     |                       |                  |    |    |          |     |                       |       |
|-----|-----------------------|------------------|----|----|----------|-----|-----------------------|-------|
| 240 | Pseudotsuga menziesii | Douglas fir      | 36 | 19 | Normal   | Yes |                       | 5.76  |
| 241 | Pseudotsuga menziesii | Douglas fir      | 36 | 20 | Normal   | Yes | Neighboring property. | 5.76  |
| 242 | Pseudotsuga menziesii | Douglas fir      | 38 | 20 | Normal   | Yes | Neighboring property. | 6.08  |
| 244 | Pseudotsuga menziesii | Douglas fir      | 46 | 21 | Normal   | Yes | Neighboring property. | 7.36  |
| 245 | Pseudotsuga menziesii | Douglas fir      | 44 | 20 | Normal   | Yes | Neighboring property. | 7.04  |
| 246 | Thuja plicata         | Western redcedar | 33 | 15 | Moderate | Yes | In decline. Low risk. | 5.28  |
| 267 | Thuja plicata         | Western redcedar | 48 | 16 | Moderate | Yes | In decline. Low risk. | 7.68  |
| 268 | Pseudotsuga menziesii | Douglas fir      | 46 | 20 | Normal   | Yes |                       | 7.36  |
| 269 | Pseudotsuga menziesii | Douglas fir      | 42 | 19 | Normal   | Yes |                       | 6.72  |
| 270 | Pseudotsuga menziesii | Douglas fir      | 36 | 19 | Normal   | Yes |                       | 5.76  |
| 271 | Pseudotsuga menziesii | Douglas fir      | 64 | 23 | Normal   | Yes |                       | 10.24 |
| 272 | Pseudotsuga menziesii | Douglas fir      | 41 | 21 | Normal   | Yes |                       | 6.56  |
| 273 | Pseudotsuga menziesii | Douglas fir      | 43 | 20 | Normal   | Yes | Neighboring property. | 6.88  |
| 274 | Pseudotsuga menziesii | Douglas fir      | 53 | 21 | Normal   | Yes | Neighboring property. | 8.48  |
| 275 | Pseudotsuga menziesii | Douglas fir      | 37 | 19 | Normal   | Yes | Neighboring property. | 5.92  |
| 276 | Thuja plicata         | Western redcedar | 31 | 15 | Normal   | Yes |                       | 4.96  |
| 277 | Thuja plicata         | Western redcedar | 33 | 16 | Normal   | Yes |                       | 5.28  |
| 279 | Frangula purshiana    | Cascara          | 12 | 7  | Normal   | Yes |                       | 1.92  |
| 280 | Thuja plicata         | Western redcedar | 55 | 17 | Normal   | Yes |                       | 8.8   |
| 287 | Pseudotsuga menziesii | Douglas fir      | 50 | 20 | Normal   | Yes |                       | 8     |
| 288 | Pseudotsuga menziesii | Douglas fir      | 52 | 21 | Normal   | Yes |                       | 8.32  |
| 289 | Pseudotsuga menziesii | Douglas fir      | 43 | 20 | Normal   | Yes |                       | 6.88  |
| 290 | Pseudotsuga menziesii | Douglas fir      | 52 | 20 | Normal   | Yes | Neighboring property. | 8.32  |
| 291 | Pseudotsuga menziesii | Douglas fir      | 37 | 20 | Normal   | Yes | Neighboring property. | 5.92  |
| 292 | Pseudotsuga menziesii | Douglas fir      | 46 | 21 | Normal   | Yes | Neighboring property. | 7.36  |

## 2.4 Tree Removal Table

| Tree # | Species               | Common Name      | DBH (cm) | Height (m) | Condition  | Protected? | Comments                             |
|--------|-----------------------|------------------|----------|------------|------------|------------|--------------------------------------|
| 1      | Pseudotsuga menziesii | Douglas Fir      | 32       | 15         | Normal     | Yes        | Within development footprint         |
| 2      | Pseudotsuga menziesii | Douglas Fir      | 42       | 18         | Normal     | Yes        | Within development footprint         |
| 3      | Pseudotsuga menziesii | Douglas Fir      | 45       | 18         | Normal     | Yes        | Within development footprint         |
| 4      | Alnus rubra           | Red alder        | 26       | 9          | Moderate   |            | Within development footprint         |
| 5      | Pseudotsuga menziesii | Douglas Fir      | 40       | 15         | Normal     | Yes        | Within development footprint         |
| 6      | Pseudotsuga menziesii | Douglas Fir      | 30       | 10         | Normal     | Yes        | Within development footprint         |
| 7      | Pseudotsuga menziesii | Douglas Fir      | 46       | 18         | Normal     | Yes        | Within development footprint         |
| 8      | Frangula purshiana    | Cascara          | 9        | 6          | Normal     | Yes        | Within development footprint         |
| 9      | Frangula purshiana    | Cascara          | 13       | 7.5        | Normal     | Yes        | Within development footprint         |
| 10     | Thuja plicata         | Western redcedar | 44       | 10         | Dead/Dying | Yes        | >%50 dead                            |
| 11     | Thuja plicata         | Western redcedar | 51       | 10         | Dead/Dying | Yes        | >%50 dead                            |
| 12     | Frangula purshiana    | Cascara          | 17       | 6          | Moderate   | Yes        | Within development footprint         |
| 13     | Thuja plicata         | Western redcedar | 34       | 6          | Dead/Dying | Yes        | >%50 dead *ms*                       |
| 14     | Alnus rubra           | Red alder        | 49       | 12         | Poor       | Yes        | Within development footprint         |
| 15     | Thuja plicata         | Western redcedar | 65       | 10         | Dead/Dying | Yes        | >%50 dead                            |
| 16     | Alnus rubra           | Red alder        | 49       | 10         | Poor       | Yes        | Hazard tree, excessive decay of stem |
| 17     | Thuja plicata         | Western redcedar | 51       | 12         | Poor       | Yes        | Within development footprint         |
| 18     | Thuja plicata         | Western redcedar | 55 ms    | 13         | Dead/Dying | Yes        | >%50 dead *ms*                       |
| 19     | Pseudotsuga menziesii | Douglas Fir      | 35       | 13         | Normal     | Yes        | Within development footprint         |
| 20     | Pseudotsuga menziesii | Douglas Fir      | 37       | 15         | Normal     | Yes        | Within development footprint         |
| 21     | Pseudotsuga menziesii | Douglas Fir      | 52       | 18         | Normal     | Yes        | Within development footprint         |
| 22     | Salix Scouleriana     | Scouler's willow | 36       | 10         | Moderate   | Yes        | Within development footprint         |
| 23     | Pseudotsuga menziesii | Douglas Fir      | 42       | 12         | Normal     | Yes        | Within development footprint         |

|    |                       |                  |    |    |        |     |                              |
|----|-----------------------|------------------|----|----|--------|-----|------------------------------|
| 24 | Pseudotsuga menziesii | Douglas Fir      | 55 | 18 | Normal | Yes | Within development footprint |
| 25 | Pseudotsuga menziesii | Douglas Fir      | 47 | 15 | Normal | Yes | Within development footprint |
| 26 | Pseudotsuga menziesii | Douglas Fir      | 42 | 15 | Normal | Yes | Within development footprint |
| 27 | Thuja plicata         | Western redcedar | 48 | 12 | Poor   | Yes | <%50 dead                    |
| 28 | Thuja plicata         | Western redcedar | 38 | 10 | Poor   | Yes | <%50 dead                    |
| 29 | Pseudotsuga menziesii | Douglas Fir      | 65 | 18 | Normal | Yes | Within development footprint |
| 30 | Pseudotsuga menziesii | Douglas Fir      | 46 | 16 | Normal | Yes | Within development footprint |
| 31 | Pseudotsuga menziesii | Douglas Fir      | 36 | 13 | Normal | Yes | Within development footprint |
| 32 | Pseudotsuga menziesii | Douglas Fir      | 45 | 19 | Normal | Yes | Within development footprint |
| 33 | Pseudotsuga menziesii | Douglas Fir      | 37 | 15 | Normal | Yes | Within development footprint |
| 34 | Pseudotsuga menziesii | Douglas Fir      | 30 | 12 | Normal | Yes | Within development footprint |
| 35 | Pseudotsuga menziesii | Douglas Fir      | 32 | 15 | Normal | Yes | Within development footprint |
| 36 | Pseudotsuga menziesii | Douglas Fir      | 32 | 14 | Normal | Yes | Within development footprint |
| 37 | Thuja plicata         | Western redcedar | 42 | 12 | Normal | Yes | Within development footprint |
| 38 | Pseudotsuga menziesii | Douglas Fir      | 31 | 15 | Normal | Yes | Within development footprint |
| 39 | Pseudotsuga menziesii | Douglas Fir      | 42 | 16 | Normal | Yes | Within development footprint |
| 40 | Pseudotsuga menziesii | Douglas Fir      | 31 | 15 | Normal | Yes | Within development footprint |
| 41 | Pseudotsuga menziesii | Douglas Fir      | 38 | 17 | Normal | Yes | Within development footprint |
| 42 | Pseudotsuga menziesii | Douglas Fir      | 34 | 16 | Normal | Yes | Within development footprint |
| 43 | Pseudotsuga menziesii | Douglas Fir      | 43 | 18 | Normal | Yes | Within development footprint |
| 44 | Pseudotsuga menziesii | Douglas Fir      | 41 | 16 | Normal | Yes | Within development footprint |
| 45 | Pseudotsuga menziesii | Douglas Fir      | 51 | 18 | Normal | Yes | Within development footprint |
| 46 | Pseudotsuga menziesii | Douglas Fir      | 36 | 14 | Normal | Yes | Within development footprint |
| 47 | Pseudotsuga menziesii | Douglas Fir      | 39 | 15 | Normal | Yes | Within development footprint |
| 48 | Pseudotsuga menziesii | Douglas Fir      | 34 | 15 | Normal | Yes | Within development footprint |



|    |                       |                  |    |    |            |     |                              |
|----|-----------------------|------------------|----|----|------------|-----|------------------------------|
| 49 | Pseudotsuga menziesii | Douglas Fir      | 40 | 18 | Normal     | Yes | Within development footprint |
| 50 | Pseudotsuga menziesii | Douglas Fir      | 32 | 16 | Normal     | Yes | Within development footprint |
| 51 | Pseudotsuga menziesii | Douglas Fir      | 34 | 15 | Normal     | Yes | Within development footprint |
| 52 | Pseudotsuga menziesii | Douglas Fir      | 31 | 15 | Normal     | Yes | Within development footprint |
| 53 | Pseudotsuga menziesii | Douglas Fir      | 33 | 14 | Normal     | Yes | Within development footprint |
| 54 | Thuja plicata         | Western redcedar | 35 | 13 | Poor       | Yes | Dead top                     |
| 55 | Pseudotsuga menziesii | Douglas Fir      | 35 | 15 | Moderate   | Yes | Within development footprint |
| 56 | Pseudotsuga menziesii | Douglas Fir      | 34 | 15 | Normal     | Yes | Within development footprint |
| 57 | Pseudotsuga menziesii | Douglas Fir      | 46 | 18 | Normal     | Yes | Within development footprint |
| 58 | Pseudotsuga menziesii | Douglas Fir      | 40 | 17 | Normal     | Yes | Within development footprint |
| 60 | Pseudotsuga menziesii | Douglas Fir      | 46 | 18 | Normal     | Yes | Within development footprint |
| 61 | Pseudotsuga menziesii | Douglas Fir      | 42 | 16 | Normal     | Yes | Within development footprint |
| 62 | Thuja plicata         | Western redcedar | 42 | 15 | Dead/Dying | Yes | >%50 dead                    |
| 63 | Pseudotsuga menziesii | Douglas Fir      | 38 | 15 | Normal     | Yes | Within development footprint |
| 64 | Pseudotsuga menziesii | Douglas Fir      | 31 | 14 | Normal     | Yes | Within development footprint |
| 65 | Pseudotsuga menziesii | Douglas Fir      | 46 | 18 | Normal     | Yes | Within development footprint |
| 66 | Pseudotsuga menziesii | Douglas Fir      | 36 | 12 | Moderate   | Yes | Within development footprint |
| 67 | Pseudotsuga menziesii | Douglas Fir      | 53 | 19 | Normal     | Yes | Within development footprint |
| 68 | Pseudotsuga menziesii | Douglas Fir      | 36 | 15 | Normal     | Yes | Within development footprint |
| 69 | Pseudotsuga menziesii | Douglas Fir      | 34 | 15 | Normal     | Yes | Within development footprint |
| 70 | Pseudotsuga menziesii | Douglas Fir      | 51 | 20 | Normal     | Yes | Within development footprint |
| 71 | Pseudotsuga menziesii | Douglas Fir      | 34 | 15 | Normal     | Yes | Within development footprint |
| 72 | Thuja plicata         | Western redcedar | 32 | 14 | Moderate   | Yes | Within development footprint |
| 73 | Pseudotsuga menziesii | Douglas Fir      | 40 | 18 | Normal     | Yes | Within development footprint |
| 74 | Pseudotsuga menziesii | Douglas Fir      | 33 | 16 | Normal     | Yes | Within development footprint |

|     |                       |                  |    |    |          |     |                                |
|-----|-----------------------|------------------|----|----|----------|-----|--------------------------------|
| 75  | Pseudotsuga menziesii | Douglas Fir      | 32 | 15 | Normal   | Yes | Within development footprint   |
| 76  | Pseudotsuga menziesii | Douglas Fir      | 34 | 15 | Normal   | Yes | Within development footprint   |
| 77  | Pseudotsuga menziesii | Douglas Fir      | 45 | 17 | Normal   | Yes | Within development footprint   |
| 78  | Pseudotsuga menziesii | Douglas Fir      | 30 | 13 | Normal   | Yes | Within development footprint   |
| 79  | Pseudotsuga menziesii | Douglas Fir      | 30 | 13 | Normal   | Yes | Within development footprint   |
| 80  | Salix Scouleriana     | Scouler's willow | 62 | 12 | Normal   | Yes | Within development footprint   |
| 94  | Pseudotsuga menziesii | Douglas Fir      | 40 | 15 | Normal   | Yes | Within development footprint   |
| 95  | Pseudotsuga menziesii | Douglas Fir      | 38 | 15 | Normal   | Yes | Within development footprint   |
| 96  | Pseudotsuga menziesii | Douglas Fir      | 39 | 12 | Poor     | Yes | Split in stem, extensive decay |
| 97  | Pseudotsuga menziesii | Douglas Fir      | 42 | 16 | Normal   | Yes | Within development footprint   |
| 98  | Pseudotsuga menziesii | Douglas Fir      | 32 | 15 | Normal   | Yes | Within development footprint   |
| 99  | Pseudotsuga menziesii | Douglas Fir      | 45 | 17 | Normal   | Yes | Within development footprint   |
| 100 | Pseudotsuga menziesii | Douglas Fir      | 38 | 16 | Normal   | Yes | Within development footprint   |
| 101 | Pseudotsuga menziesii | Douglas Fir      | 31 | 16 | Normal   | Yes | Within development footprint   |
| 102 | Salix Scouleriana     | Scouler's willow | 36 | 9  | Poor     | Yes | Within development footprint   |
| 103 | Thuja plicata         | Western redcedar | 54 | 12 | Normal   | Yes | Within development footprint   |
| 104 | Thuja plicata         | Western redcedar | 46 | 13 | Moderate | Yes | Dead top                       |
| 105 | Thuja plicata         | Western redcedar | 34 | 9  | Poor     | Yes | ~%50 dead                      |
| 106 | Pseudotsuga menziesii | Douglas Fir      | 38 | 15 | Normal   | Yes | Within development footprint   |
| 107 | Pseudotsuga menziesii | Douglas Fir      | 32 | 15 | Normal   | Yes | Within development footprint   |
| 108 | Pseudotsuga menziesii | Douglas Fir      | 36 | 15 | Normal   | Yes | Within development footprint   |
| 109 | Pseudotsuga menziesii | Douglas Fir      | 33 | 14 | Normal   | Yes | Within development footprint   |
| 110 | Thuja plicata         | Western redcedar | 39 | 9  | Moderate | Yes | Dead top                       |
| 111 | Pseudotsuga menziesii | Douglas Fir      | 32 | 14 | Normal   | Yes | Within development footprint   |
| 112 | Pseudotsuga menziesii | Douglas Fir      | 35 | 15 | Normal   | Yes | Within development footprint   |

|     |                       |                  |            |    |            |     |                              |
|-----|-----------------------|------------------|------------|----|------------|-----|------------------------------|
| 113 | Pseudotsuga menziesii | Douglas Fir      | 30         | 13 | Normal     | Yes | Within development footprint |
| 114 | Thuja plicata         | Western redcedar | 38         | 12 | Poor       | Yes | >%50 dead                    |
| 115 | Pseudotsuga menziesii | Douglas Fir      | 35         | 15 | Normal     | Yes | Within development footprint |
| 116 | Pseudotsuga menziesii | Douglas Fir      | 37         | 16 | Normal     | Yes | Within development footprint |
| 117 | Thuja plicata         | Western redcedar | 36         | 11 | Moderate   | Yes | Within development footprint |
| 118 | Pseudotsuga menziesii | Douglas Fir      | 44         | 18 | Normal     | Yes | Within development footprint |
| 119 | Thuja plicata         | Western redcedar | 38         | 12 | Dead/Dying | Yes | >%50 dead                    |
| 120 | Pseudotsuga menziesii | Douglas Fir      | 32         | 13 | Normal     | Yes | Within development footprint |
| 121 | Thuja plicata         | Western redcedar | 69         | 13 | Poor       | Yes | Within development footprint |
| 122 | Thuja plicata         | Western redcedar | 56         | 13 | Poor       | Yes | Within development footprint |
| 123 | Thuja plicata         | Western redcedar | 65         | 13 | Moderate   | Yes | Within development footprint |
| 124 | Thuja plicata         | Western redcedar | 67<br>*ms* | 14 | Normal     | Yes | Within development footprint |
| 125 | Pseudotsuga menziesii | Douglas Fir      | 46         | 16 | Normal     | Yes | Within development footprint |
| 126 | Thuja plicata         | Western redcedar | 43         | 15 | Dead/Dying | Yes | >%50 dead                    |
| 127 | Pseudotsuga menziesii | Douglas Fir      | 38         | 16 | Normal     | Yes | Within development footprint |
| 128 | Pseudotsuga menziesii | Douglas Fir      | 31         | 15 | Normal     | Yes | Within development footprint |
| 137 | Pseudotsuga menziesii | Douglas Fir      | 40         | 16 | Normal     | Yes | Within development footprint |
| 138 | Pseudotsuga menziesii | Douglas Fir      | 38         | 16 | Normal     | Yes | Within development footprint |
| 139 | Pseudotsuga menziesii | Douglas Fir      | 44         | 17 | Normal     | Yes | Within development footprint |
| 140 | Pseudotsuga menziesii | Douglas Fir      | 47         | 18 | Normal     | Yes | Within development footprint |
| 141 | Pseudotsuga menziesii | Douglas Fir      | 33         | 15 | Normal     | Yes | Within development footprint |
| 142 | Thuja plicata         | Western redcedar | 57         | 15 | Normal     | Yes | Within development footprint |
| 143 | Thuja plicata         | Western redcedar | 51         | 15 | Normal     | Yes | Within development footprint |
| 144 | Thuja plicata         | Western redcedar | 57         | 15 | Poor       | Yes | Dead top                     |
| 145 | Pseudotsuga menziesii | Douglas Fir      | 59         | 18 | Normal     | Yes | Within development footprint |

|     |                       |                  |    |    |            |     |                              |
|-----|-----------------------|------------------|----|----|------------|-----|------------------------------|
| 146 | Thuja plicata         | Western redcedar | 42 | 14 | Dead/Dying | Yes | >%50 dead                    |
| 147 | Pseudotsuga menziesii | Douglas Fir      | 31 | 15 | Normal     | Yes | Within development footprint |
| 148 | Pseudotsuga menziesii | Douglas Fir      | 37 | 16 | Normal     | Yes | Within development footprint |
| 149 | Thuja plicata         | Western redcedar | 37 | 9  | Dead/Dying | Yes | >%50 dead                    |
| 150 | Pseudotsuga menziesii | Douglas Fir      | 34 | 16 | Normal     | Yes | Within development footprint |
| 151 | Pseudotsuga menziesii | Douglas Fir      | 52 | 18 | Normal     | Yes | Within development footprint |
| 152 | Thuja plicata         | Western redcedar | 33 | 15 | Dead/Dying | Yes | >%50 dead                    |
| 153 | Pseudotsuga menziesii | Douglas Fir      | 51 | 18 | Normal     | Yes | Within development footprint |
| 154 | Pseudotsuga menziesii | Douglas Fir      | 36 | 16 | Normal     | Yes | Within development footprint |
| 155 | Pseudotsuga menziesii | Douglas Fir      | 37 | 16 | Normal     | Yes | Within development footprint |
| 156 | Pseudotsuga menziesii | Douglas Fir      | 44 | 17 | Normal     | Yes | Within development footprint |
| 157 | Pseudotsuga menziesii | Douglas Fir      | 32 | 15 | Normal     | Yes | Within development footprint |
| 158 | Pseudotsuga menziesii | Douglas Fir      | 35 | 17 | Normal     | Yes | Within development footprint |
| 159 | Pseudotsuga menziesii | Douglas Fir      | 51 | 18 | Normal     | Yes | Within development footprint |
| 160 | Pseudotsuga menziesii | Douglas Fir      | 39 | 16 | Normal     | Yes | Within development footprint |
| 161 | Pseudotsuga menziesii | Douglas Fir      | 41 | 16 | Normal     | Yes | Within development footprint |
| 162 | Pseudotsuga menziesii | Douglas Fir      | 39 | 16 | Normal     | Yes | Within development footprint |
| 163 | Pseudotsuga menziesii | Douglas Fir      | 48 | 17 | Normal     | Yes | Within development footprint |
| 167 | Pseudotsuga menziesii | Douglas Fir      | 37 | 16 | Normal     | Yes | Within development footprint |
| 182 | Alnus rubra           | Red Alder        | 38 | 8  | Poor       | Yes | Lost top, excessive decay.   |
| 183 | Pseudotsuga menziesii | Douglas Fir      | 90 | 20 | Normal     | Yes | Within development footprint |
| 184 | Thuja plicata         | Western redcedar | 36 | 9  | Poor       | Yes | ~%50 dead                    |
| 185 | Thuja plicata         | Western redcedar | 40 | 11 | Moderate   | Yes | Dead top                     |
| 186 | Thuja plicata         | Western redcedar | 55 | 17 | Normal     | Yes | Within development footprint |
| 187 | Thuja plicata         | Western redcedar | 44 | 17 | Normal     | Yes | Within development footprint |



|     |                        |                  |            |    |            |     |                                                                     |
|-----|------------------------|------------------|------------|----|------------|-----|---------------------------------------------------------------------|
| 188 | Thuja plicata          | Western redcedar | 41         | 17 | Normal     | Yes | Within development footprint                                        |
| 189 | Thuja plicata          | Western redcedar | 55         | 17 | Normal     | Yes | Within development footprint                                        |
| 190 | Other                  | Prunus serrulata | 33         | 4  | Normal     | Yes | Within development footprint                                        |
| 191 | Thuja plicata          | Western redcedar | 55         | 17 | Normal     | Yes | Within development footprint                                        |
| 192 | Thuja plicata          | Western redcedar | 61         | 18 | Normal     | Yes | Within development footprint                                        |
| 193 | Thuja plicata          | Western redcedar | 62         | 18 | Normal     | Yes | Within development footprint                                        |
| 194 | Thuja plicata          | Western redcedar | 74         | 18 | Normal     | Yes | Within development footprint                                        |
| 195 | Pinus contorta         | Lodgepole pine   | 50         | 16 | Normal     | Yes | Within development footprint                                        |
| 196 | Pyrus sp.              | Pear             | 31<br>*ms* | 10 | Normal     | Yes | Within development footprint                                        |
| 197 | Prunus serrulata       | Japanese Cherry  | 39         | 9  | Normal     | Yes | Within development footprint                                        |
| 198 | Aesculus hippocastanum | Horse Chestnut   | 35         | 10 | Normal     | Yes | Dbh taken at 1.2m due to multistem union                            |
| 199 | Prunus serrulata       | Japanese Cherry  | 35<br>*ms* | 6  | Normal     | Yes | Within development footprint                                        |
| 200 | Alnus rubra            | Red alder        | 40         | 12 | Dead/Dying | Yes | Hazard tree. Half of stem missing, extensive decay.                 |
| 207 | Alnus rubra            | Red alder        | 38         | 13 | Poor       | Yes | Neighboring property. Extensive decay with lean toward development. |
| 209 | Pseudotsuga menziesii  | Douglas Fir      | 33         | 15 | Poor       | Yes | Previously lost top. High likelihood of decay at union.             |
| 214 | Pseudotsuga menziesii  | Douglas Fir      | 39         | 14 | Moderate   | Yes | Previously lost top. High likelihood of decay at injury site.       |
| 221 | Alnus rubra            | Red alder        | 42         | 13 | Dead/Dying | Yes | Lost top, decay present. Remove due to moderate risk                |
| 231 | Pseudotsuga menziesii  | Douglas Fir      | 34         | 18 | Moderate   | Yes | Heavy lean toward development                                       |
| 232 | Salix Scouleriana      | Scouler's willow | 44<br>*ms* | 12 | Moderate   | Yes | Within development footprint                                        |
| 237 | Alnus rubra            | Red alder        | 43         | 10 | Poor       | Yes | Excessive decay, Remove.                                            |
| 243 | Alnus rubra            | Red alder        | 41         | 12 | Poor       | Yes | Dead top, lots of decay and failures. Remove due to risk.           |
| 247 | Alnus rubra            | Red alder        | 37         | 15 | Moderate   | Yes | Within development footprint                                        |
| 248 | Frangula purshiana     | Cascara          | 13         | 6  | Moderate   | Yes | Within development footprint                                        |
| 249 | Alnus rubra            | Red alder        | 35         | 15 | Normal     | Yes | Within development footprint                                        |
| 250 | Thuja plicata          | Western redcedar | 55         | 16 | Normal     | Yes | Within development footprint                                        |
| 251 | Thuja plicata          | Western redcedar | 49         | 15 | Moderate   | Yes | Within development footprint                                        |

|     |                       |                  |         |    |          |     |                              |
|-----|-----------------------|------------------|---------|----|----------|-----|------------------------------|
| 252 | Thuja plicata         | Western redcedar | 34      | 14 | Moderate | Yes | Within development footprint |
| 253 | Thuja plicata         | Western redcedar | 31      | 12 | Moderate | Yes | Within development footprint |
| 254 | Salix Scouleriana     | Scouler's willow | 34      | 14 | Normal   | Yes | Within development footprint |
| 255 | Pseudotsuga menziesii | Douglas Fir      | 41      | 16 | Normal   | Yes | Within development footprint |
| 256 | Salix Scouleriana     | Scouler's willow | 44 *ms* | 13 | Normal   | Yes | Within development footprint |
| 257 | Alnus rubra           | Red alder        | 35 *ms* | 15 | Normal   | Yes | Within development footprint |
| 258 | Thuja plicata         | Western redcedar | 50      | 17 | Normal   | Yes | Within development footprint |
| 259 | Thuja plicata         | Western redcedar | 38      | 15 | Moderate | Yes | Within development footprint |
| 260 | Thuja plicata         | Western redcedar | 34      | 15 | Moderate | Yes | Within development footprint |
| 261 | Thuja plicata         | Western redcedar | 30      | 13 | Moderate | Yes | Within development footprint |
| 262 | Thuja plicata         | Western redcedar | 53      | 15 | Moderate | Yes | Within development footprint |
| 263 | Pseudotsuga menziesii | Douglas Fir      | 48      | 18 | Normal   | Yes | Within development footprint |
| 264 | Thuja plicata         | Western redcedar | 57      | 16 | Normal   | Yes | Within development footprint |
| 265 | Alnus rubra           | Red alder        | 40      | 14 | Poor     | Yes | Severe decline               |
| 266 | Thuja plicata         | Western redcedar | 64      | 17 | Moderate | Yes | Within development footprint |
| 278 | Thuja plicata         | Western redcedar | 39      | 16 | Normal   | Yes | Within development footprint |
| 281 | Thuja plicata         | Western redcedar | 38      | 15 | Moderate | Yes | Nurse log                    |
| 282 | Alnus rubra           | Red alder        | 36      | 14 | Moderate | Yes | Within development footprint |
| 283 | Thuja plicata         | Western redcedar | 37      | 16 | Normal   | Yes | Within development footprint |
| 284 | Thuja plicata         | Western redcedar | 39 *ms* | 10 | Normal   | Yes | Within development footprint |
| 285 | Alnus rubra           | Red alder        | 31      | 14 | Normal   | Yes | Within development footprint |
| 286 | Pseudotsuga menziesii | Douglas Fir      | 45      | 22 | Normal   | Yes | Within development footprint |
| 293 | Pseudotsuga menziesii | Douglas Fir      | 60      | 24 | Normal   | Yes | Within development footprint |
| 294 | Pseudotsuga menziesii | Douglas Fir      | 62      | 24 | Normal   | Yes | Within development footprint |
| 295 | Pseudotsuga menziesii | Douglas Fir      | 33      | 18 | Normal   | Yes | Within development footprint |
| 296 | Pseudotsuga menziesii | Douglas Fir      | 50      | 21 | Normal   | Yes | Within development footprint |

|     |                       |                  |    |    |        |     |                              |
|-----|-----------------------|------------------|----|----|--------|-----|------------------------------|
| 297 | Pseudotsuga menziesii | Douglas Fir      | 40 | 20 | Normal | Yes | Within development footprint |
| 298 | Pseudotsuga menziesii | Douglas Fir      | 41 | 20 | Normal | Yes | Within development footprint |
| 299 | Pseudotsuga menziesii | Douglas Fir      | 45 | 20 | Normal | Yes | Within development footprint |
| 300 | Pseudotsuga menziesii | Douglas Fir      | 48 | 21 | Normal | Yes | Within development footprint |
| 301 | Pseudotsuga menziesii | Douglas Fir      | 48 | 21 | Normal | Yes | Within development footprint |
| 302 | Pseudotsuga menziesii | Douglas Fir      | 49 | 20 | Normal | Yes | Within development footprint |
| 303 | Pseudotsuga menziesii | Douglas Fir      | 31 | 18 | Normal | Yes | Within development footprint |
| 304 | Pseudotsuga menziesii | Douglas Fir      | 44 | 20 | Normal | Yes | Within development footprint |
| 305 | Thuja plicata         | Western redcedar | 52 | 17 | Normal | Yes | Within development footprint |
| 306 | Thuja plicata         | Western redcedar | 46 | 16 | Normal | Yes | Within development footprint |

\* (MS) Refers to Multi-stemmed trees. The DBH for these trees was determined by measuring the DBH of each stem at 1.4m from the base of the tree, squaring each measurement, adding the sums and then calculating the square root of that number. Example: You have three stems that measure 5cm, 6cm and 8cm so the DBH would be:  
 $\sqrt{(5^2+6^2+8^2)} = \sqrt{(25+36+64)} = \sqrt{125} = 11\text{cm}$

\*\* Tree Protection Zone or Root Protection Zone measurements indicate the **Radius** of the protected area around the tree.

## 3.0 Summary

### 3.1 Tree Retention Discussion

The opportunity for retention is limited on this site due to the proposed development footprint. All of the 95 trees chosen for retention are along the West, North & East property lines. Of those 95 trees, 65 are located on 1085 Ravensbourne Ln, 2 straddle the property line and would be considered shared ownership and the other 28 are located outside of the property but are directly adjacent to the property lines.

### 3.2 Tree Removal Discussion

Of the 305 Trees inventoried, 210 are to be removed for the development.

### 3.3 Tree Protection Fencing

The locations and sizes of Protected Root Zones can be found using the table in 2.4 & the maps in Appendix 4. Tree Protection Fencing specs can be found in Appendix 2.

The Protected Root Zone is calculated by measuring the DBH of the tree and multiplying it by 18. The resultant number is the distance required between the fencing and the trunk of the tree. Example: 60cm DBH x 18 = 10.8m required distance from trunk.

The size of the Protected Root Zones may be changed by the arborist so long as it is approved by the Director of Planning. This would only be done in a situation where there is a conflict with the development footprint and the Tree Protection Fencing AND where it is determined by the arborist that the bulk of the critical root system is sufficiently protected.



# Appendix 1 Construction Guidelines

Tree management recommendations in this report are made under the expectation that the following guidelines for risk mitigation and proper tree protection will be adhered to during construction.

Respecting these guidelines will prevent changes to the soil and rooting conditions, contamination due to spills and waste, or physical wounding of the trees. Any plans for construction work and activities that deviate from or contradict these guidelines should be discussed with the project arborist so that mitigation measures can be implemented.

## **Tree Protection Zones**

A Tree Protection Zone (TPZ) is determined using either dripline or a DBH multiplier to define a radius measured in all directions from the outside of a tree's trunk. It is typically determined according to local municipal bylaw specifications and may be modified based on professional judgement of the project arborist to accommodate species specific tolerances and site specific growing conditions. For retained trees, the TPZ and fencing indicated in this report are proposed as suitable in relation to the level of disturbance proposed on the site plan provided to the project arborist. Arborist consultation is required if any additional work beyond the scope of the plans provided is proposed near the tree. Work done in addition to the proposed impacts discussed in this report may cause the tree to decline and die.

## **Tree Protection Fencing**

Tree protection zones (TPZs) will be protected by Tree Protection Fencing except where site features constrict roots (e.g., retaining walls or roads), where continual access is required (e.g., sidewalks), or when an acceptable encroachment into the TPZ is proposed, in which case the fencing will be modified.

Within a TPZ, no construction activity, including materials storage, grading or landscaping, may occur without project arborist approval. Within the TPZ, the following are tree preservation guidelines based on industry standards for best practice and local municipal requirements:

- No soil disturbance or stripping.
- Maintain the natural grade.
- No storage, dumping of materials, parking, underground utilities or fires within TPZs or tree driplines.
- Any planned construction and landscaping activities affecting trees should be reviewed and approved by a consulting arborist.
- Install specially designed foundations and paving when these structures are required within TPZs.
- Route utilities around TPZs.
- Excavation within the TPZs should be supervised by a consultant arborist.

- Surface drainage should not be altered in such a way that water is directed in or out of the TPZ.

Prior to any construction activity, Tree Protection Fencing must be constructed as shown in Appendix 2. The protection barrier or temporary fencing must be at least 1.2 m in height and constructed of 2" by 4" lumber with orange plastic mesh screening. Tree Protection Fencing must be constructed prior to tree removal, excavation or construction and remain intact for the entire duration of construction.

### **Tree Crown Protection and Pruning**

All heavy machinery (excavators, cranes, dump trucks, etc.) working within five meters of a tree's crown should be made aware of their proximity to the tree. If there is to be a sustained period of machinery working within five meters of a tree's crown, a line of colored flags should be suspended at eye-level of the machinery operator for the length of the protected tree area. Any concerns regarding the clearance required for machinery and workers within or immediately outside tree protection zones should be referred to the project arborist so that a zone surrounding the crowns can be established or pruning measures undertaken. Any wounds incurred to protected trees during construction should be reported to the project arborist immediately.

### **Monitoring during construction**

Ongoing monitoring by Lemur Tree Service should occur for the duration of a development project. Site visits should be more frequent during activities that are higher risk, including the first stages of construction when excavation occurs adjacent to the trees. Site visits will ensure contractors are respecting the recommended tree protection measures and will allow the arborist to identify any new concerns that may arise.

During each site visit the following measures will be assessed and reported on by Lemur Tree Service:

- Health and condition of protected trees, including damage to branches, trunks and roots that may have resulted from construction activities, as will the health of. Recommendations for remediation will follow.
- Integrity of the TPZ and fencing.
- Changes to TPZ conditions including overall maintenance, parking on roots, and storing or dumping of materials within TPZ. If failures to maintain and respect the TPZ are observed, suggestions will be made to ensure tree protection measures are remediated and upheld.
- Review and confirmation of recommended tree maintenance including root pruning, irrigation, mulching and branch pruning.
- Changes to soil moisture levels and drainage patterns; and
- Factors that may detrimentally impact the trees.

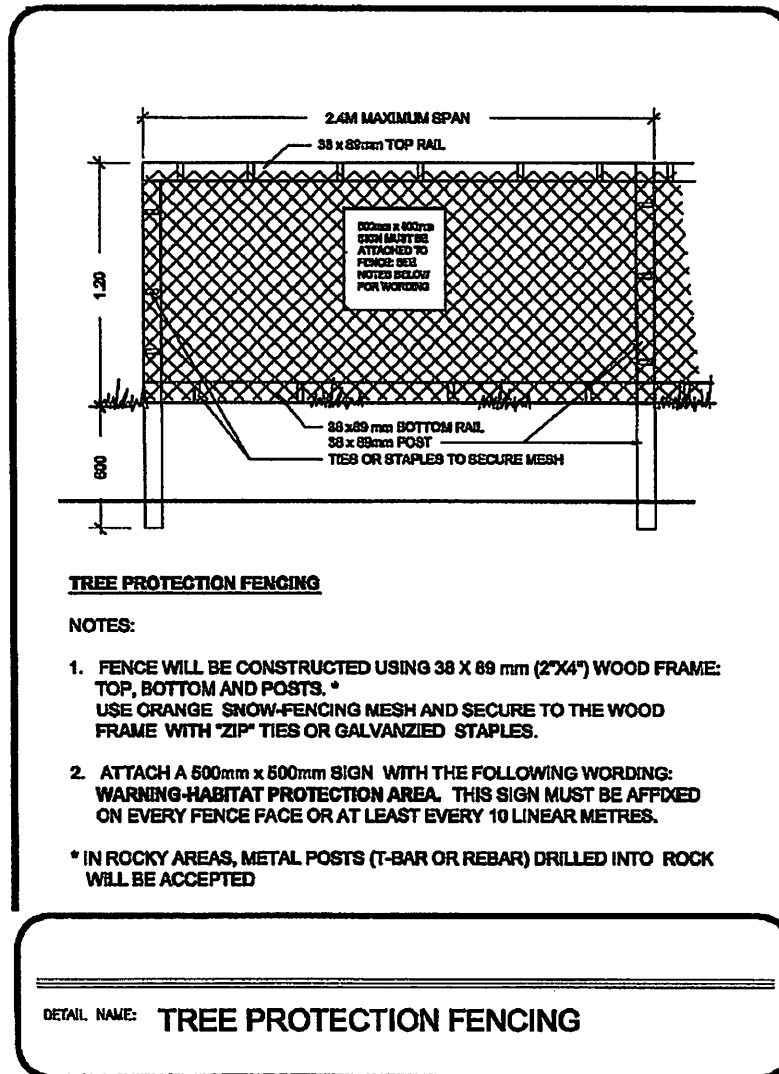
**Removal of logs from sites**

Private timber marks are required to transport logs from privately-owned land in BC. It is the property owner's responsibility to apply for a timber mark prior to removing any merchantable timber from the site.

Additional information can be found at: <http://www.for.gov.bc.ca/hth/private-timber-marks.htm>

## Appendix 2 Tree Protection Fencing Specifications

### SCHEDULE "C" TREE PROTECTION BARRIER REQUIREMENTS





## Appendix 3 Replacement Guidelines

Town of Qualicum Beach  
Tree Protection Bylaw No. 725, 2023

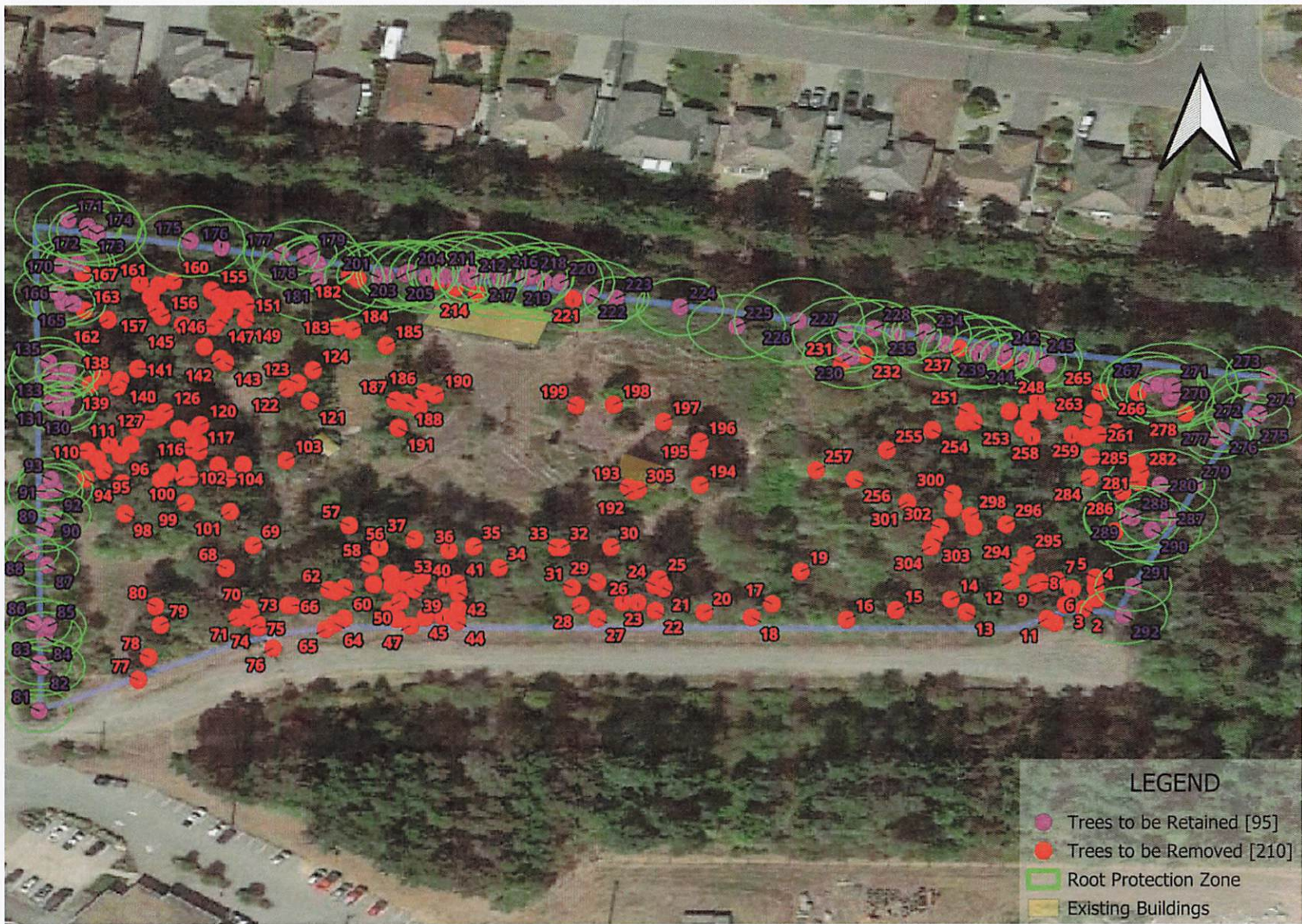
### **SCHEDULE "A"** **REPLACEMENT TREES**

Where Replacement Trees are required to be provided pursuant to this Bylaw, such Replacement Trees shall be provided and planted as follows:

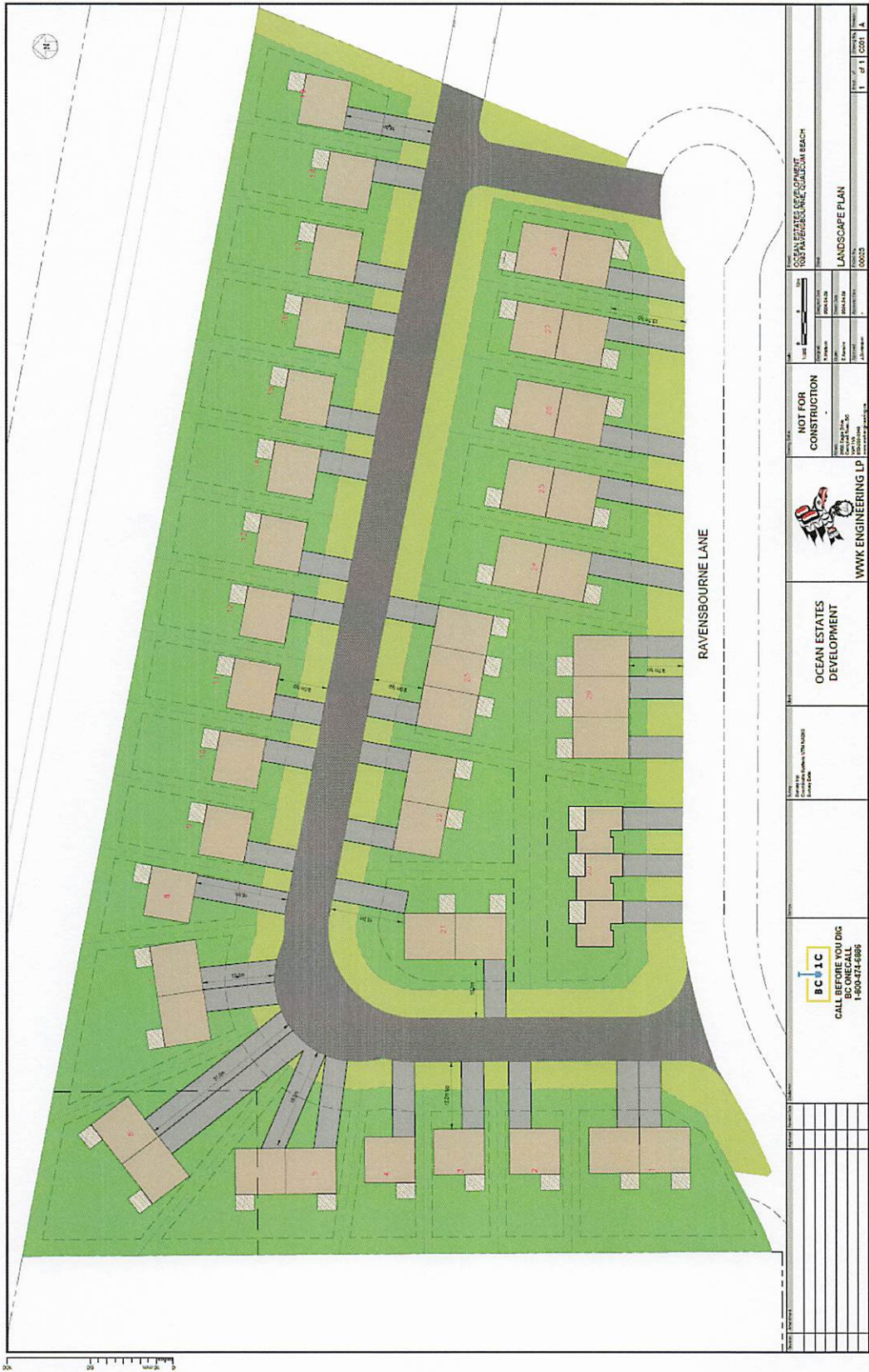
1. **Minimum Replacement Tree Sizes (at time of planting):**
  - 1.1 **Deciduous Replacement Trees** are to be a minimum of 2m in height and a minimum 4cm caliper\*,
  - 1.2 **Coniferous Replacement Trees** are to be a minimum of 3m in height.
2. **Every Replacement Tree** shall be spaced from existing Trees and other Replacement Trees in accordance with an approved landscape plan and in all cases shall be planted in accordance with the current BCSLA (British Columbia Society of Landscape Architects) or BCLNA (British Columbia Landscape & Nursery Association) Landscape Standards.
3. **All Replacement Trees** shall meet current BCSLA or BCLNA standards.
4. **The type, size, condition and location of Replacement Trees** must be approved by the Director.

\* Caliper size is the caliper width, or diameter, of a Tree at 15cm height from the ground.

## Appendix 4 Maps









## Appendix 5 Limitations of this Report

It is the policy of Lemur Tree Service to attach the following clauses regarding limitations. We do this to ensure that developers, owners, and approving officers are clearly aware of what is technically and professionally realistic in retaining trees.

1. The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These include a visual examination of each tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of insect attack, discoloured foliage, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the current or planned proximity of property and people. Except where specifically noted in the report, none of the trees examined were dissected, cored, probed, or climbed, and detailed root crown examinations involving excavation were not undertaken.

Notwithstanding the recommendations and conclusions made in this report, it must be realised that trees are living organisms, and their health and vigour constantly changes over time. They are not immune to changes in site conditions, or seasonal variations in the weather.

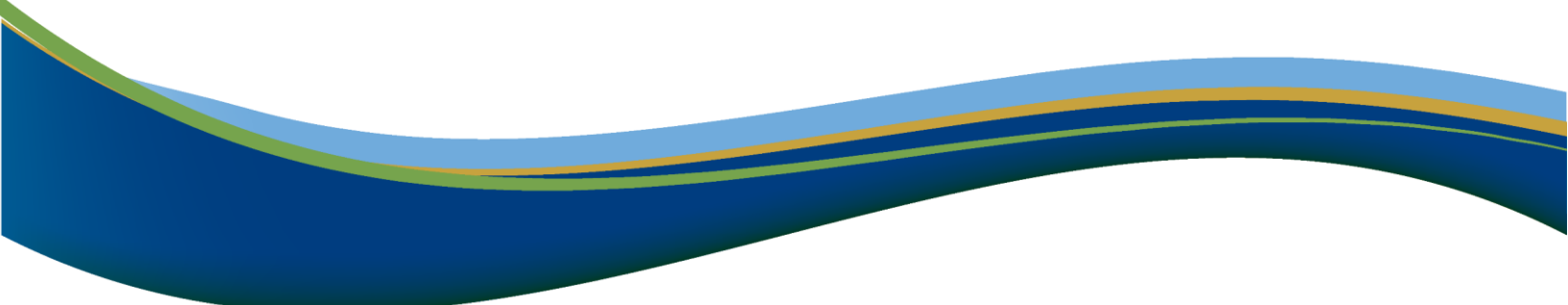
While reasonable efforts have been made to ensure that the trees recommended for retention are healthy, no guarantees are offered, or implied, that these trees, or all parts of them, will remain standing. It is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree -- or group of trees -- , or all their component parts, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure in the event of adverse weather conditions, and this risk can only be eliminated if the tree is removed.

Although every effort has been made to ensure that this assessment is reasonably accurate, the trees should be reassessed periodically. In accordance with standard practice, the assessment presented in this report is valid at the time it was undertaken. It is not a guarantee of safety.

2. Notwithstanding the recommendations made in this report, Lemur Tree Service accepts no responsibility for the implementation of all or any part of this plan, unless we have specifically been requested to examine said implementation activities. Approval and implementation of this plan in no way implies any inspection or supervisory role on the part of Lemur Tree Service. In the event that inspection or

supervision of all or part of the implementation of the plan is requested, said request shall be in writing and the details agreed to in writing by both parties. Any on site inspection or supervisory work undertaken by Lemur Tree Service shall be recorded in written form and submitted to the client as a matter of record.

3. Although this Tree Management Plan has been prepared for Ocean Estates Developments and accepting that it may be used by other parties or agencies, Lemur Tree Service shall not be held responsible for the manner of use of the interpretations that other parties may attach to the report.
4. The report shall be considered a whole, no sections are severable, and the report shall be considered incomplete if any pages are missing.
5. This report is best viewed in colour. Any copies printed in black and white may make some details difficult to properly understand. Lemur Tree Service accepts no liability for misunderstandings due to a black and white copy of the report.



## TOWN OF QUALICUM BEACH

### STAFF REPORT

**TO:** Luke Sales, Director of Planning

**FOR:** Regular Council Meeting

**DATE:** July 17, 2024

**FROM:** Liz Pollock, Planner

**SUBJECT:** Bus Garage Final Report

---

#### RECOMMENDATIONS:

1. THAT Council endorses the report titled “Bus Garage Final Report” dated May 1, 2024.
  2. THAT Council directs staff to prepare a report outlining next steps in the implementation of the Bus Garage Conceptual Design for consideration during the 2025-2029 Budget process.
- 

#### PURPOSE

The purpose of this report is to provide the Bus Garage Final Report to Council for endorsement.

#### BACKGROUND

- In 2012 the Town of Qualicum Beach purchased the “Bus Garage” Property from School District 69. The land was purchased for the purpose of strategic community development. The Town conducted extensive public engagement, and several future uses were identified in the 2011 Official Community Plan (OCP) as follows:
  - Park / Public Square
  - Neighbourhood Pub
  - Commercial Space (retail/office)
  - Artist Studios / Galleries
  - Hotel
  - Performing Arts Centre
  - Seniors’ Centre
  - Residential Development Above Ground Floor
  - Outdoor Performance Venue
  - Parking
  - Movie Theatre
- In 2011 and 2017 the Town solicited proposals from third parties to develop the lands in accordance with the community’s vision. There were no successful proponents.

- In September 2019, the Town of Qualicum Beach and Vancouver Island University's (VIU) Master of Community Planning program undertook a process to develop a vision for how the Qualicum Commons (adjacent school property) and the "Bus Garage" Property could be better utilized for community benefit. The final report was published in April 2020.
- In January 2021, the Town of Qualicum Beach signed an agreement with Naked Naturals Whole Foods Ltd. (Naked Naturals) to sell one acre of land for the purpose of a new grocery store, residential units, and onsite parking on the former "Bus Garage" Property.
- A "Bus Garage" Working Group was formed to explore the land sale area and make recommendations to Council. The working group made the following recommendations, which were endorsed by Council in 2020:
  - The area should function as a whole (synergy) with surrounding uses, with natural flow between Naked Naturals, parking, public and private outdoor areas.
  - Maximize view of Mt Arrowsmith from key public spaces.
  - Support a rational traffic flow from Memorial Avenue and Fern Road.
  - Residential unit parking is required. Parking for Naked Naturals needs flexibility based on overall site plan that comes out of Working Group. (sic)
  - Prioritize safe and pleasant pedestrian connectivity through and around store, outdoor public square, outdoor areas and parking.
  - Creates opportunities for Naked Naturals landscaping, outdoor space, and Memorial Avenue street presence.
  - There should be a multi-purpose public gathering square at the corner of Fern Road and Memorial Avenue, in accordance with the covenant.
  - Quality of residential neighbourhood will include 8 – 12 upper floor units provided with own shared entrance, and parking.
  - Preserve and protect the environmental aspects of the site – e.g. solar gain, views, etc.
  - This is the gateway to the Town centre and the architecture should be designed accordingly.
  - Enable practical and safe movement for tractor trailers, vehicles and pedestrians.
- At the December 8, 2021, Council meeting, Council directed staff to present a public consultation plan to develop design options for the remaining Town-owned land surrounding Naked Naturals (.63 ha). As per Council direction, staff presented a consultation overview to Council on January 12, 2022. The zoning amendment bylaw was adopted, but it was determined that the Development Permit for Naked Naturals would be considered after there was further clarity on the land use of the adjacent Town-owned land.
- On May 18, 2022, Urban Design Consultant Cal Srigley presented a character study and preliminary design options for the Town-owned "Bus Garage" Property. Council adopted the following motion: *THAT Council directs staff to proceed with public consultation for the remaining Town-owned "Bus Garage" land, as described in the May 18, 2022, Planning memo to Council.*
- On May 1, 2023, the Town put out an RFP seeking proposals for a consultant team to lead a public engagement process resulting in a conceptual design for the Town-owned Bus Garage property, as well as a related mobility study. The Town retained Partnership Landscape Architects Inc., (PWL).



## **DISCUSSION**

Public and stakeholder engagement and the finalization of a Conceptual Design and Transportation Mobility Study for the Bus Garage property was initiated by the Town in May 2023. The feedback from these engagements resulted in the attached Bus Garage Final Report for the Town-owned Bus Garage site. This work builds off a comprehensive public engagement and visioning process that was undertaken in 2011, the previous work completed with VIU, the Bus Garage “Working Group”, and design work by Cal Srigley.

### **Phase 1 Engagement**

The Phase 1 engagement memorandum was made available to the public in December 2023. Phase 1 engagement involved a stakeholder meeting, a Pop-Up event at the Farmer’s Market, a youth engagement event at Kwalikum Secondary School, and a public survey. Phase 1 also included working with two VIU students on collecting traffic data at the Bus Garage Site. Building on insights gathered from Phase 1, the next steps included crafting two concept design options, and two parkade options that moved the project into Phase 2.

### **Phase 2 Engagement**

Phase 2 engagement took place from December 2023 to February 2024 and involved a stakeholder meeting, a public survey, and an in-person public workshop. Building off insights gathered from Phase 1, the goals of Phase 2 engagement were to share what was learned during Phase 1, demonstrate how that feedback was incorporated into the draft preliminary design options, and to gather public input on preferred options for the plaza and parkade layout. Significant refinements from Phases 1 and 2 resulted in a north/south pedestrian connection through the site and locating the parkade entrance outside of the public plaza. The Phase 2 engagement memorandum was made available to the public in March 2024. Feedback gathered throughout Phase 2 was incorporated into the draft Concept Design & Report.

The consultant, PWL, presented the refined draft Concept Design with a more detailed site plan that articulated a shared vision for the Bus Garage site, the draft preferred parkade layout, and the draft Transportation Mobility Study at the March 27, 2024 Committee of the Whole Meeting.

Following the presentation to the Committee of the Whole, PWL made minor refinements to reflect Council comments and final requests for consideration.

## **FINANCIAL IMPLICATIONS**

The 2024-2028 Financial Plan includes a budget provision of \$1.8 million, over the years 2024 to 2027. The annual budget provisions over the next 5 years are outlined below:

- 2024: \$1,000,000
- 2025: \$100,000
- 2026: \$100,000
- 2027: \$600,000

Following detailed design and costing, it is anticipated that staff will actively pursue grant opportunities to secure funding aimed at facilitating the detailed design and offsetting construction costs associated with the Bus Garage Site.

## PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)

*Public Participation Framework developed by the International Association for Public Participation – IAP2*

| INFORM                                                                                                                                                                | CONSULT                                                                                                         | INVOLVE                                                                                                                                              | COLLABORATE                                                                                                                                                                          | EMPOWER                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Obtain feedback on analysis, alternatives, and/or decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li> </ul> | <ul style="list-style-type: none"> <li>• Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Final decision making in the hands of the stakeholders</li> </ul> |

*International.*

### INFORM, CONSULT, INVOLVE

- To date, the project has included extensive public participation (consult and involve).
- The consultation process for the Bus Garage is now complete.
- The public will continue to be informed as further information is available. (inform).

### STRATEGIC PLAN ALIGNMENT

Council's Strategic Plan Focus Area(s) supported by this initiative:

- Good Governance: *To govern for the public interest of our community while managing competing interests, ensuring availability of transparent and accessible information, fostering respectful public engagement, and demonstrating ethical values.*
- Community Health & Wellbeing: *To improve the health and wellbeing of people who live, work, and play in the Town.*

### SUMMARY

PWL has completed the Bus Garage Final Report, including: a conceptual design, the preferred parkade layout, order of magnitude estimates of probable cost, and the Transportation Mobility Study. Council is now in a position to prepare for detailed design and construction works associated with the former Bus Garage Site during Council's next year's Budget discussions.

### ALTERNATIVE OPTIONS

1. THAT Council provide alternative direction to staff.

## APPROVALS

Report respectfully submitted by Liz Pollock, Planner



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Liz Pollock  
Planner  
*Report Author*



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Lou Varela  
Chief Administrative Officer  
*Concurrence*



---

Luke Sales  
Director of Planning  
*Concurrence*



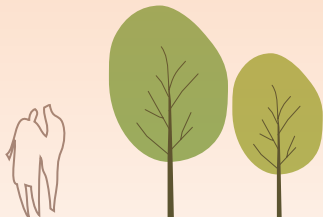
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Raj Hayre  
Director of Finance  
*Concurrence*

## REFERENCES

Attachment 1: Bus Garage Final Report  
Attachment 2: Bus Garage Transportation Mobility Study

File: 6520-20-Bus Garage  
N:\0100-0699 ADMINISTRATION\0550 COUNCIL MEETINGS\0550-20 MEETINGS\2024\07 17 RC\1.  
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# CONCEPT DESIGN & REPORT

## Bus Garage Qualicum Beach

heart of the community 



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## EXECUTIVE SUMMARY

The Town of Qualicum Beach initiated the Bus Garage Revitalization Project to develop a conceptual design for the Bus Garage lands, including a public plaza at the corner of Memorial Avenue and Fern Road, parking recommendations and a Mobility Study.

The Qualicum Beach Bus Garage Revitalization Project Final Report summarizes the project process, including public engagement, and presents the final concept design for a public plaza, high-level costing, and a Summary of Recommendations. The Appendices contain the final Transportation Mobility Study, including Parking Recommendations, as well as detailed summaries of public engagement activities and findings.

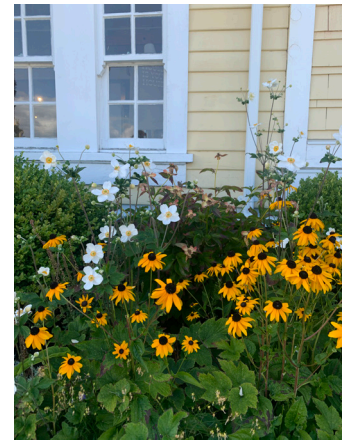
### Public engagement

Please refer to Appendices B and C to learn more about the public engagement activities and findings.

The feedback gathered during the engagement process shaped the conceptual design of the Bus Garage Property. Public input will also guided the study on transportation in the area, including analyzing parking and traffic operations for the site and adjacent Uptown area.

Phase One Engagement, held from September 2023 to November 2023, established how the Bus Garage site is currently used; determined the kinds of activities the Qualicum Beach community would like to see on the Bus Garage site; and collected insight into what the community currently values about Qualicum Beach. The feedback from Phase One Engagement informed the development of two draft conceptual designs for the Bus Garage site. These options were focused on the amenities and activities that will be included in the future Bus Garage Plan.

Phase Two Engagement, held from December 2023 to February 2024, shared what was learned during Phase One Engagement, demonstrated how that feedback was incorporated into the preliminary design options, and gathered public input on which plaza option and parkade layout was preferred. Feedback gathered throughout Phase Two Engagement was incorporated into the final concept design.



*Photos of Uptown Qualicum Beach and the Bus Garage site.*

The outcome of the public engagement process was the selection of amenities and activities for inclusion in the public plaza, and the development of the Arts Plaza concept design.

## EXECUTIVE SUMMARY

### Concept Design

The Arts Plaza is performance-focused and responds to the public's request for a performance and event space. This plaza includes an event zone with a small, raised platform stage. It also has a large flexible plaza area with a lawn and moveable seating. This area can accommodate market stalls, pop-up events and other community gatherings. This concept has a strong pedestrian connection from Uptown to Qualicum Commons.

### Transportation

Please refer to Appendix A to read the full Transportation Mobility Study.

The traffic model indicates that the additional traffic generated by the development is not anticipated to have a significant impact on local area traffic operations. All traffic movements remain within typical capacity thresholds. The difference in operations between the existing and post-development scenarios is considered negligible.

### Parking

Considering all presented factors and estimates, Bunt concludes that the surrounding area with approximately 430 on-street and parking lot spaces will be able to absorb the displaced demand for all three options with varying degrees of supportive measures. Supportive measures may reduce the amount of displaced parking demand or redistribute the parking demand to less well-used locations in the study area.

### Transportation Demand Management

Recommended study area transportation improvements for consideration include improvements to the pedestrian realm, including additional pedestrian crossings, amenities such as benches and water fountains, and cycling infrastructure.

#### Wayfinding Signs

Key Destinations, Trails,  
Cycling Routes, Water Stations,  
Parks, etc.



Source: City of Vancouver

#### Water Stations

Dog Fountain, Water Fountain,  
Misting Station, Water Fill



#### Universal Bike Racks

"Post-and-Ring" or "Sheffield"  
Multiple points of contact,  
Can accommodate large cargo bikes



#### Benches

Without arm rests,  
Comfortable recline





## BACKGROUND AND INTRODUCTION

### Purpose of Project

The Bus Garage Revitalization project presents an opportunity to create a community vision for the former Bus Garage Lands. The final Concept Design for the land considers the surrounding cultural, commercial, environmental, and transportation character of the Uptown neighbourhood, and builds on the extensive public engagement and conceptual design work completed to date. Positioned as a gateway to the heart of town, the Bus Garage Concept Design will help shape the character, amenities, and experience of this area for years to come.

### Scope of Work

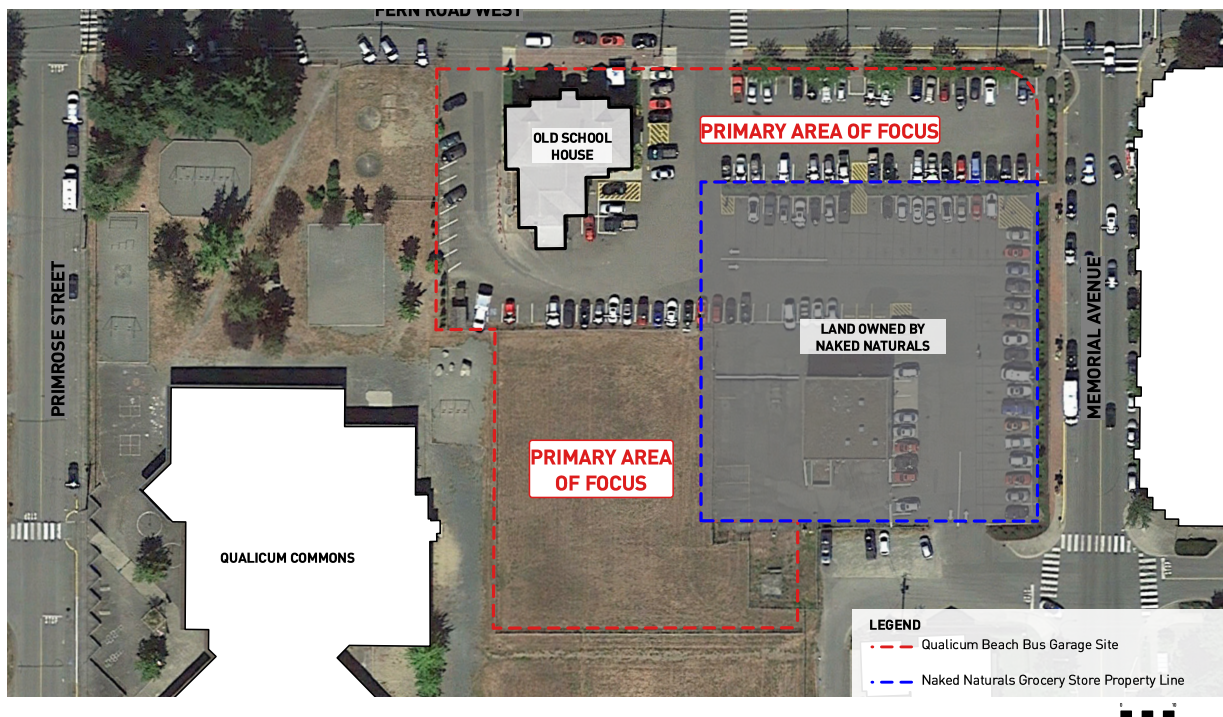
The Town of Qualicum Beach initiated the process to develop a conceptual design for the Bus Garage lands, including a public plaza at the corner of Memorial Avenue and Fern Road, parking recommendations and a Mobility Study.

Building off of previous work done by the Town, PWL Partnership Landscape Architects led a public engagement and design process to develop a conceptual design for the public plaza, informed by the Transportation and Parking recommendations.

Bunt & Associates Engineering Ltd. (Bunt) prepared a Transportation Mobility Study to meet the following objectives:

- Summarize existing transportation conditions in the study area.
- Summarize relevant Town policies and plans.
- Estimate the proposed development's impact on study area traffic operations and consider recommended mitigation.
- Review vehicle parking impacts of the proposed development and parking supply options.
- Provide a swept path analysis to confirm functionality of vehicle access, circulation, parking and loading.
- Recommend improvements to the study area multi-modal transportation network with the objective of improving the active transport mode share.

Please refer to Appendix A to read the Transportation Mobility Study and Parking Recommendations.



## BACKGROUND AND INTRODUCTION

### Project Background

The 0.63 hectare Bus Garage property was purchased by the Town of Qualicum Beach in 2012 for the purpose of strategic community development. At that time, the Town conducted extensive community engagement, identifying a range of potential uses, including (but not limited to) a park or public square; commercial space; a performing arts centre; residential development; and parking.

In 2019, the Town of Qualicum Beach partnered with Vancouver Island University's Master of Community Planning program to develop a vision for how the Bus Garage property (along with the adjacent Qualicum Commons property) could provide greater benefits to the Qualicum Beach community. The process included extensive public engagement and produced two concept designs. The final report identified mixed use residential, parking, and multi-use public open space in the Bus Garage property, and can be viewed at <https://qualicumbeach.civicweb.net/filepro/documents/7959/?preview=8247>

In 2021, the Town of Qualicum Beach signed an agreement with Naked Naturals to sell one acre of land on the site for the purpose of a new grocery store, upper level residential units, and onsite parking. The proposed Naked Naturals development will proceed following the completion of the Bus Garage Revitalization Concept Design, as a separate initiative.

A Bus Garage Working Group was formed to develop a series of recommendations for the eventual development of the Bus Garage site. These recommendations can be viewed at <https://qualicumbeach.civicweb.net/document/9714/>. The recommendations were endorsed by Town Council in 2020. In 2022, Urban Design Consultant Cal Srigley presented a character study and preliminary design options for the Bus Garage property. Council adopted a motion for staff to proceed with public consultation for the remaining Town-owned Bus Garage lands, as described in the May 18, 2022 Planning Memo to Council.



Cal Srigley perspective sketch, 2022



## BACKGROUND AND INTRODUCTION

### Site Analysis

The Bus Garage Lands are located at the corner of Memorial Avenue and Fern Road at the edge of the Uptown Neighbourhood. The Old School House Arts Centre, a non-profit charity providing arts programming, a gallery, and community space, anchors the northwest corner of the site. The Bus Garage property boasts impressive views of Mount Arrowsmith.

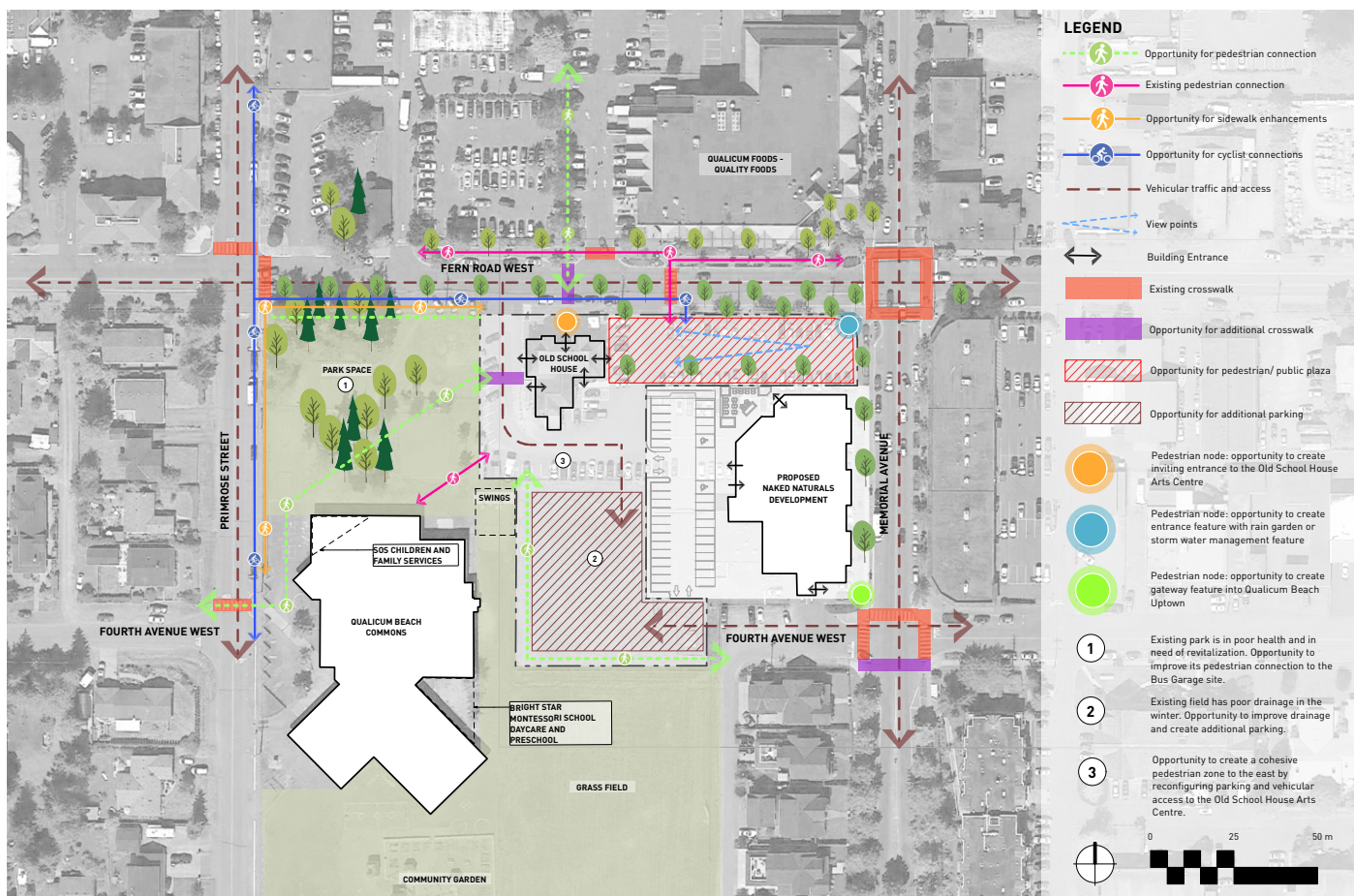
The Uptown neighbourhood is pedestrian-oriented, with a pleasant village feel. This area is home to many small businesses, including retail and restaurants, as well as cultural attractions such as local theatre and galleries. This area is frequented both by the year-round community as well as tourists and summer residents.

A pedestrian through-way, connecting the site to Second Avenue and Leigh House Park, terminates directly across Fern Road from The Old School House. The Bus Garage Lands are serviced by both north-south

and east-west bus routes. There are opportunities to better connect the Uptown area to the Bus Garage site via suggested pedestrian crosswalks, sidewalk improvements, site circulation, and cycle infrastructure.

Currently, just over half of the site is dedicated to free surface parking that is well-used by visitors to the Uptown area. For more information about how the site is currently used, please refer to Appendix B - Phase 1 Public Engagement Memo.

The Qualicum Commons property that neighbours the Bus Garage lands includes a semi-wooded play area to the west of The Old School House, as well as a large area of open lawn space. The Qualicum Commons building houses several organizations and businesses.



*Opportunities and Constraints Analysis*

## CONSULTATION SUMMARY

For a detailed account of Public Engagement activities and findings, please refer to Appendices B and C.

Public Engagement was promoted throughout the project's duration via the Town of Qualicum Beach website ([www.qualicumbeach.com/busrevive](http://www.qualicumbeach.com/busrevive)); social media posts on the Town's Facebook page; via the Town's Constant Contact email list; via the Town Tidings newsletter; and via the Noteworthy mail-out bulletin. Project information and hard copies of the public surveys were also available at Town Hall.

### Phase 1 Overview

#### Stakeholder Engagement

The Town engaged the following stakeholder groups throughout the project:

- The Old School House Arts Centre
- Naked Naturals
- Town of Qualicum Beach Staff
- Quality Foods

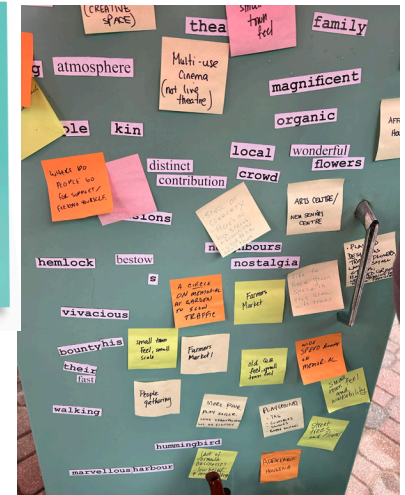
The purpose of the stakeholder group was to provide detailed insight in relation to potential programming, design, and maintenance of the site, as well as knowledge of the community's history, concerns, and needs. Stakeholder input helped to frame the questions posed during the broader public engagement process.

#### Pop-Up

The Pop-Up was the first public event for the Qualicum Beach Bus Garage Project. The Pop-Up took place on September 23rd at the Qualicum Beach Farmers' Market. The goals of the Pop-Up were to introduce the project to the community; promote the public survey; and encourage the public to become involved in the process.

Success = welcoming part of town, green space, creative space -- community art, benches, places for people to sit and have a coffee, important to keep this vision of 'heart of the town' will help guide the nitty-gritty necessary things like parking.

make sure that site engages the rest of the town, how to create flow, easy to isolate the program here from rest of uptown, make sure that everything merges with views -- mountain views.



"Many visitors are visiting the entire downtown."

bike parking, can encourage more people to come by bike



playground! hoping to attract more young families

often a dropoff point, lots of parking, green space, social spaces, public art throughout the plaza! love the plaza idea.



Photos from the Pop-up Engagement event; sticky notes from Stakeholder Meeting 1.



## CONSULTATION SUMMARY

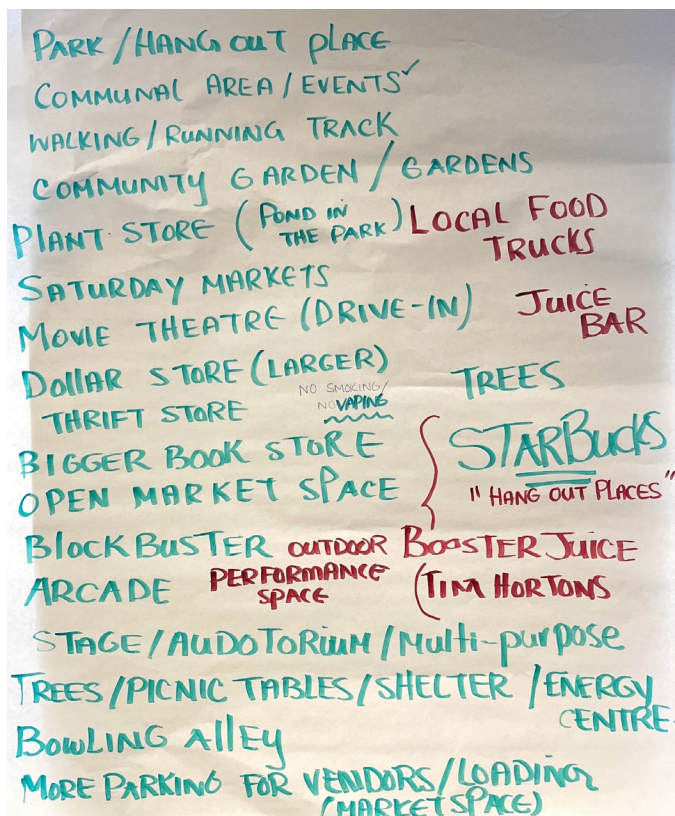
### Phase 1 Overview

#### Public Survey

A public survey was open to the public from September 22nd to October 20th, 2023. The survey was available online via the Town's project website ([qualicumbeach.com/busrevive](http://qualicumbeach.com/busrevive)) and in hard copy at Town Hall. The goals of the survey were to gain insight into current uses of the site; invite input on mobility and transportation concerns in relation to the site; and to gather feedback on programming and amenity options.

#### Youth Engagement

Youth engagement was initiated as a distinct process to address the low participation of youth in most municipal planning processes. Town of Qualicum Beach staff visited Kwalikum Secondary School's leadership class on November 2, 2023 to lead a discussion with students around the question "What do you want to see happen at the Bus Garage site?" Students also completed hard copies of the public survey.



Notes taken by Town of Qualicum Beach staff during the youth engagement session.

### Public Survey 1 Local Insights



## CONSULTATION SUMMARY

### Phase 2 Overview

Phase Two Engagement, held from December 2023 to February 2024, involved a Town staff and stakeholder meeting, a public survey, and an in-person public workshop.

The goals of Phase Two Engagement were to share what was learned during Phase One Engagement, demonstrate how that feedback was incorporated into the preliminary design options, and to gather public input on which plaza option and parkade layout is preferred. Public input gathered throughout Phase Two was incorporated into the final concept design.

### Stakeholder Meeting 2

- The second Town Staff and Stakeholder Meeting was held virtually on December 15th, 2023.
- Following an overview of the two preliminary plaza concept design options, participants were asked to respond to a series of questions:
  - Which option do you think is a better fit, and why?
  - Are there any programming elements that you would like to see added to the Bus Garage Plan? Are there programming elements or adjacencies that you see that are a poor fit?
  - Is there anything else you'd like us to know?

### Public Survey

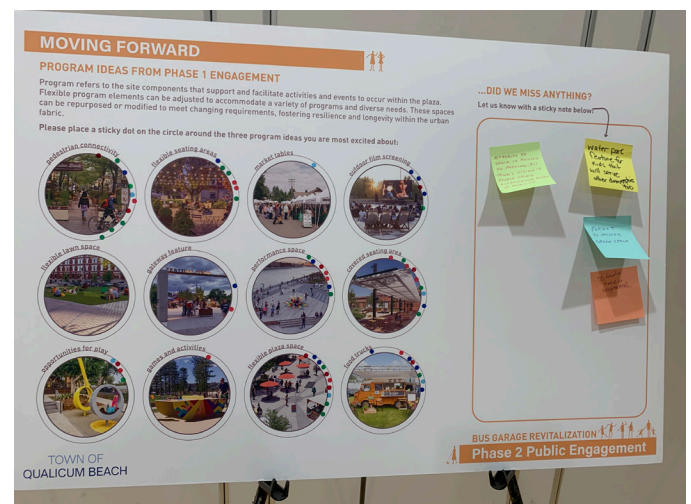
A survey was open to the public from January 16th to February 14th, 2024. A total of 263 responses were received. The survey was accessible online at [www.qualicumbeach.com/busrevive](http://www.qualicumbeach.com/busrevive). Hard copies were also available at Town Hall.

The goals of the survey were to solicit public input on the two draft conceptual designs for the Bus Garage Site, focused on amenities and activities in the public plaza. The survey also collected input on two underground parkade options. Please refer to Appendix C to review the preliminary plaza and parkade options.

### Public Workshop

An in-person public workshop was held at the Qualicum Beach Civic Centre on February 12th, 2024 from 7:00 to 9:00pm. The purpose of the Public Workshop was to summarize the feedback received during Phase One Engagement, to provide preliminary mobility study findings, and to share the two preliminary plaza concept design options along with two underground parkade options.

Participants were asked to weigh in on which parkade option was preferred; to share additional feedback on proposed programming within the plaza; and to comment on which plaza concept design option was preferred.



Photos from February 12th Public Workshop



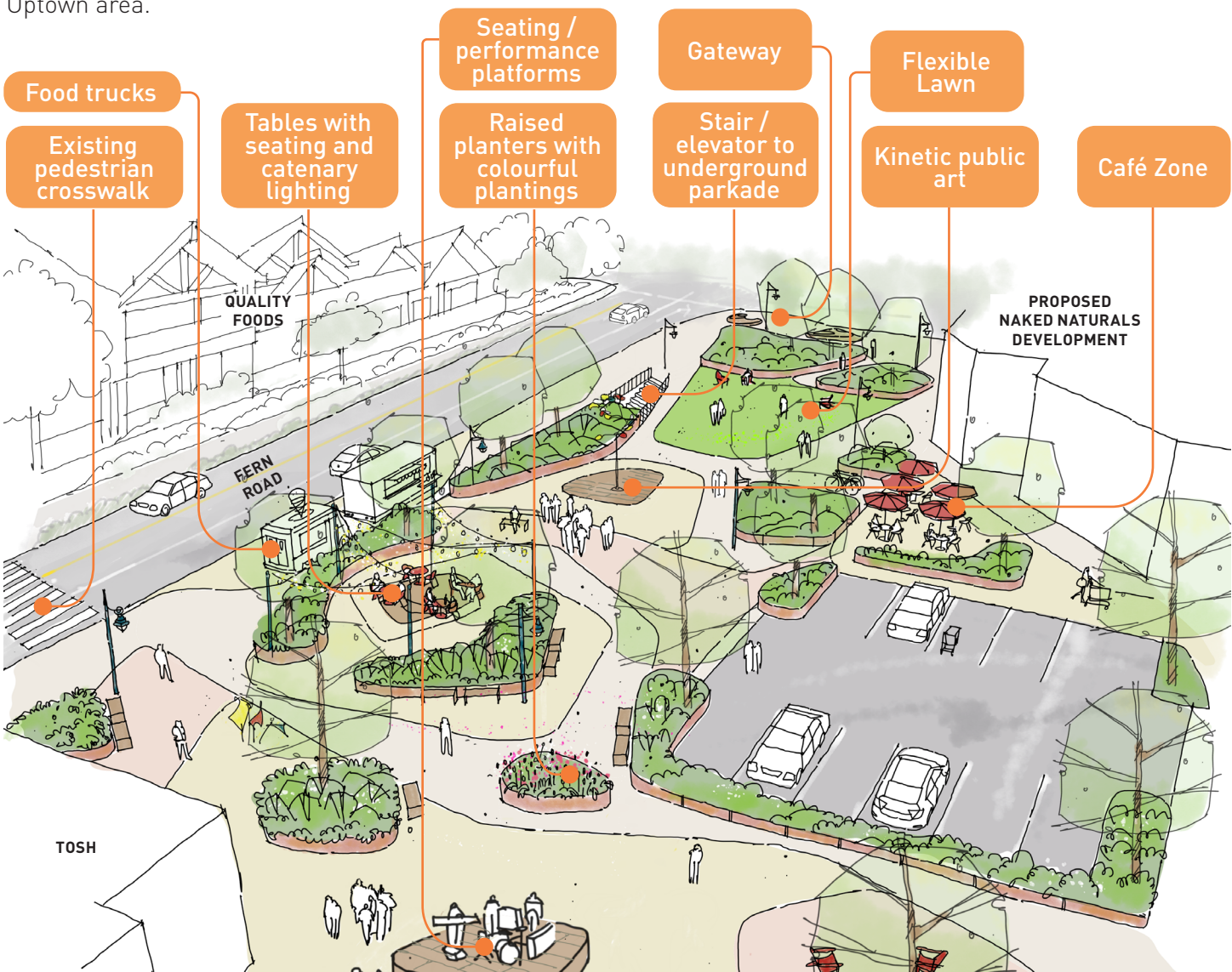
## CONCEPTUAL DESIGN

### The Arts Plaza

The Arts Plaza was one of two concept design options presented to the community during Phase 2 Engagement. Feedback gathered during Phase 2 Engagement was incorporated into the preliminary Arts Plaza option to produce the final Conceptual Design. Please refer to Appendix C for more detail on the preliminary concept design options.

The Arts Plaza responds to the community's request for performance and event space, flexible open space with trees and greenery, and a welcoming public space that functions as a gateway to the Uptown area.

VIEW CONE FOR PERSPECTIVE SKETCH



Annotated Arts Plaza perspective sketch

## CONCEPTUAL DESIGN

### Design Rationale

The formal entry to the site is at the corner of Memorial Avenue and Fern Road via the 'Gateway Feature,' a landmark area with seating and a public art feature visible to passers by and signaling arrival to the Uptown neighbourhood.

Moving west through the site from the Gateway Feature, visitors are greeted by a tree-buffered open lawn space. The Old School House is visible across the plaza, anchoring the site. Towards the heart of the site are movable tables and seating with lighting, adjoining an open area of flexible plaza space. This area can accommodate market stalls, pop-up events, and other community gatherings.

To the north is the Food Truck Zone adjacent to a cozy seating and dining area with moveable furniture, feature paving, and warmly lit by string lights.

A generous pedestrian mews traverses the site from north to south between Fern Road and Fourth Avenue at Memorial Avenue. Playable elements and flexible seating are distributed throughout this wide corridor. Moving towards The Old School House, trees and plantings frame an outdoor spill-out space serving TOSH, including a flexible timber platform that can be used for seating, events, and performances.

Vehicle access to the site is via Fourth Avenue and a driveway immediately west of TOSH. Surface parking is arranged south of TOSH and adjoins surface parking for proposed Naked Naturals development. An underground parkade entry is located within the surface parking area to the south of the public plaza.

For a detailed description of parking recommendations, please refer to Appendix A.



Arts Plaza perspective sketch

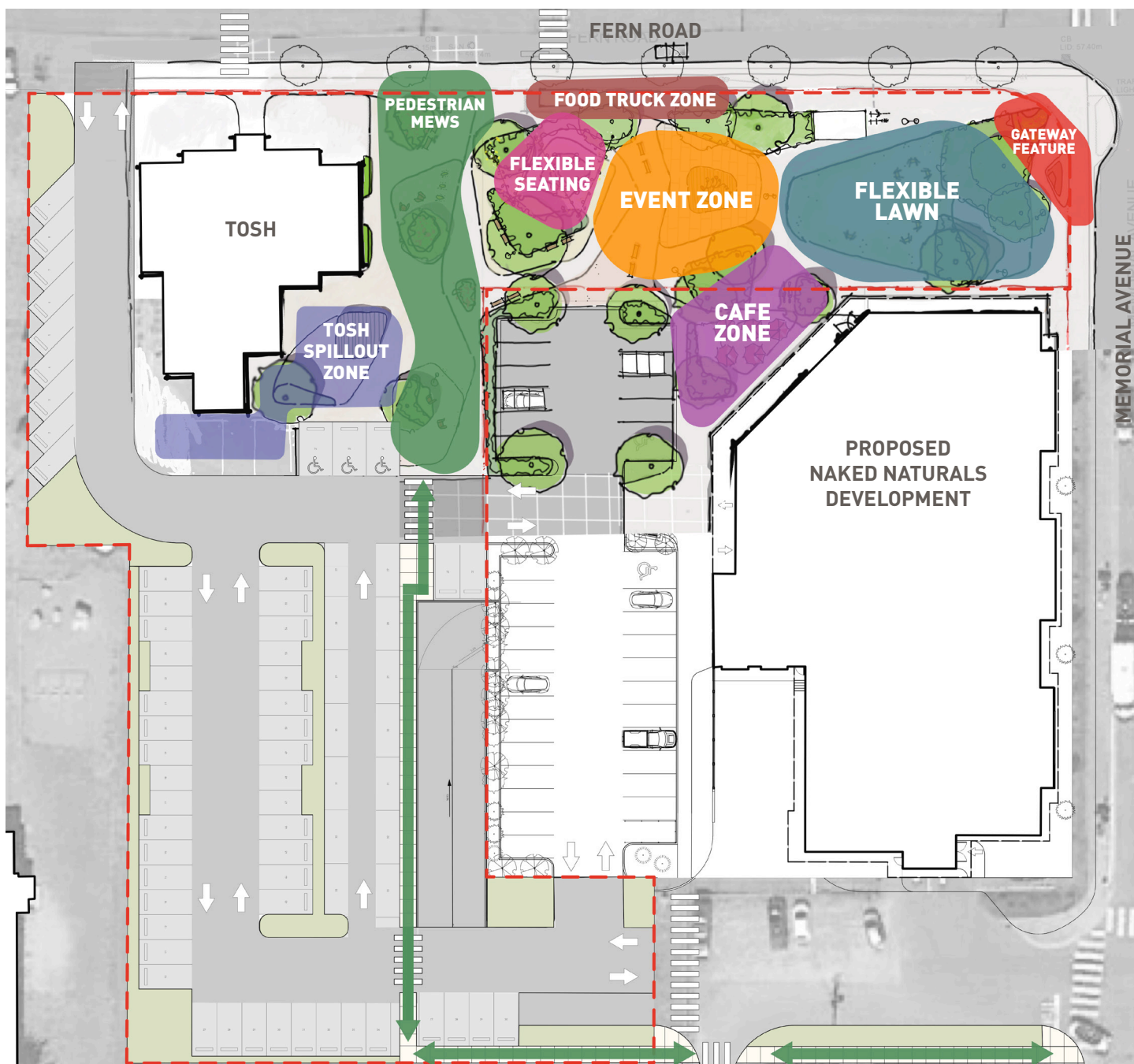


## CONCEPTUAL DESIGN

### Program Diagram

Program refers to the site components that support and facilitate activities and events to occur within the plaza. The diagram below describes the high-level function of different parts of the plaza. Many areas are designed with flexibility in mind, rather

than limited specific uses. Flexible program elements can be adjusted to accommodate a variety of programs and diverse needs. These spaces can be repurposed or modified to meet changing requirements, fostering resilience and longevity within the urban fabric.



## CONCEPTUAL DESIGN

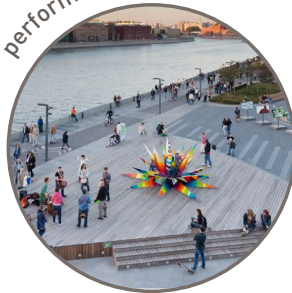
### Program

#### Primary Program Elements

flexible plaza space



performance space



flexible lawn space



covered seating area



#### Secondary Program Elements

pedestrian connectivity



market tables



gateway feature



food trucks



flexible seating

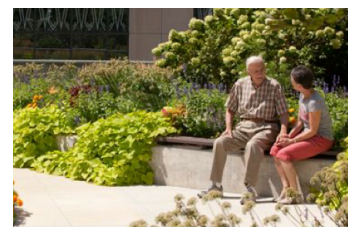


covered seating area



### Program Snapshot

Every Day Usage - Meeting for Coffee / Food Trucks / Soaking up the Sun





## CONCEPTUAL DESIGN

### Program

#### Program Snapshot

Market Stalls - Farmers' Markets / Seasonal Markets



#### Program Snapshot

Music and Theater Space - Theater / Buskers / Mini Concerts in the Plaza



## CONCEPTUAL DESIGN

### Annotated Site Plan

PEDESTRIAN MEWS WITH  
ART INSTALLATIONS



RAISED SEATING  
AND PERFORMANCE  
PLATFORM



GATEWAY FEATURE



'LIVING ROOMS' WITH  
SPECIAL PAVING AND  
SEATING



MOVABLE TABLES WITH  
CATENARY LIGHTING



FLEXIBLE LAWN WITH  
LOUNGE CHAIRS



## CONCEPTUAL DESIGN

### Annotated Site Plan



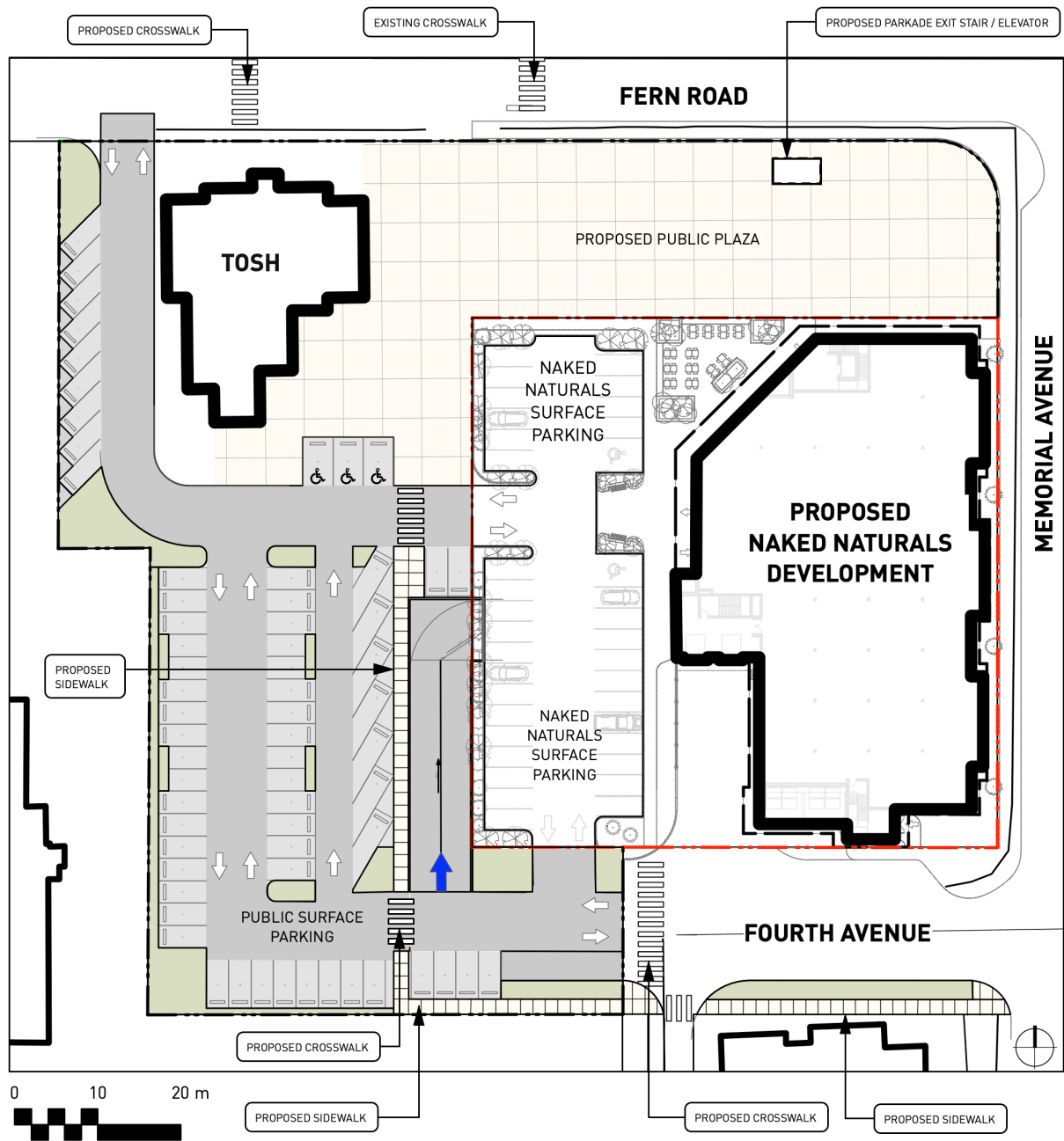
- |                                           |                          |                              |
|-------------------------------------------|--------------------------|------------------------------|
| <b>1</b> Performance / event platform     | <b>5</b> Café seating    | <b>9</b> Food trucks         |
| <b>2</b> Seating platform                 | <b>6</b> Gateway feature | <b>10</b> Flexible lawn      |
| <b>3</b> Flexible seating and dining area | <b>7</b> Flexible plaza  | <b>11</b> Kinetic public art |
| <b>4</b> Catenary lighting                | <b>8</b> Pedestrian mews | <b>12</b> Stair / elevator   |

CONCEPTUAL DESIGN

Parking - Above Ground

For a more detailed account of parking recommendations, please refer to Appendix A.

| LEGEND |                                                   |
|--------|---------------------------------------------------|
|        | PROPOSED NAKED NATURALS DEVELOPMENT PROPERTY LINE |
|        | BUS GARAGE PROPERTY LINE                          |
|        | PLAZA AND PEDESTRIAN SIDEWALK                     |
|        | TRAFFIC CIRCULATION (DRIVE AISLE)                 |
|        | SURFACE PARKING STALLS                            |
|        | PLANTING                                          |
|        | PARKADE ENTRANCE                                  |



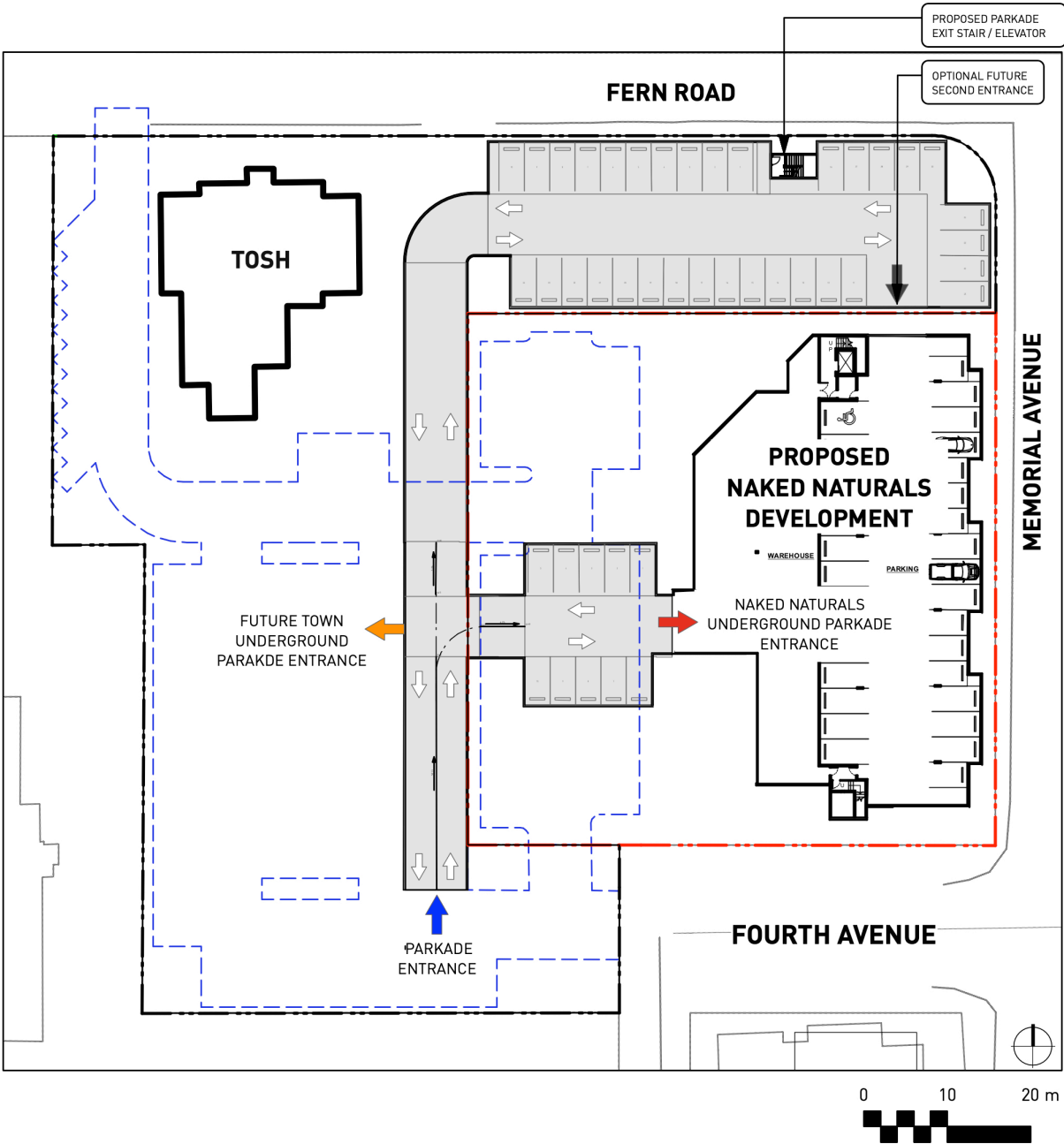


CONCEPTUAL DESIGN

Parking - Below Ground

For a more detailed account of parking recommendations, please refer to Appendix A.

| LEGEND                 |                                                   |
|------------------------|---------------------------------------------------|
| <div><div></div></div> | PROPOSED NAKED NATURALS DEVELOPMENT PROPERTY LINE |
| <div><div></div></div> | BUS GARAGE PROPERTY LINE                          |
| <div><div></div></div> | OUTLINE OF SURFACE PARKING ABOVE                  |
| <div><div></div></div> | PARKADE ENTRANCE                                  |
| <div><div></div></div> | NAKED NATURALS UNDERGROUND PARKADE ENTRANCE       |
| <div><div></div></div> | FUTURE TOWN UNDERGROUND PARKADE ENTRANCE          |



## COMPARATIVE ANALYSIS OF PUBLIC PLAZA

### On-Slab Versus On-Grade

The choice between placing the Qualicum Beach Bus Garage Plaza on-slab (over a parkade structure) or on-grade (no parking structure underneath) brings both economic and environmental considerations. Key factors to consider in the decision of placing a plaza on-slab or on-grade are outlined below:

#### Handling Rainwater:

Plazas constructed over parking structures require more elaborate drainage systems to manage rainfall as they lack capacity for passive rainwater infiltration. In contrast, on-grade plazas allow rainfall to soak into the soil, contributing to groundwater replenishment and reducing the need for more costly drainage solutions.

#### Maintenance Requirements:

On-slab plazas require a waterproof membrane to protect the parking structure from water damage. Membrane inspections, repairs, and eventual replacements result in higher maintenance costs compared to on-grade plazas. Manufacturers suggest their products can last for up to 50 years. However, insurers typically limit warranties to around 20 to 30 years, depending on the significance of the building. The lifespan of a plaza can be restricted by the warranty period of the waterproof membrane, and the plaza planting would need to be demolished and reinstalled at this point.

On-grade plazas have lower maintenance needs, since there is no parking structure to upkeep.

#### Trees, Tree Canopies and landscape planting:

Soil depth is often limited on-slab due to concerns of weight on the underlying parking structure. This negatively impacts the spread of tree roots which can lead to stunted growth, a shorter life span, and a higher irrigation demand. Landscaping including shrubs, flowers and often lawn, need to be planted in raised planters in order to get adequate soil depth and drainage.

As trees reach their mature height, this coincides with the need to replace the parking structure membrane, which results in loss of the mature tree canopies and their extensive ecological and social benefits. For example, the lack of mature tree canopies reduces the ability of the plaza to mitigate the urban heat island effect and adapt to climate change.

#### Construction Costs:

Typically, on-slab plazas have a higher construction cost due to complexities of building a plaza over a parking structure, more elaborate drainage systems, and raised concrete planter walls. Recent costing on similar projects have indicated a 3-5x factor construction cost for a comparable project on slab vs on grade. The Opinion of Probable Cost provide on the following page is for an on-slab condition.

#### Parking Needs and Future Planning:

Locating the parking ramp to serve the future development needs of Qualicum Commons could enhance the economic viability of the future development.

An on-slab plaza provides valuable parking infrastructure in high-demand parking areas and maximizes land use efficiency by providing public space and parking within one area. The reality is that until mobility trends change significantly, parking will be required – either under the plaza in a parkade, or on raw land somewhere else in the immediate area.

If community trends indicate a sustained need for parking and space is limited, an on-slab plaza could be an ideal option. However, consideration of the factors listed above should be given, especially with respect to the number of underground stalls that are possible to obtain relative to overall project cost and maintenance requirements. Future planning should balance current parking demand with the community's evolving needs.

## OPINION OF PROBABLE COST

### Public Plaza

| Item                                        | Unit | Quantity | Unit Cost     | Total         |
|---------------------------------------------|------|----------|---------------|---------------|
| <b>HARDSCAPE</b>                            |      |          |               |               |
| Concrete Unit Pavers - Pedestrian Grade     | SM   | 1322     | \$ 270.00     | \$ 356,940.00 |
| Concrete Unit Pavers - Vehicular Grade      | SM   | 78       | \$ 390.00     | \$ 30,420.00  |
| Decking                                     | SM   | 171      | \$ 1,150.00   | \$ 196,650.00 |
| CIP Curb, Around Lawn                       | LM   | 59       | \$ 230.00     | \$ 13,570.00  |
| CIP Planter Walls, Stone Veneer, 0.75m tall | LUMP | 1        | \$ 285,000.00 | \$ 285,000.00 |
| CIP Concrete Furnishing Pads                | SM   | 34       | \$ 190.00     | \$ 6,460.00   |
| Stairs                                      | LUMP | 1        | \$ 3,000.00   | \$ 3,000.00   |
| <b>SITE FURNISHINGS</b>                     |      |          |               |               |
| Lounge Chairs                               | EA   | 12       | \$ 1,400.00   | \$ 16,800.00  |
| Bike Racks                                  | EA   | 6        | \$ 900.00     | \$ 5,400.00   |
| Standard Benches                            | EA   | 8        | \$ 3,500.00   | \$ 28,000.00  |
| Cafe Tables and Chairs                      | EA   | 6        | \$ 5,000.00   | \$ 30,000.00  |
| Waste Receptacles                           | EA   | 4        | \$ 2,600.00   | \$ 10,400.00  |
| Raised Timber Stage, 0.5m ht                | LUMP | 1        | \$ 40,000.00  | \$ 40,000.00  |
| Gateway Feature                             | LUMP | 1        | \$ 60,000.00  | \$ 60,000.00  |
| <b>SOFTSCAPE</b>                            |      |          |               |               |
| Deciduous trees, 10cm cal.                  | EA   | 13       | \$ 1,350.00   | \$ 17,550.00  |
| Shrub Planting, Assume No.2 pot size        | SM   | 330      | \$ 100.00     | \$ 33,000.00  |
| Growing Medium                              | CM   | 325      | \$ 95.00      | \$ 30,875.00  |
| Sod Lawn                                    | SM   | 183      | \$ 35.00      | \$ 6,405.00   |
| Landscape Lighting - Catenary Lighting      | LUMP | 1        | \$ 50,000.00  | \$ 50,000.00  |
| Landscape Lighting - Standard Poles         | EA   | 8        | \$ 20,000.00  | \$ 160,000.00 |
| Irrigation                                  | SM   | 330      | \$ 50.00      | \$ 16,500.00  |

**PUBLIC PLAZA SUBTOTAL \$ 1,396,970.00**

40% CONTINGENCY \$ 558,788.00

**PUBLIC PLAZA TOTAL \$ 1,955,758.00**

#### Unit Definitions:

LM = Linear Metre  
 SM = Square Metre  
 CM = Cubic Metre  
 EA = Each  
 LS = Lump Sum

## OPINION OF PROBABLE COST

### Surface Parking

| Item                                     | Unit     | Quantity | Unit Cost       | Total             |
|------------------------------------------|----------|----------|-----------------|-------------------|
| <b>HARDSCAPE</b>                         |          |          |                 |                   |
| Surface Parking Stalls                   | EA       | 64       | \$ 3,000.00     | \$ 192,000.00     |
| CIP Concrete Walkway- Pedestrian Grade   | SM       | 163      | \$ 190.00       | \$ 30,970.00      |
| Asphalt Drive Aisle                      | SM       | 1770     | \$ 90.00        | \$ 159,300.00     |
| CIP Concrete Curb                        | LM       | 450      | \$ 230.00       | \$ 103,500.00     |
| <b>SOFTSCAPE</b>                         |          |          |                 |                   |
| Deciduous trees, 10cm cal.               | EA       | 14       | \$ 1,350.00     | \$ 18,900.00      |
| Growing Medium                           | CM       | 370      | \$ 85.00        | \$ 31,450.00      |
| Shrub Planting, Assume No.2 pot size     | SM       | 412      | \$ 100.00       | \$ 41,200.00      |
|                                          |          |          |                 |                   |
| Parking Lot Lighting                     | Excluded |          |                 |                   |
| Irrigation - Drip                        | SM       | 412      | \$ 50.00        | \$ 20,600.00      |
|                                          |          |          |                 |                   |
| <b>TOWN SURFACE PARKING LOT SUBTOTAL</b> |          |          | <b>\$</b>       | <b>597,920.00</b> |
|                                          |          |          | 40% CONTINGENCY | \$ 239,168.00     |
| <b>TOWN SURFACE PARKING LOT TOTAL</b>    |          |          | <b>\$</b>       | <b>837,088.00</b> |

#### NOTES:

1. This cost estimate is not intended to be a guaranteed maximum figure but rather represents an opinion of probable cost. The
2. Estimates shall have a contingency of 40%-50%, as per industry standard.

#### EXCLUSIONS:

1. Parking lot lighting, pedestrian crossing lights, all offsite works, and existing landscape around TOSH.
2. All site preparation, including but not limited to, excavation, demolition, subsurface drainage, tree protection, bulk regrading and reinforcement, , etc.
3. All electrical upgrades and civil improvements and connections, including but not limited to, site drainage, irrigation connection, electrical kiosks, transformers, etc.
4. All soft costs, including but not limited to, consultant fees, general conditions, contractor mark-ups, permits, rentals, etc.
5. All parkade costs, including but not limited to, waterproofing, slab build-up, connection of hardscape elements to slab, etc.
6. All soft costs (consultant fees, etc).

### Underground Parkade

An underground parkade, excluding ramp, currently costs between \$50,000 and \$75,000 per stall.

A parkade with 33 stalls would total between \$1,650,000 to \$2,475,000.



## SUMMARY OF RECOMMENDATIONS

### Transportation

Please refer to Appendix A to read the full Transportation Mobility Study.

Mitigation recommendations for the Memorial Avenue & First Avenue intersection consist of pedestrian realm improvements.

The traffic model indicates that the additional traffic generated by the development is not anticipated to have a significant impact on local area traffic operations. All traffic movements remain within typical capacity thresholds. The difference in operations between the existing and post-development scenarios is considered negligible.

### Parking

If, conservatively, the peak parking demand at the existing site is assumed to be 100%, a 23-vehicle parking demand (depending on the site plan option) will be displaced off-site.

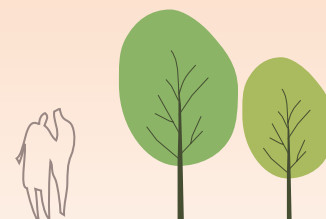
Considering all presented factors and estimates, Bunt concludes that the surrounding area with approximately 430 on-street and parking lot spaces will be able to absorb the displaced demand for all three options with varying degrees of supportive measures. Supportive measures that may reduce the amount of displaced parking demand or redistribute the parking demand to less well-used locations in the study area, include:

- The Town identified areas of underutilized in-block parking north and south of 2nd Avenue and is considering adding wayfinding signage to direct motorists towards these potential parking options.
- Mark on-street parking spaces with paint markings.
- Monitor the parking demand of the site and the underground parking spaces once the proposed development is fully occupied. If there is excess parking demand, some of the underground parking spaces may be reassigned to unrestricted public parking.

### Transportation Demand Management

Recommended study area transportation improvements for consideration include:

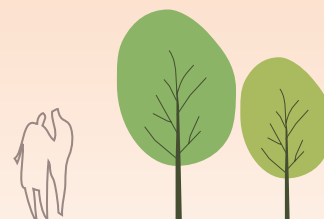
- Pedestrian related improvements near the Memorial Avenue & First Avenue/ Fir Street and Memorial Avenue & Village Way/ Veterans Way intersections.
- A pedestrian scramble phase at the signalized Fern Road & Memorial Avenue intersections,
- A second pedestrian crossing of Fern Road adjacent to TOSH building.
- A sidewalk along Fourth Avenue's south edge, across from the development site, between Memorial Avenue and lane.
- Introduction of pedestrian amenities throughout downtown area such as benches and water fountains.
- Bicycle parking integrated into plaza design.
- Providing long-term bicycle spaces (including larger sized cargo spaces) for building residents and at minimum a 6-space short-term bicycle rack for grocery store and residential visitors.



# APPENDIX A - Transportation Mobility Study

## Bus Garage Qualicum Beach

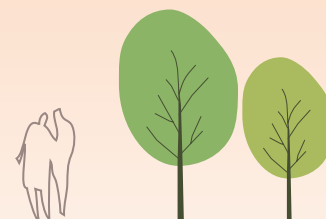
**heart of the community** 



## APPENDIX B - Phase 1 Engagement Memo

### Bus Garage Qualicum Beach

**heart of the community** 



## APPENDIX C - Phase 2 Engagement Memo

### Bus Garage Qualicum Beach

**heart of the community** 



## Qualicum Bus Garage Site Transportation Mobility Study

Version 4

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Prepared for  
Town of Qualicum Beach

Date  
June 6, 2024

Project No.  
08-23-0012

*Bunt & Associates acknowledges and respects the Traditional Territories upon which our work spans, and from which we benefit. We are grateful for the unique cultures and histories of Indigenous Peoples that enrich our understanding and connection to the lands we call home. We honour learning, listening, and truth in our journey to reconciliation.*

June 6, 2024  
08-23-0012

Luke Sales  
Director of Planning and Community Development  
Town of Qualicum Beach  
Email: LSales@qualicumbeach.com

Dear Luke:

**Re: Qualicum Beach Bus Garage Mobility Study  
Version 4**

Please find attached our Mobility Report for the proposed redevelopment of the Qualicum Beach Bus Garage site. This study reviews existing and future (with and without proposed development) traffic operations in the adjacent area and provides potential mitigation options to assist Qualicum Beach increase the viability of various forms of transportation in Qualicum's downtown area.

We trust this study will be helpful in the development rezoning application. Please do not hesitate to contact us if you have any questions.

Yours truly,  
**Bunt & Associates**



Jason Potter, M.Sc., PTP  
Associate | Senior Transportation Planner



Kieran Quan, EIT  
Transportation Analyst

## CORPORATE AUTHORIZATION

Prepared By: Kieran Quan, EIT  
Transportation Analyst

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Canada

Reviewed By: Jason Potter, PTP  
Senior Transportation Planner

Telephone: +1 250 592-6122

Date: June 6, 2024

Project No. 08-23-0012

Approved By: Yulia Liem, P.Eng, PTOE  
Principal

Version 4

*Written with respect and gratitude for the Traditional Territories upon which we work and live.*

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## EXECUTIVE SUMMARY

### *Study Purpose & Objectives*

Bunt & Associates Engineering Ltd. (Bunt) has prepared a Transportation Mobility Study to meet the following objectives:

- Summarize existing transportation conditions in the study area.
- Summarize relevant Town policies and plans.
- Estimate the proposed development's impact on study area traffic operations and review recommended mitigation.
- Review vehicle parking impacts of the proposed development and parking supply options.
- Provide a swept path analysis to confirm functionality of vehicle access, circulation, parking and loading.
- Recommend improvements to the study area multi-modal transportation network with the objective of improving the active transport mode share.

### *Development*

The proposed development would replace the existing 130 parking space surface lot with a pedestrian plaza adjacent to a 1,748 m<sup>2</sup> health food store ('Naked Natural Foods'), and a 506 m<sup>2</sup> restaurant, with 9 residential units above.

The preferred plaza and parking option results in a total of 164 parking spaces (64 for Naked Natural building and 100 for public parking).

### *Traffic*

- The Synchro model traffic analysis indicates existing traffic conditions at study area intersections operate within typical threshold criteria in regard to peak period delays and volume to capacity ratios.
- The most pressurized study area traffic movement is the westbound First Avenue to northbound Memorial Avenue left turn movement. Laning and traffic control mitigation options are limited due to the close proximity of the rail line, north of the intersection, which does not allow vehicles to stop north of the intersection. As this traffic movement is shown to operate within typically acceptable thresholds, no traffic related mitigation is recommended, rather mitigation recommendations for this intersection pertain to pedestrian realm improvement considerations.
- The proposed development is anticipated to generate approximately 220 vehicle trips (total in and out) during its peak hour period when using ITE trip generation rates. These volumes were used in the traffic analysis however it is noted that actual site trips in Qualicum Beach are anticipated to

be significantly lower due to its more dispersed peak hour and the applied grocery store rates likely being higher than anticipated to be generated by the more speciality Naked Natural store.

- The traffic model indicates that the additional traffic generated by the development is not anticipated to have a significant impact on local area traffic operations. All traffic movement remain within capacity thresholds with little difference between the existing and post-development scenarios.

### *Parking*

- The proposed development will meet or exceed the vehicle, bicycle, and loading space supply requirements outlined in the bylaw.
- If, conservatively, the peak parking demand at the existing site is assumed to be 100%, an approximate 23 vehicle parking demand (depending on the site plan option) will be displaced off-site.
- Visitors arriving to the town from Highway 19 on Memorial Avenue may be more likely to bypass the site and seek parking in other areas as the proposed building will obscure some of the proposed surface parking. This may redistribute parking demand to less well-used parking in the study area.
- Bunt concludes that the surrounding area with its approximate 430 surface lot and on-street parking supply will be able to absorb the displaced demand for all three options with varying degrees of supportive measures. Supportive measures that may reduce the amount of displaced parking demand or redistribute the parking demand to less well-used locations in the study area, include:
  - The Town identify areas of underutilized in-block parking north and south of 2<sup>nd</sup> Avenue and considering adding wayfinding signage to direct motorists towards these potential parking options.
  - Mark on-street parking spaces with paint markings.
  - Monitor the parking demand of the site and the underground parking spaces once the proposed development is fully occupied. If there is excess parking demand, some of the underground parking spaces may be reassigned to unrestricted public parking.

### *Swept Path Analysis*

The following site design updates are recommended based on the swept path analysis of the proposed Option 3 site plan:

- Provide a convex mirror on the corner of the underground parking access ramp to provide a sight line around the 90-degree corner and warn drivers to yield to oncoming vehicles.
- Remove the landscaping strip at the southeast corner of the site to accommodate inbound vehicle paths for WB-20 trucks.



### *Transportation Demand Management*

Recommended study area transportation improvements for consideration include:

- Pedestrian related improvements near the Memorial Avenue & First Avenue/Fir Street and Memorial Avenue & Railway Street/Veterans Way intersections.
- A pedestrian scramble phase at the signalized Fern Road & Memorial Avenue intersections,
- A second pedestrian crossing of Fern Road adjacent to TOSH building.
- A sidewalk along Fourth Avenue's south edge, across from the development site, between Memorial Avenue and lane.
- Introduction of pedestrian amenities throughout downtown area such as benches and water fountains.
- Bicycle parking integrated into plaza design.
- Provision of long-term bicycle spaces (including larger sized cargo spaces) for building residents and at minimum a 6-space short-term bicycle rack for grocery store and residential visitors.

# 1. INTRODUCTION

## 1.1 Study Purpose & Objectives

PWL Partnership Landscape Architects, on behalf of the Town of Qualicum Beach, is seeking a transportation study for the proposed mixed-use grocery store/restaurant/residential development on the 'Qualicum Bus Garage' site in Qualicum Beach, BC. The 'Qualicum Bus Garage' site (the 'site') is currently an L-shaped parking lot on the southwest corner of Memorial Avenue & Fern Road; no other land uses exist on the site except for a heritage schoolhouse building (The Old School House / TOSH) which will be maintained.

The proposed development consists of a 1,748 m<sup>2</sup> health food store ('Naked Natural Foods'), a 506 m<sup>2</sup> restaurant, 4 one-bedroom units, and 5 two-bedroom units. Vehicle access is proposed via the existing access with Fern Road on the west side of the schoolhouse and the existing access with Fourth Avenue at the south edge of the site. The existing access with Fern Road on the east side of the schoolhouse is proposed to be removed.

There are currently three potential options for the proposed site plan. These options vary in their parking configuration and supply. All other aspects of the proposed development, including vehicles access and land use, are unchanged between the three options.

The developer and the Town of Qualicum Beach (the 'Town') are seeking a transportation mobility study with the following objectives:

- Summarize the existing and future land use, zoning, and transportation network connectivity of the proposed site;
- Summarize relevant Town policies and plans in the local area and their potential effect on transportation-related elements in the study area;
- Estimate the development's impact on traffic performance and provide recommended mitigations (if required);
- Review vehicle parking impacts of the proposed development;
- Provide a swept path analysis using AutoTURN software to confirm functionality of vehicle access, circulation, parking and loading for all three site plan options; and,
- Recommend improvements to the study area multi-modal network with the objective of improving the active mode split and the local pedestrian and cycling connections.

It should be noted that this study does not address the proposed parking supply, parking variance below the Town bylaw requirements, or reduction in public parking from the Downtown area. However, Bunt will undertake a separate study, to be completed at a later date, to address these items.

## 1.2 Study Area

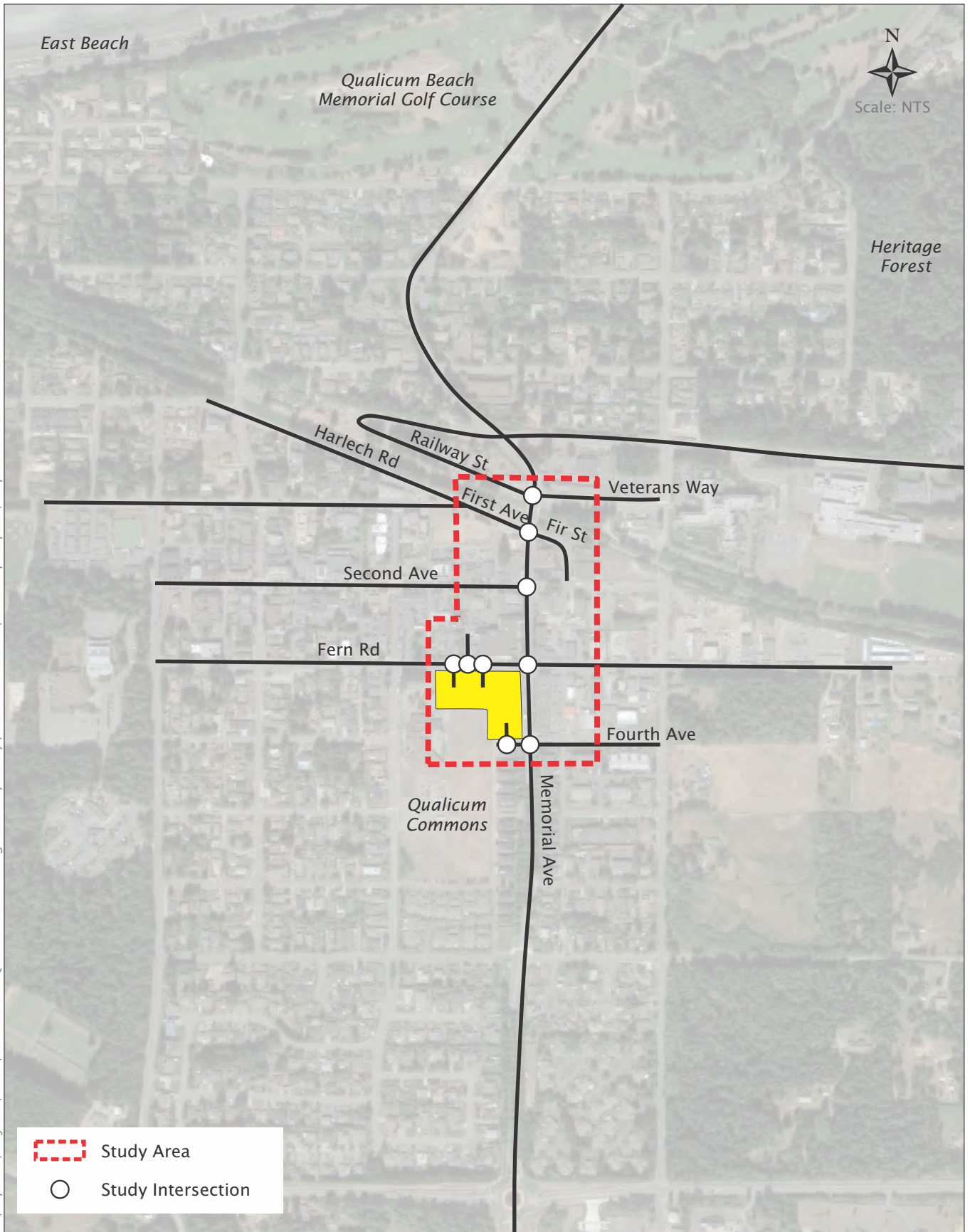
The study area includes the following intersections:

- Memorial Avenue & Railway Street/Veterans Way
- Memorial Avenue & First Avenue/Fir Street
- Memorial Avenue & Second Avenue
- Memorial Avenue & Fern Road
- Memorial Avenue & Fourth Avenue
- Fern Road & West School Access
- Fern Road & Quality Foods Access
- Fern Road & East School Access
- Fourth Avenue & South Site Access

This study will review existing and total (existing + proposed development) traffic operations at the study intersections as well as provide a high-level review of pedestrian and/or cyclist improvement opportunities at the study intersections.

**Exhibit 1.1** illustrates the site location and study area.

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## Exhibit 1.1 Site Location & Study Area

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Qualicum Mobility  
April 2024

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### 1.3 Organization of Report

**Section 1** introduces the proposed development, study objectives, and study area.

**Section 2** provides background information on the existing conditions of the site and study area in terms of its land use & zoning, transportation connectivity, relevant policies and plans, and traffic operations.

**Section 3** summarizes the traffic operations analysis for the estimated total (with development) traffic scenario and provides recommended mitigations, if required.

**Section 4** summarizes the Town parking requirements for the development and provides an estimate of the appropriateness of both the proposed parking supply for the development and the proposed reduction to the public parking supply in the area.

**Section 5** summarizes the swept path analysis completed in AutoTURN software which confirms functionality of vehicle access, circulation, parking, and loading on the proposed site.

**Section 6** provides high-level active mode focused concepts of potential pedestrian and/or cyclist improvements in the study area.

**Section 7** summarizes the conclusions and recommendations of the study.

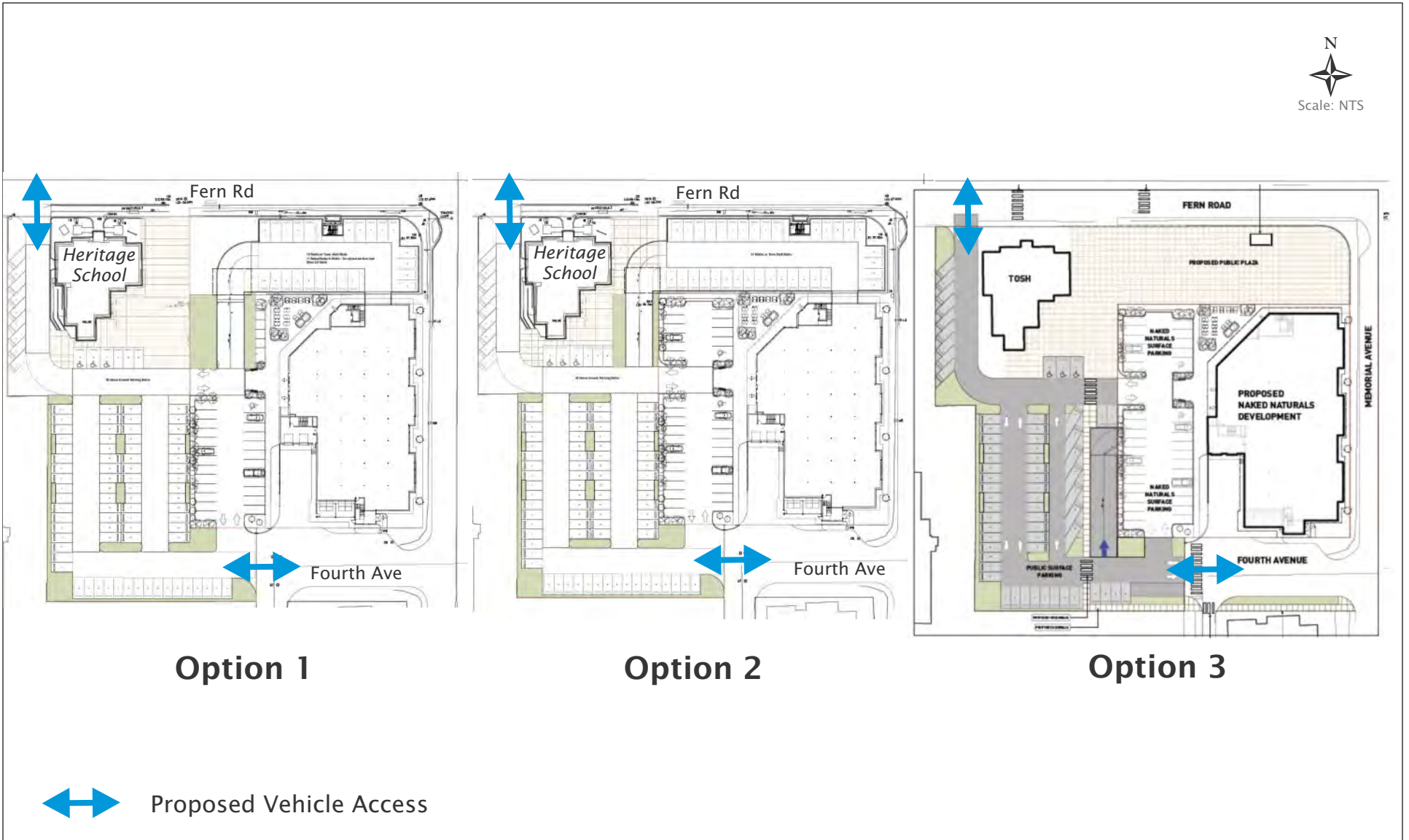
### 1.4 Proposed Development

**Table 1.1** summarizes the proposed development land uses.

**Table 1.1: Proposed Land Uses**

| LAND USE          | DENSITY | UNITS          |
|-------------------|---------|----------------|
| Health Food Store | 1,748   | Square Metres  |
| Restaurant        | 506     | Square Metres  |
| 1-bedroom unit    | 4       | Dwelling Units |
| 2-bedroom unit    | 5       | Dwelling Units |

**Exhibit 1.2** illustrates the proposed site plan.



## Exhibit 1.2 Site Plan

Qualicum Mobility  
March 2024

08-23-0012

## 2. EXISTING CONDITIONS

### 2.1 Site Location & Land Use

The site is centrally located in the 'Village Neighbourhood' which is Qualicum Beach's main commercial area. The site is currently occupied by a public parking lot with approximately 130 spaces.

### 2.2 Existing Transportation Network

#### 2.2.1 Road Network

The site is located on the southwest corner of the signalized Memorial Avenue & Fern Road intersection.

Memorial Avenue is an arterial road that serves as the gateway to/from Highway 19 and serves as the main route into the Town. Memorial Avenue features one lane in each travel direction and on-street parking on both sides.

Fern Road is an arterial road that serves as a main access route for large commercial buildings such as the Quality Foods grocery store. Fern Road features one lane in each travel direction and on-street parking on both sides.

The remaining study intersections are unsignalized, with two-way stop control. The remaining study area roads mainly serve as collector roads for the commercial area. Most of which feature on-street parking on both sides.

#### 2.2.2 Transit Network

Three bus routes operate within the study area. These are the 91, 97, and 99. The 91 provides connections to the communities to the south such as Parksville, Nanoose, and Lantzville and operates with 30-60-minute service at peak times. The 97 is a loop that runs through the residential neighbourhoods of the town and operates with approximately 60-minute service at peak times. Finally, the 99 provides connections to the communities to the north of the town such as Dashwood, Qualicum Bay, Bowser, and Deep Bay and operates once in the morning and once in the afternoon in each travel direction.

#### 2.2.3 Cycling & Pedestrian Networks

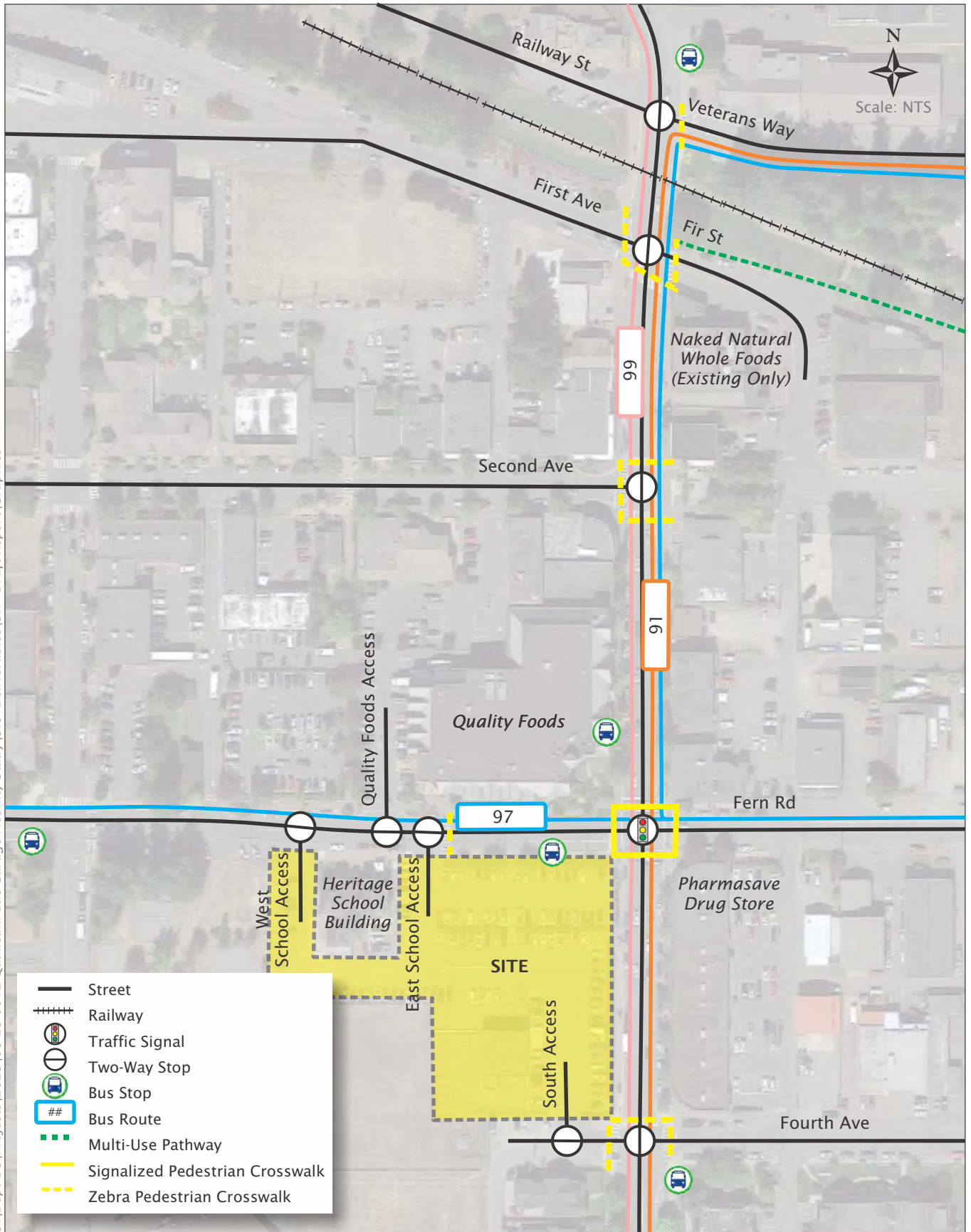
There is minimal dedicated cycling infrastructure in the study area. However, many of the local roads near the study area, such as the section of Fourth Avenue to the west of the site, are signed as cycling connections and are suitable for cyclists of moderate skill level.

The site is well-connected to the local pedestrian network. Most study area roads feature concrete sidewalks on both sides. The signalized Memorial Avenue & Fern Road intersection features a pedestrian crosswalk on all four legs. All the unsignalized intersections on Memorial Avenue in the study area feature at least one leg with a painted zebra pedestrian crossing. There is a painted zebra pedestrian crossing on Fern Road between the site and the Quality Foods grocery store; this crossing also features a pole-

mounted overhead pedestrian crossing sign for additional visibility. Finally, the Dollymount Multi-Use trail runs from east to west along the inactive Island Rail Corridor between Qualicum Road and the Memorial Avenue & First Avenue/Fir Street intersection.

**Exhibit 2.1** illustrates the transportation context as described in Sections 2.2.1 to 2.2.3 above.





## Exhibit 2.1 Transportation Context

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## 2.3 Current Relevant Policies & Plans

### 2.3.1 Community Transportation Plan

The Town of Qualicum Beach *Community Transportation Plan* (formerly known as the *Age-Friendly Transportation Plan*) serves as a roadmap for upcoming pedestrian and cycling improvement projects. It should be noted that at the time of this study, the most recent version of the Community Transportation Plan was dated December 2019; however, there has recently been an update to the plan in 2024. This recent update is not anticipated to impact the findings and recommendations of this study. The two stated goals of the plan are to:

- Improve mobility by active transportation modes, and
- Improve safety for vulnerable road users.

The plan outlines a series of future projects that seek to achieve these goals. **Figure 2.1** illustrates one of the plan's projects relevant to the study area: an extension of the Dollymount multi-use path to run across the Memorial Avenue & First Avenue/Fir Street intersection and continue onto First Avenue and Harlech Road.

**Figure 2.1: Community Transportation Plan: Proposed Dollymount Trail Extension<sup>1</sup>**



<sup>1</sup> Town of Qualicum Beach, "Age-Friendly Transportation Plan 2019 Update," Town of Qualicum Beach, Qualicum Beach, BC, Canada, 27 December 2019. Accessed: January 8, 2024. [Online]. Available: <https://qualicumbeach.civicweb.net/document/9569/>

## 2.4 Existing Traffic Volumes

### 2.4.1 Traffic Data Collection Program

The Town of Qualicum Beach indicated that the weekday peak hour of vehicle traffic in the town occurs between 13:00 and 15:00. Therefore, one hour of traffic data was collected at each study intersection during this period on weekdays (Tuesday, Wednesday, or Thursday) between November 16, 2023, and November 22, 2023.

#### *Seasonal Adjustment*

The traffic data collected in November 2023 was compared to previous traffic data collected in the summer to confirm if a seasonal adjustment factor would be required.

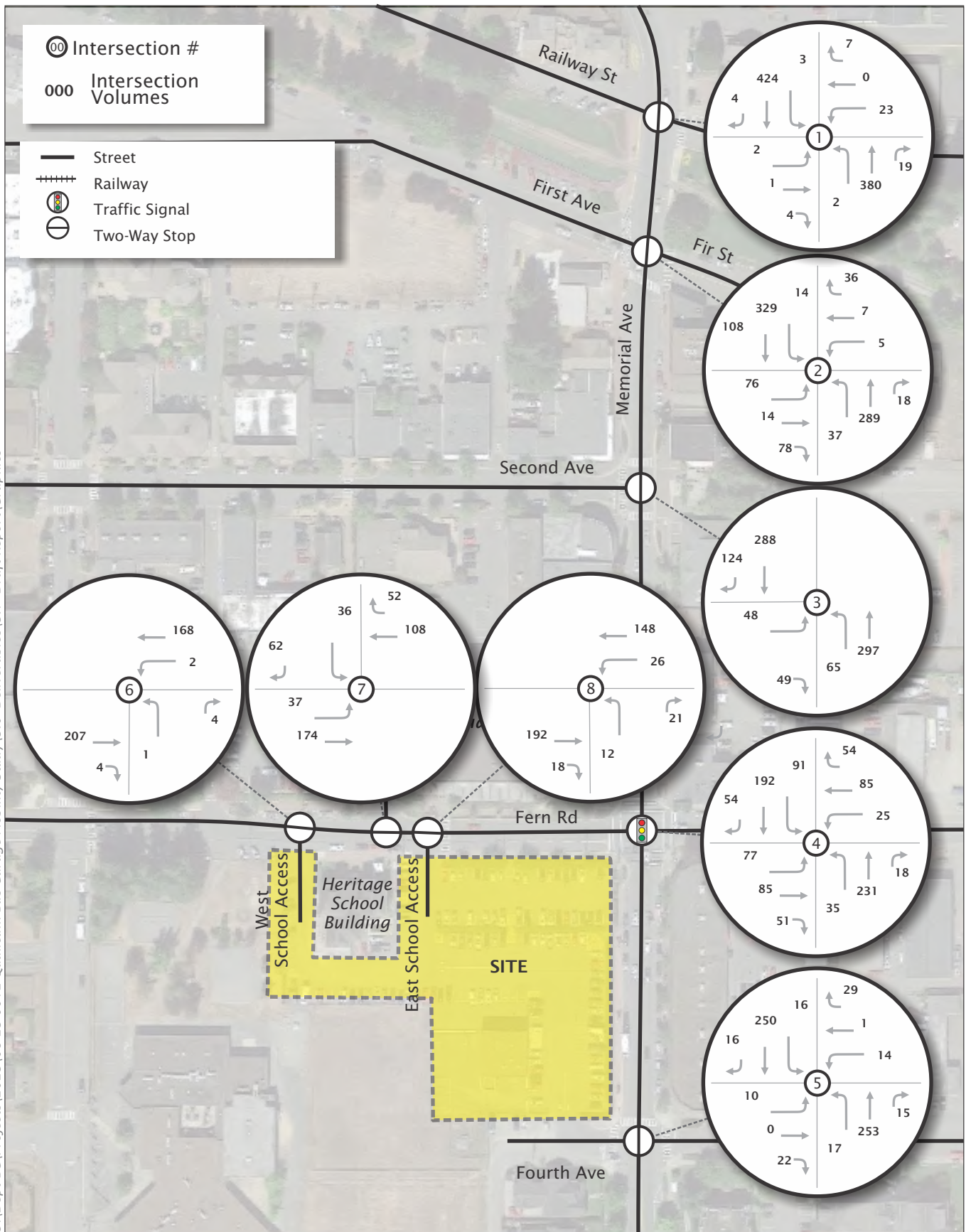
The Town supplied summer traffic volumes (from September 1<sup>st</sup>, 2012) at Memorial Avenue & First Avenue/Fir Street. A 1.5% per year linear growth rate was applied to this September 2012 data to estimate the traffic volumes at the same intersection in September 2023 (this equates to 16.5% growth applied to the intersection volumes). A 1.5% per year linear growth rate is consistent with the standard growth rate applied by other reviewing agencies in the area, such as the Ministry of Transportation and Infrastructure (MoTI). After applying this growth rate, the estimated September 2023 volumes were found to be 1.9% higher, on average, than the collected November 2023 volumes.

Based on these high-level findings, the study area traffic volumes are estimated to be approximately 2% higher on average in the summer than in November. This difference in volume is minimal and is not anticipated to have a significant impact on traffic operations in the study area. Therefore, no seasonal adjustment factor was applied, and the traffic volumes and operations presented in this study are based on the collected November 2023 data. Furthermore, it is noted that analysis of the non-summer peak period is considered a reasonable original approach as it represents typical conditions and includes schools being in-class.

### 2.4.2 Peak Hour Traffic Volumes

As a conservative measure, Bunt adjusted the traffic data in the study area by balancing the vehicle traffic data towards the higher volume of adjacent intersections. Bunt maintained existing turning movement distributions when balancing. **Exhibit 2.2** illustrates the existing peak hour traffic volumes in the study area, after volume balancing.





## Exhibit 2.2 Existing Peak Hour Traffic Volumes



## 2.5 Existing Operations

### 2.5.1 Performance Thresholds

The existing operations of study area intersections and access points were assessed using the methods outlined in the 2000 Highway Capacity Manual (HCM), using the Synchro 11 analysis software. The traffic operations were assessed using the performance measures of Level of Service (LOS) and volume-to-capacity (V/C) ratio.

The LOS rating is based on average vehicle delay and ranges from “A” to “F” based on the quality of operation at the intersection. LOS “A” represents optimal, minimal delay conditions while a LOS “F” represents an over-capacity condition with considerable congestion and/or delay. Delay is calculated in seconds and is based on the average intersection delay per vehicle.

**Table 2.1** below summarizes the LOS thresholds for the six Levels of Service, for both signalized and unsignalized intersections.

**Table 2.1: Intersection Level of Service Thresholds**

| LEVEL OF SERVICE | AVERAGE CONTROL DELAY PER VEHICLE (SECONDS) |              |
|------------------|---------------------------------------------|--------------|
|                  | SIGNALIZED                                  | UNSIGNALIZED |
| A                | ≤10                                         | ≤10          |
| B                | >10 and ≤20                                 | >10 and ≤15  |
| C                | >20 and ≤35                                 | >15 and ≤25  |
| D                | >35 and ≤55                                 | >25 and ≤35  |
| E                | >55 and ≤80                                 | >35 and ≤50  |
| F                | >80                                         | >50          |

Source: Highway Capacity Manual

The volume to capacity (V/C) ratio of an intersection represents ratio between the demand volume and the available capacity. A V/C ratio less than 0.85 indicates that there is sufficient capacity to accommodate demands and generally represents reasonable traffic conditions in suburban settings. A V/C value between 0.85 and 0.95 indicates an intersection is approaching practical capacity; a V/C ratio over 0.95 indicates that traffic demands are close to exceeding the available capacity, resulting in saturated conditions. A V/C ratio over 1.0 indicates a very congested intersection where drivers may have to wait through several signal cycles. In downtown and Town Centre contexts, during peak demand periods, V/C ratios over 0.90 and even 1.0 are common.

The performance thresholds that were used to trigger consideration of roadway or traffic control improvements to support roadway or traffic control improvements employed in this study are listed below:

Signalized Intersections:

- Overall intersection Level of Service = LOS D or better;
- Overall intersection V/C ratio = 0.85 or less;

- Individual movement Level of Service = LOS E or better; and,
- Individual movement V/C ratio = 0.90 or less.

#### Unsignalized Intersections and Roundabouts:

- Individual movement Level of Service = LOS E or better, unless the volume is very low in which case LOS F is acceptable.

The performance reporting thresholds noted above have been used throughout this document and the detailed outputs are provided in **Appendix B**.

### 2.5.2 Existing Conditions Analysis Assumptions

#### *Signal Timing*

Signal timing for the signalized Memorial Avenue & Fern Road intersection was provided by the Town of Qualicum Beach and input into Synchro software.

#### *Synchro Parameters*

Default Synchro parameters were used, except:

- Observed heavy vehicle percentages were used for each traffic movement, except where it was less than 2%, in which case the heavy vehicle percentage was set to a minimum of 2%; and,
- Overall intersection Peak Hour Factor (PHF) was applied to each traffic movement.

### 2.5.3 Existing Operational Analysis Results

Table 2.2 summarizes the existing peak hour traffic operations at the study intersections.

**Table 2.2: Existing Traffic Operations**

| INTERSECTION/<br>TRAFFIC CONTROL                            | MOVEMENT | EXISTING (PM) |      |            |
|-------------------------------------------------------------|----------|---------------|------|------------|
|                                                             |          | LOS           | V/C  | 95TH Q (M) |
| Memorial Ave &<br>Railway St/Veterans Way<br>(unsignalized) | EBR      | B             | 0.02 | 5          |
|                                                             | WBLTR    | C             | 0.12 | 5          |
|                                                             | NBLTR    | A             | 0.00 | 5          |
|                                                             | SBLTR    | A             | 0.00 | 5          |
| Memorial Ave &<br>First Ave/Fir St<br>(unsignalized)        | EBL      | D             | 0.36 | 10         |
|                                                             | EBTR     | B             | 0.21 | 5          |
|                                                             | WBLTR    | B             | 0.12 | 5          |
|                                                             | NBLTR    | A             | 0.04 | 5          |
| Memorial Ave &<br>Second Ave<br>(unsignalized)              | SBLTR    | A             | 0.01 | 5          |
|                                                             | EBLR     | C             | 0.32 | 10         |
|                                                             | NBTL     | A             | 0.07 | 5          |
|                                                             | SBTR     | A             | 0.26 | 5          |
| Memorial Ave &<br>Fern Rd<br>(signalized)                   | OVERALL  | A             | 0.43 | 5          |
|                                                             | EBLTR    | B             | 0.26 | 10         |
|                                                             | WBLTR    | B             | 0.32 | 20         |
|                                                             | NBLTR    | A             | 0.37 | 35         |
| Memorial Ave &<br>Fourth Ave<br>(unsignalized)              | SBLTR    | A             | 0.49 | 45         |
|                                                             | EBLTR    | B             | 0.07 | 5          |
|                                                             | WBLTR    | B             | 0.10 | 5          |
|                                                             | NBLTR    | A             | 0.02 | 5          |
| West School Access &<br>Fern Road<br>(unsignalized)         | SBLTR    | A             | 0.01 | 5          |
|                                                             | EBTR     | A             | 0.13 | 5          |
|                                                             | WBTL     | A             | 0.00 | 5          |
|                                                             | NBLR     | A             | 0.01 | 5          |
| Fern Road &<br>Quality Foods Access<br>(unsignalized)       | EBTL     | A             | 0.04 | 5          |
|                                                             | WBTR     | A             | 0.11 | 5          |
|                                                             | SBLR     | B             | 0.19 | 5          |
|                                                             | EBTR     | A             | 0.13 | 5          |
| East School Access &<br>Fern Road<br>(unsignalized)         | WBTL     | A             | 0.02 | 5          |
|                                                             | NBLR     | B             | 0.05 | 5          |
| South Site Access &<br>Fourth Ave<br>(unsignalized)         | EBTL     | A             | 0.00 | 5          |
|                                                             | WBTR     | A             | 0.02 | 5          |
|                                                             | SBLR     | A             | 0.04 | 5          |
|                                                             | EBTL     | A             | 0.00 | 5          |

As shown above, the Synchro analysis indicates there are no traffic movements in the study area that exceed performance thresholds in the existing condition.



### 3. FUTURE TRAFFIC CONDITIONS

#### 3.1 Traffic Forecasts

##### 3.1.1 Background Traffic Forecasts

Background traffic is traffic that would be present on the road network if the site did not redevelop. Bunt did not forecast a background traffic scenario due to the anticipated low growth in local traffic volumes in the near term. Instead, the total (with development) traffic will be compared to the existing traffic condition in this section.

##### 3.1.2 Site Traffic

Site traffic is the estimated future peak hour vehicle volumes in the study area with an origin/destination of the proposed development. The following subsections summarize the methods used to estimate site traffic.

##### *Trip Generation*

Future vehicle trips from the proposed development are layered onto the existing conditions and its existing site trips. This analysis therefore assumes that the existing volume of parking lot (including TOSH) generated trips will remain consistent into the future condition despite an anticipated reduction in parking spaces. This assumption is considered a conservative approach which can account for potential additional trips generated by the proposed public plaza area of the site.

Bunt estimated the vehicle trip generation of the proposed development using the rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11<sup>th</sup> Edition. **Tables 3.1** and **3.2** summarize the peak hour vehicle trip rates and estimated vehicle trips, respectively, for each land use. It should be noted that ITE does not provide trip rates for the specific peak hour of the study area (one hour between 13:00 and 15:00); therefore, Bunt applied the ITE trip rates for the PM peak hour between 16:00 and 18:00.

**Table 3.1: Peak Hour Vehicle Trip Rates**

| LAND USE                                    | UNITS          | PM PEAK HOUR (4 – 6 PM) |         |       |
|---------------------------------------------|----------------|-------------------------|---------|-------|
|                                             |                | IN (%)                  | OUT (%) | TOTAL |
| ITE 850 – Supermarket                       | 1000 SF        | 50%                     | 50%     | 8.95  |
| ITE 932 – High-Turnover Sit-Down Restaurant | 1000 SF        | 61%                     | 39%     | 9.05  |
| ITE 220 – Multifamily Housing (Low-Rise)    | Dwelling Units | 63%                     | 37%     | 0.51  |

**Table 3.2: Estimated Peak Hour Site Vehicle Trips**

| LAND USE          | PM PEAK HOUR (4 – 6 PM) |            |            |
|-------------------|-------------------------|------------|------------|
|                   | IN                      | OUT        | TOTAL      |
| Health Food Store | 84                      | 84         | 168        |
| Restaurant        | 30                      | 19         | 49         |
| Residential       | 3                       | 2          | 5          |
| <b>TOTAL</b>      | <b>117</b>              | <b>105</b> | <b>222</b> |

Based on ITE rates, the proposed development is anticipated to generate approximately 220 (115 in, 105 out) vehicle trips in the PM peak hour. Substantially lower trip generation is anticipated from the site due to the following reasons:

- The rate for 'ITE 850 – Supermarket' was considered the most appropriate rate available to represent the proposed health food store. However, based on the ITE description of this land use category, the data used to inform this rate was collected at large grocery stores (e.g., Walmart, Superstore, Save-on-Foods, etc.). The proposed health food store will offer specialty food items as opposed to weekly groceries and is therefore anticipated to see less frequent activity and a reduced trip rate than ITE 850.
- The restaurant is anticipated to be more of ancillary land use to the grocery store rather than the rate applied which insinuates an approximate full 50-seat restaurant (average 25 vehicles entering per peak hour applied to a 2-person vehicle occupancy).
- The peak hour of the study area (one hour between 13:00 – 15:00) is anticipated to be outside of the peak hour of the proposed restaurant.

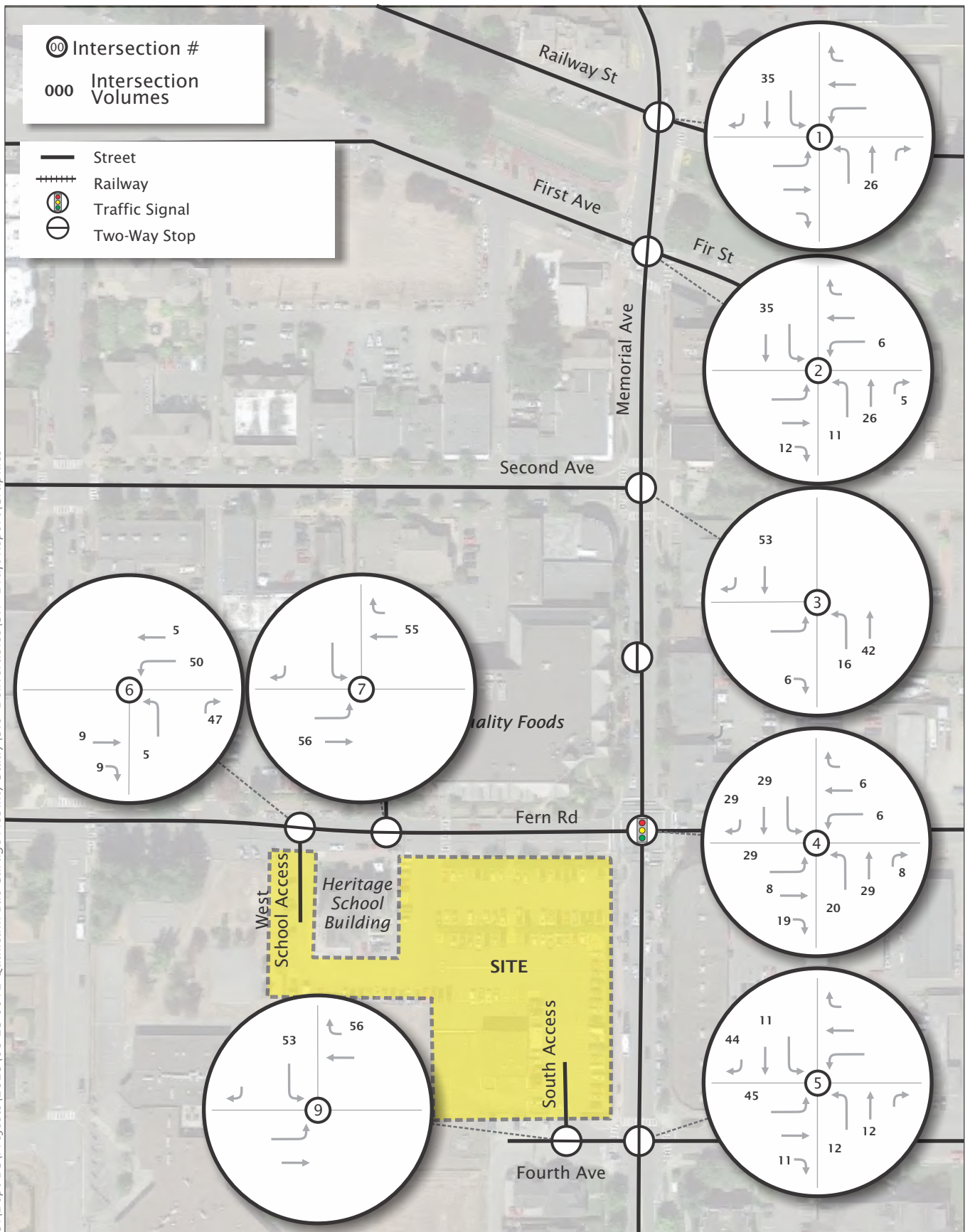
Due to these reasons the actual increase in peak hour trip generation of the proposed building site is anticipated to be in the magnitude of 100 total two-way trips in a peak hour period. This is the volume of traffic that would be added onto the existing volumes that are generated by the current public parking on the site, that will continue to do so on proposed public parking on the site.

#### *Trip Distribution & Assignment*

Bunt distributed the estimated site traffic throughout the study area using a combination of existing traffic patterns and engineering judgement. **Exhibit 3.1** illustrates site traffic forecasts.

#### **3.1.3 Total Traffic**

Bunt estimated the total (with development) traffic volumes by adding the estimated site traffic to the existing traffic volumes. **Exhibit 3.2** illustrates the total peak hour traffic volumes in the study area.



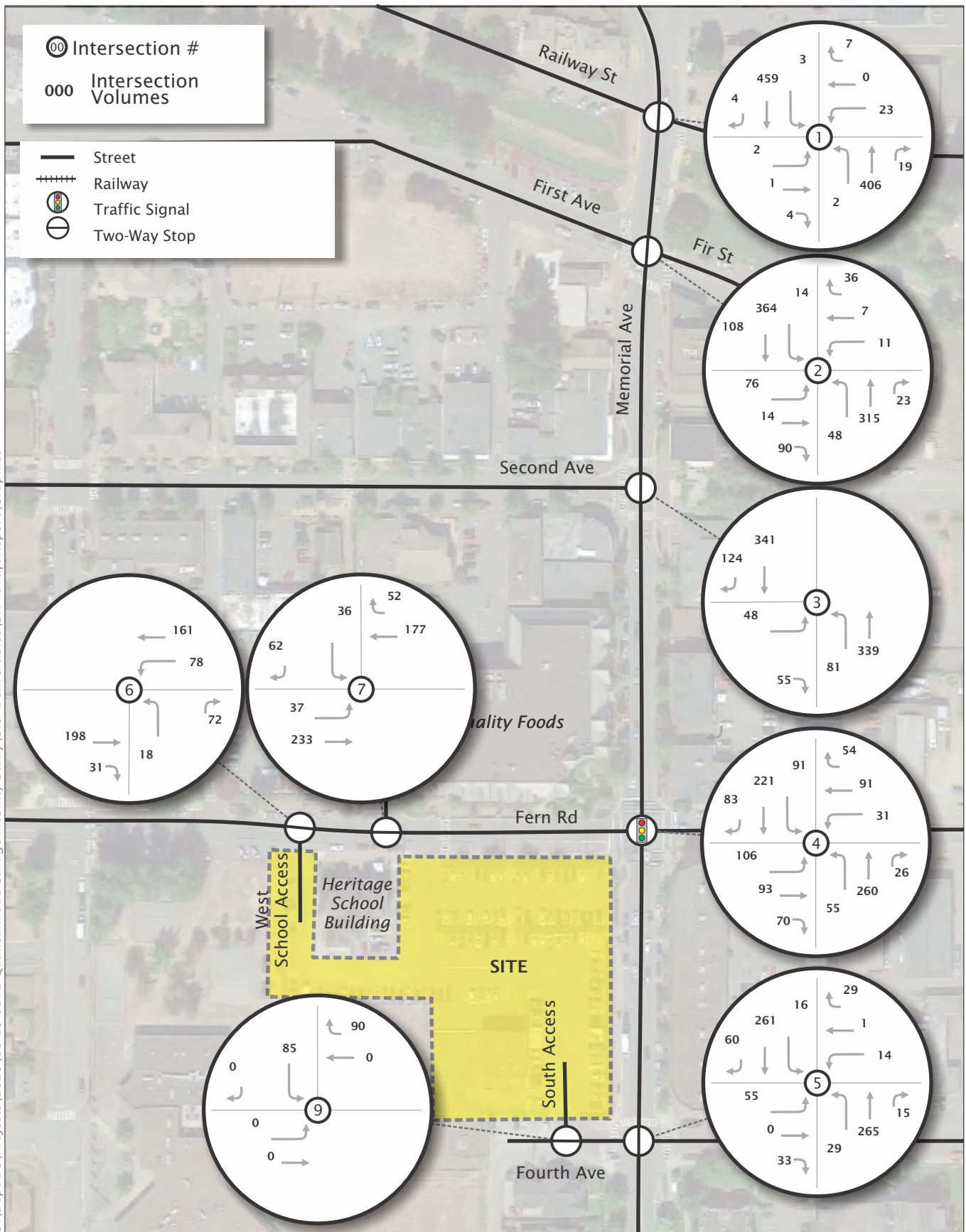
### Exhibit 3.1 Site Traffic Forecasts

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## Exhibit 3.2 Total Peak Hour Traffic Forecasts



## 3.2 Total Traffic Operations

### 3.2.1 Total Condition Analysis Assumptions

The signal timing and Synchro parameters applied to total condition are unchanged from the existing condition.

### 3.2.2 Total Traffic Operations

Table 3.3 compares the existing and total (with development) traffic operations in the study area.

**Table 3.3: Existing vs. Total (with Development) Vehicle Operations**

| INTERSECTION/<br>TRAFFIC CONTROL                            | MOVEMENT | EXISTING |      |               | TOTAL (WITH SITE) |      |               |
|-------------------------------------------------------------|----------|----------|------|---------------|-------------------|------|---------------|
|                                                             |          | LOS      | V/C  | 95TH Q<br>(M) | LOS               | V/C  | 95TH Q<br>(M) |
| Memorial Ave &<br>Railway St/Veterans Way<br>(unsignalized) | EBR      | B        | 0.02 | 5             | C                 | 0.02 | 5             |
|                                                             | WBLTR    | C        | 0.12 | 5             | C                 | 0.14 | 5             |
|                                                             | NBLTR    | A        | 0.00 | 5             | A                 | 0.00 | 5             |
|                                                             | SBLTR    | A        | 0.00 | 5             | A                 | 0.00 | 5             |
| Memorial Ave &<br>First Ave/Fir St<br>(unsignalized)        | EBL      | D        | 0.36 | 10            | E                 | 0.42 | 15            |
|                                                             | EBTR     | B        | 0.21 | 5             | C                 | 0.25 | 10            |
|                                                             | WBLTR    | B        | 0.12 | 5             | C                 | 0.19 | 5             |
|                                                             | NBLTR    | A        | 0.04 | 5             | A                 | 0.05 | 5             |
|                                                             | SBLTR    | A        | 0.01 | 5             | A                 | 0.01 | 5             |
| Memorial Ave &<br>Second Ave<br>(unsignalized)              | EBLR     | C        | 0.32 | 10            | D                 | 0.39 | 15            |
|                                                             | NBTL     | A        | 0.07 | 5             | A                 | 0.09 | 5             |
|                                                             | SBTR     | A        | 0.26 | 5             | A                 | 0.30 | 5             |
| Memorial Ave &<br>Fern Rd<br>(signalized)                   | OVERALL  | A        | 0.43 | -             | A                 | 0.50 | -             |
|                                                             | EBLTR    | B        | 0.26 | 10            | B                 | 0.33 | 15            |
|                                                             | WBLTR    | B        | 0.32 | 20            | B                 | 0.38 | 20            |
|                                                             | NBLTR    | A        | 0.37 | 35            | A                 | 0.47 | 45            |
|                                                             | SBLTR    | A        | 0.49 | 45            | A                 | 0.57 | 55            |
| Memorial Ave &<br>Fourth Ave<br>(unsignalized)              | EBLTR    | B        | 0.07 | 5             | C                 | 0.28 | 10            |
|                                                             | WBLTR    | B        | 0.10 | 5             | B                 | 0.11 | 5             |
|                                                             | NBLTR    | A        | 0.02 | 5             | A                 | 0.03 | 5             |
|                                                             | SBLTR    | A        | 0.01 | 5             | A                 | 0.01 | 5             |
| West School Access &<br>Fern Road<br>(unsignalized)         | EBTR     | A        | 0.13 | 5             | A                 | 0.15 | 5             |
|                                                             | WBTL     | A        | 0.00 | 5             | A                 | 0.07 | 5             |
|                                                             | NBLR     | A        | 0.01 | 5             | B                 | 0.14 | 5             |
| Fern Road &<br>Quality Foods Access<br>(unsignalized)       | EBTL     | A        | 0.04 | 5             | A                 | 0.04 | 5             |
|                                                             | WBTR     | A        | 0.11 | 5             | A                 | 0.16 | 5             |
|                                                             | SBLR     | B        | 0.19 | 5             | B                 | 0.22 | 5             |
| East School Access &<br>Fern Road<br>(unsignalized)         | EBTR     | A        | 0.13 | 5             | A                 | 0.17 | 5             |
|                                                             | WBTL     | A        | 0.02 | 5             | A                 | 0.00 | 5             |
|                                                             | NBLR     | B        | 0.05 | 5             | A                 | 0.05 | 5             |
| South Site Access &<br>Fourth Ave<br>(unsignalized)         | EBTL     | A        | 0.00 | 5             | A                 | 0.00 | 5             |
|                                                             | WBTR     | A        | 0.02 | 5             | A                 | 0.06 | 5             |
|                                                             | SBLR     | A        | 0.04 | 5             | A                 | 0.10 | 5             |

As shown, the estimated site traffic is not anticipated to cause any movement to operate above performance thresholds. All traffic movements operate well within capacity and queuing thresholds.

All traffic movements operate at LOS C or better except for the eastbound left turn at the Memorial Avenue & First Avenue/Fir Street intersection, which operates at LOS D in the existing condition and at LOS E in the total condition. This is due to the high volume of north/south through traffic which may create difficulties for vehicles seeking a safe gap to turn left. However, the 95<sup>th</sup> percentile queues for this movement are minimal (approx. 2 vehicles in the existing condition and 3 vehicles in the total condition).

### 3.2.3 Consideration of Converting 2<sup>nd</sup> Avenue to One-Way Configuration

Bunt was asked to consider the opportunities and constraints related to the potential conversion of 2<sup>nd</sup> Avenue to a one-way configuration.

2<sup>nd</sup> Avenue currently operates with two-way travel with one travel lane in each direction with parallel curbside parking along both road edges as well as two areas of angled parking. In the 3 blocks from Memorial Avenue to Jones Street, 2<sup>nd</sup> Avenue has approximately 98 curbside parking spaces (15 angled and 83 parallel).

Conversion to a one-way condition would allow for significantly reduced road width from the current 7-metre roadway to approximately 4-metres. This would allow for increased portions of angled parking.

Angled parking spaces have a typical depth (road to sidewalk) of 5.6m and a width of 4.5m. Parallel spaces have a typical width (road to sidewalk) of 2.5m and a length of 6.5m. With these measurements approximately parking supply can be increased by approximately 40% by converting areas of parallel to angled parking. In the context of 2<sup>nd</sup> Avenue this would equate to an approximate increase in parking spaces along the three-block section of 2<sup>nd</sup> Avenue from its current 98 spaces up to 135 spaces or an increase of approximately 35 spaces. Despite potentially reduced drive aisle width, pedestrian / sidewalk area would still need to be reduced in various locations along 2<sup>nd</sup> Avenue to allow width required for angled parking along both road edges.

Increase in parking supply is viewed as the main positive outcome of converting 2<sup>nd</sup> Avenue to one-way travel. Other positive impacts are shorter pedestrian crossing distances and reduced conflict points as pedestrians will only need to look one direction when crossing the roadway.

The described positive impacts are countered by the following factors:

- A one-way condition would reduce turning opportunities and put pressure on the surrounding minor street capacities resulting in potentially increased vehicle queues and delays the intersections.
- One-way streets tend to have higher vehicle operating speeds, this can also cause issues with angled parking vehicles backing out into the roadway.
- The angled parking can cause increased conflicts with cyclists due to reduced sightlines as well as the possibility of cyclists travelling counter to the one-way direction.

- One-way roads can be confusing for drivers, especially for non-residents and may increase travel distances for motorists which equates to higher levels of green house gas emissions.
- Converting to a one-way condition can lead to less direct access and reduced retail visibility for commercial development which is the prominent land use along 2<sup>nd</sup> Avenue.
- Converting to one-way travel is often controversial with the adjacent businesses due to potentially reduced access to their business.
- Costs of conversion to one-way are considerable.
- Parallel parking spaces have more favourable loading ability than angled parking as passengers can load/unload to a sidewalk rather than into an adjacent parking space.
- Further inputs from the Town indicate that the curb-to-curb width of 2<sup>nd</sup> Avenue (13m) is insufficient to accommodate the required width for one-way angled parking (15.2m) and as such the adjacent sidewalks would need to be reduced which would negatively impacting the pedestrian realm along 2<sup>nd</sup> Avenue.

Considering these factors, the positive outcomes of one-way conversion (increased parking spaces) are not considered to outweigh the negative impacts. If parking supply increases are desired it is recommended that the Town first look to better utilize parking supplies that currently exist behind many 2<sup>nd</sup> Avenue businesses through increase signage. If further parking is still desired, then it is recommended that the Town pursue opportunities for consolidated parking pools which allow motorists to find a parking space more easily with less travel distances.

### 3.2.4 Summary of Traffic Impacts & Recommended Mitigations

All traffic movements are within performance thresholds in both the existing and total scenario.

The Memorial Avenue & First Avenue/Fir Street eastbound left turn is approaching the threshold for vehicle delay (LOS D in the existing condition and LOS E in the total condition). Bunt tested the potential mitigation of converting the intersection to a 4-way stop. This is indicated to successfully reduce the delays for the movement to LOS C in the total condition. However, this mitigation is not recommended for the following reasons:

- There is a rail crossing approximately 15 metres north of where a stop bar for the north approach would be located. A 4-way stop may introduce queues on the north leg of the intersection, which creates a risk that vehicles would queue on the rail line. It should be noted that the rail line is not currently active; in the future, should it be confirmed that the rail line will be permanently closed, the Town intends to consider improvements at the intersection. Timing potential improvements with this process is advisable to avoid costly rework.
- Although vehicle delays are approaching the threshold, the Synchro analysis indicates that there are no significant capacity or queuing issues for the movement ( $V/C = 0.42$ , 95<sup>th</sup> percentile queue length = 15m or approx. 3 vehicles).
- As noted in Section 3.1.2, the estimated site vehicle trips are anticipated to be conservative. As a result, the Synchro analysis may be overstating the delays for the movement.



Due to the proximity of the rail crossing and the anticipated minimal impact to traffic performance, Bunt does not recommend any traffic-specific mitigations in the study area. However, the performance of the intersection should be monitored if further development is introduced in the local area.

An alternative mitigation option is to augment pedestrian crossings at the intersection which will provide more gaps in Memorial Avenue traffic, this can allow for reduced delays from First Avenue as northbound traffic on Memorial Avenue is stopped to allow for the pedestrians to cross. This mitigation option is discussed further in Section 5.

## 4. PARKING

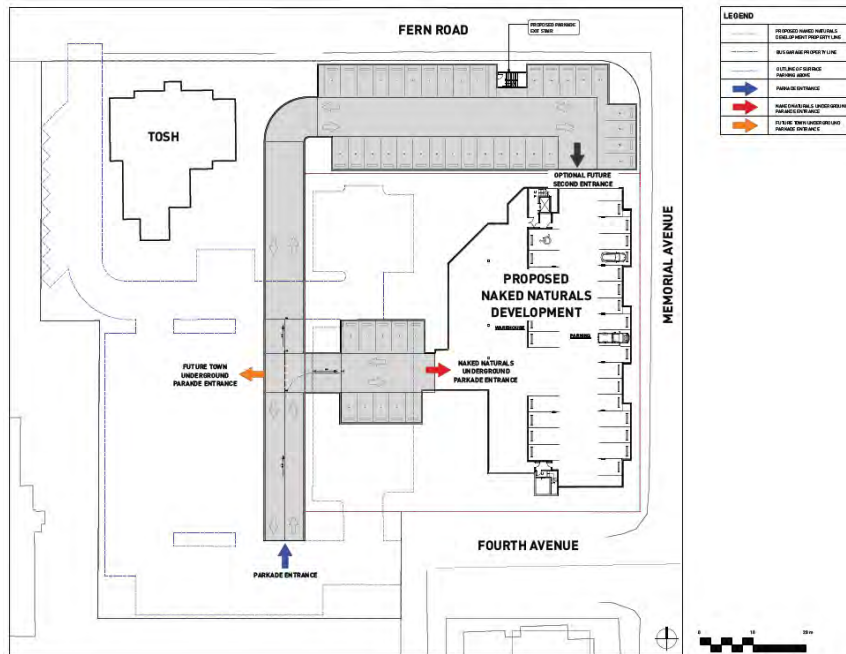
Three parking configurations were originally considered. All options had the same vehicle access points from the external road network. Each option includes 64 parking spaces (including 3 accessible) provided for the site land uses. In addition, depending on the site plan option, 73-118 parking spaces were provided for public parking. **Figure 4.1** illustrates the currently preferred option which has 107 public spaces, illustrating both surface and underground parking.

The preferred option has 64 spaces for the private development and 107 for public for a site total parking supply of 171 vehicle spaces.

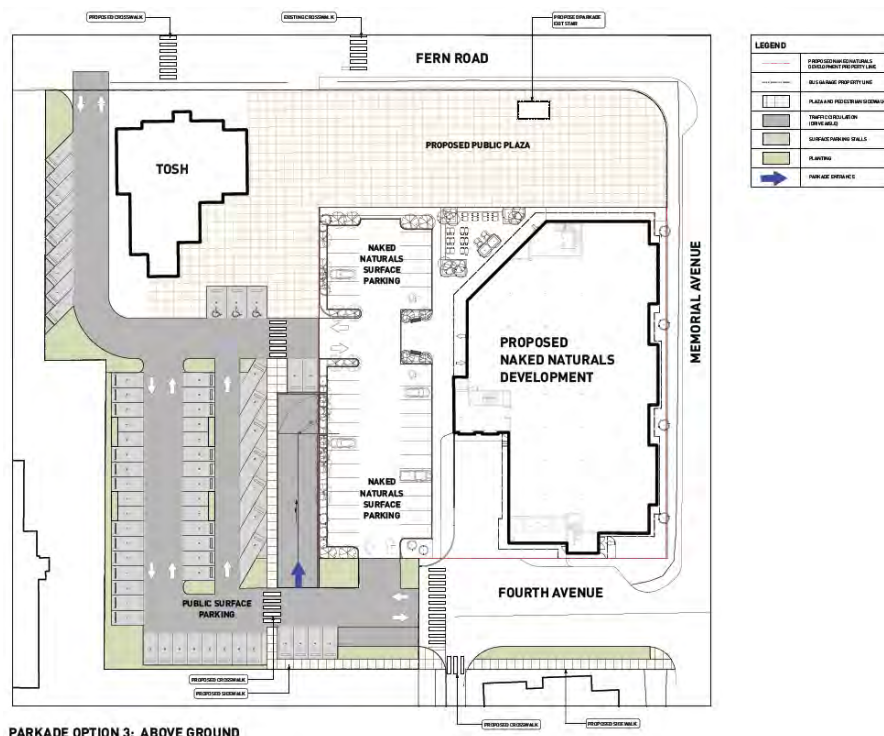
Due to all options resulting in public parking reductions, Bunt reviewed the viability of proposed parking supplies. The parking analysis:

- Summarizes the Town of Qualicum Beach parking and loading supply requirements for the proposed development and compare them to the proposed supply;
- Estimates the existing public parking demand of the site;
- Estimates the existing public parking supply in the local area;
- Estimates feasibility of the local area to absorb the displaced public parking demand;
- Identifies the preferred site plan option from a parking supply perspective;
- Recommends potential parking demand management strategies for the local area; and,
- Summarizes conclusions & recommendations.

### Figure 4.1: Preferred Parking Option



### PARKADE OPTION 3: BELOW GROUND



### PARKADE OPTION 3: ABOVE GROUND

## 4.1 Bylaw Review

Vehicle parking supply requirements are outlined in the Town *Land Use and Subdivision Bylaw No. 580, 1999*<sup>2</sup> ('the bylaw'). Based on the Town *Official Community Plan Bylaw 800, 2018* ('OCP'), the site is in the "Village Neighbourhood" zone. Land uses in the "Village Neighbourhood" zone are subject to Schedule 6B, Section 2 of the bylaw. **Table 4.1** summarizes the vehicle parking supply requirement and provision for the proposed development (Naked Naturals building). The public plaza has no parking bylaw requirements.

**Table 4.1: Vehicle Parking Supply Requirement & Provision (Village Neighbourhood)**

| LAND USE                                   | DENSITY              | BYLAW RATE                  | BYLAW SUPPLY REQUIREMENT | PROVIDED | DIFFERENCE    |
|--------------------------------------------|----------------------|-----------------------------|--------------------------|----------|---------------|
| Ground Floor Commercial (Naked Naturals)   | 1,748 m <sup>2</sup> | 1 / 40 m <sup>2</sup>       | 44                       | 61       | -             |
| Above-Ground Floor Commercial (Restaurant) | 506 m <sup>2</sup>   | 1 / 60 m <sup>2</sup>       | 8                        |          |               |
| Multi-Dwelling Unit                        | 9 units              | 1 / unit                    | 9                        |          |               |
| Accessible                                 | 66 spaces            | 1 for first 20, then 1 / 50 | 2                        | 3        | +1            |
| TOTAL                                      |                      |                             | 63                       | 64       | +1 ACCESSIBLE |

The proposed development will exceed the parking supply requirement for its proposed land uses by 1 accessible parking space.

### 4.1.1 Small Car Parking Supply

Per the bylaw, up to 20% of the proposed parking spaces can be designed and designated as "small car" parking. The proposed small car parking supply is within the allowable maximum.

### 4.1.2 Bicycle Parking Supply

No bicycle parking spaces are required per the bylaw.

However, Bunt recommends that the Naked Naturals building consider bicycle parking for both residents (long-term) and visitors (short-term). Bunt recommends:

<sup>2</sup> Town of Qualicum Beach, "Land Use and Subdivision Bylaw No. 580, 1999", Town of Qualicum Beach, Qualicum Beach, BC, Canada, Consolidated January 2021. Accessed: January 23, 2024. [Online]. Available: <https://qualicumbeach.civicweb.net/filepro/documents/5637/>



- Two (2) horizontal bicycle parking spaces, including one (1) oversized cargo bicycle parking space, per residential unit, for a total of eighteen (18) spaces (including 9 cargo). The long-term bicycle parking for residents should be in a secure room within the development.
- A covered, 6-space bicycle rack at the main entrance to the building.

#### 4.1.3 Loading Space Supply

For commercial land uses, one (1) loading space for each 2,000 m<sup>2</sup> of floor area or part thereof is required. The proposed development will provide two (2) loading spaces, which meets the requirement.

#### 4.1.4 Bylaw Review Summary

The proposed Naked Naturals building will meet or exceed the vehicle, bicycle, and loading space supply requirements outlined in the bylaw. The public plaza has no parking requirements.

## 4.2 Public Parking Supply Review

The site is currently occupied by a public parking lot with approximately 130 spaces. The proposed development will provide 107 public parking spaces. This equates to a loss of 23 public parking spaces from the local area.

The following subsections review the existing parking demand at the site, and the parking supply in the surrounding area to determine the suitability of the proposed public parking supply reduction.

### 4.2.1 Existing Site Parking Demand

#### *Parking Demand*

Bunt counted the number of parked vehicles at the existing site parking lot on Thursday, January 11<sup>th</sup>, 2024, at 3:00 PM. The observed parking demand was 83 vehicles out of 130 spaces (64% parked).

It is noted that the peak parking demand is anticipated to be higher as data was collected at only one time and in January, which is assumed to be outside of the peak month. This said, the observed parking demand at the site compares well with the proposed public parking supply of 107 spaces.

At the same time, Bunt counted the number of parked vehicles at the Quality Foods and the Pharmasave. The observed parking demand was 71 vehicles out of 88 spaces (81% parked), and 14 vehicles out of 31 spaces (45% parked), respectively.

#### *Parking Survey Data*

Bunt circulated an intercept survey to drivers parked at the existing site in November 2023. The survey sought information on destination, origin, and duration. The following information was compiled from 55 responses:

- Destination: Quality Foods Grocery Store (62%), Employment (6%), Other (33%).
- Origin: Within Qualicum Beach (56%), Out of Town (44%).

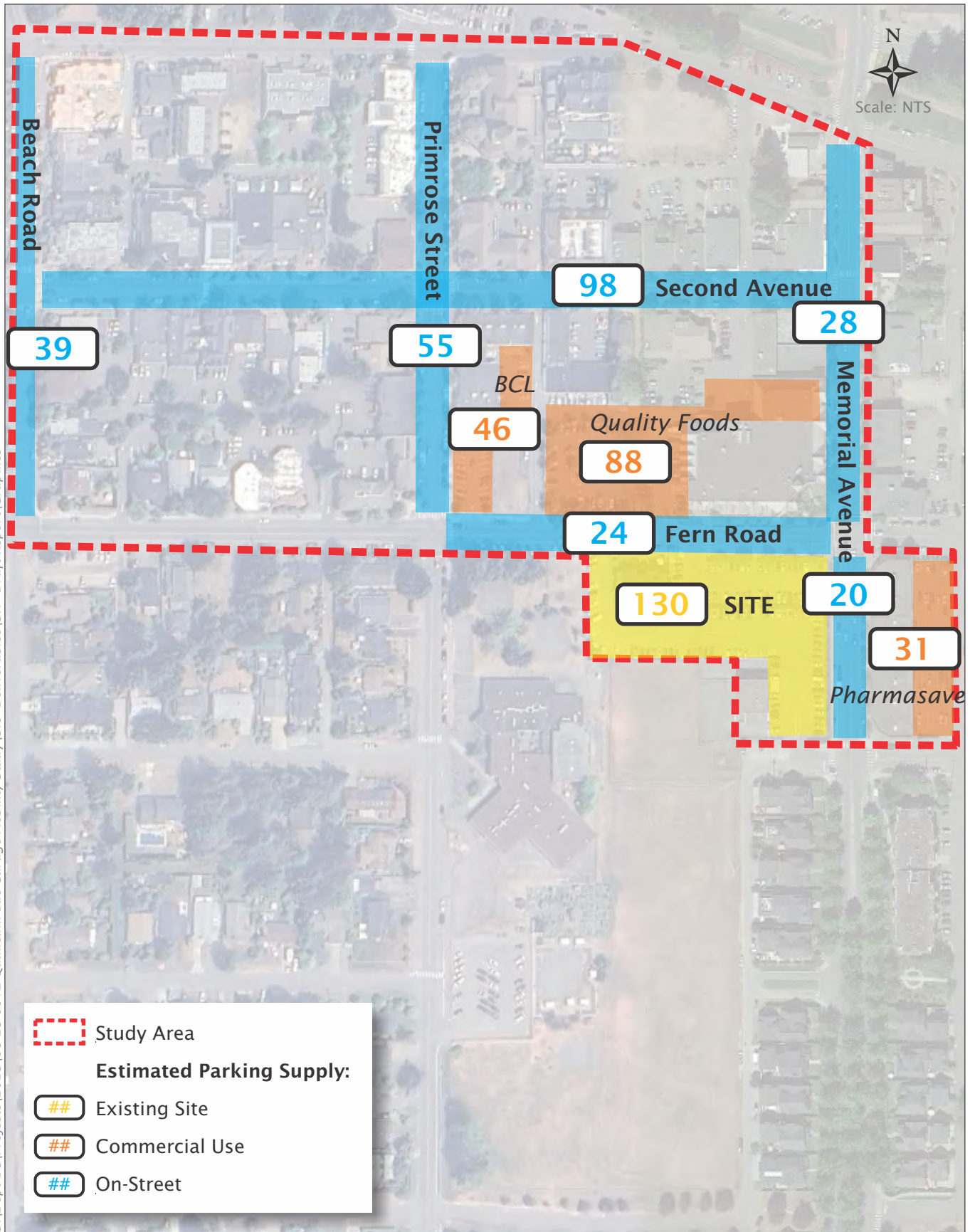
- Duration: Less than 1 hour (80%), 2-4 hours (12%), over 4 hours (8%).

The surveys indicated that most of the parking demand of the existing site is generated by the Quality Foods Grocery Store. There is a near even number of local and out-of-town trips to the site. And the parking behaviour of the site is largely high turnover, with most visits lasting less than 1 hour.

It should be noted that most respondents who selected 'Other' as their destination specified that they were visiting the Pharmasave.

#### **4.2.2 Local Area Parking Supply**

Bunt completed a desktop review of the local area parking supply by estimating the number of spaces in the study area at key locations and on-street using aerial imagery and Google Street View. **Exhibit 4.1** summarizes the estimated parking supplies in the local area.



## Exhibit 4.1 Estimated Local Area Parking Supply

Based on the desktop review, Bunt estimated the local public parking supply as follows:

- 165 spaces available at commercial surface lots, and,
- 264 spaces available on-street.

This results in a total of 429 off-site public parking spaces.

#### 4.2.3 Anticipated Future Parking Behaviour

Based on the observed parking demand of 83 vehicles at the existing site, the proposed public parking supply of 107 vehicles may be able to accommodate most of the existing demand. However, as noted, the peak parking demand of the site is anticipated to be higher than observed due to the limited amount of data collected and the off-season collection period. Therefore, as a conservative measure, it is assumed that the peak parking demand of the site is 100%, or 130 vehicles.

As a result, the proposed supply of 107 public parking spaces is anticipated to displace 23 vehicles from the site to elsewhere in the study area.

Bunt assigned these 23 displaced trips using the destination data compiled from the circulated surveys:

- Quality Foods (62%): 14 displaced vehicles.
- Employees (6%): 1 displaced vehicle.
- Other/Pharmasave (33%): 8 displaced vehicles.

Bunt observed that the parking demand of the Pharmasave was low at 14 vehicles out of 31 spaces (41% parked). As a result, the Pharmasave may have sufficient capacity to accommodate its additional parking demand due to displaced vehicles.

The Quality Foods appears to have a parking demand that is greater than its supply (observed 81% parked). Therefore, it is assumed the remaining approximate 15 displaced vehicles assigned to the Quality Foods and Employment destinations would need to be accommodated by the public surface parking lots or on-street in the study area. The distribution of the 15 displaced demand equates to approximately 3% of the estimated study area supply of 429 spaces. Section 4.3 provides potential management strategies, including strategies to redistribute displaced parking demand throughout the study area by guiding drivers to less well-used parking areas.



### 4.3 Parking Management

As noted prior, approximately 23 vehicles are anticipated to be displaced from the existing site to elsewhere in the study area based on our described estimates and propagation of demand factors. The following subsections describe potential measures to manage this displaced demand.

#### 4.3.1 Site Plan Options

From a purely parking demand perspective, the site plan option with the highest public parking supply will present the least risk. The number of proposed surface and underground public parking spaces in each of the most recent site plan options were as follows:

- Option 1: 73 Public Spaces (73 surface, 0 underground)
- Option 2: 118 Public Spaces (84 surface, 34 underground)
- Option 3: 107 Public Spaces (64 surface, 43 underground)

Therefore, the option that presents the least risk of introducing unaccommodated parking demand to the study area is Option 2, followed by Option 3, then Option 1.

It is however importantly noted that Option 3 is also considered viable with supporting measures. Option 1 is also considered viable but with a higher degree of supporting measures.

#### 4.3.2 Wayfinding Signage

As noted prior, based on the survey results, most of the existing site parking demand is bound for the Quality Foods. Bunt observed the Quality Foods underground parking to be underused compared to the surface parking lot. Bunt also observed the entrance to the underground parking to be difficult to find as it is located at the back of the building without any clear signage. If surface spaces are not available, then more vehicles may use the Quality Foods parkade. However, the underground parkade has a limited parking supply; therefore, adding wayfinding signage to guide drivers to the underground parking area is not recommended as it may quickly reach capacity in the future.

It was noted through various site visits that parking areas behind businesses on 2<sup>nd</sup> Avenue (to both the north and south of 2<sup>nd</sup> Avenue) have substantially lower occupancy than the on-street parking spaces. It is recommended that the Town identify areas of underutilized in-block parking and add wayfinding signage to direct motorists towards these potential parking options. Currently these areas are largely accessed through one-way lanes that extend from 2<sup>nd</sup> Avenue, therefore signage may be placed on 2<sup>nd</sup> Avenue at selected locations based on further assessment of underutilized parking areas.

#### 4.3.3 On-Street Parking Paint Markings

Most streets in the study area feature unrestricted parking on both sides. Bunt observed available parking spaces on most streets during the January 2024 site visit. Paint markings to outline on-street parking spaces may help drivers identify available on-street parking.

#### 4.3.4 Public Parking Visibility

The site, in its existing condition, is clearly visible as the first available public parking area when entering the Town via Memorial Avenue.

The public parking will become less visible to visitors after the proposed development is completed, as most of the surface parking will be obscured by the proposed building. This may result in visitors driving further into town to find parking, which would better distribute the parking demand across the study area.

#### 4.3.5 Shared-Use Underground Parking

The proposed development will exceed the bylaw requirement for the proposed Naked Natural Foods store. As a result, it is anticipated that the proposed parking supply for the Naked Natural Foods may exceed its parking demand. Bunt recommends that the actual demand of the underground parking is monitored after site occupation. If the Naked Natural Foods parking demand is less than the supply, the development may consider converting some of the Naked Natural Foods parking to unrestricted public parking. This additional public parking could accommodate some potential displaced demand.

## 4.4 Parking Conclusions & Recommendations

### 4.4.1 Parking Conclusions

#### *Development Parking Supply*

- The proposed Naked Natural building will meet or exceed the vehicle, bicycle, and loading space supply requirements outlined in the bylaw.

#### *Public Parking Supply*

- If, conservatively, the peak parking demand at the existing site is assumed to be 100%, a 30-vehicle parking demand (with preferred option 3) will be displaced off-site.
- Bunt completed a high-level estimate of future parking behaviour:
  - Based on observed demand, the Pharmasave may be able to accommodate some of the displaced demand.
  - The remaining approximately 20 vehicles are anticipated to be able to be absorbed into the adjacent area surface lot or on-street parking supplies, of which the total supply is approximately 429 spaces.
- Visitors arriving to the town via Memorial Avenue may be more likely to bypass the site and seek parking in other areas as the proposed building will obscure some of the proposed surface parking. This may redistribute parking demand to less well-used parking in the study area.

### 4.4.2 Parking Recommendations

- All three development plan options are considered viable from a parking perspective with anticipation that the lower parking supply options may require supportive measures to manage the parking demand, these may include:
  - It is recommended that the Town identify areas of underutilized in-block parking north and south of 2<sup>nd</sup> Avenue and considering adding wayfinding signage to direct motorists towards these potential parking options.
  - Highlight on-street parking with paint markings.
  - Monitor the parking demand of the site including the underground parking spaces once the proposed development is fully occupied. If there is excess parking demand, some of the underground parking spaces may be reassigned to unrestricted public parking.
- While no bicycle parking is required per the bylaw, Bunt recommends Naked Naturals consider long-term bicycle spaces (including larger sized cargo spaces) for residents and a 6-space short-term bicycle rack for visitors.

## 5. ACTIVE MODES IMPROVEMENTS

### 5.1 Intersection Upgrades

Bunt conducted a site visit and review of existing active mode infrastructure in the study area to identify opportunities for improvements. Bunt identified two study intersections as candidates for active mode improvements based on the site visit, discussions with the Town, and through consulting the *Age-Friendly Transportation Plan* (discussed in Section 2.3.1):

- Memorial Avenue & Railway Street/Veterans Way; and,
- Memorial Avenue & First Avenue/Fir Street.

Bunt identified these study intersections as both seeing significant pedestrian traffic and having an important role in connecting existing and proposed active mode infrastructure. The following subsections provide a high-level description of potential active modes improvements at these study intersections.

#### 5.1.1 Memorial Avenue & Railway Street/Veterans Way

##### *Northwest Corner: Bollards and Painted Pedestrian Refuge Area*

The Town has noted that vehicles park on top of paint markings at the northwest corner of the intersection. In addition, vehicles have been observed taking the southbound right turn too sharply and driving through the white paint markings that outline the corner. This behavior presents a safety hazard as parked vehicles may encroach into the road width, increasing the likelihood of conflicts and potentially impacting the sight line between the southbound vehicle and any pedestrians on the west leg. Vehicles overlapping with the paint markings while turning have an increased likelihood of collision with pedestrians or cyclists on the corner.

If this area is not required for large vehicle turning movements, Bunt recommends the existing white paint markings that define the corner be refreshed. In addition, Bunt recommends flexible bollards be installed over the paint markings to further outline the corner and prevent vehicles from parking or overlapping. This creates an opportunity to add street art to the newly defined pedestrian refuge area within the corner. This potential measure has the added benefit of reducing the crossing distance on the west leg of the intersection; this reduces exposure time.

##### *North Leg: Provide a Painted Zebra Crossing with a Rectangular Rapid Flashing Beacon (RRFB)*

The Town has noted that there is a significant pedestrian volume on the north leg of the intersection, especially on Saturdays when the Qualicum Beach Farmers' Market is open. There is no marked pedestrian crossing here. This presents a safety issue as drivers may not be aware of the unmarked crossing, which limits their ability to see and react to pedestrians. This is especially prominent for southbound vehicles exiting a horizontal curve which, combined with the lack of markings/signage for the crossing, provides a short reaction window.



Bunt recommends providing a painted zebra crossing with pole-mounted pedestrian crossing signs on both sides and facing both travel directions. As an additional measure, the visibility of the crossing could be further improved with push-activated Rectangular Rapid Flashing Beacons (RRFB).

*Southbound Approach: Provide a Pole-Mounted Sign for Crosswalk*

As noted above, the horizontal curve of the road for southbound vehicles limits the sight line to the currently unmarked pedestrian crossing on the north leg.

Bunt recommends a pole-mounted advanced warning sign for the crosswalk (yellow diamond sign with pedestrian symbol) be installed on the southbound approach ahead of the intersection north leg. This measure would be paired with the recommended painted zebra crossing and RRFB described above. This aims to warn southbound drivers of the upcoming crossing and prepare them to stop for pedestrians.

### 5.1.2 Memorial Avenue & First Avenue/Fir Street

*Northwest Corner: Extend Curb Bulge*

The pedestrian crossing on the west leg of the intersection is long (approx. 20m). This presents a safety issue as longer crossing distances have longer pedestrian exposure times.

Bunt recommends the hardscaping on the northwest corner be extended into the intersection to reduce the west leg crossing distance. This measure also aims to force southbound vehicles to take a wider right turn, which will require vehicles to enter the turn at slower speeds. Note that the extend of the bulge will need to be confirmed through the turning movement of the intended vehicles expected to use the intersection.

*Southwest Corner: Provide a Double-Sided, Pole-Mounted Pedestrian Crossing Sign*

The existing zebra pedestrian crossing on the south leg of the intersection is missing a double-sided pedestrian crossing sign (white rectangles with pedestrian symbol).

Bunt recommends installing a double-sided pedestrian crossing sign to improve visibility of the crossing.

*South Leg: Upgrade Existing Crossing with a Rectangular Rapid Flashing Beacon (RRFB)*

The existing south leg zebra crossing is an important connection between the existing Dollymount Multi-Use trail to the east and the future extension of the Dollymount Multi-Use trail to the west. As a result, it is anticipated that the crossing will see significant pedestrian and cyclist traffic in the future.

Bunt recommends that the crossing be upgraded with a push-activated Rectangular Rapid Flashing Beacon (RRFB) to improve the visibility of this important crossing.

*Wayfinding Signage*

The ideal location for a crosswalk would be the north leg of the intersection, as it would directly connect the existing and future sections of the Dollymount Trail. However, this is not possible due to its proximity to the E&N rail line. Therefore, pedestrians and cyclists must instead cross three legs of the intersection to

stay on the Dollymount Trail. This is potentially confusing and may reduce the number of users on the trail.

Bunt recommends wayfinding signage be installed on the trail just before the intersection, or on the corners of the intersection, in both travel directions. The signs could feature arrows and symbols directing pedestrians and cyclists to use the marked crossings and continue onto the trail.

**Exhibit 5.1** summarizes the potential active mode upgrades described above.

## 5.2 Additional Active Mode Measures

The developer and the Town may consider other, more general measures that aim to increase the mode split for pedestrians and cyclists. These potential measures are outlined below.

### 5.2.1 Mid-Block Pedestrian Crossings

There is currently one mid-block pedestrian crossing of Fern Road along the site's north frontage. This is aligned with the east leg of the existing site's East Fern Road Access. In addition to this crossing, it is also recommended that the Town consider introducing a second mid-block crossing approximately 33 meters to the west which would align with the existing pedestrian path that extends north through the Qualicum Foods - Quality Foods parking lot to 2<sup>nd</sup> Avenue.

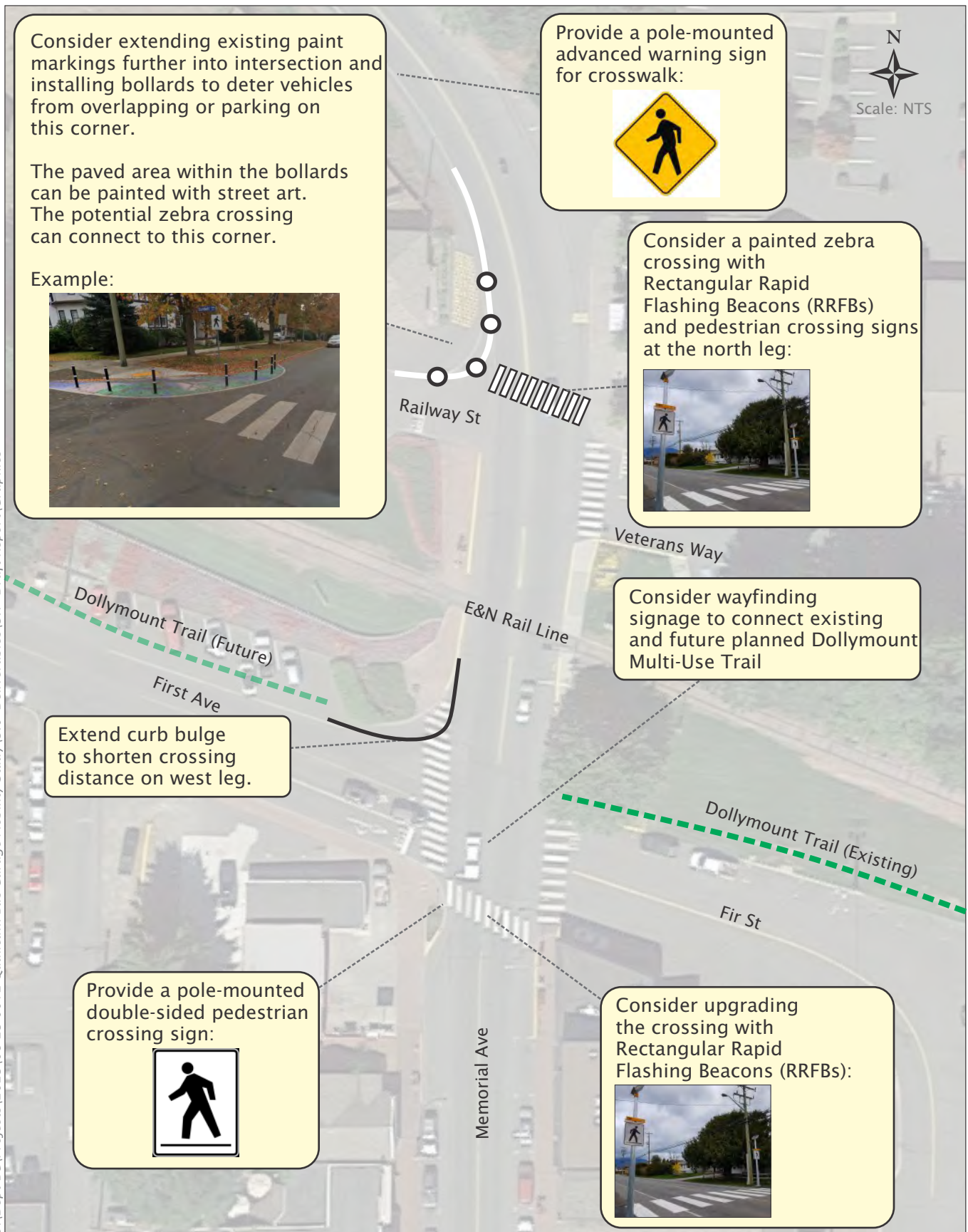
### 5.2.2 Pedestrian Scramble Phase at Fern Road & Memorial Avenue Intersection

The Fern Road & Memorial Avenue intersection is immediately adjacent to the public plaza. The future proposed development includes public parking therefore pedestrian connectivity and safety is a critical consideration. The intersection is the only signalized intersection in Qualicum Beach and represents a focal point for the community which will be augmented with the adjacent proposed development. The intersection is shown to operate well from a vehicle operations perspective, however opportunities to improve the intersection from a pedestrian perspective were evaluated to acknowledge its importance to the pedestrian realm.

It is recommended to consider implementing a pedestrian scramble signal phase where pedestrians are permitted to cross all legs of the intersection including diagonal crossings during a single, all pedestrian crossing signal phase. Adding a pedestrian scramble phase should include new pavement paint markings and infrastructure improvements to include audible instructions in coordination with push-button activation (i.e. "Walk sign is on for all crossings").

Importantly, this would allow fully protected pedestrian crossings in all directions (all vehicle movements would be under red light stop control during the one pedestrian phase), thus removing pedestrian and motorist conflict points and improving safety for all modes.

An image of paint markings at an intersection with a pedestrian scramble phase is shown in **Figure 5.1**.



## Exhibit 5.1 Potential Active Mode Upgrades



**Figure 5.1: Paint Markings at an Intersection with Pedestrian Scramble Signal Phase**



Source: Google Maps image of Buffalo Street & Banff Avenue Intersection

#### ***Total Traffic Operations – Pedestrian Scramble***

Synchro 11 software was used to estimate the future traffic operations at the Fern Road & Memorial Avenue intersection if it were to have a pedestrian scramble phase. The intersection was given a separate pedestrian-only phase which would give a red signal to all vehicle movements. All existing pedestrian phases that operate concurrently with vehicle movements were removed from the model. The following assumptions were input for the pedestrian phase:

- A “Walk” time of 2 seconds (i.e., the time where the pedestrian signal heads show the symbol for a walking person).
- A “Flash, Don’t Walk” (FDW) time of 22 seconds (i.e., the time where the pedestrian signal heads show a flashing orange hand and a countdown timer) based on an estimated diagonal crossing distance of 22 metres and a walking speed of 1.0 m/s.
- The Synchro “Optimize Cycle Length” tool was applied, which attempts to recalculate the cycle length and individual split times for optimal traffic operations. This resulted in a 90 second cycle length. This is within the typical range for a traffic signal cycle length in an urban environment.

**Table 5.1** summarizes the total (with development) traffic operations at the Fern Road & Memorial Avenue intersection with a 24 second pedestrian scramble phase modeled in Synchro 11 software. Detailed outputs are provided in Appendix B.



**Table 5.1: Total (with Development) Vehicle Operations – No Scramble vs. Pedestrian Scramble**

| INTERSECTION/<br>TRAFFIC CONTROL          | MOVEMENT | TOTAL (WITH SITE) – EXISTING<br>TIMING |      |               | TOTAL (WITH SITE) – PEDESTRIAN<br>SCRAMBLE |      |               |
|-------------------------------------------|----------|----------------------------------------|------|---------------|--------------------------------------------|------|---------------|
|                                           |          | LOS                                    | V/C  | 95TH Q<br>(M) | LOS                                        | V/C  | 95TH Q<br>(M) |
| Memorial Ave &<br>Fern Rd<br>(signalized) | OVERALL  | A                                      | 0.50 | -             | C                                          | 0.49 | -             |
|                                           | EBLTR    | B                                      | 0.33 | 15            | C                                          | 0.63 | 35            |
|                                           | WBLTR    | B                                      | 0.38 | 20            | C                                          | 0.64 | 50            |
|                                           | NBLTR    | A                                      | 0.47 | 45            | C                                          | 0.67 | 85            |
|                                           | SBLTR    | A                                      | 0.57 | 55            | D                                          | 0.86 | 115           |

As expected, the intersection is anticipated to be more delayed if a pedestrian scramble is implemented as vehicles must wait longer on average for their phase. However, results indicate that all movements will continue to operate within performance thresholds for level of service, V/C ratio, and queuing. Therefore, a pedestrian scramble is anticipated to be viable from a traffic operations perspective.

### 5.2.3 Wayfinding Signs

Wayfinding signs can be installed in high-pedestrian-traffic areas. These signs can provide directions and information on points of interest such as key destinations (restaurants, tourist attractions, etc.), parks and beaches, trails, cycling routes, water stations, bike racks, etc. This measure may provide active mode users with destinations they would have otherwise missed and provide information which will enhance their experience such as water stations and bike racks. **Figure 5.2** provides an example of a wayfinding sign.

**Figure 5.2: Wayfinding Sign Example**



Source: City of Vancouver

#### **5.2.4 Water Stations**

Water stations can be installed in high-traffic areas. These stations can be equipped with water fountains at different heights, and a ground-height fountain for dogs. In addition, stations can be equipped with water fill stations and misting stations. With the increasing frequency of record-breaking summer temperatures, these stations can improve active mode safety. **Figure 5.3** provides an example of a water station with all the described features.

**Figure 5.3: Water Station Example**



### 5.2.5 Bike Racks

Access to bike racks near key destinations is an important measure to encourage cycling for daily errands and day trips. Bike racks should be able to accommodate most types of bicycles (road bikes, children's bikes, cargo bikes, etc.) and be in visible areas to decrease the likelihood of theft. **Figure 5.4** provides two examples of bike racks that can accommodate most bikes.

**Figure 5.4: Bike Rack Examples: "Post-and-Ring" (Left) and "Sheffield" (Right)**



### 5.2.6 Benches

Benches encourage activities outdoors and provide a rest point for active mode users.

## 6. SWEEP PATH ANALYSIS

Bunt completed a swept path analysis of proposed site plan option 3 (currently preferred by the design team) to confirm functionality of passenger vehicle access, circulation, and parking as well as loading vehicle maneuvers. The swept path analysis is attached in **Appendix C**. The following summarizes the exhibit package:

- **Exhibit 1** illustrates passenger vehicle circulation on the ground level and on the access ramp to the underground parking. Two-way concurrent circulation is achievable at all corners between at least a 4.6m small car (“Honda Civic 2017”) and a 5.6m standard vehicle (“P-TAC” – Passenger – Transportation Association of Canada), which is the minimum standard per Bunt internal guidelines. It is recommended that a convex mirror be installed on the corner of the ramp to the underground parking, as indicated in the Exhibit, to provide a sight line around the 90-degree corner and warn drivers to yield to oncoming traffic.
- **Exhibit 2** illustrates successful parking maneuvers in the one-way angled parking section of the surface parking lot.
- **Exhibits 3 and 4** illustrates inbound and outbound loading maneuvers into both on-site loading spaces with a 20-metre WB-20 semi-tractor trailer truck. As indicated, the inbound vehicle paths into both loading spaces overlap the landscaping strip on the southeast corner of the site; this landscaping strip will need to be removed to accommodate WB-20 trucks. Note that loading vehicles will not be permitted to use the north-south laneway that intersects with Fourth Avenue.
- **Exhibits 5 and 6** illustrates successful loading maneuvers in and out of the on-site loading spaces with a 15-metre WB-15 truck. Note that loading vehicles will not be permitted to use the north-south laneway that intersects with Fourth Avenue.



## 7. CONCLUSIONS & RECOMMENDATIONS

### 7.1 Conclusions

The proposed development would replace the existing 130 parking space surface lot with a pedestrian plaza adjacent to a 1,748 m<sup>2</sup> health food store ('Naked Natural Foods'), and a 506 m<sup>2</sup> restaurant, with 9 residential units above.

The preferred plaza and parking option results in a total of 171 parking spaces (64 for Naked Natural building and 107 for public parking).

#### *Traffic*

1. The Synchro model traffic analysis indicates existing traffic conditions at study area intersections operate within typical threshold criteria in regard to peak period delays and volume to capacity ratios.
2. The most pressurized study area traffic movement is the westbound First Avenue to northbound Memorial Avenue left turn movement. Laning and traffic control mitigation options are limited due to the close proximity of the rail line, north of the intersection, which does not allow vehicles to stop north of the intersection. As this traffic movement is shown to operate within common thresholds, no traffic related mitigation is recommended, rather mitigation recommendations for this intersection pertain to pedestrian realm improvement considerations.
3. The proposed development is anticipated to generate approximately 220 vehicle trips (total in and out) during its peak hour period when using ITE trip generation rates. These volumes were used in the traffic analysis however it is noted that actual site trips in Qualicum Beach are anticipated to be significantly lower due to its more dispersed peak hour and the applied grocery store rates likely being higher than anticipated to be generated by the more speciality Naked Natural store and the restaurant being more of an ancillary land use.
4. The traffic model indicates that the additional traffic generated by the development is not anticipated to have a significant impact on local area traffic operations. All traffic movement remain within capacity thresholds with little difference between the existing and post-development scenarios.

#### *Parking*

5. The proposed Naked Natural building will meet or exceed the vehicle, bicycle, and loading space supply requirements outlined in the bylaw.
6. If, conservatively, the peak parking demand at the existing site is assumed to be 100%, a 30-vehicle parking demand (with preferred option 3) will be displaced off-site.
7. Bunt completed a high-level estimate of future parking behaviour:

- Based on observed demand, the Pharmasave may be able to accommodate some of the displaced demand.
- The remaining approximately 20 vehicles are anticipated to be able to be absorbed into the adjacent area surface lot or on-street parking supplies, of which the total supply is approximately 429 spaces.
- Visitors arriving to the town via Memorial Avenue may be more likely to bypass the site and seek parking in other areas as the proposed building will obscure some of the proposed surface parking. This may redistribute parking demand to less well-used parking in the study area.

## 7.2 Recommendations

### *Swept Path Analysis*

8. The following site design updates are recommended based on the swept path analysis of the proposed Option 3 site plan:
  - Provide a convex mirror on the corner of the underground parking access ramp to provide a sight line around the 90-degree corner and warn drivers to yield to oncoming vehicles.
  - Remove the landscaping strip at the southeast corner of the site to accommodate inbound vehicle paths for WB-20 trucks.

### *Traffic and Transportation Demand Management*

9. Recommended study area transportation improvements for consideration include:
  - Pedestrian related improvements near the Memorial Avenue & First Avenue/Fir Street and Memorial Avenue & Railway Street/Veterans Way intersections.
  - A pedestrian scramble phase at the signalized Fern Road & Memorial Avenue intersections.
  - A second pedestrian crossing of Fern Road adjacent to TOSH building.
  - A sidewalk along Fourth Avenue's south edge, across from the development site, between Memorial Avenue and lane.
  - Introduction of pedestrian amenities throughout downtown area such as benches and water fountains.
  - Bicycle parking integrated into plaza design.
  - Provision of long-term bicycle spaces (including larger sized cargo spaces) for building residents and at minimum a 6-space short-term bicycle rack for grocery store and residential visitors.

### *Parking Recommendations*

10. All three development plan options are considered viable from a parking perspective with anticipation that the lower parking supply options may require supportive measures to manage the parking demand, these may include:
  - It is recommended that the Town identify areas of underutilized in-block parking north and south of 2<sup>nd</sup> Avenue and considering adding wayfinding signage to direct motorists towards these potential parking options.
  - Highlight on-street parking with paint markings.
  - Monitor the parking demand of the site including the underground parking spaces once the proposed development is fully occupied. If there is excess parking demand, some of the underground parking spaces may be reassigned to unrestricted public parking.
11. While no bicycle parking is required per the bylaw, Bunt recommends Naked Naturals consider long-term bicycle spaces (including larger sized cargo spaces) for residents and a 6-space short-term bicycle rack for visitors.

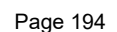
# APPENDIX A

## Traffic Data





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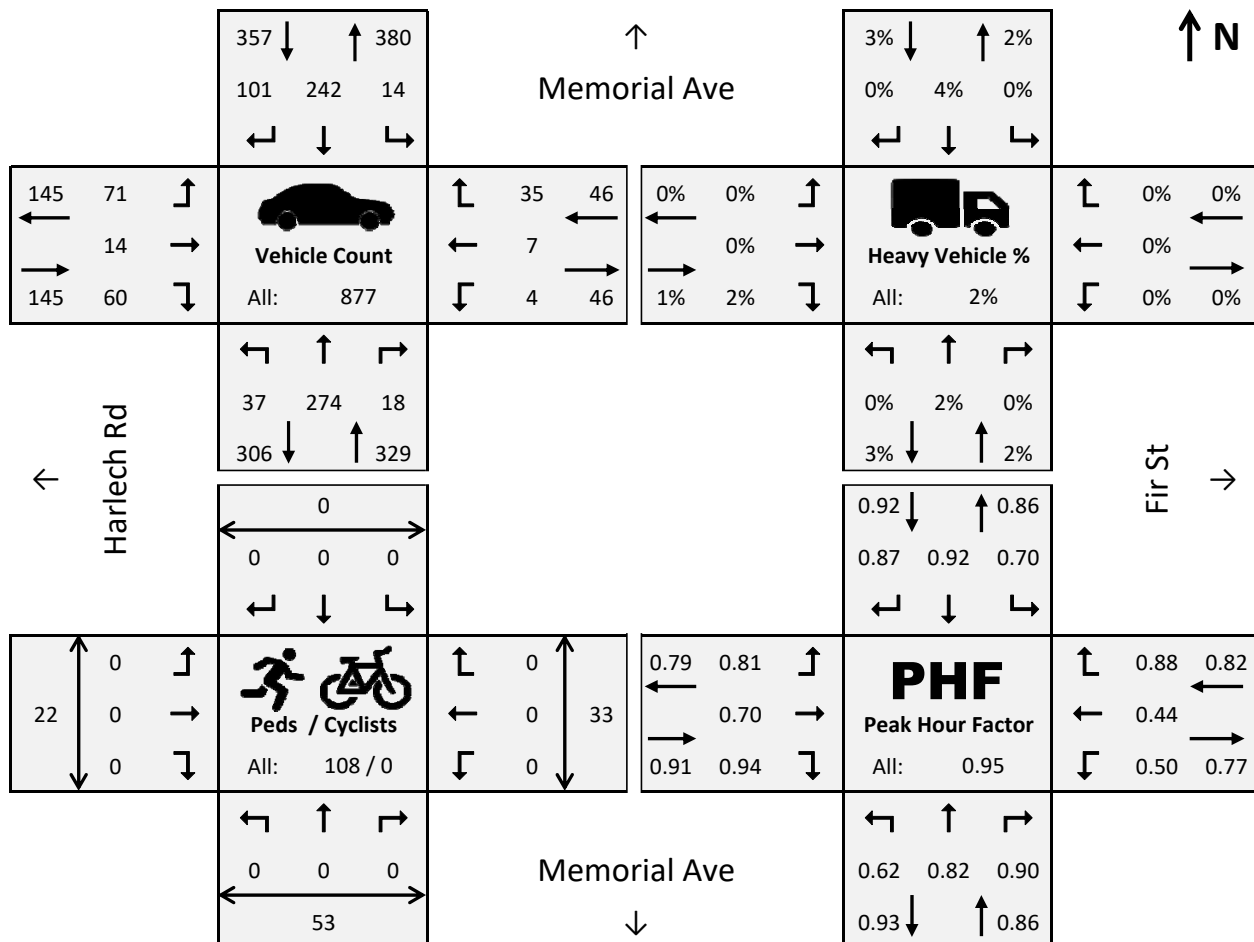
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# Memorial Ave @ First Ave – Qualicum Beach, BC

**Project#:** 08-23-0012      **Weather:** Sun      **Analysis Period:** 13:45 - 14:45  
**Date:** 11-16-2023      **Road Cond:** Dry      **Intersection Peak:** 13:45 - 14:45  
**Notes:** Pattern of pedestrian movement was observed in which people were crossing multiple intersections and coming back in the same direction like they were strolling

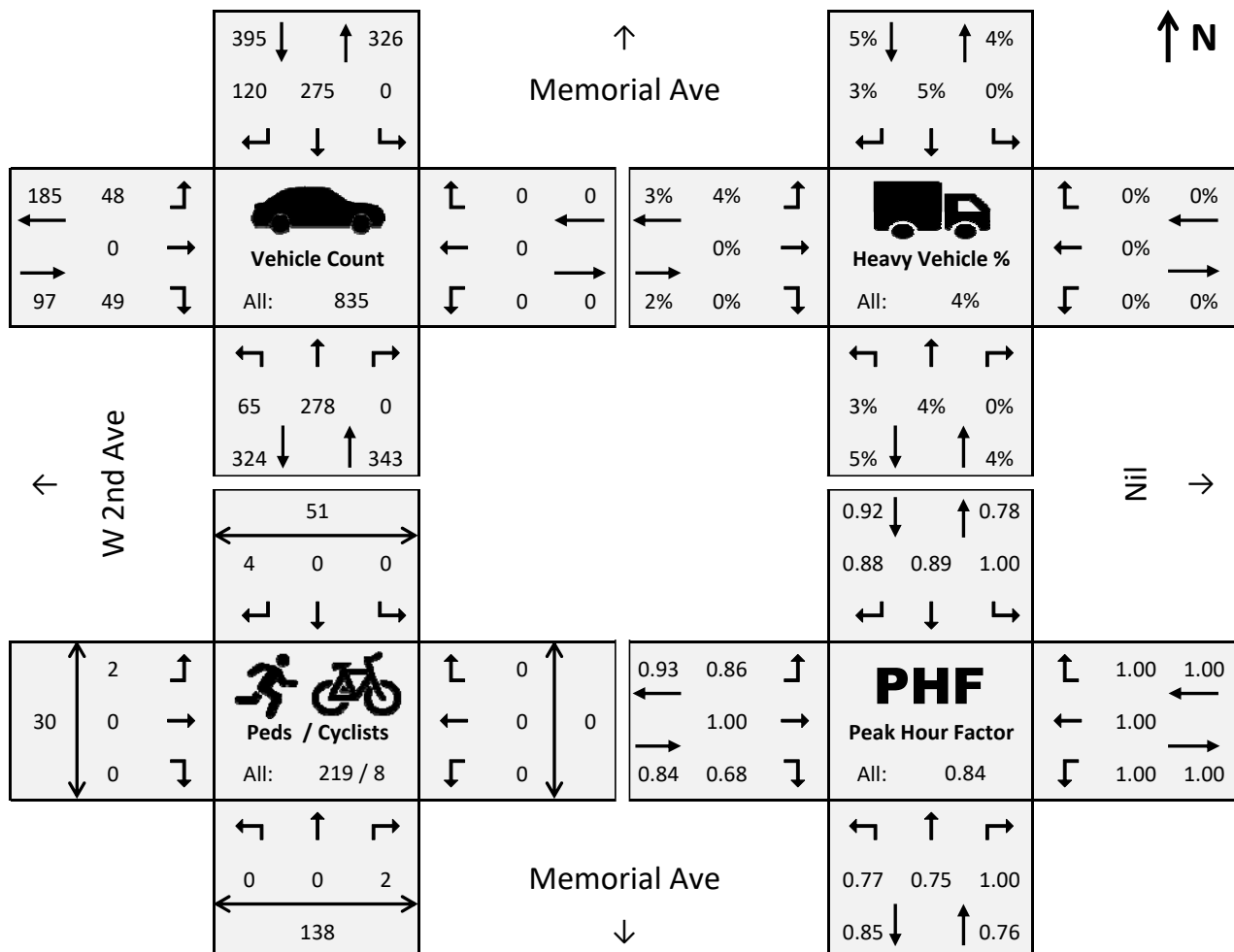


| TIME<br>INTERVAL | AUTOMOBILE COUNT |     |     |     |     |     |     |     |     |     |     |     | PEDESTRIANS |    |   |   |
|------------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|----|---|---|
|                  | NBL              | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | N           | S  | E | W |
| 13:45 - 14:00    | 7                | 84  | 5   | 3   | 57  | 23  | 17  | 5   | 15  | 0   | 4   | 10  | 0           | 18 | 9 | 1 |
| 14:00 - 14:15    | 7                | 63  | 5   | 5   | 57  | 28  | 16  | 1   | 15  | 0   | 0   | 10  | 0           | 14 | 9 | 6 |
| 14:15 - 14:30    | 15               | 58  | 3   | 2   | 66  | 29  | 22  | 4   | 14  | 2   | 2   | 5   | 0           | 11 | 8 | 7 |
| 14:30 - 14:45    | 8                | 69  | 5   | 4   | 62  | 21  | 16  | 4   | 16  | 2   | 1   | 10  | 0           | 10 | 7 | 8 |
| -                | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | -  | - | - |
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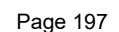


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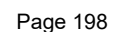


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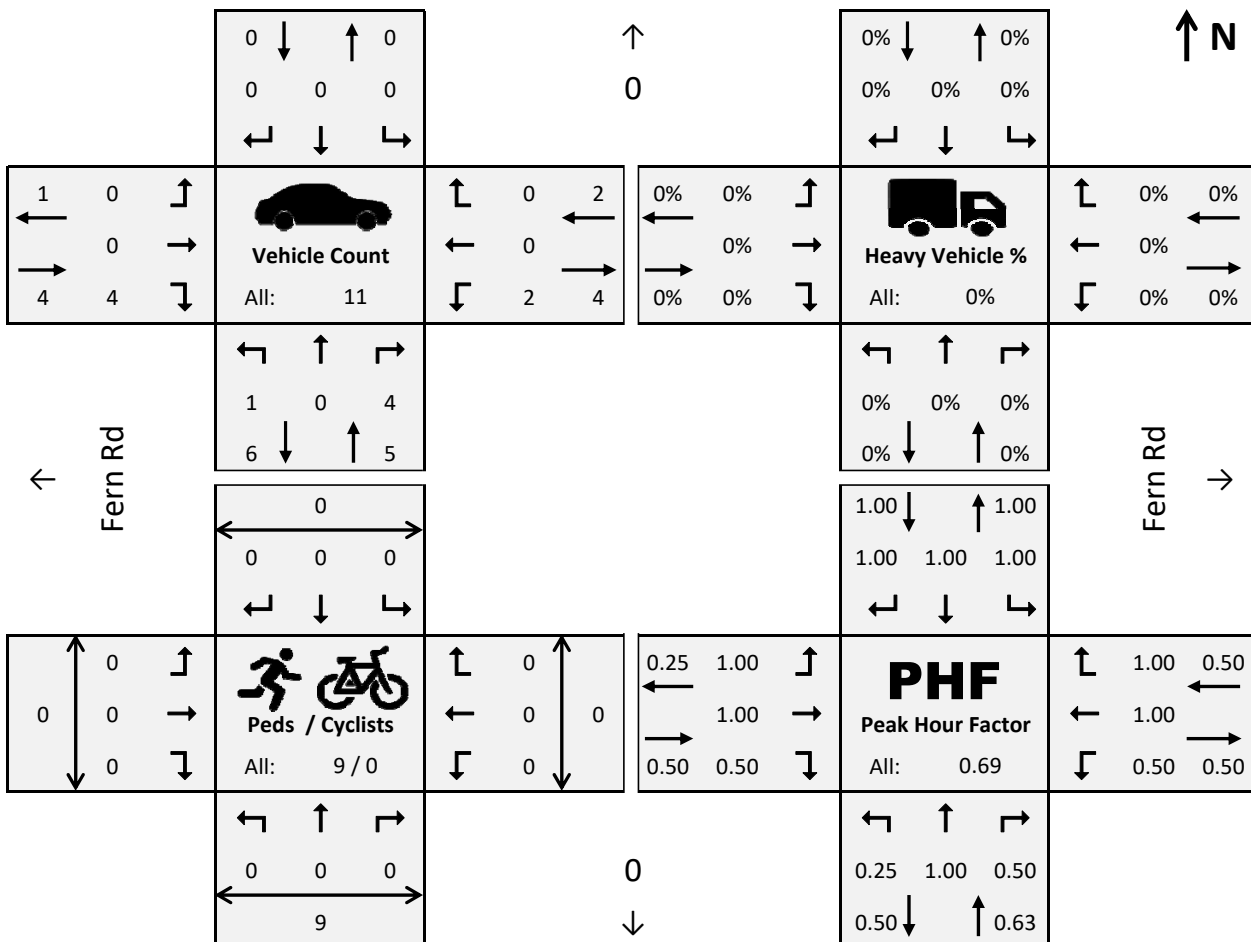


# Fern Road @ West Site Access – Qualicum Beach, BC

**Project#:** 08-23-0012      **Weather:** Sun      **Analysis Period:** 13:30 - 14:30  
**Date:** 11-22-2023      **Road Cond:** Dry      **Intersection Peak:** 13:30 - 14:30  
**Notes:** This intersection is on the west of old school arts centre when facing towards north

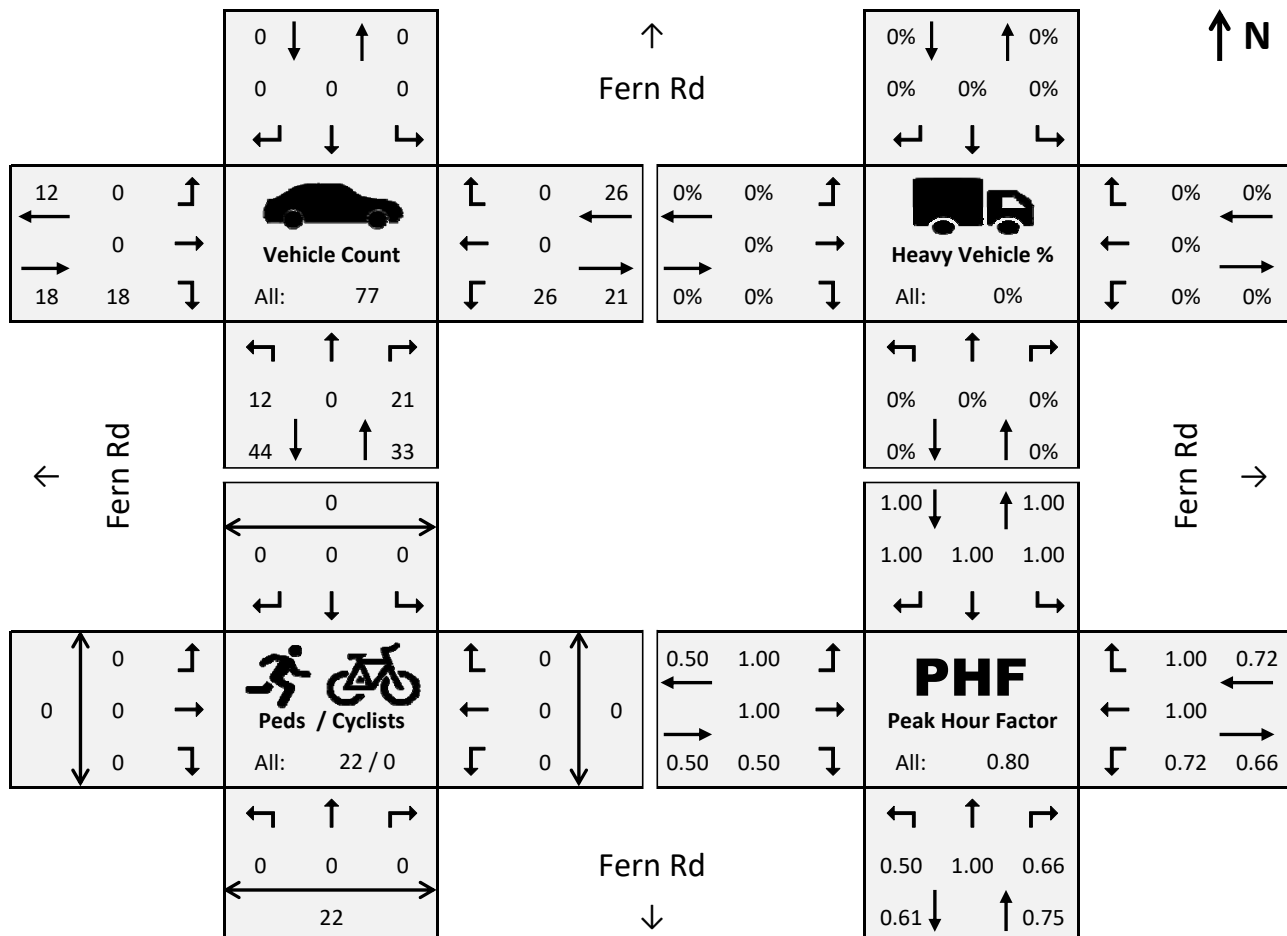


| TIME<br>INTERVAL | AUTOMOBILE COUNT |     |     |     |     |     |     |     |     |     |     |     | PEDESTRIANS |   |   |   |
|------------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|---|---|---|
|                  | NBL              | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | N           | S | E | W |
| 13:30 - 13:45    | 0                | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 2   | 1   | 0   | 0   | 0           | 0 | 0 | 0 |
| 13:45 - 14:00    | 1                | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0           | 4 | 0 | 0 |
| 14:00 - 14:15    | 0                | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0           | 4 | 0 | 0 |
| 14:15 - 14:30    | 0                | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0           | 1 | 0 | 0 |
| -                | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | - | - |
| -                | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | - | - |
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| -                | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | - | - |
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| -                | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | - | - |
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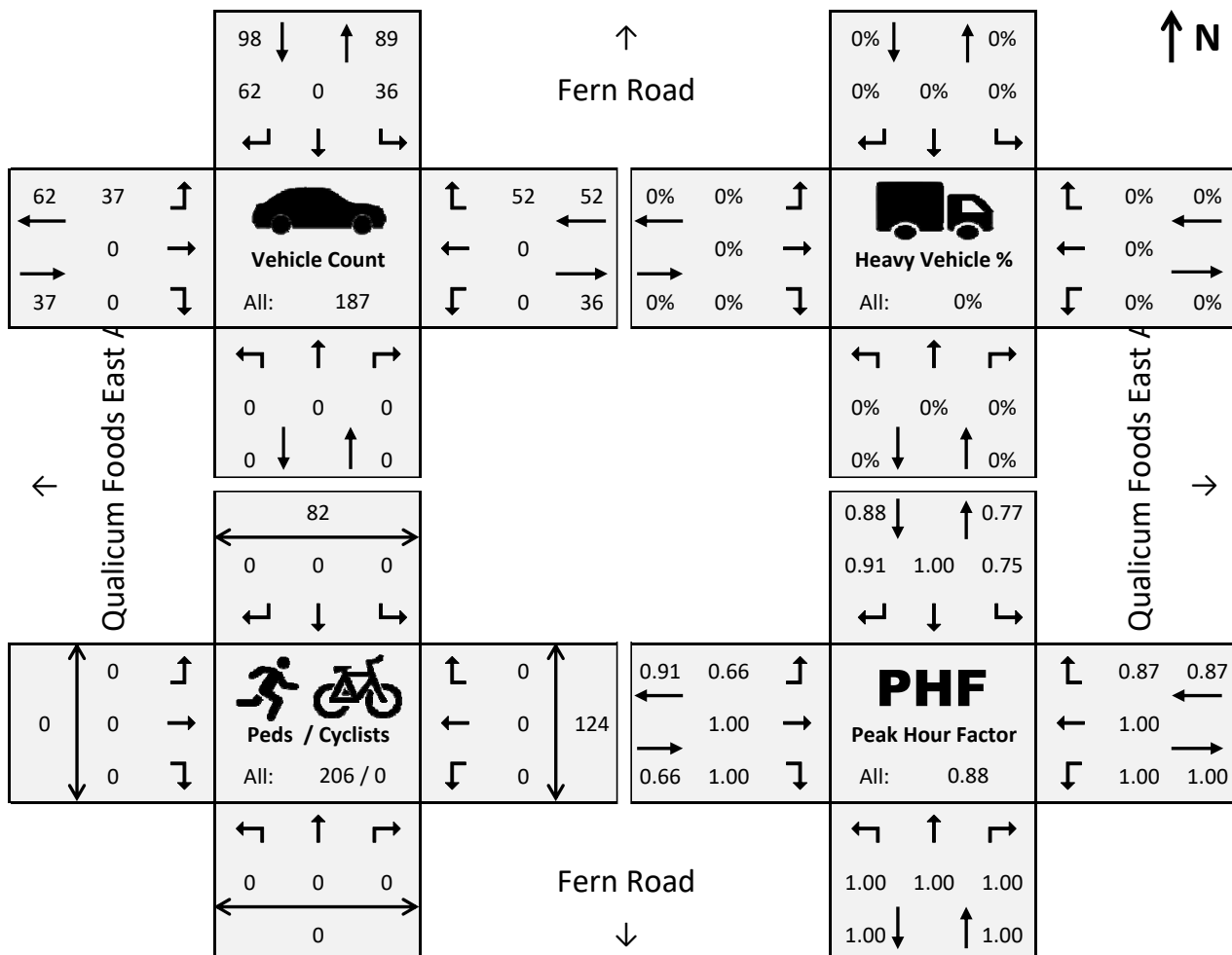


|                  |                                                                                          |                   |     |                           |               |
|------------------|------------------------------------------------------------------------------------------|-------------------|-----|---------------------------|---------------|
| <b>Project#:</b> | 08-23-0012                                                                               | <b>Weather:</b>   | Sun | <b>Analysis Period:</b>   | 13:30 - 14:30 |
| <b>Date:</b>     | 11-22-2023                                                                               | <b>Road Cond:</b> | Dry | <b>Intersection Peak:</b> | 13:30 - 14:30 |
| <b>Notes:</b>    | This intersection is on the East of The old school arts centre when facing towards north |                   |     |                           |               |

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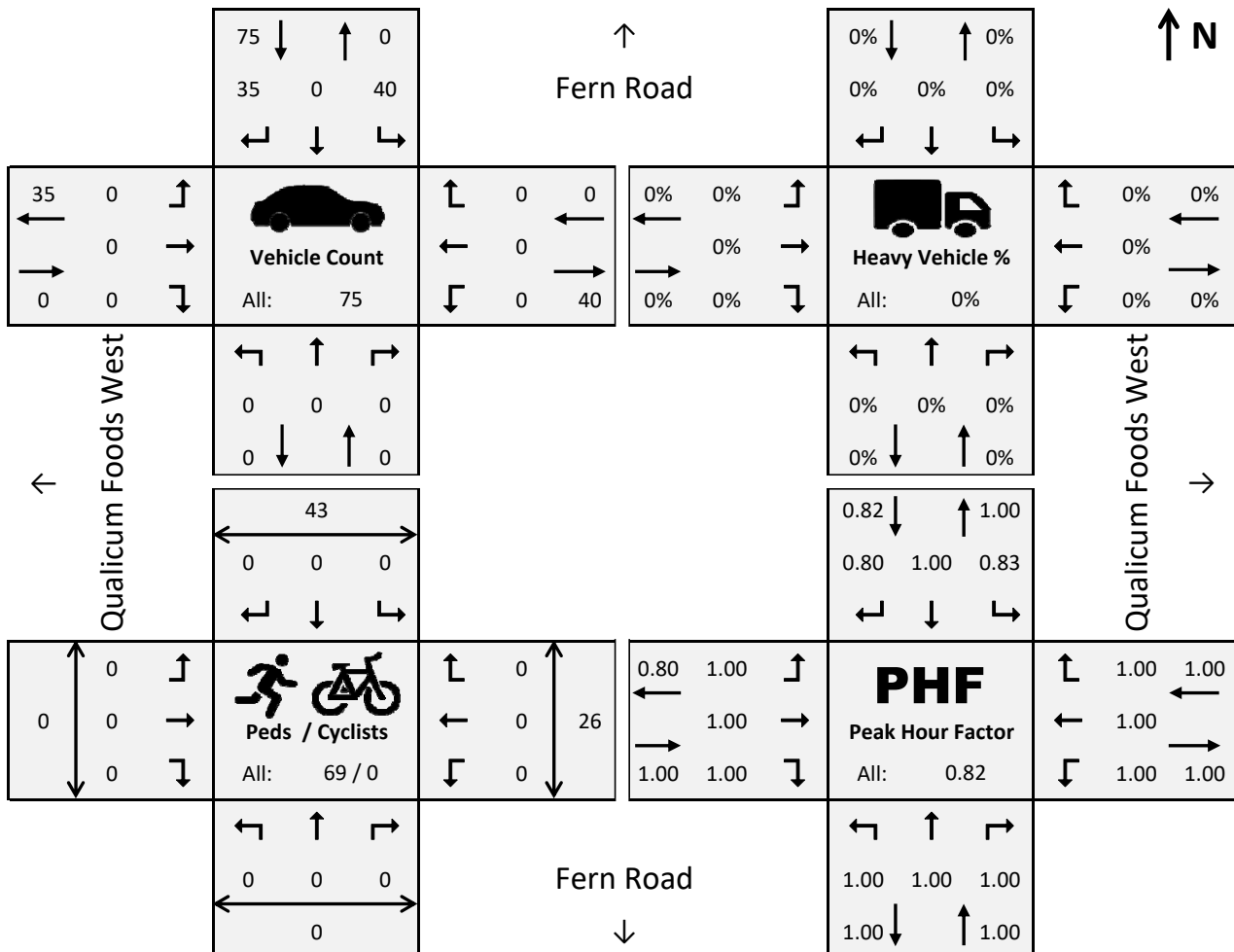
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# Fern Road @ Qualicum Foods West Access – Qualicum Beach, BC

Project#: 08-23-0012 Weather: Sun Analysis Period: 13:45 - 14:45  
 Date: Nov 22, 2023 (Wed) Road Cond: Dry Intersection Peak: 13:45 - 14:45  
 Notes:



| TIME INTERVAL | AUTOMOBILE COUNT |     |     |     |     |     |     |     |     |     |     |     | PEDESTRIANS |   |    |   |
|---------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|---|----|---|
|               | NBL              | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | N           | S | E  | W |
| 13:45 - 14:00 | 0                | 0   | 0   | 6   | 0   | 5   | 0   | 0   | 0   | 0   | 0   | 0   | 10          | 0 | 6  | 0 |
| 14:00 - 14:15 | 0                | 0   | 0   | 12  | 0   | 11  | 0   | 0   | 0   | 0   | 0   | 0   | 10          | 0 | 10 | 0 |
| 14:15 - 14:30 | 0                | 0   | 0   | 12  | 0   | 9   | 0   | 0   | 0   | 0   | 0   | 0   | 10          | 0 | 3  | 0 |
| 14:30 - 14:45 | 0                | 0   | 0   | 10  | 0   | 10  | 0   | 0   | 0   | 0   | 0   | 0   | 13          | 0 | 7  | 0 |
| -             | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | -  | - |
| -             | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | -  | - |
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| -             | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | -  | - |
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| -             | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | -  | - |
| -             | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | -  | - |
| -             | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | -  | - |
| -             | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | -  | - |
| -             | -                | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -           | - | -  | - |



*The attached information is provided to support the agency's review process  
and shall not be distributed to other parties without written consent from  
Bunt & Associates Engineering Ltd.*

## APPENDIX B

### Synchro Reports



# HCM Unsignalized Intersection Capacity Analysis

## 1: Memorial Ave & Village Way/Veterans Way

Existing 2023  
01-03-2024

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                     |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)            | 2                                                                                 | 1                                                                                 | 4                                                                                 | 23                                                                                | 0                                                                                 | 7                                                                                 | 2                                                                                   | 380                                                                                 | 19                                                                                  | 3                                                                                   | 424                                                                                 | 4                                                                                   |
| Future Volume (Veh/h)             | 2                                                                                 | 1                                                                                 | 4                                                                                 | 23                                                                                | 0                                                                                 | 7                                                                                 | 2                                                                                   | 380                                                                                 | 19                                                                                  | 3                                                                                   | 424                                                                                 | 4                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 2                                                                                 | 1                                                                                 | 4                                                                                 | 25                                                                                | 0                                                                                 | 8                                                                                 | 2                                                                                   | 413                                                                                 | 21                                                                                  | 3                                                                                   | 461                                                                                 | 4                                                                                   |
| Pedestrians                       | 5                                                                                 |                                                                                   |                                                                                   | 29                                                                                |                                                                                   |                                                                                   | 7                                                                                   |                                                                                     |                                                                                     | 3                                                                                   |                                                                                     |                                                                                     |
| Lane Width (m)                    | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                                 |                                                                                     |                                                                                     | 3.6                                                                                 |                                                                                     |                                                                                     |
| Walking Speed (m/s)               | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                                 |                                                                                     |                                                                                     | 1.2                                                                                 |                                                                                     |                                                                                     |
| Percent Blockage                  | 0                                                                                 |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 246                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 912                                                                               | 941                                                                               | 475                                                                               | 937                                                                               | 932                                                                               | 456                                                                               | 470                                                                                 |                                                                                     |                                                                                     |                                                                                     | 463                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 912                                                                               | 941                                                                               | 475                                                                               | 937                                                                               | 932                                                                               | 456                                                                               | 470                                                                                 |                                                                                     |                                                                                     |                                                                                     | 463                                                                                 |                                                                                     |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 99                                                                                | 100                                                                               | 99                                                                                | 89                                                                                | 100                                                                               | 99                                                                                | 100                                                                                 |                                                                                     |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |
| cM capacity (veh/h)               | 243                                                                               | 255                                                                               | 584                                                                               | 229                                                                               | 258                                                                               | 589                                                                               | 1087                                                                                |                                                                                     |                                                                                     |                                                                                     | 1072                                                                                |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 7                                                                                 | 33                                                                                | 436                                                                               | 468                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 2                                                                                 | 25                                                                                | 2                                                                                 | 3                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 4                                                                                 | 8                                                                                 | 21                                                                                | 4                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 368                                                                               | 269                                                                               | 1087                                                                              | 1072                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.02                                                                              | 0.12                                                                              | 0.00                                                                              | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 0.5                                                                               | 3.3                                                                               | 0.0                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 15.0                                                                              | 20.2                                                                              | 0.1                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                 | C                                                                                 | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 15.0                                                                              | 20.2                                                                              | 0.1                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | Err%                                                                              | ICU Level of Service                                                              |                                                                                   |                                                                                     | H                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 2: Memorial Ave & Harlech Rd/Fir St

Existing 2023  
01-03-2024

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (veh/h)            | 76                                                                                | 14                                                                                | 78                                                                                | 5                                                                                 | 7                                                                                 | 36                                                                                | 37                                                                                 | 289                                                                                 | 18                                                                                  | 14                                                                                  | 329                                                                                 | 108                                                                                 |
| Future Volume (Veh/h)             | 76                                                                                | 14                                                                                | 78                                                                                | 5                                                                                 | 7                                                                                 | 36                                                                                | 37                                                                                 | 289                                                                                 | 18                                                                                  | 14                                                                                  | 329                                                                                 | 108                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                               |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                 |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Hourly flow rate (vph)            | 80                                                                                | 15                                                                                | 82                                                                                | 5                                                                                 | 7                                                                                 | 38                                                                                | 39                                                                                 | 304                                                                                 | 19                                                                                  | 15                                                                                  | 346                                                                                 | 114                                                                                 |
| Pedestrians                       | 22                                                                                |                                                                                   |                                                                                   | 33                                                                                |                                                                                   |                                                                                   | 53                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (m)                    | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (m/s)               | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  | 2                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   | 4                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 194                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 888                                                                               | 889                                                                               | 478                                                                               | 1000                                                                              | 936                                                                               | 346                                                                               | 482                                                                                |                                                                                     |                                                                                     |                                                                                     | 356                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 888                                                                               | 889                                                                               | 478                                                                               | 1000                                                                              | 936                                                                               | 346                                                                               | 482                                                                                |                                                                                     |                                                                                     |                                                                                     | 356                                                                                 |                                                                                     |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                                |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 64                                                                                | 94                                                                                | 85                                                                                | 97                                                                                | 97                                                                                | 94                                                                                | 96                                                                                 |                                                                                     |                                                                                     |                                                                                     | 99                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 223                                                                               | 256                                                                               | 551                                                                               | 156                                                                               | 240                                                                               | 677                                                                               | 1061                                                                               |                                                                                     |                                                                                     |                                                                                     | 1170                                                                                |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | EB 2                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 80                                                                                | 97                                                                                | 50                                                                                | 362                                                                               | 475                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 80                                                                                | 0                                                                                 | 5                                                                                 | 39                                                                                | 15                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 82                                                                                | 38                                                                                | 19                                                                                | 114                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 223                                                                               | 468                                                                               | 426                                                                               | 1061                                                                              | 1170                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.36                                                                              | 0.21                                                                              | 0.12                                                                              | 0.04                                                                              | 0.01                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 12.4                                                                              | 6.2                                                                               | 3.2                                                                               | 0.9                                                                               | 0.3                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 30.0                                                                              | 14.7                                                                              | 14.6                                                                              | 1.3                                                                               | 0.4                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | D                                                                                 | B                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 21.6                                                                              |                                                                                   | 14.6                                                                              | 1.3                                                                               | 0.4                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | C                                                                                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     | 4.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization | 53.0%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 3: Memorial Ave & 2nd Ave

Existing 2023  
01-03-2024

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |
| Traffic Volume (veh/h)            | 48                                                                                | 49                                                                                | 65                                                                                | 297                                                                               | 288                                                                               | 124                                                                               |
| Future Volume (Veh/h)             | 48                                                                                | 49                                                                                | 65                                                                                | 297                                                                               | 288                                                                               | 124                                                                               |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Hourly flow rate (vph)            | 52                                                                                | 53                                                                                | 71                                                                                | 323                                                                               | 313                                                                               | 135                                                                               |
| Pedestrians                       | 30                                                                                |                                                                                   |                                                                                   | 138                                                                               | 51                                                                                |                                                                                   |
| Lane Width (m)                    | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                               | 3.6                                                                               |                                                                                   |
| Walking Speed (m/s)               | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                               | 1.2                                                                               |                                                                                   |
| Percent Blockage                  | 3                                                                                 |                                                                                   |                                                                                   | 12                                                                                | 4                                                                                 |                                                                                   |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Upstream signal (m)               | 114                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| pX, platoon unblocked             | 0.97                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC, conflicting volume            | 926                                                                               | 548                                                                               | 478                                                                               |                                                                                   |                                                                                   |                                                                                   |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| vCu, unblocked vol                | 908                                                                               | 548                                                                               | 478                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |
| p0 queue free %                   | 80                                                                                | 89                                                                                | 93                                                                                |                                                                                   |                                                                                   |                                                                                   |
| cM capacity (veh/h)               | 256                                                                               | 462                                                                               | 1052                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume Total                      | 105                                                                               | 394                                                                               | 448                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Volume Left                       | 52                                                                                | 71                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Volume Right                      | 53                                                                                | 0                                                                                 | 135                                                                               |                                                                                   |                                                                                   |                                                                                   |
| cSH                               | 330                                                                               | 1052                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Volume to Capacity                | 0.32                                                                              | 0.07                                                                              | 0.26                                                                              |                                                                                   |                                                                                   |                                                                                   |
| Queue Length 95th (m)             | 10.7                                                                              | 1.7                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Control Delay (s)                 | 20.9                                                                              | 2.2                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Lane LOS                          | C                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Approach Delay (s)                | 20.9                                                                              | 2.2                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Approach LOS                      | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Average Delay                     | 3.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Intersection Capacity Utilization | 66.0%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              | C                                                                                 |                                                                                   |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

|                        | →    | ←     | ↑    | ↓    |
|------------------------|------|-------|------|------|
| Lane Group             | EBT  | WBT   | NBT  | SBT  |
| Lane Group Flow (vph)  | 224  | 172   | 299  | 355  |
| v/c Ratio              | 0.25 | 0.33  | 0.34 | 0.46 |
| Control Delay          | 8.0  | 8.8   | 10.3 | 11.6 |
| Queue Delay            | 0.0  | 0.0   | 0.0  | 0.0  |
| Total Delay            | 8.0  | 8.8   | 10.3 | 11.6 |
| Queue Length 50th (m)  | 3.3  | 4.3   | 9.2  | 11.2 |
| Queue Length 95th (m)  | 11.2 | 17.6  | 35.8 | 44.9 |
| Internal Link Dist (m) | 53.3 | 103.0 | 82.4 | 90.0 |
| Turn Bay Length (m)    |      |       |      |      |
| Base Capacity (vph)    | 1596 | 931   | 1135 | 1002 |
| Starvation Cap Reductn | 0    | 0     | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0     | 0    | 0    |
| Storage Cap Reductn    | 0    | 0     | 0    | 0    |
| Reduced v/c Ratio      | 0.14 | 0.18  | 0.26 | 0.35 |
| Intersection Summary   |      |       |      |      |

# HCM Signalized Intersection Capacity Analysis

## 4: Memorial Ave & Fern Rd

Existing 2023  
01-03-2024

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 77                                                                                | 85                                                                                | 51                                                                                | 25                                                                                | 85                                                                                | 54                                                                                | 35                                                                                 | 231                                                                                 | 18                                                                                  | 91                                                                                  | 192                                                                                 | 54                                                                                  |
| Future Volume (vph)               | 77                                                                                | 85                                                                                | 51                                                                                | 25                                                                                | 85                                                                                | 54                                                                                | 35                                                                                 | 231                                                                                 | 18                                                                                  | 91                                                                                  | 192                                                                                 | 54                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                    | 5.2                                                                                 |                                                                                     |                                                                                     | 5.2                                                                                 |                                                                                     |
| Lane Util. Factor                 |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Frpb, ped/bikes                   |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| Flpb, ped/bikes                   |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| Frt                               |                                                                                   | 0.96                                                                              |                                                                                   |                                                                                   | 0.96                                                                              |                                                                                   |                                                                                    | 0.99                                                                                |                                                                                     |                                                                                     | 0.98                                                                                |                                                                                     |
| Flt Protected                     |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                    | 0.99                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| Satd. Flow (prot)                 |                                                                                   | 3237                                                                              |                                                                                   |                                                                                   | 1721                                                                              |                                                                                   |                                                                                    | 1827                                                                                |                                                                                     |                                                                                     | 1775                                                                                |                                                                                     |
| Flt Permitted                     |                                                                                   | 0.84                                                                              |                                                                                   |                                                                                   | 0.91                                                                              |                                                                                   |                                                                                    | 0.93                                                                                |                                                                                     |                                                                                     | 0.83                                                                                |                                                                                     |
| Satd. Flow (perm)                 |                                                                                   | 2754                                                                              |                                                                                   |                                                                                   | 1586                                                                              |                                                                                   |                                                                                    | 1704                                                                                |                                                                                     |                                                                                     | 1498                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 81                                                                                | 89                                                                                | 54                                                                                | 26                                                                                | 89                                                                                | 57                                                                                | 37                                                                                 | 243                                                                                 | 19                                                                                  | 96                                                                                  | 202                                                                                 | 57                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 40                                                                                | 0                                                                                 | 0                                                                                 | 42                                                                                | 0                                                                                 | 0                                                                                  | 4                                                                                   | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 184                                                                               | 0                                                                                 | 0                                                                                 | 130                                                                               | 0                                                                                 | 0                                                                                  | 295                                                                                 | 0                                                                                   | 0                                                                                   | 343                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               | 40                                                                                |                                                                                   | 62                                                                                | 62                                                                                |                                                                                   | 40                                                                                | 24                                                                                 |                                                                                     | 54                                                                                  | 54                                                                                  |                                                                                     | 24                                                                                  |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Heavy Vehicles (%)                | 2%                                                                                | 2%                                                                                | 4%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                    | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 9.8                                                                               |                                                                                   |                                                                                   | 9.8                                                                               |                                                                                   |                                                                                    | 17.8                                                                                |                                                                                     |                                                                                     | 17.8                                                                                |                                                                                     |
| Effective Green, g (s)            |                                                                                   | 9.8                                                                               |                                                                                   |                                                                                   | 9.8                                                                               |                                                                                   |                                                                                    | 17.8                                                                                |                                                                                     |                                                                                     | 17.8                                                                                |                                                                                     |
| Actuated g/C Ratio                |                                                                                   | 0.26                                                                              |                                                                                   |                                                                                   | 0.26                                                                              |                                                                                   |                                                                                    | 0.47                                                                                |                                                                                     |                                                                                     | 0.47                                                                                |                                                                                     |
| Clearance Time (s)                |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                    | 5.2                                                                                 |                                                                                     |                                                                                     | 5.2                                                                                 |                                                                                     |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                    | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                |                                                                                   | 714                                                                               |                                                                                   |                                                                                   | 411                                                                               |                                                                                   |                                                                                    | 802                                                                                 |                                                                                     |                                                                                     | 705                                                                                 |                                                                                     |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Perm                    |                                                                                   | 0.07                                                                              |                                                                                   |                                                                                   | c0.08                                                                             |                                                                                   |                                                                                    | 0.17                                                                                |                                                                                     |                                                                                     | c0.23                                                                               |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.26                                                                              |                                                                                   |                                                                                   | 0.32                                                                              |                                                                                   |                                                                                    | 0.37                                                                                |                                                                                     |                                                                                     | 0.49                                                                                |                                                                                     |
| Uniform Delay, d1                 |                                                                                   | 11.1                                                                              |                                                                                   |                                                                                   | 11.3                                                                              |                                                                                   |                                                                                    | 6.4                                                                                 |                                                                                     |                                                                                     | 6.9                                                                                 |                                                                                     |
| Progression Factor                |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             |                                                                                   | 0.2                                                                               |                                                                                   |                                                                                   | 0.4                                                                               |                                                                                   |                                                                                    | 0.3                                                                                 |                                                                                     |                                                                                     | 0.5                                                                                 |                                                                                     |
| Delay (s)                         |                                                                                   | 11.3                                                                              |                                                                                   |                                                                                   | 11.7                                                                              |                                                                                   |                                                                                    | 6.7                                                                                 |                                                                                     |                                                                                     | 7.4                                                                                 |                                                                                     |
| Level of Service                  |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 11.3                                                                              |                                                                                   |                                                                                   | 11.7                                                                              |                                                                                   |                                                                                    | 6.7                                                                                 |                                                                                     |                                                                                     | 7.4                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 8.7                                                                               |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 0.43                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 37.8                                                                              |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                    | 10.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 74.4%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |



# HCM Unsignalized Intersection Capacity Analysis

## 5: Memorial Ave & Fourth Ave

Existing 2023  
01-03-2024

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                     |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)            | 10                                                                                | 0                                                                                 | 22                                                                                | 14                                                                                | 1                                                                                 | 29                                                                                | 17                                                                                  | 253                                                                                 | 15                                                                                  | 16                                                                                  | 250                                                                                 | 16                                                                                  |
| Future Volume (Veh/h)             | 10                                                                                | 0                                                                                 | 22                                                                                | 14                                                                                | 1                                                                                 | 29                                                                                | 17                                                                                  | 253                                                                                 | 15                                                                                  | 16                                                                                  | 250                                                                                 | 16                                                                                  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                                |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                                | 0.89                                                                                | 0.89                                                                                | 0.89                                                                                | 0.89                                                                                | 0.89                                                                                |
| Hourly flow rate (vph)            | 11                                                                                | 0                                                                                 | 25                                                                                | 16                                                                                | 1                                                                                 | 33                                                                                | 19                                                                                  | 284                                                                                 | 17                                                                                  | 18                                                                                  | 281                                                                                 | 18                                                                                  |
| Pedestrians                       | 8                                                                                 |                                                                                   |                                                                                   | 7                                                                                 |                                                                                   |                                                                                   | 4                                                                                   |                                                                                     |                                                                                     | 13                                                                                  |                                                                                     |                                                                                     |
| Lane Width (m)                    | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                                 |                                                                                     |                                                                                     | 3.6                                                                                 |                                                                                     |                                                                                     |
| Walking Speed (m/s)               | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                                 |                                                                                     |                                                                                     | 1.2                                                                                 |                                                                                     |                                                                                     |
| Percent Blockage                  | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   | 0                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                                |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 106                                                                                 |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 711                                                                               | 680                                                                               | 302                                                                               | 692                                                                               | 680                                                                               | 312                                                                               | 307                                                                                 |                                                                                     |                                                                                     |                                                                                     | 308                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 711                                                                               | 680                                                                               | 302                                                                               | 692                                                                               | 680                                                                               | 312                                                                               | 307                                                                                 |                                                                                     |                                                                                     |                                                                                     | 308                                                                                 |                                                                                     |
| tC, single (s)                    | 7.2                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                                 |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.6                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 96                                                                                | 100                                                                               | 97                                                                                | 95                                                                                | 100                                                                               | 95                                                                                | 98                                                                                  |                                                                                     |                                                                                     |                                                                                     | 99                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 306                                                                               | 358                                                                               | 730                                                                               | 332                                                                               | 357                                                                               | 716                                                                               | 1245                                                                                |                                                                                     |                                                                                     |                                                                                     | 1245                                                                                |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 36                                                                                | 50                                                                                | 320                                                                               | 317                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 11                                                                                | 16                                                                                | 19                                                                                | 18                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 25                                                                                | 33                                                                                | 17                                                                                | 18                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 513                                                                               | 515                                                                               | 1245                                                                              | 1245                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.07                                                                              | 0.10                                                                              | 0.02                                                                              | 0.01                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 1.8                                                                               | 2.6                                                                               | 0.4                                                                               | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 12.5                                                                              | 12.7                                                                              | 0.6                                                                               | 0.6                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | B                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 12.5                                                                              | 12.7                                                                              | 0.6                                                                               | 0.6                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | B                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 2.0                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | 33.8%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

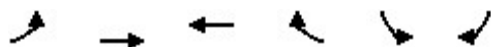
HCM Unsignalized Intersection Capacity Analysis  
6: W Access & Fern Rd

Existing 2023  
01-03-2024

|                                   |      |       |      |                      |      |      |
|-----------------------------------|------|-------|------|----------------------|------|------|
|                                   | →    | ↘     | ↙    | ←                    | ↖    | ↗    |
| Movement                          | EBT  | EBR   | WBL  | WBT                  | NBL  | NBR  |
| Lane Configurations               | ↰    |       |      | ↱                    | ↰    | ↱    |
| Traffic Volume (veh/h)            | 207  | 4     | 2    | 168                  | 1    | 4    |
| Future Volume (Veh/h)             | 207  | 4     | 2    | 168                  | 1    | 4    |
| Sign Control                      | Free |       |      | Free                 | Stop |      |
| Grade                             | 0%   |       |      | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92  | 0.92 | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 225  | 4     | 2    | 183                  | 1    | 4    |
| Pedestrians                       |      |       |      |                      | 9    |      |
| Lane Width (m)                    |      |       |      |                      | 3.6  |      |
| Walking Speed (m/s)               |      |       |      |                      | 1.2  |      |
| Percent Blockage                  |      |       |      |                      | 1    |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       | None |       |      | None                 |      |      |
| Median storage veh)               |      |       |      |                      |      |      |
| Upstream signal (m)               |      |       |      | 118                  |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            |      |       | 238  |                      | 423  | 236  |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                |      |       | 238  |                      | 423  | 236  |
| tC, single (s)                    |      |       | 4.1  |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            |      |       | 2.2  |                      | 3.5  | 3.3  |
| p0 queue free %                   |      |       | 100  |                      | 100  | 99   |
| cM capacity (veh/h)               |      |       | 1319 |                      | 582  | 797  |
| Direction, Lane #                 | EB 1 | WB 1  | NB 1 |                      |      |      |
| Volume Total                      | 229  | 185   | 5    |                      |      |      |
| Volume Left                       | 0    | 2     | 1    |                      |      |      |
| Volume Right                      | 4    | 0     | 4    |                      |      |      |
| cSH                               | 1700 | 1319  | 742  |                      |      |      |
| Volume to Capacity                | 0.13 | 0.00  | 0.01 |                      |      |      |
| Queue Length 95th (m)             | 0.0  | 0.0   | 0.2  |                      |      |      |
| Control Delay (s)                 | 0.0  | 0.1   | 9.9  |                      |      |      |
| Lane LOS                          |      | A     | A    |                      |      |      |
| Approach Delay (s)                | 0.0  | 0.1   | 9.9  |                      |      |      |
| Approach LOS                      |      |       | A    |                      |      |      |
| Intersection Summary              |      |       |      |                      |      |      |
| Average Delay                     |      |       | 0.2  |                      |      |      |
| Intersection Capacity Utilization |      | 21.7% |      | ICU Level of Service | A    |      |
| Analysis Period (min)             |      |       | 15   |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis 7: Fern Rd & Quality

Existing 2023  
01-03-2024



| Movement                          | EBL  | EBT                                                                               | WBT                                                                               | WBR  | SBL                                                                               | SBR  |
|-----------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|
| Lane Configurations               |      |  |  |      |  |      |
| Traffic Volume (veh/h)            | 37   | 174                                                                               | 108                                                                               | 52   | 36                                                                                | 62   |
| Future Volume (Veh/h)             | 37   | 174                                                                               | 108                                                                               | 52   | 36                                                                                | 62   |
| Sign Control                      |      | Free                                                                              | Free                                                                              |      | Stop                                                                              |      |
| Grade                             |      | 0%                                                                                | 0%                                                                                |      | 0%                                                                                |      |
| Peak Hour Factor                  | 0.82 | 0.82                                                                              | 0.82                                                                              | 0.82 | 0.82                                                                              | 0.82 |
| Hourly flow rate (vph)            | 45   | 212                                                                               | 132                                                                               | 63   | 44                                                                                | 76   |
| Pedestrians                       |      |                                                                                   | 26                                                                                |      | 43                                                                                |      |
| Lane Width (m)                    |      |                                                                                   | 3.6                                                                               |      | 3.6                                                                               |      |
| Walking Speed (m/s)               |      |                                                                                   | 1.2                                                                               |      | 1.2                                                                               |      |
| Percent Blockage                  |      |                                                                                   | 2                                                                                 |      | 4                                                                                 |      |
| Right turn flare (veh)            |      |                                                                                   |                                                                                   |      |                                                                                   |      |
| Median type                       |      | None                                                                              | None                                                                              |      |                                                                                   |      |
| Median storage veh)               |      |                                                                                   |                                                                                   |      |                                                                                   |      |
| Upstream signal (m)               |      |                                                                                   | 101                                                                               |      |                                                                                   |      |
| pX, platoon unblocked             |      |                                                                                   |                                                                                   |      |                                                                                   |      |
| vC, conflicting volume            | 238  |                                                                                   |                                                                                   |      | 534                                                                               | 206  |
| vC1, stage 1 conf vol             |      |                                                                                   |                                                                                   |      |                                                                                   |      |
| vC2, stage 2 conf vol             |      |                                                                                   |                                                                                   |      |                                                                                   |      |
| vCu, unblocked vol                | 238  |                                                                                   |                                                                                   |      | 534                                                                               | 206  |
| tC, single (s)                    | 4.1  |                                                                                   |                                                                                   |      | 6.4                                                                               | 6.2  |
| tC, 2 stage (s)                   |      |                                                                                   |                                                                                   |      |                                                                                   |      |
| tF (s)                            | 2.2  |                                                                                   |                                                                                   |      | 3.5                                                                               | 3.3  |
| p0 queue free %                   | 96   |                                                                                   |                                                                                   |      | 90                                                                                | 91   |
| cM capacity (veh/h)               | 1281 |                                                                                   |                                                                                   |      | 461                                                                               | 804  |
| Direction, Lane #                 | EB 1 | WB 1                                                                              | SB 1                                                                              |      |                                                                                   |      |
| Volume Total                      | 257  | 195                                                                               | 120                                                                               |      |                                                                                   |      |
| Volume Left                       | 45   | 0                                                                                 | 44                                                                                |      |                                                                                   |      |
| Volume Right                      | 0    | 63                                                                                | 76                                                                                |      |                                                                                   |      |
| cSH                               | 1281 | 1700                                                                              | 632                                                                               |      |                                                                                   |      |
| Volume to Capacity                | 0.04 | 0.11                                                                              | 0.19                                                                              |      |                                                                                   |      |
| Queue Length 95th (m)             | 0.9  | 0.0                                                                               | 5.6                                                                               |      |                                                                                   |      |
| Control Delay (s)                 | 1.6  | 0.0                                                                               | 12.0                                                                              |      |                                                                                   |      |
| Lane LOS                          | A    |                                                                                   | B                                                                                 |      |                                                                                   |      |
| Approach Delay (s)                | 1.6  | 0.0                                                                               | 12.0                                                                              |      |                                                                                   |      |
| Approach LOS                      |      |                                                                                   | B                                                                                 |      |                                                                                   |      |
| Intersection Summary              |      |                                                                                   |                                                                                   |      |                                                                                   |      |
| Average Delay                     |      |                                                                                   | 3.3                                                                               |      |                                                                                   |      |
| Intersection Capacity Utilization |      |                                                                                   | 39.5%                                                                             |      | ICU Level of Service                                                              |      |
|                                   |      |                                                                                   |                                                                                   |      | A                                                                                 |      |
| Analysis Period (min)             |      |                                                                                   | 15                                                                                |      |                                                                                   |      |

HCM Unsignalized Intersection Capacity Analysis  
8: E Access & Fern Rd

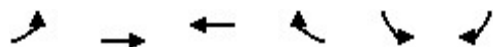
Existing 2023  
01-03-2024

|                                   |      |      |       |                      |      |      |
|-----------------------------------|------|------|-------|----------------------|------|------|
|                                   | →    | ↘    | ↙     | ←                    | ↖    | ↗    |
| Movement                          | EBT  | EBR  | WBL   | WBT                  | NBL  | NBR  |
| Lane Configurations               | ↰    |      |       | ↱                    | ↰    | ↱    |
| Traffic Volume (veh/h)            | 192  | 18   | 26    | 148                  | 12   | 21   |
| Future Volume (Veh/h)             | 192  | 18   | 26    | 148                  | 12   | 21   |
| Sign Control                      | Free |      |       | Free                 | Stop |      |
| Grade                             | 0%   |      |       | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92 | 0.92  | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 209  | 20   | 28    | 161                  | 13   | 23   |
| Pedestrians                       |      |      |       |                      | 22   |      |
| Lane Width (m)                    |      |      |       |                      | 3.6  |      |
| Walking Speed (m/s)               |      |      |       |                      | 1.2  |      |
| Percent Blockage                  |      |      |       |                      | 2    |      |
| Right turn flare (veh)            |      |      |       |                      |      |      |
| Median type                       | None |      | None  |                      |      |      |
| Median storage veh)               |      |      |       |                      |      |      |
| Upstream signal (m)               | 77   |      |       |                      |      |      |
| pX, platoon unblocked             |      |      |       |                      |      |      |
| vC, conflicting volume            |      |      | 251   |                      | 458  | 241  |
| vC1, stage 1 conf vol             |      |      |       |                      |      |      |
| vC2, stage 2 conf vol             |      |      |       |                      |      |      |
| vCu, unblocked vol                |      |      | 251   |                      | 458  | 241  |
| tC, single (s)                    |      |      | 4.1   |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |      |      |       |                      |      |      |
| tF (s)                            |      |      | 2.2   |                      | 3.5  | 3.3  |
| p0 queue free %                   |      |      | 98    |                      | 98   | 97   |
| cM capacity (veh/h)               |      |      | 1290  |                      | 539  | 783  |
| Direction, Lane #                 | EB 1 | WB 1 | NB 1  |                      |      |      |
| Volume Total                      | 229  | 189  | 36    |                      |      |      |
| Volume Left                       | 0    | 28   | 13    |                      |      |      |
| Volume Right                      | 20   | 0    | 23    |                      |      |      |
| cSH                               | 1700 | 1290 | 673   |                      |      |      |
| Volume to Capacity                | 0.13 | 0.02 | 0.05  |                      |      |      |
| Queue Length 95th (m)             | 0.0  | 0.5  | 1.4   |                      |      |      |
| Control Delay (s)                 | 0.0  | 1.3  | 10.7  |                      |      |      |
| Lane LOS                          |      | A    | B     |                      |      |      |
| Approach Delay (s)                | 0.0  | 1.3  | 10.7  |                      |      |      |
| Approach LOS                      |      |      | B     |                      |      |      |
| Intersection Summary              |      |      |       |                      |      |      |
| Average Delay                     |      |      | 1.4   |                      |      |      |
| Intersection Capacity Utilization |      |      | 35.0% | ICU Level of Service |      | A    |
| Analysis Period (min)             |      |      | 15    |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis

## 9: Fourth Ave & Site Access

Existing 2023  
01-03-2024



| Movement                          | EBL  | EBT  | WBT   | WBR                  | SBL  | SBR  |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations               |      | ↰    | ↰     |                      | ↰    | ↰    |
| Traffic Volume (veh/h)            | 0    | 0    | 0     | 34                   | 32   | 0    |
| Future Volume (Veh/h)             | 0    | 0    | 0     | 34                   | 32   | 0    |
| Sign Control                      |      | Free | Free  |                      | Stop |      |
| Grade                             |      | 0%   | 0%    |                      | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92 | 0.92  | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 0    | 0    | 0     | 37                   | 35   | 0    |
| Pedestrians                       |      |      |       |                      |      |      |
| Lane Width (m)                    |      |      |       |                      |      |      |
| Walking Speed (m/s)               |      |      |       |                      |      |      |
| Percent Blockage                  |      |      |       |                      |      |      |
| Right turn flare (veh)            |      |      |       |                      |      |      |
| Median type                       |      | None | None  |                      |      |      |
| Median storage (veh)              |      |      |       |                      |      |      |
| Upstream signal (m)               |      |      |       |                      |      |      |
| pX, platoon unblocked             |      |      |       |                      |      |      |
| vC, conflicting volume            | 37   |      |       |                      | 18   | 18   |
| vC1, stage 1 conf vol             |      |      |       |                      |      |      |
| vC2, stage 2 conf vol             |      |      |       |                      |      |      |
| vCu, unblocked vol                | 37   |      |       |                      | 18   | 18   |
| tC, single (s)                    | 4.1  |      |       |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |      |      |       |                      |      |      |
| tF (s)                            | 2.2  |      |       |                      | 3.5  | 3.3  |
| p0 queue free %                   | 100  |      |       |                      | 96   | 100  |
| cM capacity (veh/h)               | 1574 |      |       |                      | 999  | 1060 |
| Direction, Lane #                 | EB 1 | WB 1 | SB 1  |                      |      |      |
| Volume Total                      | 0    | 37   | 35    |                      |      |      |
| Volume Left                       | 0    | 0    | 35    |                      |      |      |
| Volume Right                      | 0    | 37   | 0     |                      |      |      |
| cSH                               | 1700 | 1700 | 999   |                      |      |      |
| Volume to Capacity                | 0.00 | 0.02 | 0.04  |                      |      |      |
| Queue Length 95th (m)             | 0.0  | 0.0  | 0.9   |                      |      |      |
| Control Delay (s)                 | 0.0  | 0.0  | 8.7   |                      |      |      |
| Lane LOS                          |      |      | A     |                      |      |      |
| Approach Delay (s)                | 0.0  | 0.0  | 8.7   |                      |      |      |
| Approach LOS                      |      |      | A     |                      |      |      |
| Intersection Summary              |      |      |       |                      |      |      |
| Average Delay                     |      |      | 4.2   |                      |      |      |
| Intersection Capacity Utilization |      |      | 13.3% | ICU Level of Service |      | A    |
| Analysis Period (min)             |      |      | 15    |                      |      |      |



# HCM Unsignalized Intersection Capacity Analysis

## 1: Memorial Ave & Village Way/Veterans Way

Total 2023  
01-03-2024

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |                                                                                   |  |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)            | 2                                                                                 | 1                                                                                 | 4                                                                                 | 23                                                                                | 0                                                                                 | 7                                                                                 | 2                                                                                  | 406                                                                                 | 19                                                                                  | 3                                                                                   | 459                                                                                 | 4                                                                                   |
| Future Volume (Veh/h)             | 2                                                                                 | 1                                                                                 | 4                                                                                 | 23                                                                                | 0                                                                                 | 7                                                                                 | 2                                                                                  | 406                                                                                 | 19                                                                                  | 3                                                                                   | 459                                                                                 | 4                                                                                   |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                               |                                                                                     |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                 |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Hourly flow rate (vph)            | 2                                                                                 | 1                                                                                 | 4                                                                                 | 25                                                                                | 0                                                                                 | 8                                                                                 | 2                                                                                  | 441                                                                                 | 21                                                                                  | 3                                                                                   | 499                                                                                 | 4                                                                                   |
| Pedestrians                       | 5                                                                                 |                                                                                   |                                                                                   | 29                                                                                |                                                                                   |                                                                                   | 7                                                                                  |                                                                                     |                                                                                     | 3                                                                                   |                                                                                     |                                                                                     |
| Lane Width (m)                    | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                                |                                                                                     |                                                                                     | 3.6                                                                                 |                                                                                     |                                                                                     |
| Walking Speed (m/s)               | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                                |                                                                                     |                                                                                     | 1.2                                                                                 |                                                                                     |                                                                                     |
| Percent Blockage                  | 0                                                                                 |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 1                                                                                  |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 246                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 978                                                                               | 1007                                                                              | 513                                                                               | 1003                                                                              | 998                                                                               | 484                                                                               | 508                                                                                |                                                                                     |                                                                                     |                                                                                     | 491                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 978                                                                               | 1007                                                                              | 513                                                                               | 1003                                                                              | 998                                                                               | 484                                                                               | 508                                                                                |                                                                                     |                                                                                     |                                                                                     | 491                                                                                 |                                                                                     |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                                |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 99                                                                                | 100                                                                               | 99                                                                                | 88                                                                                | 100                                                                               | 99                                                                                | 100                                                                                |                                                                                     |                                                                                     |                                                                                     | 100                                                                                 |                                                                                     |
| cM capacity (veh/h)               | 219                                                                               | 233                                                                               | 556                                                                               | 207                                                                               | 236                                                                               | 568                                                                               | 1053                                                                               |                                                                                     |                                                                                     |                                                                                     | 1046                                                                                |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 7                                                                                 | 33                                                                                | 464                                                                               | 506                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 2                                                                                 | 25                                                                                | 2                                                                                 | 3                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 4                                                                                 | 8                                                                                 | 21                                                                                | 4                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 339                                                                               | 244                                                                               | 1053                                                                              | 1046                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.02                                                                              | 0.14                                                                              | 0.00                                                                              | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 0.5                                                                               | 3.7                                                                               | 0.0                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 15.8                                                                              | 22.0                                                                              | 0.1                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | C                                                                                 | C                                                                                 | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 15.8                                                                              | 22.0                                                                              | 0.1                                                                               | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | C                                                                                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   |                                                                                   | Err%                                                                              | ICU Level of Service                                                              |                                                                                   |                                                                                    | H                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis 2: Memorial Ave & Harlech Rd/Fir St

Total 2023  
01-03-2024

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (veh/h)            | 76                                                                                | 14                                                                                | 90                                                                                | 11                                                                                | 7                                                                                 | 36                                                                                | 48                                                                                 | 315                                                                                 | 23                                                                                  | 14                                                                                  | 364                                                                                 | 108                                                                                 |
| Future Volume (Veh/h)             | 76                                                                                | 14                                                                                | 90                                                                                | 11                                                                                | 7                                                                                 | 36                                                                                | 48                                                                                 | 315                                                                                 | 23                                                                                  | 14                                                                                  | 364                                                                                 | 108                                                                                 |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Hourly flow rate (vph)            | 80                                                                                | 15                                                                                | 95                                                                                | 12                                                                                | 7                                                                                 | 38                                                                                | 51                                                                                 | 332                                                                                 | 24                                                                                  | 15                                                                                  | 383                                                                                 | 114                                                                                 |
| Pedestrians                       | 22                                                                                |                                                                                   |                                                                                   |                                                                                   | 33                                                                                |                                                                                   |                                                                                    |                                                                                     | 53                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Lane Width (m)                    | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                    |                                                                                     | 3.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Walking Speed (m/s)               | 1.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 1.2                                                                               |                                                                                   |                                                                                    |                                                                                     | 1.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Percent Blockage                  | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                    |                                                                                     | 4                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |
| Median storage (veh)              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream signal (m)               | 194                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC, conflicting volume            | 980                                                                               | 983                                                                               | 515                                                                               | 1104                                                                              | 1028                                                                              | 377                                                                               | 519                                                                                |                                                                                     |                                                                                     |                                                                                     | 389                                                                                 |                                                                                     |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| vCu, unblocked vol                | 980                                                                               | 983                                                                               | 515                                                                               | 1104                                                                              | 1028                                                                              | 377                                                                               | 519                                                                                |                                                                                     |                                                                                     |                                                                                     | 389                                                                                 |                                                                                     |
| tC, single (s)                    | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                                |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| tF (s)                            | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     |                                                                                     | 2.2                                                                                 |                                                                                     |
| p0 queue free %                   | 58                                                                                | 93                                                                                | 82                                                                                | 90                                                                                | 97                                                                                | 94                                                                                | 95                                                                                 |                                                                                     |                                                                                     |                                                                                     | 99                                                                                  |                                                                                     |
| cM capacity (veh/h)               | 190                                                                               | 223                                                                               | 525                                                                               | 125                                                                               | 210                                                                               | 651                                                                               | 1028                                                                               |                                                                                     |                                                                                     |                                                                                     | 1137                                                                                |                                                                                     |
| Direction, Lane #                 | EB 1                                                                              | EB 2                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Total                      | 80                                                                                | 110                                                                               | 57                                                                                | 407                                                                               | 512                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Left                       | 80                                                                                | 0                                                                                 | 12                                                                                | 51                                                                                | 15                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume Right                      | 0                                                                                 | 95                                                                                | 38                                                                                | 24                                                                                | 114                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| cSH                               | 190                                                                               | 443                                                                               | 304                                                                               | 1028                                                                              | 1137                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Volume to Capacity                | 0.42                                                                              | 0.25                                                                              | 0.19                                                                              | 0.05                                                                              | 0.01                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Queue Length 95th (m)             | 15.3                                                                              | 7.7                                                                               | 5.4                                                                               | 1.3                                                                               | 0.3                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Delay (s)                 | 37.1                                                                              | 15.8                                                                              | 19.6                                                                              | 1.6                                                                               | 0.4                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane LOS                          | E                                                                                 | C                                                                                 | C                                                                                 | A                                                                                 | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay (s)                | 24.8                                                                              |                                                                                   | 19.6                                                                              | 1.6                                                                               | 0.4                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                      | C                                                                                 |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Average Delay                     |                                                                                   |                                                                                   | 5.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 60.8%                                                                             | ICU Level of Service                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# HCM Unsignalized Intersection Capacity Analysis

## 3: Memorial Ave & 2nd Ave

Total 2023  
01-03-2024

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--|--|--|
|                                   |  |  |  |  |  |  |  |  |  |
| Movement                          | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |  |  |  |
| Lane Configurations               |  |                                                                                   |                                                                                   |  |  |                                                                                   |  |  |  |
| Traffic Volume (veh/h)            | 48                                                                                | 55                                                                                | 81                                                                                | 339                                                                               | 341                                                                               | 124                                                                               |  |  |  |
| Future Volume (Veh/h)             | 48                                                                                | 55                                                                                | 81                                                                                | 339                                                                               | 341                                                                               | 124                                                                               |  |  |  |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   | Free                                                                              | Free                                                                              |                                                                                   |  |  |  |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   | 0%                                                                                | 0%                                                                                |                                                                                   |  |  |  |
| Peak Hour Factor                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |  |  |  |
| Hourly flow rate (vph)            | 52                                                                                | 60                                                                                | 88                                                                                | 368                                                                               | 371                                                                               | 135                                                                               |  |  |  |
| Pedestrians                       | 30                                                                                |                                                                                   |                                                                                   | 138                                                                               | 51                                                                                |                                                                                   |  |  |  |
| Lane Width (m)                    | 3.6                                                                               |                                                                                   |                                                                                   | 3.6                                                                               | 3.6                                                                               |                                                                                   |  |  |  |
| Walking Speed (m/s)               | 1.2                                                                               |                                                                                   |                                                                                   | 1.2                                                                               | 1.2                                                                               |                                                                                   |  |  |  |
| Percent Blockage                  | 3                                                                                 |                                                                                   |                                                                                   | 12                                                                                | 4                                                                                 |                                                                                   |  |  |  |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Median type                       |                                                                                   |                                                                                   |                                                                                   | None                                                                              | None                                                                              |                                                                                   |  |  |  |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Upstream signal (m)               | 114                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| pX, platoon unblocked             | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| vC, conflicting volume            | 1064                                                                              | 606                                                                               | 536                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| vCu, unblocked vol                | 1042                                                                              | 606                                                                               | 536                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| tC, single (s)                    | 6.4                                                                               | 6.2                                                                               | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| tF (s)                            | 3.5                                                                               | 3.3                                                                               | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| p0 queue free %                   | 75                                                                                | 86                                                                                | 91                                                                                |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| cM capacity (veh/h)               | 205                                                                               | 429                                                                               | 1001                                                                              |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Direction, Lane #                 | EB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Volume Total                      | 112                                                                               | 456                                                                               | 506                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Volume Left                       | 52                                                                                | 88                                                                                | 0                                                                                 |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Volume Right                      | 60                                                                                | 0                                                                                 | 135                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| cSH                               | 284                                                                               | 1001                                                                              | 1700                                                                              |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Volume to Capacity                | 0.39                                                                              | 0.09                                                                              | 0.30                                                                              |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Queue Length 95th (m)             | 14.4                                                                              | 2.3                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Control Delay (s)                 | 25.7                                                                              | 2.5                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Lane LOS                          | D                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Approach Delay (s)                | 25.7                                                                              | 2.5                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Approach LOS                      | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Average Delay                     | 3.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |
| Intersection Capacity Utilization | 71.8%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              | C                                                                                 |                                                                                   |  |  |  |
| Analysis Period (min)             | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |  |  |

Queues  
4: Memorial Ave & Fern Rd

Total 2023  
01-03-2024

|                        | →    | ←     | ↑    | ↓    |
|------------------------|------|-------|------|------|
| Lane Group             | EBT  | WBT   | NBT  | SBT  |
| Lane Group Flow (vph)  | 284  | 186   | 359  | 416  |
| v/c Ratio              | 0.31 | 0.35  | 0.42 | 0.53 |
| Control Delay          | 8.3  | 9.9   | 11.1 | 12.4 |
| Queue Delay            | 0.0  | 0.0   | 0.0  | 0.0  |
| Total Delay            | 8.3  | 9.9   | 11.1 | 12.4 |
| Queue Length 50th (m)  | 4.5  | 5.6   | 12.4 | 14.5 |
| Queue Length 95th (m)  | 13.4 | 19.8  | 44.8 | 54.6 |
| Internal Link Dist (m) | 53.3 | 103.0 | 82.4 | 90.0 |
| Turn Bay Length (m)    |      |       |      |      |
| Base Capacity (vph)    | 1677 | 952   | 1042 | 968  |
| Starvation Cap Reductn | 0    | 0     | 0    | 0    |
| Spillback Cap Reductn  | 0    | 0     | 0    | 0    |
| Storage Cap Reductn    | 0    | 0     | 0    | 0    |
| Reduced v/c Ratio      | 0.17 | 0.20  | 0.34 | 0.43 |
| Intersection Summary   |      |       |      |      |

# HCM Signalized Intersection Capacity Analysis

## 4: Memorial Ave & Fern Rd

Total 2023  
01-03-2024

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 106                                                                               | 93                                                                                | 70                                                                                | 31                                                                                | 91                                                                                | 54                                                                                | 55                                                                                 | 260                                                                                 | 26                                                                                  | 91                                                                                  | 221                                                                                 | 83                                                                                  |
| Future Volume (vph)               | 106                                                                               | 93                                                                                | 70                                                                                | 31                                                                                | 91                                                                                | 54                                                                                | 55                                                                                 | 260                                                                                 | 26                                                                                  | 91                                                                                  | 221                                                                                 | 83                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                    | 5.2                                                                                 |                                                                                     |                                                                                     | 5.2                                                                                 |                                                                                     |
| Lane Util. Factor                 |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Frpb, ped/bikes                   |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| Flpb, ped/bikes                   |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Frt                               |                                                                                   | 0.96                                                                              |                                                                                   |                                                                                   | 0.96                                                                              |                                                                                   |                                                                                    | 0.99                                                                                |                                                                                     |                                                                                     | 0.97                                                                                |                                                                                     |
| Flt Protected                     |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                    | 0.99                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| Satd. Flow (prot)                 |                                                                                   | 3215                                                                              |                                                                                   |                                                                                   | 1727                                                                              |                                                                                   |                                                                                    | 1820                                                                                |                                                                                     |                                                                                     | 1765                                                                                |                                                                                     |
| Flt Permitted                     |                                                                                   | 0.83                                                                              |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                    | 0.88                                                                                |                                                                                     |                                                                                     | 0.84                                                                                |                                                                                     |
| Satd. Flow (perm)                 |                                                                                   | 2725                                                                              |                                                                                   |                                                                                   | 1535                                                                              |                                                                                   |                                                                                    | 1621                                                                                |                                                                                     |                                                                                     | 1494                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 112                                                                               | 98                                                                                | 74                                                                                | 33                                                                                | 96                                                                                | 57                                                                                | 58                                                                                 | 274                                                                                 | 27                                                                                  | 96                                                                                  | 233                                                                                 | 87                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 55                                                                                | 0                                                                                 | 0                                                                                 | 38                                                                                | 0                                                                                 | 0                                                                                  | 5                                                                                   | 0                                                                                   | 0                                                                                   | 17                                                                                  | 0                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 229                                                                               | 0                                                                                 | 0                                                                                 | 148                                                                               | 0                                                                                 | 0                                                                                  | 354                                                                                 | 0                                                                                   | 0                                                                                   | 399                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               | 40                                                                                |                                                                                   | 62                                                                                | 62                                                                                |                                                                                   | 40                                                                                | 24                                                                                 |                                                                                     | 54                                                                                  | 54                                                                                  |                                                                                     | 24                                                                                  |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Heavy Vehicles (%)                | 2%                                                                                | 2%                                                                                | 4%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                    | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 9.5                                                                               |                                                                                   |                                                                                   | 9.5                                                                               |                                                                                   |                                                                                    | 17.4                                                                                |                                                                                     |                                                                                     | 17.4                                                                                |                                                                                     |
| Effective Green, g (s)            |                                                                                   | 9.5                                                                               |                                                                                   |                                                                                   | 9.5                                                                               |                                                                                   |                                                                                    | 17.4                                                                                |                                                                                     |                                                                                     | 17.4                                                                                |                                                                                     |
| Actuated g/C Ratio                |                                                                                   | 0.26                                                                              |                                                                                   |                                                                                   | 0.26                                                                              |                                                                                   |                                                                                    | 0.47                                                                                |                                                                                     |                                                                                     | 0.47                                                                                |                                                                                     |
| Clearance Time (s)                |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                    | 5.2                                                                                 |                                                                                     |                                                                                     | 5.2                                                                                 |                                                                                     |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                    | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                |                                                                                   | 697                                                                               |                                                                                   |                                                                                   | 393                                                                               |                                                                                   |                                                                                    | 760                                                                                 |                                                                                     |                                                                                     | 700                                                                                 |                                                                                     |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Perm                    |                                                                                   | 0.08                                                                              |                                                                                   |                                                                                   | 0.10                                                                              |                                                                                   |                                                                                    | 0.22                                                                                |                                                                                     |                                                                                     | 0.27                                                                                |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.33                                                                              |                                                                                   |                                                                                   | 0.38                                                                              |                                                                                   |                                                                                    | 0.47                                                                                |                                                                                     |                                                                                     | 0.57                                                                                |                                                                                     |
| Uniform Delay, d1                 |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                   | 11.4                                                                              |                                                                                   |                                                                                    | 6.7                                                                                 |                                                                                     |                                                                                     | 7.1                                                                                 |                                                                                     |
| Progression Factor                |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   | 0.6                                                                               |                                                                                   |                                                                                    | 0.5                                                                                 |                                                                                     |                                                                                     | 1.1                                                                                 |                                                                                     |
| Delay (s)                         |                                                                                   | 11.5                                                                              |                                                                                   |                                                                                   | 12.0                                                                              |                                                                                   |                                                                                    | 7.1                                                                                 |                                                                                     |                                                                                     | 8.3                                                                                 |                                                                                     |
| Level of Service                  |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 11.5                                                                              |                                                                                   |                                                                                   | 12.0                                                                              |                                                                                   |                                                                                    | 7.1                                                                                 |                                                                                     |                                                                                     | 8.3                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 9.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | HCM 2000 Level of Service                                                           |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 0.50                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 37.1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | Sum of lost time (s)                                                                |                                                                                     | 10.2                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 77.2%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | ICU Level of Service                                                                |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |



# HCM Unsignalized Intersection Capacity Analysis

## 5: Memorial Ave & Fourth Ave

Total 2023  
01-03-2024

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |      |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |      |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |      |
| Traffic Volume (veh/h)            | 55                                                                                | 0                                                                                 | 33                                                                                | 14                                                                                | 1                                                                                 | 29                                                                                | 29                                                                                 | 265                                                                                 | 15                                                                                  | 16                                                                                  | 261                                                                                 | 60                                                                                  |      |
| Future Volume (Veh/h)             | 55                                                                                | 0                                                                                 | 33                                                                                | 14                                                                                | 1                                                                                 | 29                                                                                | 29                                                                                 | 265                                                                                 | 15                                                                                  | 16                                                                                  | 261                                                                                 | 60                                                                                  |      |
| Sign Control                      | Stop                                                                              |                                                                                   |                                                                                   |                                                                                   | Stop                                                                              |                                                                                   |                                                                                    |                                                                                     | Free                                                                                |                                                                                     |                                                                                     |                                                                                     |      |
| Grade                             | 0%                                                                                |                                                                                   |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                    |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     |                                                                                     |      |
| Peak Hour Factor                  | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                              | 0.89                                                                               | 0.89                                                                                | 0.89                                                                                | 0.89                                                                                | 0.89                                                                                | 0.89                                                                                |      |
| Hourly flow rate (vph)            | 62                                                                                | 0                                                                                 | 37                                                                                | 16                                                                                | 1                                                                                 | 33                                                                                | 33                                                                                 | 298                                                                                 | 17                                                                                  | 18                                                                                  | 293                                                                                 | 67                                                                                  |      |
| Pedestrians                       | 8                                                                                 |                                                                                   |                                                                                   |                                                                                   | 7                                                                                 |                                                                                   |                                                                                    |                                                                                     | 4                                                                                   |                                                                                     |                                                                                     |                                                                                     |      |
| Lane Width (m)                    | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                    |                                                                                     | 3.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |      |
| Walking Speed (m/s)               | 1.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 1.2                                                                               |                                                                                   |                                                                                    |                                                                                     | 1.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |      |
| Percent Blockage                  | 1                                                                                 |                                                                                   |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                    |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |      |
| Right turn flare (veh)            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Median type                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | None                                                                               |                                                                                     |                                                                                     | None                                                                                |                                                                                     |                                                                                     |      |
| Median storage veh                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Upstream signal (m)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 106                                                                                 |      |
| pX, platoon unblocked             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| vC, conflicting volume            | 790                                                                               | 758                                                                               | 338                                                                               | 783                                                                               | 784                                                                               | 326                                                                               | 368                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 322  |
| vC1, stage 1 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| vC2, stage 2 conf vol             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| vCu, unblocked vol                | 790                                                                               | 758                                                                               | 338                                                                               | 783                                                                               | 784                                                                               | 326                                                                               | 368                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 322  |
| tC, single (s)                    | 7.2                                                                               | 6.5                                                                               | 6.2                                                                               | 7.1                                                                               | 6.5                                                                               | 6.2                                                                               | 4.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 4.1  |
| tC, 2 stage (s)                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| tF (s)                            | 3.6                                                                               | 4.0                                                                               | 3.3                                                                               | 3.5                                                                               | 4.0                                                                               | 3.3                                                                               | 2.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2.2  |
| p0 queue free %                   | 77                                                                                | 100                                                                               | 95                                                                                | 94                                                                                | 100                                                                               | 95                                                                                | 97                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 99   |
| cM capacity (veh/h)               | 268                                                                               | 318                                                                               | 697                                                                               | 280                                                                               | 308                                                                               | 703                                                                               | 1183                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1231 |
| Direction, Lane #                 | EB 1                                                                              | WB 1                                                                              | NB 1                                                                              | SB 1                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Volume Total                      | 99                                                                                | 50                                                                                | 348                                                                               | 378                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Volume Left                       | 62                                                                                | 16                                                                                | 33                                                                                | 18                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Volume Right                      | 37                                                                                | 33                                                                                | 17                                                                                | 67                                                                                |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| cSH                               | 348                                                                               | 466                                                                               | 1183                                                                              | 1231                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Volume to Capacity                | 0.28                                                                              | 0.11                                                                              | 0.03                                                                              | 0.01                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Queue Length 95th (m)             | 9.2                                                                               | 2.9                                                                               | 0.7                                                                               | 0.4                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Control Delay (s)                 | 19.4                                                                              | 13.7                                                                              | 1.0                                                                               | 0.5                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Lane LOS                          | C                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Approach Delay (s)                | 19.4                                                                              | 13.7                                                                              | 1.0                                                                               | 0.5                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Approach LOS                      | C                                                                                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Average Delay                     |                                                                                   |                                                                                   | 3.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 42.2%                                                                             |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                    |                                                                                     | A                                                                                   |                                                                                     |                                                                                     |                                                                                     |      |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |

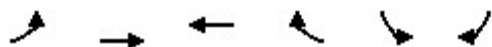
# HCM Unsignalized Intersection Capacity Analysis 6: W Access & Fern Rd

Total 2023  
01-03-2024

|                                   |       |      |      |                      |      |      |
|-----------------------------------|-------|------|------|----------------------|------|------|
|                                   | →     | ↘    | ↙    | ←                    | ↖    | ↗    |
| Movement                          | EBT   | EBR  | WBL  | WBT                  | NBL  | NBR  |
| Lane Configurations               | ↰     |      |      | ↱                    | ↰    | ↱    |
| Traffic Volume (veh/h)            | 198   | 31   | 78   | 161                  | 18   | 72   |
| Future Volume (Veh/h)             | 198   | 31   | 78   | 161                  | 18   | 72   |
| Sign Control                      | Free  |      |      | Free                 | Stop |      |
| Grade                             | 0%    |      |      | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.92  | 0.92 | 0.92 | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 215   | 34   | 85   | 175                  | 20   | 78   |
| Pedestrians                       |       |      |      |                      | 9    |      |
| Lane Width (m)                    |       |      |      |                      | 3.6  |      |
| Walking Speed (m/s)               |       |      |      |                      | 1.2  |      |
| Percent Blockage                  |       |      |      |                      | 1    |      |
| Right turn flare (veh)            |       |      |      |                      |      |      |
| Median type                       | None  |      |      | None                 |      |      |
| Median storage veh)               |       |      |      |                      |      |      |
| Upstream signal (m)               |       |      |      | 118                  |      |      |
| pX, platoon unblocked             |       |      |      |                      |      |      |
| vC, conflicting volume            |       |      | 258  |                      | 586  | 241  |
| vC1, stage 1 conf vol             |       |      |      |                      |      |      |
| vC2, stage 2 conf vol             |       |      |      |                      |      |      |
| vCu, unblocked vol                |       |      | 258  |                      | 586  | 241  |
| tC, single (s)                    |       |      | 4.1  |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |       |      |      |                      |      |      |
| tF (s)                            |       |      | 2.2  |                      | 3.5  | 3.3  |
| p0 queue free %                   |       |      | 93   |                      | 95   | 90   |
| cM capacity (veh/h)               |       |      | 1297 |                      | 438  | 792  |
| Direction, Lane #                 | EB 1  | WB 1 | NB 1 |                      |      |      |
| Volume Total                      | 249   | 260  | 98   |                      |      |      |
| Volume Left                       | 0     | 85   | 20   |                      |      |      |
| Volume Right                      | 34    | 0    | 78   |                      |      |      |
| cSH                               | 1700  | 1297 | 680  |                      |      |      |
| Volume to Capacity                | 0.15  | 0.07 | 0.14 |                      |      |      |
| Queue Length 95th (m)             | 0.0   | 1.7  | 4.0  |                      |      |      |
| Control Delay (s)                 | 0.0   | 3.0  | 11.2 |                      |      |      |
| Lane LOS                          |       | A    | B    |                      |      |      |
| Approach Delay (s)                | 0.0   | 3.0  | 11.2 |                      |      |      |
| Approach LOS                      |       |      | B    |                      |      |      |
| Intersection Summary              |       |      |      |                      |      |      |
| Average Delay                     | 3.1   |      |      |                      |      |      |
| Intersection Capacity Utilization | 40.9% |      |      | ICU Level of Service | A    |      |
| Analysis Period (min)             | 15    |      |      |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis 7: Fern Rd & Quality

Total 2023  
01-03-2024



| Movement                          | EBL  | EBT                                                                               | WBT                                                                               | WBR                  | SBL                                                                               | SBR  |
|-----------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations               |      |  |  |                      |  |      |
| Traffic Volume (veh/h)            | 37   | 233                                                                               | 177                                                                               | 52                   | 36                                                                                | 62   |
| Future Volume (Veh/h)             | 37   | 233                                                                               | 177                                                                               | 52                   | 36                                                                                | 62   |
| Sign Control                      |      | Free                                                                              | Free                                                                              |                      | Stop                                                                              |      |
| Grade                             |      | 0%                                                                                | 0%                                                                                |                      | 0%                                                                                |      |
| Peak Hour Factor                  | 0.82 | 0.82                                                                              | 0.82                                                                              | 0.82                 | 0.82                                                                              | 0.82 |
| Hourly flow rate (vph)            | 45   | 284                                                                               | 216                                                                               | 63                   | 44                                                                                | 76   |
| Pedestrians                       |      |                                                                                   | 26                                                                                |                      | 43                                                                                |      |
| Lane Width (m)                    |      |                                                                                   | 3.6                                                                               |                      | 3.6                                                                               |      |
| Walking Speed (m/s)               |      |                                                                                   | 1.2                                                                               |                      | 1.2                                                                               |      |
| Percent Blockage                  |      |                                                                                   | 2                                                                                 |                      | 4                                                                                 |      |
| Right turn flare (veh)            |      |                                                                                   |                                                                                   |                      |                                                                                   |      |
| Median type                       |      | None                                                                              | None                                                                              |                      |                                                                                   |      |
| Median storage veh)               |      |                                                                                   |                                                                                   |                      |                                                                                   |      |
| Upstream signal (m)               |      |                                                                                   | 101                                                                               |                      |                                                                                   |      |
| pX, platoon unblocked             |      |                                                                                   |                                                                                   |                      |                                                                                   |      |
| vC, conflicting volume            | 322  |                                                                                   |                                                                                   |                      | 690                                                                               | 290  |
| vC1, stage 1 conf vol             |      |                                                                                   |                                                                                   |                      |                                                                                   |      |
| vC2, stage 2 conf vol             |      |                                                                                   |                                                                                   |                      |                                                                                   |      |
| vCu, unblocked vol                | 322  |                                                                                   |                                                                                   |                      | 690                                                                               | 290  |
| tC, single (s)                    | 4.1  |                                                                                   |                                                                                   |                      | 6.4                                                                               | 6.2  |
| tC, 2 stage (s)                   |      |                                                                                   |                                                                                   |                      |                                                                                   |      |
| tF (s)                            | 2.2  |                                                                                   |                                                                                   |                      | 3.5                                                                               | 3.3  |
| p0 queue free %                   | 96   |                                                                                   |                                                                                   |                      | 88                                                                                | 89   |
| cM capacity (veh/h)               | 1193 |                                                                                   |                                                                                   |                      | 373                                                                               | 722  |
| Direction, Lane #                 | EB 1 | WB 1                                                                              | SB 1                                                                              |                      |                                                                                   |      |
| Volume Total                      | 329  | 279                                                                               | 120                                                                               |                      |                                                                                   |      |
| Volume Left                       | 45   | 0                                                                                 | 44                                                                                |                      |                                                                                   |      |
| Volume Right                      | 0    | 63                                                                                | 76                                                                                |                      |                                                                                   |      |
| cSH                               | 1193 | 1700                                                                              | 537                                                                               |                      |                                                                                   |      |
| Volume to Capacity                | 0.04 | 0.16                                                                              | 0.22                                                                              |                      |                                                                                   |      |
| Queue Length 95th (m)             | 0.9  | 0.0                                                                               | 6.8                                                                               |                      |                                                                                   |      |
| Control Delay (s)                 | 1.4  | 0.0                                                                               | 13.6                                                                              |                      |                                                                                   |      |
| Lane LOS                          | A    |                                                                                   | B                                                                                 |                      |                                                                                   |      |
| Approach Delay (s)                | 1.4  | 0.0                                                                               | 13.6                                                                              |                      |                                                                                   |      |
| Approach LOS                      |      |                                                                                   | B                                                                                 |                      |                                                                                   |      |
| Intersection Summary              |      |                                                                                   |                                                                                   |                      |                                                                                   |      |
| Average Delay                     |      | 2.9                                                                               |                                                                                   |                      |                                                                                   |      |
| Intersection Capacity Utilization |      | 43.4%                                                                             |                                                                                   | ICU Level of Service |                                                                                   | A    |
| Analysis Period (min)             |      | 15                                                                                |                                                                                   |                      |                                                                                   |      |

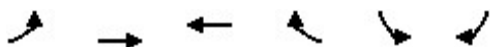
# HCM Unsignalized Intersection Capacity Analysis 8: E Access & Fern Rd

Total 2023  
01-03-2024

|                                   |      |      |       |                      |      |      |
|-----------------------------------|------|------|-------|----------------------|------|------|
|                                   | →    | ↘    | ↙     | ←                    | ↖    | ↗    |
| Movement                          | EBT  | EBR  | WBL   | WBT                  | NBL  | NBR  |
| Lane Configurations               | ↱    |      |       | ↱                    | ↘↗   |      |
| Traffic Volume (veh/h)            | 269  | 0    | 0     | 229                  | 0    | 0    |
| Future Volume (Veh/h)             | 269  | 0    | 0     | 229                  | 0    | 0    |
| Sign Control                      | Free |      |       | Free                 | Stop |      |
| Grade                             | 0%   |      |       | 0%                   | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92 | 0.92  | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 292  | 0    | 0     | 249                  | 0    | 0    |
| Pedestrians                       |      |      |       |                      | 22   |      |
| Lane Width (m)                    |      |      |       |                      | 3.6  |      |
| Walking Speed (m/s)               |      |      |       |                      | 1.2  |      |
| Percent Blockage                  |      |      |       |                      | 2    |      |
| Right turn flare (veh)            |      |      |       |                      |      |      |
| Median type                       | None |      |       | None                 |      |      |
| Median storage veh)               |      |      |       |                      |      |      |
| Upstream signal (m)               |      |      |       | 77                   |      |      |
| pX, platoon unblocked             |      |      |       |                      |      |      |
| vC, conflicting volume            |      |      | 314   |                      | 563  | 314  |
| vC1, stage 1 conf vol             |      |      |       |                      |      |      |
| vC2, stage 2 conf vol             |      |      |       |                      |      |      |
| vCu, unblocked vol                |      |      | 314   |                      | 563  | 314  |
| tC, single (s)                    |      |      | 4.1   |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |      |      |       |                      |      |      |
| tF (s)                            |      |      | 2.2   |                      | 3.5  | 3.3  |
| p0 queue free %                   |      |      | 100   |                      | 100  | 100  |
| cM capacity (veh/h)               |      |      | 1223  |                      | 479  | 713  |
| Direction, Lane #                 | EB 1 | WB 1 | NB 1  |                      |      |      |
| Volume Total                      | 292  | 249  | 0     |                      |      |      |
| Volume Left                       | 0    | 0    | 0     |                      |      |      |
| Volume Right                      | 0    | 0    | 0     |                      |      |      |
| cSH                               | 1700 | 1223 | 1700  |                      |      |      |
| Volume to Capacity                | 0.17 | 0.00 | 0.05  |                      |      |      |
| Queue Length 95th (m)             | 0.0  | 0.0  | 0.0   |                      |      |      |
| Control Delay (s)                 | 0.0  | 0.0  | 0.0   |                      |      |      |
| Lane LOS                          |      |      | A     |                      |      |      |
| Approach Delay (s)                | 0.0  | 0.0  | 0.0   |                      |      |      |
| Approach LOS                      |      |      | A     |                      |      |      |
| Intersection Summary              |      |      |       |                      |      |      |
| Average Delay                     |      |      | 0.0   |                      |      |      |
| Intersection Capacity Utilization |      |      | 17.5% | ICU Level of Service |      | A    |
| Analysis Period (min)             |      |      | 15    |                      |      |      |

# HCM Unsignalized Intersection Capacity Analysis 9: Fourth Ave & Site Access

Total 2023  
01-03-2024



| Movement                          | EBL  | EBT   | WBT  | WBR                  | SBL  | SBR  |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations               |      | ↰     | ↰    |                      | ↰    | ↰    |
| Traffic Volume (veh/h)            | 0    | 0     | 0    | 90                   | 85   | 0    |
| Future Volume (Veh/h)             | 0    | 0     | 0    | 90                   | 85   | 0    |
| Sign Control                      |      | Free  | Free |                      | Stop |      |
| Grade                             |      | 0%    | 0%   |                      | 0%   |      |
| Peak Hour Factor                  | 0.92 | 0.92  | 0.92 | 0.92                 | 0.92 | 0.92 |
| Hourly flow rate (vph)            | 0    | 0     | 0    | 98                   | 92   | 0    |
| Pedestrians                       |      |       |      |                      |      |      |
| Lane Width (m)                    |      |       |      |                      |      |      |
| Walking Speed (m/s)               |      |       |      |                      |      |      |
| Percent Blockage                  |      |       |      |                      |      |      |
| Right turn flare (veh)            |      |       |      |                      |      |      |
| Median type                       |      | None  | None |                      |      |      |
| Median storage (veh)              |      |       |      |                      |      |      |
| Upstream signal (m)               |      |       |      |                      |      |      |
| pX, platoon unblocked             |      |       |      |                      |      |      |
| vC, conflicting volume            | 98   |       |      |                      | 49   | 49   |
| vC1, stage 1 conf vol             |      |       |      |                      |      |      |
| vC2, stage 2 conf vol             |      |       |      |                      |      |      |
| vCu, unblocked vol                | 98   |       |      |                      | 49   | 49   |
| tC, single (s)                    | 4.1  |       |      |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |      |       |      |                      |      |      |
| tF (s)                            | 2.2  |       |      |                      | 3.5  | 3.3  |
| p0 queue free %                   | 100  |       |      |                      | 90   | 100  |
| cM capacity (veh/h)               | 1495 |       |      |                      | 960  | 1020 |
| Direction, Lane #                 | EB 1 | WB 1  | SB 1 |                      |      |      |
| Volume Total                      | 0    | 98    | 92   |                      |      |      |
| Volume Left                       | 0    | 0     | 92   |                      |      |      |
| Volume Right                      | 0    | 98    | 0    |                      |      |      |
| cSH                               | 1700 | 1700  | 960  |                      |      |      |
| Volume to Capacity                | 0.00 | 0.06  | 0.10 |                      |      |      |
| Queue Length 95th (m)             | 0.0  | 0.0   | 2.5  |                      |      |      |
| Control Delay (s)                 | 0.0  | 0.0   | 9.1  |                      |      |      |
| Lane LOS                          |      |       | A    |                      |      |      |
| Approach Delay (s)                | 0.0  | 0.0   | 9.1  |                      |      |      |
| Approach LOS                      |      |       | A    |                      |      |      |
| Intersection Summary              |      |       |      |                      |      |      |
| Average Delay                     |      |       | 4.4  |                      |      |      |
| Intersection Capacity Utilization |      | 16.9% |      | ICU Level of Service |      | A    |
| Analysis Period (min)             |      |       | 15   |                      |      |      |



|                        | →    | ←     | ↑    | ↓      |
|------------------------|------|-------|------|--------|
| Lane Group             | EBT  | WBT   | NBT  | SBT    |
| Lane Group Flow (vph)  | 284  | 186   | 359  | 416    |
| v/c Ratio              | 0.66 | 0.65  | 0.67 | 0.87   |
| Control Delay          | 32.9 | 38.7  | 29.1 | 43.7   |
| Queue Delay            | 0.0  | 0.0   | 0.0  | 0.0    |
| Total Delay            | 32.9 | 38.7  | 29.1 | 43.7   |
| Queue Length 50th (m)  | 18.4 | 24.6  | 46.3 | 57.3   |
| Queue Length 95th (m)  | 32.8 | 47.9  | 82.5 | #116.1 |
| Internal Link Dist (m) | 42.4 | 103.0 | 82.4 | 90.0   |
| Turn Bay Length (m)    |      |       |      |        |
| Base Capacity (vph)    | 612  | 407   | 673  | 598    |
| Starvation Cap Reductn | 0    | 0     | 0    | 0      |
| Spillback Cap Reductn  | 0    | 0     | 0    | 0      |
| Storage Cap Reductn    | 0    | 0     | 0    | 0      |
| Reduced v/c Ratio      | 0.46 | 0.46  | 0.53 | 0.70   |

#### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 4: Memorial Ave & Fern Rd

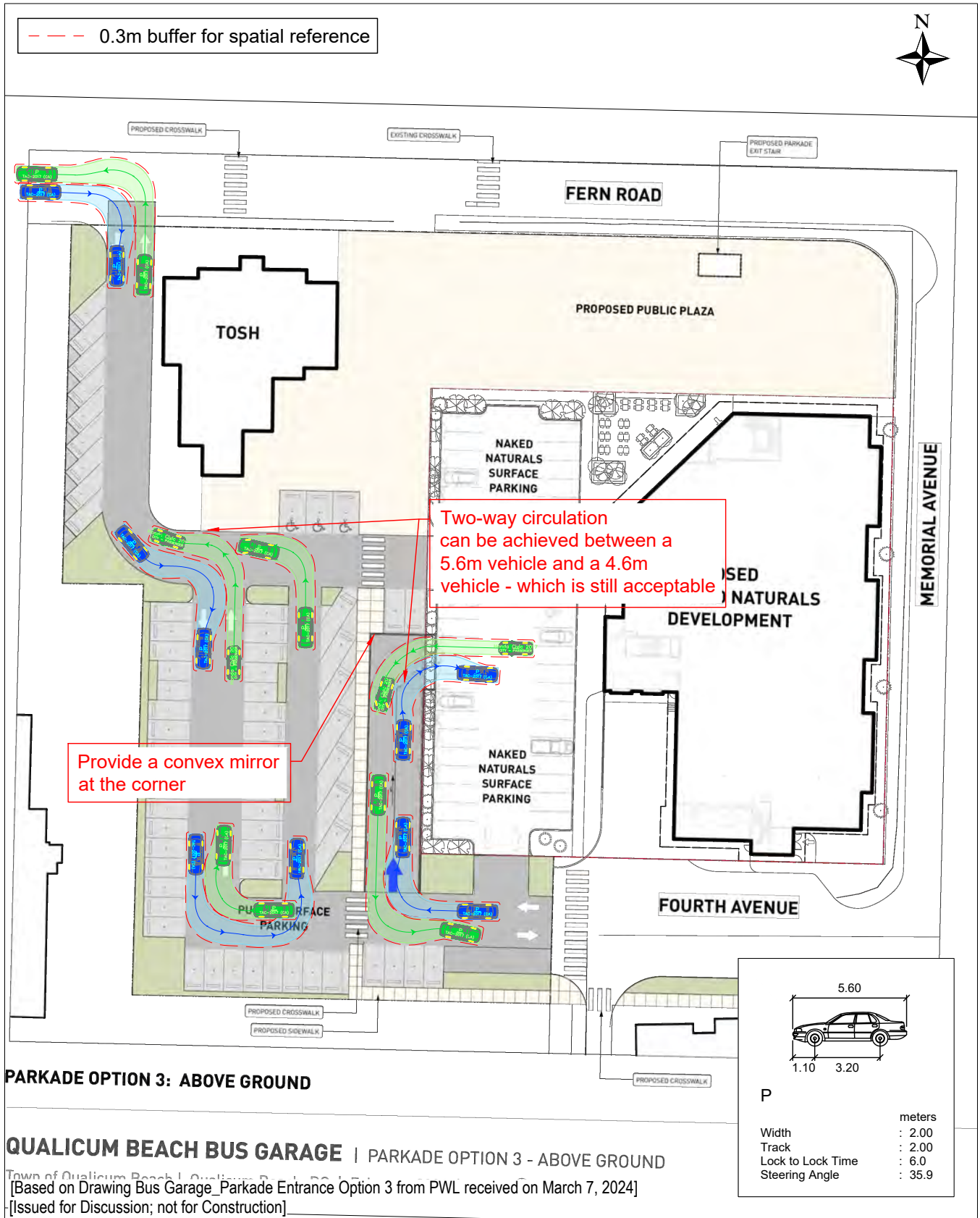
Total 2023 - Pedestrian Scramble  
03-08-2024

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)              | 106                                                                               | 93                                                                                | 70                                                                                | 31                                                                                | 91                                                                                | 54                                                                                | 55                                                                                 | 260                                                                                 | 26                                                                                  | 91                                                                                  | 221                                                                                 | 83                                                                                  |
| Future Volume (vph)               | 106                                                                               | 93                                                                                | 70                                                                                | 31                                                                                | 91                                                                                | 54                                                                                | 55                                                                                 | 260                                                                                 | 26                                                                                  | 91                                                                                  | 221                                                                                 | 83                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                    | 5.2                                                                                 |                                                                                     |                                                                                     | 5.2                                                                                 |                                                                                     |
| Lane Util. Factor                 |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Frpb, ped/bikes                   |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   | 0.96                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| Flpb, ped/bikes                   |                                                                                   | 0.97                                                                              |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| Frt                               |                                                                                   | 0.96                                                                              |                                                                                   |                                                                                   | 0.96                                                                              |                                                                                   |                                                                                    | 0.99                                                                                |                                                                                     |                                                                                     | 0.97                                                                                |                                                                                     |
| Flt Protected                     |                                                                                   | 0.98                                                                              |                                                                                   |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                    | 0.99                                                                                |                                                                                     |                                                                                     | 0.99                                                                                |                                                                                     |
| Satd. Flow (prot)                 |                                                                                   | 3068                                                                              |                                                                                   |                                                                                   | 1664                                                                              |                                                                                   |                                                                                    | 1816                                                                                |                                                                                     |                                                                                     | 1759                                                                                |                                                                                     |
| Flt Permitted                     |                                                                                   | 0.70                                                                              |                                                                                   |                                                                                   | 0.88                                                                              |                                                                                   |                                                                                    | 0.86                                                                                |                                                                                     |                                                                                     | 0.78                                                                                |                                                                                     |
| Satd. Flow (perm)                 |                                                                                   | 2177                                                                              |                                                                                   |                                                                                   | 1483                                                                              |                                                                                   |                                                                                    | 1572                                                                                |                                                                                     |                                                                                     | 1379                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Adj. Flow (vph)                   | 112                                                                               | 98                                                                                | 74                                                                                | 33                                                                                | 96                                                                                | 57                                                                                | 58                                                                                 | 274                                                                                 | 27                                                                                  | 96                                                                                  | 233                                                                                 | 87                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 42                                                                                | 0                                                                                 | 0                                                                                 | 19                                                                                | 0                                                                                 | 0                                                                                  | 3                                                                                   | 0                                                                                   | 0                                                                                   | 11                                                                                  | 0                                                                                   |
| Lane Group Flow (vph)             | 0                                                                                 | 242                                                                               | 0                                                                                 | 0                                                                                 | 167                                                                               | 0                                                                                 | 0                                                                                  | 356                                                                                 | 0                                                                                   | 0                                                                                   | 405                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               | 40                                                                                |                                                                                   | 62                                                                                | 62                                                                                |                                                                                   | 40                                                                                | 24                                                                                 |                                                                                     | 54                                                                                  | 54                                                                                  |                                                                                     | 24                                                                                  |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Heavy Vehicles (%)                | 2%                                                                                | 2%                                                                                | 4%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Turn Type                         | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                    | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Permitted Phases                  | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Actuated Green, G (s)             |                                                                                   | 13.8                                                                              |                                                                                   |                                                                                   | 13.8                                                                              |                                                                                   |                                                                                    | 26.5                                                                                |                                                                                     |                                                                                     | 26.5                                                                                |                                                                                     |
| Effective Green, g (s)            |                                                                                   | 13.8                                                                              |                                                                                   |                                                                                   | 13.8                                                                              |                                                                                   |                                                                                    | 26.5                                                                                |                                                                                     |                                                                                     | 26.5                                                                                |                                                                                     |
| Actuated g/C Ratio                |                                                                                   | 0.18                                                                              |                                                                                   |                                                                                   | 0.18                                                                              |                                                                                   |                                                                                    | 0.34                                                                                |                                                                                     |                                                                                     | 0.34                                                                                |                                                                                     |
| Clearance Time (s)                |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                    | 5.2                                                                                 |                                                                                     |                                                                                     | 5.2                                                                                 |                                                                                     |
| Vehicle Extension (s)             |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                   | 3.0                                                                               |                                                                                   |                                                                                    | 3.0                                                                                 |                                                                                     |                                                                                     | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                |                                                                                   | 385                                                                               |                                                                                   |                                                                                   | 262                                                                               |                                                                                   |                                                                                    | 534                                                                                 |                                                                                     |                                                                                     | 468                                                                                 |                                                                                     |
| v/s Ratio Prot                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/s Ratio Perm                    |                                                                                   | 0.11                                                                              |                                                                                   |                                                                                   | c0.11                                                                             |                                                                                   |                                                                                    | 0.23                                                                                |                                                                                     |                                                                                     | c0.29                                                                               |                                                                                     |
| v/c Ratio                         |                                                                                   | 0.63                                                                              |                                                                                   |                                                                                   | 0.64                                                                              |                                                                                   |                                                                                    | 0.67                                                                                |                                                                                     |                                                                                     | 0.86                                                                                |                                                                                     |
| Uniform Delay, d1                 |                                                                                   | 29.7                                                                              |                                                                                   |                                                                                   | 29.8                                                                              |                                                                                   |                                                                                    | 22.0                                                                                |                                                                                     |                                                                                     | 24.1                                                                                |                                                                                     |
| Progression Factor                |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             |                                                                                   | 3.2                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                    | 3.1                                                                                 |                                                                                     |                                                                                     | 15.3                                                                                |                                                                                     |
| Delay (s)                         |                                                                                   | 32.9                                                                              |                                                                                   |                                                                                   | 34.8                                                                              |                                                                                   |                                                                                    | 25.1                                                                                |                                                                                     |                                                                                     | 39.3                                                                                |                                                                                     |
| Level of Service                  |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 32.9                                                                              |                                                                                   |                                                                                   | 34.8                                                                              |                                                                                   |                                                                                    | 25.1                                                                                |                                                                                     |                                                                                     | 39.3                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   | 33.1                                                                              |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                         |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   | 0.49                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   | 78.0                                                                              |                                                                                   |                                                                                   | Sum of lost time (s)                                                              |                                                                                   |                                                                                    | 13.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   | 66.3%                                                                             |                                                                                   |                                                                                   | ICU Level of Service                                                              |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

*The attached information is provided to support the agency's review process  
and shall not be distributed to other parties without written consent from  
Bunt & Associates Engineering Ltd.*

## APPENDIX C

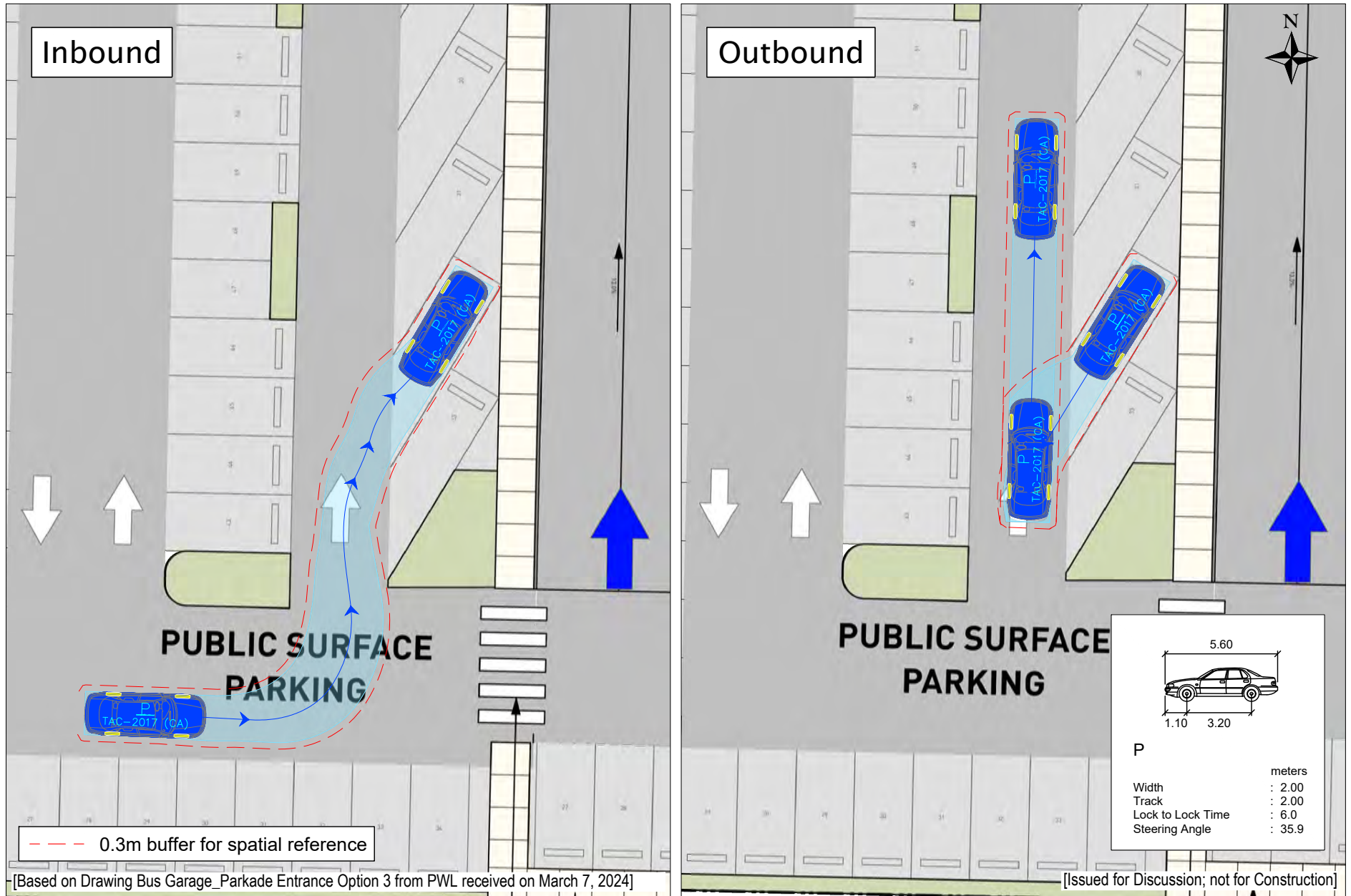
### Swept Path Analysis



## Exhibit 1 Passenger Vehicle Circulation - Option 3

08-23-0012 March 2024 Naked Natural Foods Site Plan  
 Scale 1:750 on Letter Prepared by KQ



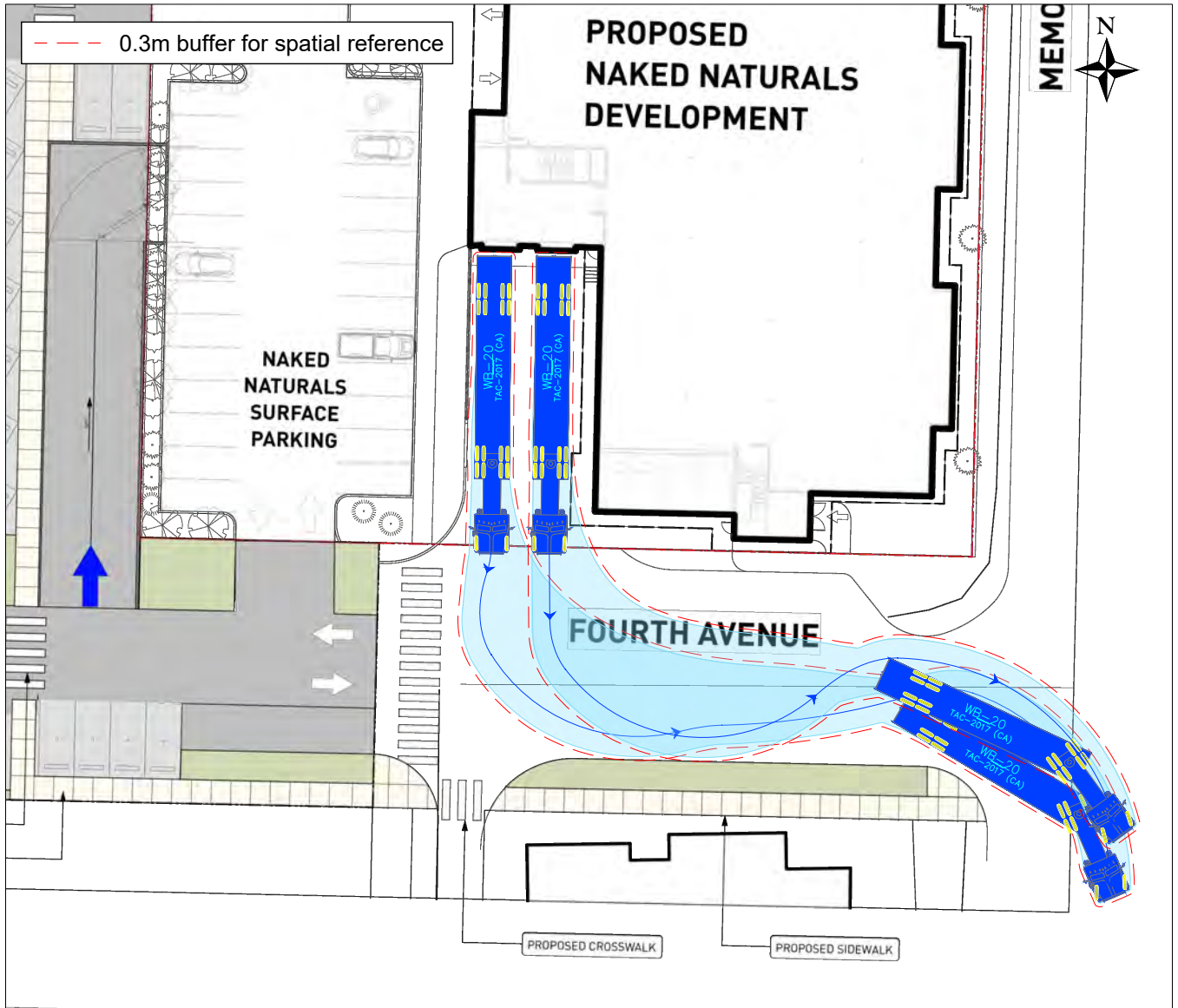


## Exhibit 2 Passenger Vehicle Parking - One-Way Angled Parking



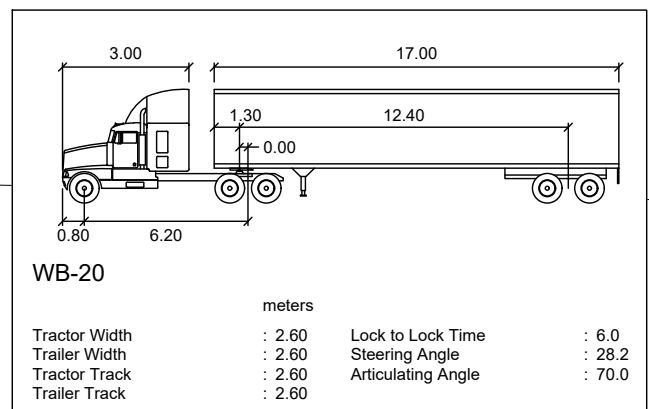


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 Plotted by Kieran Quon



## | PARKADE OPTION 3 - ABOVE GROUND

February 2024 | 1:250 ⓘ

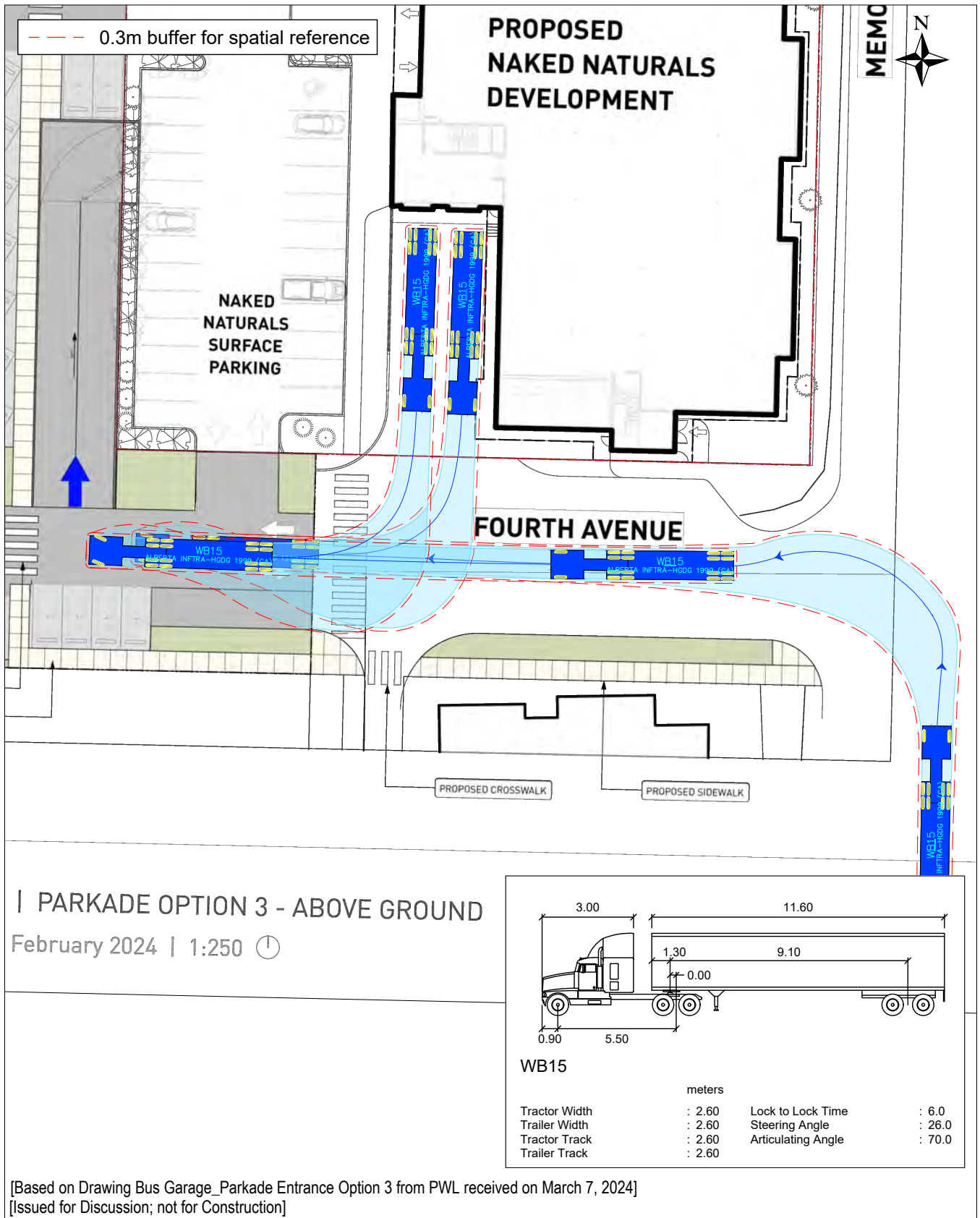


[Based on Drawing Bus Garage\_Parkade Entrance Option 3 from PWL received on March 7, 2024]  
 [Issued for Discussion; not for Construction]

## Exhibit 4 WB-20 Maneuvers - Outbound - Option 3



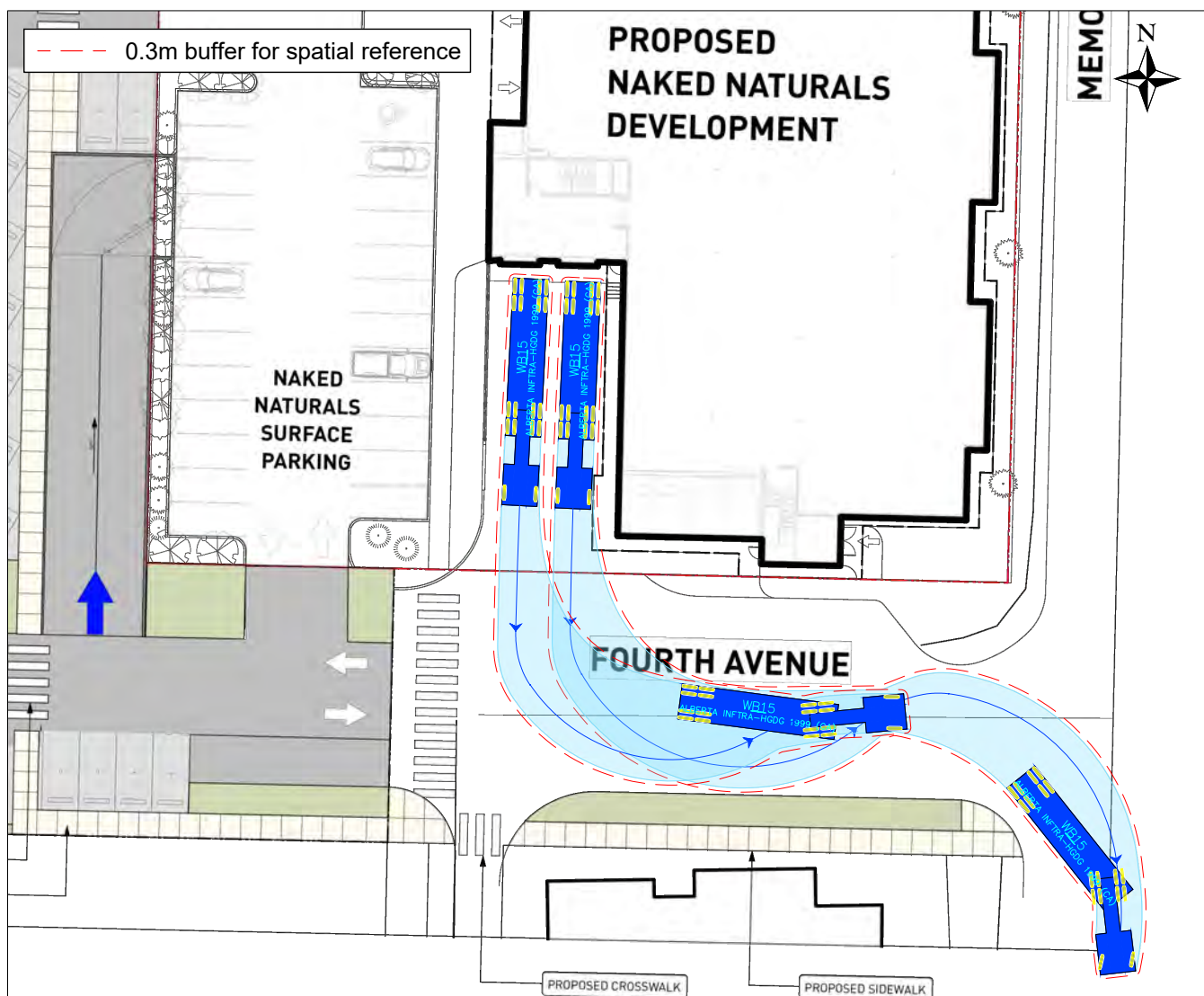
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Plotted by Kieran Quon



## Exhibit 5 WB-15 Maneuvers - Inbound - Option 3

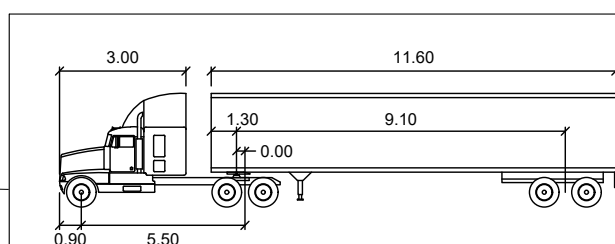
08-23-0012 March 2024 Naked Natural Foods Site Plan  
Scale 1:500\_1 on Letter Prepared by KQ





## 1 PARKADE OPTION 3 - ABOVE GROUND

February 2024 | 1:250 ⌚



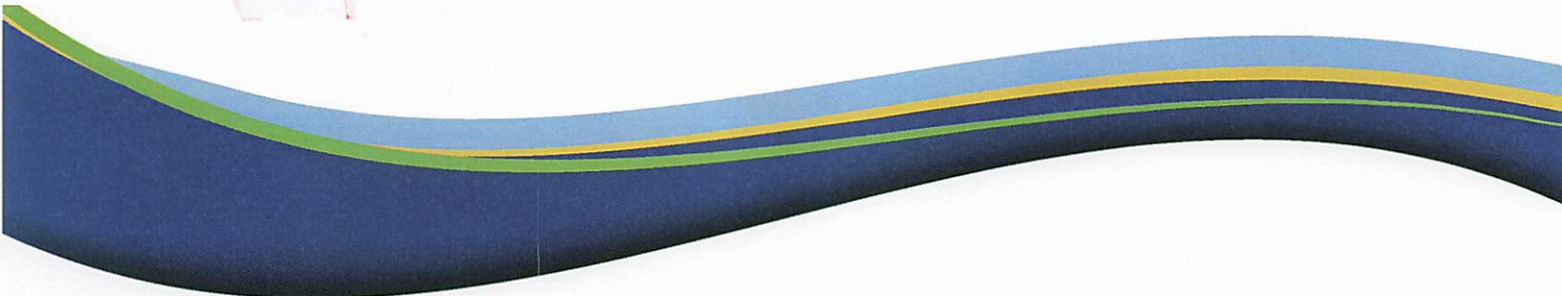
WB15

|               | meters |                    |        |
|---------------|--------|--------------------|--------|
| Tractor Width | : 2.60 | Lock to Lock Time  | : 6.0  |
| Trailer Width | : 2.60 | Steering Angle     | : 26.0 |
| Tractor Track | : 2.60 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.60 |                    |        |

[Based on Drawing Bus Garage\_Parkade Entrance Option 3 from PWL received on March 7, 2024]  
[Issued for Discussion; not for Construction]

WB-15 Maneuvers - Outbound - Option 3 Exhibit 6





## TOWN OF QUALICUM BEACH STAFF REPORT

**TO:** Luke Sales, Director of Planning  
**FOR:** Regular Council Meeting  
**DATE:** July 17, 2024  
**FROM:** Liz Pollock, Planner  
**SUBJECT:** Saahtlam Park Detailed Plan

---

### RECOMMENDATIONS:

1. THAT Council endorses the report titled "Saahtlam Park Detailed Plan" dated April 19, 2024.
  2. THAT Council directs staff to prepare a report outlining next steps in the implementation of the Saahtlam Park Detailed Plan for consideration during the 2025-2029 Budget process.
- 

### PURPOSE

The purpose of this report is to provide the final Saahtlam Park Detailed Plan for Council endorsement and to direct a further report from staff outlining implementation next steps for consideration during the 2025-2029 Budget process.

### BACKGROUND

In 2018, the Town of Qualicum Beach purchased the historic St. Andrew's Lodge property on the Qualicum Beach waterfront. The property is approximately 9,800m<sup>2</sup> (2.4 acres) in size, has over 70m of waterfront and is in a key location at Buller Road and Highway 19A.

In June 2019, the Town undertook a comprehensive public consultation and visioning process led by Lanarc Consultants. The Plan was undertaken with the following objectives:

- Learn about the site's existing conditions and assets;
- Engage with stakeholders, members of the public, staff, and Council;
- Understand key issues and develop potential options to address these issues;
- Develop a strong vision; and
- Outline recommendations that support the vision and allow the Town to plan, prioritize, and budget for park improvements over time.

The Town adopted the "Former St. Andrew's Waterfront Park" Conceptual Plan on February 5, 2020. The full Conceptual Plan can be found on the Town's website:

<https://www.qualicumbeach.com/saahtlam>

## DISCUSSION

Public engagement and the finalization of a detailed Park Plan for Saahtlam Park was initiated by the Town in May 2023. The feedback from these engagements resulted in a refined vision and updated Park Plan Illustration for Saahtlam Park. This work builds off the “Former St. Andrew’s Waterfront Park Plan”. Several key decisions have been made since 2020 that also informed the next phase:

1. The St. Andrew’s Lodge building will remain and be restored by a not-for-profit society.
2. There will be a public washroom in the St. Andrew’s Lodge building that is accessible from the outside.

The Phase 1 Engagement Summary, updated Park Plan Illustration, and Refined Vision Statement became publicly available in early December 2023. Staff circulated the updated Park Plan Illustration and refined Vision Statement to interest groups and provided a second Feedback Form as an opportunity for the public to comment on the revisions.

Lanarc consultants presented the updated Park Plan Illustration showing the proposed spatial arrangement and relationships of site amenities and provided an outline of changes made since the first round of stakeholder and public engagement at the December 13, 2023 Committee of the Whole Meeting. Following this presentation to the Committee of the Whole, further refinements were made to reflect Council comments.

Following Council approval, the Saahtlam Park Detailed Plan can move into the next phase which would include detailed costing and consideration of implementation.

## FINANCIAL IMPLICATIONS

The 2024-2028 Financial Plan includes a total budget provision of \$600,000 with \$250,000 budgeted in 2025 and \$350,000 budgeted in 2026.

NOTE: There is an additional budget provision of \$20,000 in 2024 for the removal of the bocce ball court and installation of a fence. Beyond this, it is anticipated that staff will actively pursue grant opportunities to secure funding aimed at facilitating the detailed design and construction costs associated with improvements to Saahtlam Park.

## PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)

| INFORM                                                                                                                                                                | CONSULT                                                                                                         | INVOLVE                                                                                                                                              | COLLABORATE                                                                                                                                                                          | EMPOWER                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Obtain feedback on analysis, alternatives, and/or decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li> </ul> | <ul style="list-style-type: none"> <li>• Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Final decision making in the hands of the stakeholders</li> </ul> |

*Public Participation Framework developed by the International Association for Public Participation – IAP<sup>2</sup> International.*

### CONSULT, INVOLVE, INFORM:

- To date the project has included extensive public participation (consult and involve).
- The consultation process for the design is now complete.
- Next steps will include informing the public as further information is available (inform).



## STRATEGIC PLAN ALIGNMENT

Council's Strategic Plan Focus Area(s) supported by this initiative:

- Good Governance: *To govern for the public interest of our community while managing competing interests, ensuring availability of transparent and accessible information, fostering respectful public engagement, and demonstrating ethical values.*
- Community Health & Wellbeing: *To improve the health and wellbeing of people who live, work, and play in the Town.*

## SUMMARY

In 2018, the Town of Qualicum Beach acquired the historic St. Andrew's Lodge property on the waterfront, a key 2.4-acre property located at Buller Road and Highway 19A. Starting in June 2019, a public consultation and visioning process was led by Lanarc Consultants, focusing on understanding the site's conditions, engaging stakeholders, and developing a vision for future park improvements. The "Former St. Andrew's Waterfront Park" Conceptual Plan was adopted on February 5, 2020. Lanarc Consulting has completed the Saahtlam Park Detailed Plan and Council is now in a position to direct staff to prepare a report speaking to detailed costing and consideration of implementation.

## ALTERNATIVE OPTIONS

1. THAT Council directs staff to provided alternative direction to staff.

## APPROVALS

Report respectfully submitted by Liz Pollock, Planner



Liz Pollock  
Planner  
*Report Author*



Lou Varela, MCIP, RPP  
Chief Administrative Officer  
*Concurrence*



Luke Sales  
Director of Planning  
*Concurrence*



Raj Hayre  
Director of Finance  
*Concurrence*

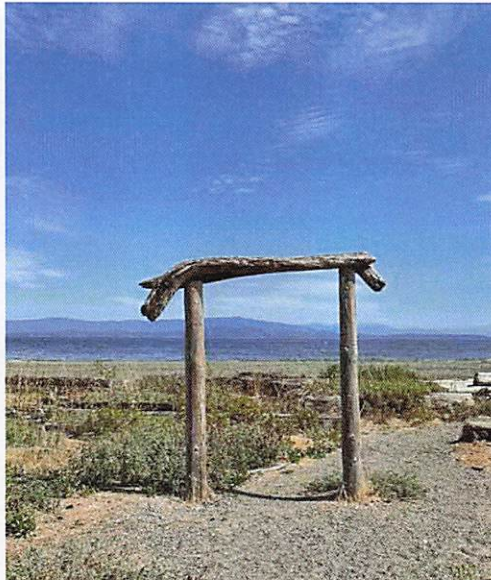
## REFERENCES

Attachment 1: Saahtlam Park Detailed Plan

File: 6520-20-St. Andrew's Park

N:\0100-0699 ADMINISTRATION\0550 COUNCIL MEETINGS\0550-20 MEETINGS\2024\07 17 RC\1. DRAFTS FOR CORP  
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ATTACHMENT NO. 1

# SAAHTLAM PARK DETAILED PLAN

APRIL 2024



TOWN OF  
QUALICUM BEACH  
Page 235







# DETAILED PLAN

- 1 | INTRODUCTION ..... 1
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  - 1.2 Using This Document ..... 3
  - 1.3 Summary of Recent Developments ..... 3
  - 1.4 Planning Process Overview ..... 5
  - 1.5 Community Engagement ..... 5
  - 1.6 Park Vision Statement..... 7
  - 1.7 Guiding Principles ..... 8
- 2 | RECOMMENDATIONS ..... 11
  - 2.1 Refined Concept Illustration..... 12
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# 1 | INTRODUCTION

## CONTENTS

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| 1.3 | SUMMARY OF RECENT DEVELOPMENTS..... | 3 |
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## 1.1 PURPOSE OF THE PLAN

The Saahtlam Park Detailed Plan (the Plan) is an update to be used as an amendment (not a consolidation or replacement) of the *2020 Former St. Andrews Concept Plan*. The 2020 Concept Plan was initiated by the Town of Qualicum Beach following the acquisition of the property in 2018. This Plan aims to bring together previous work alongside recent developments to form a cohesive and unified plan for the future of this important waterfront park.

This Plan provides an opportunity to reconsider the site today, two years after it was opened as a community park. This Plan identifies priorities for short-term (1-3 years), medium-term (3-10 years), and ongoing that will create a resilient park for the community to enjoy for generations to come.

This Plan was undertaken with the following objectives:

- ▶ Explore how the site's existing conditions and assets have changed since the 2020 Concept Plan;
- ▶ Re-engage with interest groups, members of the public, staff, and Council;
- ▶ Investigate key issues and challenges;
- ▶ Revise the 2020 Concept Plan vision statement, site plan illustration, and recommendations to reflect key changes and support the Town to plan, prioritize, and budget for park improvements over time.

## 1.2 USING THIS DOCUMENT

The Saahtlam Park Detailed Plan, in conjunction with the *2020 Former St. Andrews Concept Plan*, is considered a living document that will continue to evolve as needs shift and opportunities arise. Recommendations in this plan are intended to be reviewed annually and adjusted in 5-10 years to reflect evolving park and community needs.

This Plan does not illustrate an exact or final layout for all potential improvements, rather it provides a vision and strategies for planning, assessing, and implementing desired changes over time.

All capital projects recommended in this Plan will be considered within the Town of Qualicum Beach's broader planning and budgeting processes, and will be subject to individual consideration and approval by Council prior to proceeding.

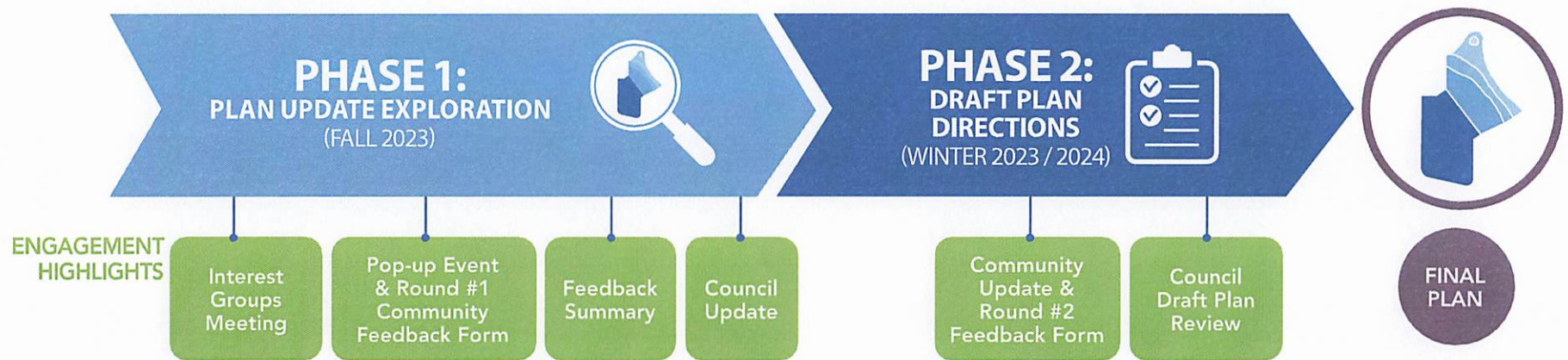
This Plan sets a framework for positive change — success will depend on the continued contributions from the Town, St. Andrews Lodge Historical and Cultural Society (SALHACS), and the broader community.

## 1.3 SUMMARY OF RECENT DEVELOPMENTS

Since the 2020 Concept Plan's adoption the park has undergone key developments that informed the need for the 2024 Detailed Plan. Recent developments include:

- ▶ **2021:** Park opens to the public.
- ▶ **2022:** Council decides to retain the Lodge building in support of community aspirations.
- ▶ **2022:** The St. Andrews Lodge Historical and Cultural Society (SALHACS) forms and begins planning for Lodge improvements and programming special events in the park.
- ▶ **2022:** Park use is increasing including several successful events and community gatherings in the park and programming such as yoga and exercise classes.
- ▶ **2023:** Qualicum First Nation gifts the name "Saahtlam", meaning "the green at the mouth of the river".

Figure 1: Process Diagram



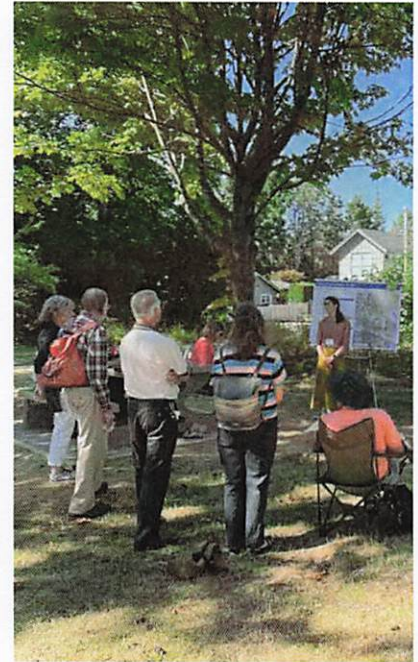


## 1.4 PLANNING PROCESS OVERVIEW

The Saahtlam Park Detailed Plan process was conducted in two phases. The process was initiated in Summer 2023 and concluded in Winter 2024. Each phase involved community engagement and feedback. Community input was fundamental to refining the plan directions.

**PHASE 1** This phase met with stakeholders, developed a refined concept illustration, vision statement, and draft list of directions, and then gathered community input and feedback.

**PHASE 2** Based on feedback from Phase 1, this phase revised the concept illustration, recommendations list, and vision statement for further input from Council, interest groups, and the community prior to developing the Plan document.



## 1.5 COMMUNITY ENGAGEMENT

As illustrated in the Process Diagram (Figure 1), community input was gathered during both phases of the project. Engagement activities included:

### **ROUND #1:**

- ▶ **Interest Groups Meeting:** The project team met with interest groups in the park to review the former plan and to discuss opportunities, challenges, and priorities to be addressed in the Detailed Plan.
- ▶ **Farmer's Market Pop-Up Event:** The Town of Qualicum Beach staff ran a booth at the Qualicum Beach Farmer's Market to gather community input on park plan refinements, answer questions, and share information about the detailed plan update process.
- ▶ **Community Feedback Form:** A community feedback form was available at the pop-up event, Town Hall, and online throughout October. The focus of the community feedback form was to share updates on the Saahtlam Park Detailed Plan process and receive feedback on the updated concept plan and potential park improvements.

### **ROUND #2:**

- ▶ **Community Referral (Round #2 Feedback Form):** A feedback form was available at Town Hall and online. The feedback form shared the revised materials with the community for further comment. The material refinements were a reflection of the feedback heard in Round #1.

### **ROUND #1** WHO PARTICIPATED?

**286**

Completed Community  
Feedback Forms

**~100**

Visited the Farmer's Market  
Pop-Up Event

### **ROUND #2** WHO PARTICIPATED?

**207**

Completed Round #2  
Feedback Forms







## 1.6 PARK VISION STATEMENT

The vision describes a long-term future for this waterfront park in the Town of Qualicum Beach. It provides a reminder about the spirit and intent for this public space and encourages planning and development to make progress towards this community aim. A vision helps to guide decisions about future park changes and development.

### 2020 Vision Statement:

The 2020 Park Concept Plan was adopted with the following vision statement:

The Town of Qualicum Beach's former St. Andrews waterfront park offers a natural respite among mature trees and is a highlight of the Town's waterfront character. This park serves to connect people with nature, community, family, and site history. Visitors of all ages are invited here to relax, socialize, be active outdoors, enjoy the waterfront, and celebrate natural coastal features for generations to come.

### 2024 Refined Vision Statement:

The following is the updated vision statement that includes the following refinements:

- ▶ Uses the park name "Saahtlam Park"
- ▶ Enhances reference to "culture and heritage"
- ▶ Reflects the park's role as a gathering place to "celebrate with community"
- ▶ Identifies the importance of "stewardship" here
- ▶ Clarifies the active role for "restoring" the natural coastal features

### VISION STATEMENT:

**Saahtlam Park offers a natural respite among mature trees and is a highlight of the Town's waterfront character. This park serves to connect people with nature, community, family, culture, and heritage. Visitors of all ages are invited here to relax, celebrate with community, enjoy the waterfront, be active stewards, and join in restoring the natural coastal features for generations to come.**



## 1.7 GUIDING PRINCIPLES

Guiding principles support realization of the vision by providing guidance for future projects within the park. These principles act as a "checklist" for proposed park improvements; if a potential project meets these objectives it will support the spirit and focus of the Plan.



### Protect and Enhance Natural Areas

- Retain healthy, significant trees and vegetation
- Maintain a naturalized foreshore that is receptive and resilient to coastal processes
- Plan park improvements to best respond to projected sea level rise
- Protect a healthy marine ecosystem that is not threatened by human interference
- Encourage opportunities for local stewardship of the park
- Restore and enhance the park's natural features through removal and management of invasive species and implementation of plantings that encourage wildlife and pollinators



### Improve Access

- Create pathways that support accessible travel to the beach and park
- Link beyond the park's boundaries to the surrounding neighbourhood and across the highway
- Provide routes that feel safe and inviting and encourage universal accessibility and inclusivity
- Create a wayfinding and signage system that is clear and engaging
- Integrate clear park entry points that include arrival amenities
- Establish viewpoints to key park features and the waterfront
- Encourage active transportation users by providing end-of-trip facilities (e.g., secure bike parking, e-bike charging)
- Seek opportunities for parking to support park access and use





## Celebrate Site History

- Provide park visitors opportunities to see and learn about cultural and ecological features of the park
- Work with Qualicum First Nation to celebrate local Indigenous culture and heritage
- Integrate the legacy of the site's recent history as a lodge and vacation destination
- Pursue opportunities to connect park users to the past through use of materials or naming of park features
- Encourage amenities that attract both residents and visitors throughout the year



## Encourage a Healthy, Active Community

- Encourage park visitors of all ages and abilities to be active outdoors
- Provide a setting for positive social interactions and community connections
- Promote features and amenities that are unique from other parks in Town
- Strengthen access to amenities that are family-friendly and exciting
- Offer opportunities for social gathering, both day-to-day and special events
- Integrate flexible, multi-use spaces that encourage a wide range of activities





## 2 | RECOMMENDATIONS

### CONTENTS

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| 2.2 | SUMMARY LIST OF RECOMMENDATIONS..... | 12 |
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## 2.1 REFINED CONCEPT ILLUSTRATION

The adjacent Refined Concept Illustration summarizes the proposed vision for the park. This illustration shows how the park Vision and Guiding Principles could be incorporated in the future and is used to set planning directions, recommendations, and current priorities.

The illustration and corresponding list are informed by:

- » The 2020 Concept Plan;
- » Use of the Lodge and Park since the Park's opening in 2021;
- » Council motions;
- » Input from interest groups;
- » Input from the community;
- » Input from Qualicum First Nation; and
- » Technical review by the consulting team and Town.

## 2.2 SUMMARY LIST OF RECOMMENDATIONS

Refer to the summary list of recommendations below, which is also the legend for the Refined Concept Illustration. Refer to the adjacent illustration for locations of improvements.

\* Indicates improvement is not shown on the Concept Illustration.

### QUALICUM FIRST NATION

Relationship Building with Qualicum First Nation

### UPLAND PARK AMENITIES

- 1 Park Washroom
- 2 Play Area
- 3 Performance + Audience Space
- 4 Upland Pathways
- 5 Outdoor Seating + Picnic Areas
- 6 Multi-Purpose Open Space
- 7 Art Opportunity
- 8 Food Truck Parking & Amenities

### ACCESS & PARKING

- 9 Crosswalk + Trail Connection
- 10 Cyclist Amenities
- 11 Service Vehicle Access
- 12 Accessible Parking
- 13 Drop-off / Loading Zone / Bus Pull-Out
- 14 Roadside Day Parking
- 15 Future Expansion Parking
- 16 Park Signage + Wayfinding

### NATURAL AREAS & TREE CANOPY

- 17 Designated Beach Paths
- 18 Former Foreshore Area
- 19 Upland Planting Areas
- 20 Tree Management\*
- 21 Bat Boxes

### OPERATIONS

- 22 Plan Review\*
- 23 Operations & Maintenance Budgeting\*
- 24 Staffing\*
- 25 Life-Cycle Planning\*
- 26 Dogs On-Leash\*
- 27 Events & Programming\*
- 28 Park Stewardship Group\*
- 29 Plant Management Plan\*
- 30 Manage Fire Risk\*
- 31 Maintain Sightlines\*
- 32 Outdoor Storage\*

#### ■■■■ SALHACS Lease Area Boundary\*\*

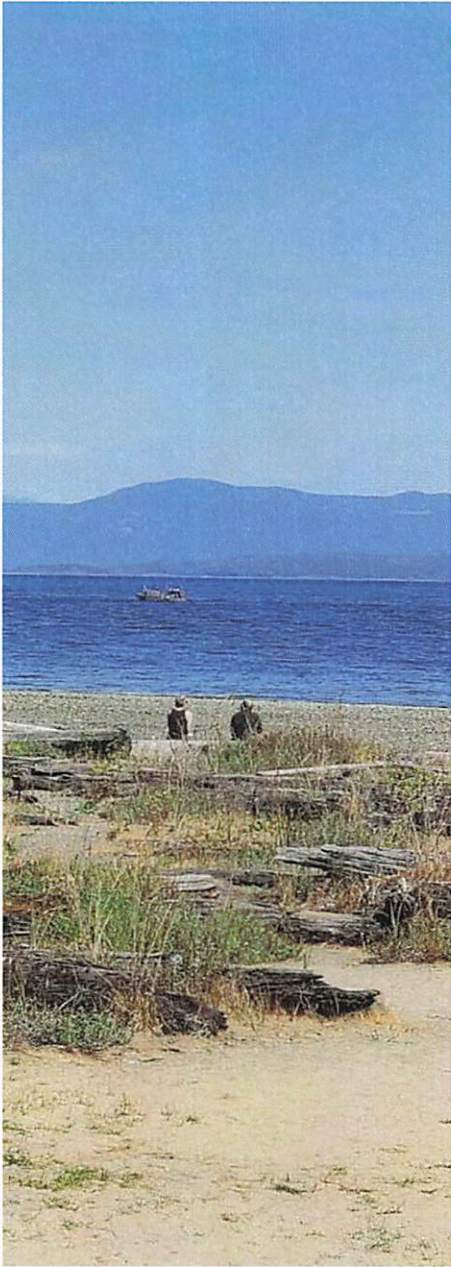
*All upgrades shown within this boundary (including St. Andrew's Lodge, accessibility ramps, stairs, etc.), with the exception of the Park Washroom (1), are the responsibility of SALHACS.*



# REFINED CONCEPT ILLUSTRATION







## 2.3 RECOMMENDATIONS

### 2.3.1 Recommendation Format

Each recommendation is organized to include the following information:

- **Actions:** A summary of key steps required to complete the recommendation.
- **Timeline:** Identifies the relative phasing for implementation of the recommendation:
  - » 1-3 year (short-term)
  - » 3-10 year (medium-term)
  - » Ongoing: Recurring, no defined time frame
- **Preliminary Capital Cost Estimate:** Identifies an estimated cost allowance for planning purposes.
  - » Estimates are developed using unit costs and quantities based on general assumptions and historical construction cost data from similar projects, and are provided to assist with long-range budget planning.
  - » Costs for infrastructure can vary widely depending on site constraints, design, market forces or other variables.
  - » **Cost Breakdown:**
    - » \$: \$0 to \$15,000
    - » \$\$: \$15,000 to \$50,000
    - » \$\$\$: \$50,000 to \$150,000
    - » \$\$\$\$: \$150,000+

## QUALICUM FIRST NATION

### RELATIONSHIP BUILDING WITH QUALICUM FIRST NATION

| ACTIONS                                                                                                                                                                   | TIMELINE | CAPITAL ESTIMATE |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| A.1 Explore opportunities with Qualicum First Nation at a government to government level for Saahtlam Park to be a place for building trust, respect, and Reconciliation. | Ongoing  | n/a              |



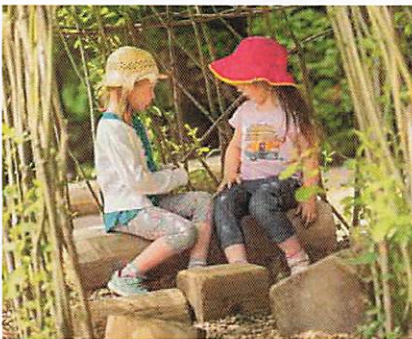
## UPLAND PARK AMENITIES

### 1 PROVIDE A PARK WASHROOM

| ACTIONS                                                                                                                                                                               | TIMELINE | CAPITAL ESTIMATE |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 1.1 Provide a public washroom in the Lodge to support general park visitation. The public washroom will be accessible, efficient, and connected with a direct entrance from the park. | Short    | \$\$\$           |

### 2 PLAY AREA

| ACTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | TIMELINE | BUDGET ESTIMATE |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|
| 2.1 Complete a detailed design process and construct a play area with a natural character that is inclusive for all ages and abilities. Amenities to include: <ul style="list-style-type: none"> <li>» Play features for ages 2-5 and 5-12</li> <li>» Climbing feature</li> <li>» Supporting elements: wobbler, spinner, ride-on spring toy, etc.</li> <li>» Engineered wood fibre or pour-in-place rubber safety surfacing</li> <li>» 2-3 benches and informal seating (logs, seat boulders)</li> <li>» Cedar rail fencing</li> <li>» Tree planting for shade</li> </ul> | Short    | \$\$\$\$        |



**Inspiration:** Play features can take many different forms. The images above are inspiration for built play features that relate to the natural character of the park.



### 3 PERFORMANCE + AUDIENCE SPACE

| ACTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | TIMELINE | BUDGET ESTIMATE |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|
| <p>3.1 Complete a detailed design process to design a performance space between the two cedar trees directly north of the Lodge. This location is buffered from the ambient vehicle noise on Hwy 19A. Key amenities to provide:</p> <ul style="list-style-type: none"> <li>» Secure outdoor electrical connection</li> <li>» Temporary or permanent mounting locations for speakers / audio equipment</li> <li>» Temporary or permanent cover for weather protection and to improve acoustics</li> <li>» Root protection for the two cedar trees</li> <li>» Open space north of the cedar trees for audiences to gather</li> <li>» Consideration for atmosphere lighting (e.g., posts for string lights)</li> </ul> | Medium   | \$\$ - \$\$\$   |



*Images: Saahtlam Park has become a place for the community to enjoy and support local musical talent and performance. The location between the two cedar trees adjacent to the Lodge is recommended as the focal point for performance due to its protected location relative to Hwy 19A and the foreshore.*

*Inspiration: Decking is one strategy to provide root protection (as well as drainage and permeability) to support tree longevity with increased use of this area.*

### 4 UPLAND PATHWAYS

| ACTIONS                                                                                                                                                                                              | TIMELINE | BUDGET ESTIMATE |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|
| <p>4.1 Provide accessible paved pathways to formalize circulation through the park (see Concept Illustration for locations). Path surfacing material(s) to be confirmed through detailed design.</p> | Medium   | \$\$            |

### 5 OUTDOOR SEATING

| ACTIONS                                                                                                                                                                                            | TIMELINE | BUDGET ESTIMATE |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|
| <p>5.1 Incorporate seating throughout the park that is located with a focus on natural and programmed park features and desirable views.</p>                                                       | Medium   | \$              |
| <p>5.2 Continue to include memorial benches as part of park seating.</p>                                                                                                                           | Medium   | \$              |
| <p>5.3 Provide additional picnic tables including accessible tables on pads accessible directly from park pathways. Provide waste receptacles and access to potable water nearby picnic areas.</p> | Medium   | \$              |

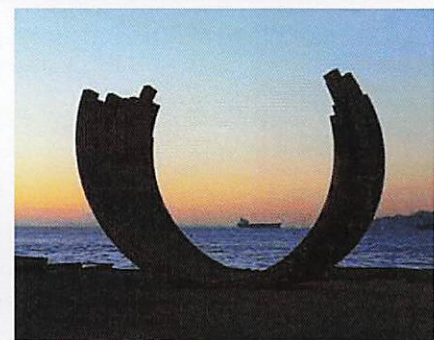
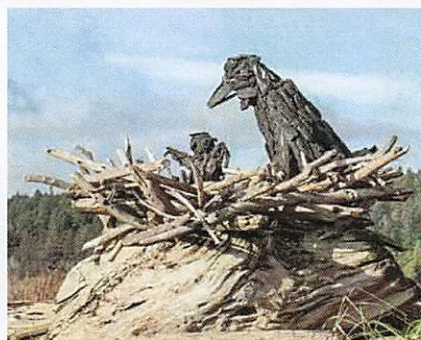
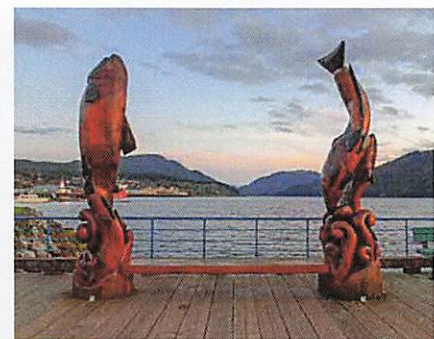
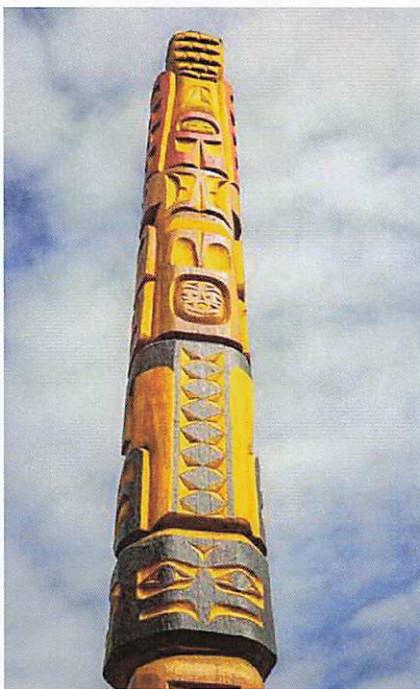


## 6 MAINTAIN MULTI-PURPOSE OPEN SPACE

| ACTIONS                                                                                                                                                                                                                 | TIMELINE        | BUDGET ESTIMATE |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| 6.1 Reserve open lawn space to support a variety of uses both informal (e.g., picnic, frisbee) and formal (e.g., yoga class, local market [25-35 temporary exhibitor tents], community events, small gatherings, etc.). | Short / Ongoing | \$              |

## 7 ART OPPORTUNITY

| ACTIONS                                                                                                                                                                                                                                                                                        | TIMELINE         | BUDGET ESTIMATE |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|
| 7.1 Explore opportunity with Qualicum First Nation or other local artists for the installation of a commissioned art piece to support the visibility and celebration of local arts and culture. (The form and location for an art piece should be determined through a site specific process). | Medium / Ongoing | \$\$            |



*Inspiration: An art feature provides an opportunity for cultural expression. Arts and culture are key components to community gathering places like Sahtlam Park. The above images are inspiration from other sites and are shown for general reference only.*

## 8 FOOD TRUCK PARKING & AMENITIES

| ACTIONS                                                                                                                                                                                                           | TIMELINE | CAPITAL ESTIMATE |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 8.1 Provide two designated food truck parking locations in the park — one near the Lodge and one at the northwest corner off Buller Road. Provide secure power and water connections accessible to each location. | Medium   | \$\$             |

## ACCESS & PARKING

### 9 CROSSWALK + TRAIL CONNECTION

| ACTIONS                                                                                                                                                                                                        | TIMELINE | CAPITAL ESTIMATE |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 9.1 Provide a painted crosswalk with pedestrian crosswalk warning lights across Hwy 19A at Challoner Road for traffic calming, safe crossing from parking, and to connect the Laburnum Trail to Saahtlam Park. | Medium   | \$\$             |
| 9.2 Complete an engineering, transportation, and emergency services review for a second painted crosswalk to Saahtlam Park (at Buller Road). If supported, proceed with implementation.                        | Medium   | \$\$             |

### 10 CYCLIST AMENITIES

| ACTIONS                                                                                                 | TIMELINE | CAPITAL ESTIMATE |
|---------------------------------------------------------------------------------------------------------|----------|------------------|
| 10.1 Provide a designated bike parking area near the Lodge building (and visible from Hwy 19A).         | Short    | \$               |
| 10.2 Provide a covered area with e-bike charging station. Consider including a simple bike repair area. | Medium   | \$\$             |

### 11 SERVICE VEHICLE ACCESS

| ACTIONS                                                                                                                                                                                | TIMELINE | CAPITAL ESTIMATE |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 11.1 Maintain the existing service / emergency vehicle access from Hwy 19A. Formalize two additional service vehicle access points: one from Buller Road, and one from Challoner Road. | Medium   | \$               |

### 12 ACCESSIBLE PARKING

| ACTIONS                                                                                                                                                                                                                                | TIMELINE | CAPITAL ESTIMATE |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 12.1 Provide signage and markings to clearly designate (3) accessible parking stalls adjacent to the Lodge building and southwest park entry. Coordinate with SALHACS to integrate heritage hitching post reference in this same area. | Short    | \$               |



### 13 DROP-OFF / LOADING ZONE / BUS PULL-OUT

| ACTIONS                                                                                                                                                                                   | TIMELINE | CAPITAL ESTIMATE |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 13.1 Formalize a 15 minute drop-off / loading zone off Hwy 19A fronting the Lodge to improve convenience and access to the park. This area should also support a shuttle or bus pull-out. | Short    | \$-\$\$          |

### 14 ROADSIDE DAY PARKING

| ACTIONS                                                                                                                             | TIMELINE | CAPITAL ESTIMATE |
|-------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 14.1 Maintain parking areas along Hwy 19A. Improve the delineation of this parking and provide connecting pathways for circulation. | Short    | \$               |

### 15 FUTURE EXPANSION PARKING

| ACTIONS                                                                                                         | TIMELINE | CAPITAL ESTIMATE |
|-----------------------------------------------------------------------------------------------------------------|----------|------------------|
| 15.1 Consider formalizing parking (approximately 15 stalls) in the Challoner Road right-of-way west of Hwy 19A. | Medium   | \$\$\$           |

### 16 PARK SIGNAGE + WAYFINDING

| ACTIONS                                                                                                                                                                                                                                                                 | TIMELINE | CAPITAL ESTIMATE |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 16.1 Provide one primary park sign along Hwy 19A. Include secondary signage at all park entry points that includes wayfinding / directional signage, and regulatory signage to communicate codes-of-conduct information (e.g., hours of use, nature restoration zones). | Short    | \$\$             |
| 16.2 Develop an interpretive signage program for the site that includes information about Indigenous culture, recent history, and natural features. Integrate the interpretive signage at Saahtlam Park with interpretive signage from other Town waterfront parks.     | Short    | \$-\$\$          |



## NATURAL AREAS & TREE CANOPY

### 17) DESIGNATED BEACH PATHS

| ACTIONS                                                                                                                                                                                                                                                     | TIMELINE | CAPITAL ESTIMATE |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|
| 17.1 Designate paths with stacked cedar rail fencing to minimize trampling through the former foreshore area to the beach. Provide a primary route from the centre of the park, a secondary route from Challoner Road end, and a connection to Buller Road. | Short    | \$               |

### 18) FORMER FORESHORE AREA

| ACTIONS                                                                                                                                                                     | TIMELINE        | CAPITAL ESTIMATE |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|
| 18.1 Retain and enhance existing vegetation. Allow for natural succession of accreted foreshore area to take place (e.g., establishing Douglas fir trees).                  | Short / Ongoing | \$               |
| 18.2 Remove invasive species (e.g., Himalayan blackberry, Scotch broom, etc.) on an ongoing basis.                                                                          | Short / Ongoing | \$               |
| 18.3 Install signage to educate park visitors about areas that are in restoration and sensitive to access and encourage visitors to remain in designated areas of the park. | Short           | \$               |

### 19) UPLAND PLANTING AREAS

| ACTIONS                                                                                                                                                                                                                                                                                    | TIMELINE        | CAPITAL ESTIMATE |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|
| 19.1 Retain and enhance existing upland shrub areas around the park perimeter to provide habitat value and retain the park's natural character. Plant species that are native, drought-tolerant, and pollinator friendly. Maintain plant height to provide clear sightlines into the park. | Short / Ongoing | \$               |
| 19.2 Supplement the native planting area around the proposed play area.                                                                                                                                                                                                                    | Short           | \$               |
| 19.3 Preserve the heritage Gold-Bronze Rhododendrons gifted to Elizabeth Little by the Museum Society.                                                                                                                                                                                     | Ongoing         | \$               |
| 19.4 Remove invasive species (e.g., Himalayan blackberry, Scotch broom, etc.) on an ongoing basis.                                                                                                                                                                                         | Short / Ongoing | \$               |

## 20 TREE MANAGEMENT

| ACTIONS                                                                                                                               | TIMELINE        | CAPITAL ESTIMATE |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|
| 20.1 Continue arborist review of park trees for continued tree health and park safety.                                                | Ongoing         | \$               |
| 20.2 Establish a tree planting program to support tree succession in the park that maintains a mature forest canopy in the long-term. | Short / Ongoing | \$-\$\$          |

## 21 BAT BOX PROGRAM

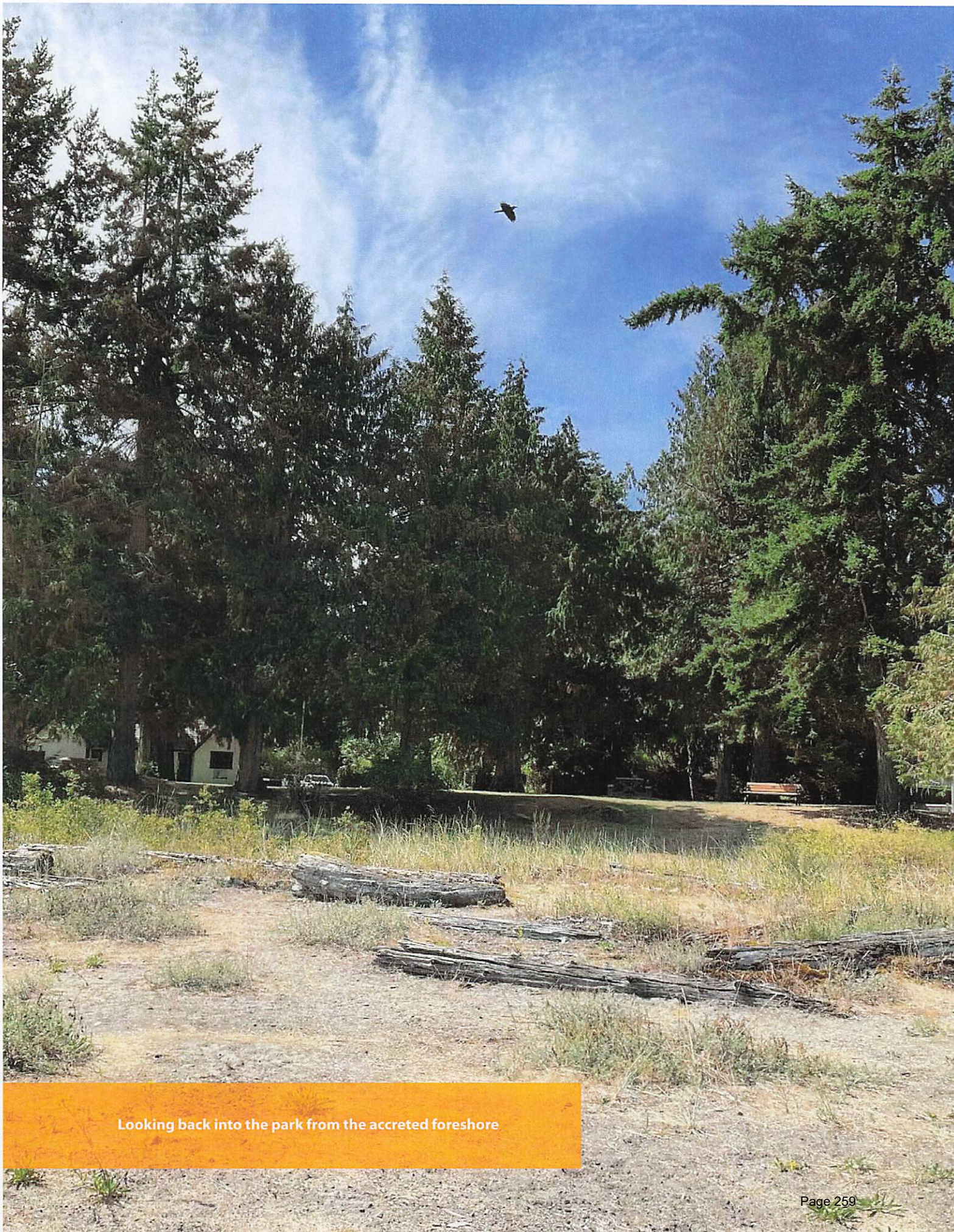
| ACTIONS                                                                                  | TIMELINE | CAPITAL ESTIMATE |
|------------------------------------------------------------------------------------------|----------|------------------|
| 21.1 Monitor existing bat boxes for activity and success. Consider additional bat boxes. | Ongoing  | \$               |



## OPERATIONS

| ACTIONS                                                                                                                                                                                                                                                                                                              | TIMELINE        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>22 PLAN REVIEW:</b> Revisit the usage, amenities, and opportunities of Saahtlam Park every 5 years and plan for updates accordingly.                                                                                                                                                                              | Ongoing         |
| <b>23 OPERATIONS &amp; MAINTENANCE BUDGETING:</b> Increase operations and maintenance budgets for Saahtlam Park to accommodate new amenities, upgraded amenities, restored natural areas, and maintenance of natural areas.                                                                                          | Ongoing         |
| <b>24 STAFFING:</b> As park amenities and level of service are expanded or improved, increase staffing levels to meet additional maintenance, operations, and management needs.                                                                                                                                      | Ongoing         |
| <b>25 LIFE-CYCLE PLANNING:</b> Undertake life-cycle planning and asset management to ensure park amenities are regularly inspected for safety, necessary maintenance, and renewal (e.g. play elements, furnishings, and pathways).                                                                                   | Ongoing         |
| <b>26 DOGS ON-LEASH:</b> As per existing municipal bylaw, continue to designate Saahtlam Park as area for dogs on-leash to support the comfort of park users of all ages and abilities and the park's natural environment.                                                                                           | Ongoing         |
| <b>27 EVENTS &amp; PROGRAMMING:</b> Integrate Saahtlam Park into the parks and recreation network of Qualicum Beach. Support existing programming and identify opportunities for year round programming of the park and Lodge in collaboration with SALHACS and others to make Saahtlam Park an ongoing destination. | Short / Ongoing |
| <b>28 PARK STEWARDSHIP GROUP:</b> Promote the formation of a Saahtlam Park stewardship group (name to be determined) by coordinating with local schools, neighbourhood groups, or volunteer groups already active nearby (e.g. SALHACS, Qualicum Beach Streamkeepers).                                               | Ongoing         |
| <b>29 PLANT MANAGEMENT PLAN:</b> With stewardship partners, develop a park plant management plan. Support volunteer stewardship efforts such as work parties to remove invasive species and garbage, undertake restoration planting, and monitor efforts.                                                            | Ongoing         |
| <b>30 MANAGE FIRE RISK:</b> Clearly post the ban of beach fires and all forms of smoking in the park.                                                                                                                                                                                                                | Ongoing         |
| <b>31 MAINTAIN SIGHTLINES:</b> Design park furnishings and structures to avoid hidden areas. Remove the basketball hoop to improve the sightline from the park entry and lodge through the park. Support opportunities for year-round park activity to encourage consistent "eyes on the park".                      | Short / Ongoing |
| <b>32 OUTDOOR STORAGE:</b> Coordinate with SALHACS for the provision of accessible storage for event materials (e.g. tables, chairs) in close proximity to the Lodge building and outdoor performance space.                                                                                                         | Short / Medium  |

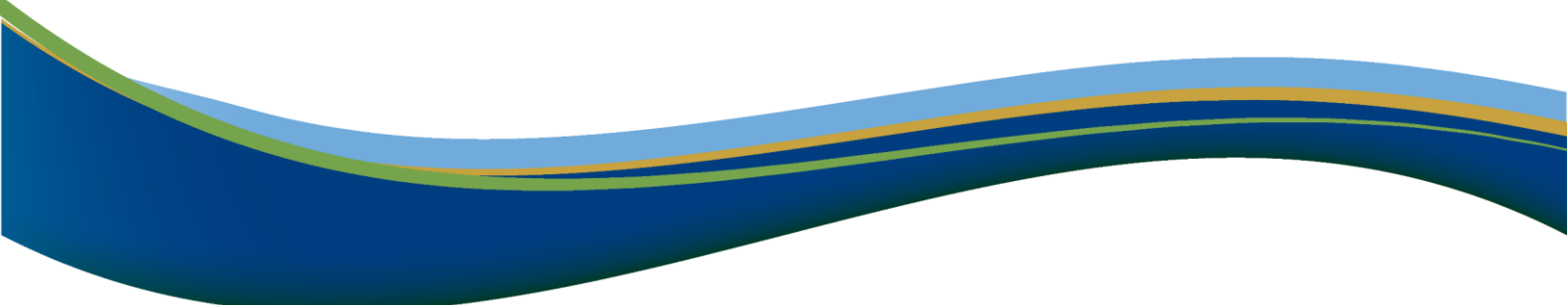




Looking back into the park from the accreted foreshore



TOWN OF  
QUALICUM BEACH



## TOWN OF QUALICUM BEACH

### STAFF REPORT

**TO:** Luke Sales, Director of Planning

**FOR:** Regular Council Meeting

**DATE:** July 17, 2024

**FROM:** Shinjini Mehta, Climate Action/Emergency Program Coordinator

**SUBJECT:** Extreme Weather Response

---

#### **RECOMMENDATIONS:**

That Council receives, for information, the staff report attached to the July 17, 2024 agenda outlining the Town's response to extreme heat events when thresholds for temperature are exceeded.

---

#### **EXECUTIVE SUMMARY**

Since 2001, the Town of Qualicum Beach and the City of Parkville have worked together to jointly deliver emergency management services through EMO<sup>1</sup>. For some years, the Regional District of Nanaimo (RDN) was a formal partner in EMO but is not currently a signatory to the most recent renewed agreement, although staff work collaboratively in Oceanside to respond to emergencies. The 2021 EMO agreement was designed to facilitate future inclusion of the RDN and other governments.

The Province of BC granted Royal Assent to the *Emergency and Disaster Management Act* (EDMA) in November of 2023. The EDMA contains several new requirements for emergency planning, including changes that allow local governments to access emergency funding for responding to extreme weather conditions that may be hazardous to human health.

This report will discuss changes affecting the Extreme Weather Response Plan regulations and provide options for Council consideration regarding extreme heat events in summer 2024. A separate report on extreme cold weather response will be provided under a separate report this fall.

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<sup>1</sup> <https://parkville.civicweb.net/filepro/documents/48457/?preview=48859>

## **BACKGROUND**

Social services are a provincial responsibility and are mostly delivered through the Ministries of Housing, Health, Poverty Reduction and Mental Health and Addictions and the center for Disease Control. The Province partners with not-for-profit organizations to deliver a wide range of social supports to communities over and above this provincial responsibility. Municipalities may choose to tax residents locally to provide social services and recruit community safety officers and/or social planners, but the communities in Oceanside (Electoral Areas E, F, G & H, City of Parksville and the Town of Qualicum Beach) do not currently provide social planning services.

Outside of a seasonal cold weather program, which is a provincially managed response, recent changes to emergency management legislation expand the scope of local government responsibilities in responding to emergencies associated with extreme weather.

Local authorities must now respond to extreme weather events in summer if:

1. Environment and Climate Change Canada issues a Heat Warning or Extreme Heat Emergency affecting the local area.

Local authorities respond to extreme weather events by applying for a task number through EMCR<sup>2</sup> and receive provincial approval for expected incremental costs to meet emergency warming / cooling needs. These services are typically delivered through contracts with community/resource service providers, with payments processed by local governments and subsequently reimbursed by EMCR, provided the costs have been pre-approved by EMCR. These emergencies typically last 3 to 5 days and are expected to increase in frequency and severity due to climate change.

### Current extreme weather thresholds:

**Extreme Heat:** For the Vancouver Island region Emergency Management and Climate Readiness (EMCR) will provide access to heat emergency funding when daytime temperatures are expected to reach 29°C or warmer for two or more consecutive days and nighttime minimum temperatures are expected to be 16°C or warmer.

### Available Provincial supports for Extreme Heat Events:

The Province of BC funds several social service providers in the Oceanside area: Outreach, SOS, Orca Place and Inclusion Parksville. The Province is funding air conditioning units for eligible people including online resources for people to access before, during and after events. All libraries in BC are designated as community warming and cooling spaces and people are encouraged to access other air-conditioned indoor public spaces such as civic centres, recreation centres, malls and churches. The Province recommends staying cool outdoors by seeking breezy spots near bodies of water and treed areas such as parks.

### Town's Response plan for Potential Extreme Heat Events:

For the upcoming summer season, staff will closely monitor temperature thresholds and advise Council of the need to trigger an Extreme Weather response. A task number will be obtained from EMCR for the response. A Cooling Centre will be set up at the Town Hall Foyer/ Library should the event occur between Monday-Saturday. The Community Hall will be an alternate location if the event spills over to a Sunday. Outreach will be conducted with the local vulnerable population

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<sup>2</sup> Financial assistance for emergency response and recovery costs supported by EMCR can be found here: [Addendum-policy 5.14 \(gov.bc.ca\)](#)



to ensure their wellbeing, and seasonal provincial communications will be issued through the Town's social media channels (e.g.- Island Health's indicators of heat stroke/ hyperthermia, extreme heat weather forecasts etc.).

For the recent extreme heat warning issued by Environment and Climate Change Canada from 5-9 July, the Library, Town Hall foyer and Ravensong Aquatic Centre were designated as public cooling spaces. The Town also obtained a task number from EMCR to support the set up of a Cooing Centre by a community service provider in the MLA's office.

Measures have been put in place to protect outside Town workers from the effects of extreme heat during peak temperatures and reminders are provided on hydration, use of personal protective equipment such as sunscreen, head coverings and appropriate clothing. Advice for all employers is available in the Provincial Heat Alert Response System (BC HARS) Guide.

Note: In addition, staff are working with regional partners to prepare a tactical plan identifying the regional response procedure for extreme cold weather events. This will involve identifying and entering partnership arrangements with regional service providers in advance of the cold weather season. Staff will prepare a Council report addressing options for this year's warming center response for presentation to Council later in 2024.

### FINANCIAL IMPLICATIONS

The additional costs for extreme weather response will be covered through task numbers obtained from EMCR and therefore, are not anticipated to have any financial implications on the Town's operating expenses. Staff time will be tracked for an understanding of ineligible "in kind" service provision.

### PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)

*Public Participation Framework developed by the International Association for Public Participation – IAP<sup>2</sup>*

| INFORM                                                                                                                                                                | CONSULT                                                                                                         | INVOLVE                                                                                                                                              | COLLABORATE                                                                                                                                                                          | EMPOWER                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Obtain feedback on analysis, alternatives, and/or decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li> </ul> | <ul style="list-style-type: none"> <li>• Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Final decision making in the hands of the stakeholders</li> </ul> |

*International.*

- Public participation is not required for this scope of work.

### STRATEGIC PLAN ALIGNMENT

Council's Strategic Plan Focus Area(s) supported by this initiative:

- Community Health & Wellbeing: *To improve the health and wellbeing of people who live, work, and play in the Town.*

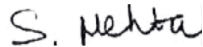


### **SUMMARY**

Staff are providing this report to inform Council of the Town's tactical response strategy in anticipation of the forthcoming extreme heat conditions.

### **APPROVALS**

Report respectfully submitted by Shinjini Mehta, Climate Action and Emergency Program Coordinator.



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Shinjini Mehta  
Climate Action & Emergency Program Coordinator  
*Report Writer*



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Luke Sales  
Director of Planning  
*Concurrence*



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Raj Hayre, CPA, CMA  
Director of Finance  
*Concurrence*



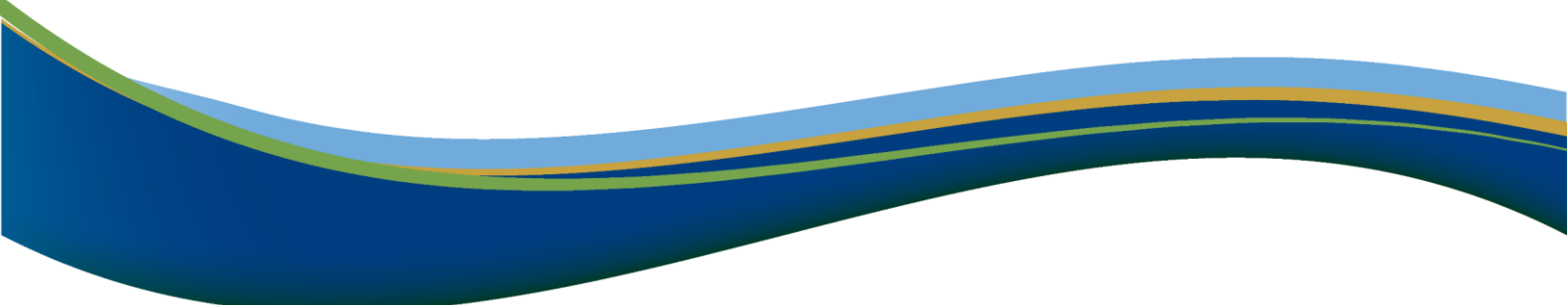
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Agnieszka Warzybok, CPHR  
Director of Human Resources  
*Concurrence*



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Lou Varela, MCIP, RPP  
CAO  
*Concurrence*



## TOWN OF QUALICUM BEACH

### STAFF REPORT

**TO:** Lou Varela, Chief Administrative Officer

**FOR:** Regular Council Meeting

**DATE:** July 17, 2024

**FROM:** Oliver Watson, Capital Projects Manager

**SUBJECT:** Bay Street Slope Stabilization – RFQ Award

---

#### RECOMMENDATION

THAT Council approves the award of the Bay Street Slope Stabilization project to David Stalker Excavating in the amount of \$599,147 excluding GST.

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#### PURPOSE

For Council to consider awarding the construction project of the Bay Street Stabilization Project to David Stalker Excavating.

#### BACKGROUND

Sections of the Bay Street slope between Elm Avenue and Highway 19A have been showing signs of failure for many years. Within this section of road, the Town has a 200mm PVC sewer main, a 200mm PVC water main, and a 200mm storm main. As the road continues to shift, the risk of one of these utilities breaking or separating at a joint increases. To protect the Town's infrastructure and adjacent properties, this project was included in the 2024 Financial Plan with a budget of \$1,978,000. \$192,400 of this budget provision was reallocated by Council resolution (#24-116) to the Beach Creek/E. Crescent Culvert Replacement project budget provision, leaving a remaining project budget of \$1,785,600, with reallocation of any unused budget back to the funding source – the Asset Replacement Reserve.

#### DISCUSSION

There are several methods available for improving unstable slopes. Initial considerations included combinations of soil nailing, mechanically stabilized earth retaining walls and various piling techniques.

In the spring of 2024, after monitoring well data and performing a road subbase soil investigation, engineers determined that a less ambitious method could be undertaken in phases and was more cost-effective than other methods. Moving forward with the project, slope stabilization will include:

- Re-establishing the existing one-way road.

- Establishing dedicated gravel shoulders for pedestrians.
- Replacing a large portion of road subbase.
- Securing the road subbase with geogrid.
- Narrowing the hill to reduce the static load on the outside shoulder.
- Upgrading the storm system including connecting the private property storm leads on the south side of the Bay Street slope to the storm system.
- Installing a new perforated storm pipe down the south side of the Bay Street slope to intercept ground water.
- Replacing a large portion of the road base from Crescent Road down to Highway 19A including repaving Bay Street from Crescent Road down to Highway 19A.

This proposed approach is anticipated to stabilize the slope sufficiently to protect and preserve municipal utilities in the roadway and adjacent properties.

Upon completion of the final design, the project was posted on BC Bid. The tender closed on July 3, 2024, with five (5) bids received. The bids ranged from \$599,147 to \$734,842 with David Stalker Excavating submitting the lowest bid.

Subject to Council awarding the project, the contractor will be authorized to begin any time after receipt of the Notice to Proceed and must complete the project by December 15, 2024.

### **FINANCIAL IMPLICATIONS**

The available 2024 budget provision (after the reallocation of \$192,400, as identified earlier in this report) for this project is \$1,785,600. To date, \$73,200 has been spent on engineering and soil investigation.

The \$599,147 excluding GST bid received by David Stalker Excavating does not include soft costs. Project management, geotechnical inspection supervision and other soft costs are anticipated to be \$270,000. Due to the complexity of the project, a contingency of \$60,000 has been identified.

The adjusted 2024 budget provision of \$1,785,600 is sufficient to address the anticipated project costs comprised of the bid amount for works, anticipated soft costs, and contingency for unexpected circumstances. Any unused budget provision will be returned to the Asset Replacement Reserve, which was the funding source for this project.

### **PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)**

| INFORM                                                                                                                                                                | CONSULT                                                                                                         | INVOLVE                                                                                                                                              | COLLABORATE                                                                                                                                                                          | EMPOWER                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Obtain feedback on analysis, alternatives, and/or decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li> </ul> | <ul style="list-style-type: none"> <li>• Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Final decision making in the hands of the stakeholders</li> </ul> |

*Public Participation Framework developed by the International Association for Public Participation – IAP<sup>2</sup> International.*

**INFORM:**

- This report informs the public of the project scope and works associated with the Bay Street Slope Stabilization project RFQ award.

**STRATEGIC PLAN ALIGNMENT**

Council's Strategic Plan Focus Area(s) supported by this initiative:

- **Progressive Infrastructure:** *To ensure infrastructure for energy, water, wastewater and storm water, solid waste and multi-modal transportation is efficient and effective at advancing the Town's sustainability goals.*

**SUMMARY**

The slope stabilization of Bay Street is necessary to reduce the risk of either the water, storm, or sanitary sewer mains from separating and causing a spill onto the properties below. After reviewing monitoring well data and the road subbase soil investigation results, engineers determined that the slope could be stabilized by replacing the road subbase, securing it with geogrid and upgrading the storm system. Once works associated with this project have been completed, Bay Street will be restored and stabilized from Crescent Road West down to Highway 19A. Staff are now seeking Council's approval to award the contract to David Stalker Excavating for the bid price of \$599,147 excluding GST. Following the award of the contract, staff will issue the Notice to Proceed.

**ALTERNATIVE OPTIONS**

1. THAT Council does not award the contract to the low bidder and directs staff to select another respondent for the Bay Street Slope Stabilization project.
2. THAT Council directs staff to postpone the Bay Street Stabilization project.

**APPROVALS**

Report respectfully submitted by



Oliver Watson,  
Manager of  
Capital Projects  
*Report Author*



Lou Varela, MCIP,  
RPP,  
CAO  
*Concurrence*

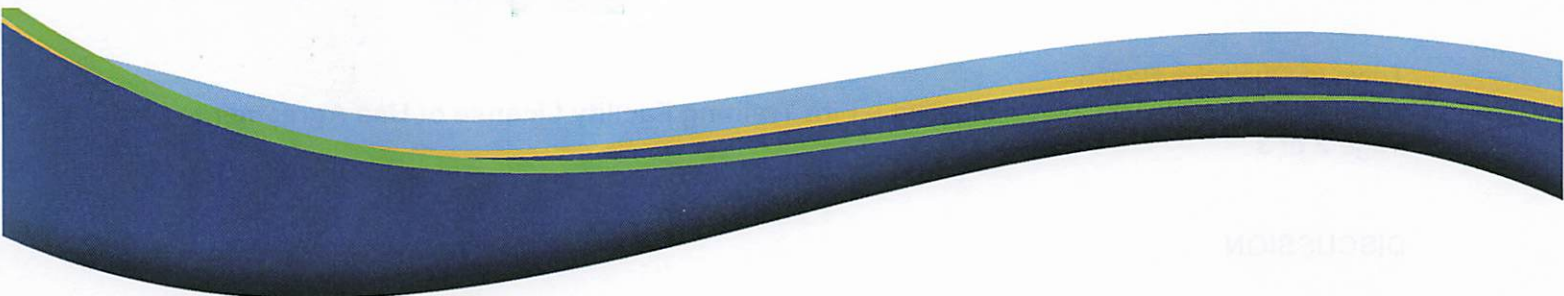


Rob Dickinson,  
Director of  
Infrastructure Services  
*Concurrence*



Raj Hayre, CPA CMA  
Director of Finance  
*Concurrence*





## TOWN OF QUALICUM BEACH STAFF REPORT

**TO:** Lou Varela, Chief Administrative Officer

**FOR:** Regular Council Meeting

**DATE:** July 17, 2024

**FROM:** Peter Cornell, Fire Chief

**SUBJECT:** Fire Training Facility License of Use Agreement

---

### RECOMMENDATIONS:

THAT Council authorizes staff to enter into a License of Use Agreement for the Fire Training Facility located at 130 Rupert Road, Qualicum Beach between the Town of Qualicum Beach, the Regional District of Nanaimo and the Dashwood Volunteer Fire Department for a five-year term.

---

### PURPOSE

To enter into a Fire Training Facility License of Use Agreement with the Regional District of Nanaimo (RDN) and the Dashwood Volunteer Fire Department for the Fire Training Facility located at the Qualicum Beach Fire Station.

### BACKGROUND

In 2019, Qualicum Beach, Coombs-Hilliers, and Dashwood Fire Departments received a Union of BC Municipalities (UBCM) grant to fund composite Fire Department equipment and training. The Town of Qualicum Beach applied for and managed the grant, which was used to purchase a modular Fire Training facility that would be installed behind the Qualicum Beach Fire Station. This location was selected due to its central location and large training area.

The Fire Training Facility was completed and located in the fall of 2020 and has been used multiple times a week by one of the three Fire Departments. It regularly hosts large training sessions attended by firefighters from around the province and Washington State.

## DISCUSSION

In 2023, it was identified by the partnering Fire Departments that there was no formal agreement in place for the Fire Training Facility maintenance and more importantly, liability associated with its use. The Town of Qualicum Beach, Dashwood Volunteer Fire Department and the RDN, on behalf of the Coombs-Hilliars Volunteer Fire Department, agreed that a License of Use Agreement would mitigate the liability and clarify ownership and costs associated with maintenance and future upgrades.

The License of Use Agreement was prepared with input from the RDN and all three partnering Fire Departments. The term of the agreement is five years [effective upon the execution date of the Agreement] and renews automatically. Language in the agreement clarifies termination, indemnification, insurance requirements, and facility scheduling.

The License of Use Agreement was brought before the RDN board on May 14, 2024, and endorsed for signing.

## FINANCIAL IMPLICATIONS

No financial implications are anticipated from this report, as regular facility maintenance is already included in the Fire Department's training budget.

## PUBLIC PARTICIPATION SPECTRUM (IAP<sup>2</sup>)

| INFORM                                                                                                                                                                | CONSULT                                                                                                         | INVOLVE                                                                                                                                              | COLLABORATE                                                                                                                                                                          | EMPOWER                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Provide balanced and objective data to assist in understanding issues, alternatives, opportunities, and solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Obtain feedback on analysis, alternatives, and/or decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Work directly with stakeholders to ensure concerns and aspirations are understood and considered</li> </ul> | <ul style="list-style-type: none"> <li>• Partner with stakeholders in each aspect of the decision, development of alternatives, and identification of preferred solutions</li> </ul> | <ul style="list-style-type: none"> <li>• Final decision making in the hands of the stakeholders</li> </ul> |

*Public Participation Framework developed by the International Association for Public Participation – IAP<sup>2</sup> International.*

### INFORM:

- Residents will be informed through this report.

## STRATEGIC PLAN ALIGNMENT

Council's Strategic Plan Focus Area(s) supported by this initiative:

- Good Governance: To govern for the public interest of our community while managing competing interests, ensuring availability of transparent and accessible information, fostering respectful public engagement, and demonstrating ethical values.
- Community Health & Wellbeing: To improve the health and wellbeing of people who live, work, and play in the Town.

## SUMMARY

The shared Fire Training Facility was purchased through a joint UBCM grant in 2020 and is used multiple times a week by either Dashwood, Coombs-Hilliers or Qualicum Beach Fire Departments. The License of Use Agreement for the Fire Training Facility is required to clarify maintenance costs and reduce liability to the Town of Qualicum Beach.

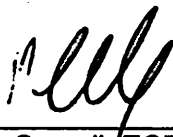
## ALTERNATIVE OPTIONS

1. THAT Council directs staff not to sign the Fire Training Facility License of Use Agreement.

NOTE: If the alternative option is advanced, Council is aware and informed that there would not be an agreement in place for the use of the shared Fire Training Facility, which may increase both risk and liability to the Town of Qualicum Beach and user conflict between Dashwood, Coombs-Hilliers and Qualicum Beach Fire Departments.

## APPROVALS

Report respectfully submitted by Peter Cornell, Fire Chief



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Peter Cornell, ECFO  
Fire Chief  
*Report Author*



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Lou Varela, MCIP, RPP  
Chief Administrative Officer  
*Concurrence*



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Raj Hayre, CPA, CMA  
Director of Finance  
*Concurrence*



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Luke Sales, MCIP, RPP  
Director of Planning  
*Concurrence*

## REFERENCES

Attachment 1: License of Use Agreement Fire Training Facility



# **LICENSE OF USE AGREEMENT**

## **Fire Training Facility**

---

**BETWEEN:**

**THE TOWN OF QUALICUM BEACH ("TOWN")**

P.O. Box 130  
Qualicum Beach, BC  
V9K 1S7

AND

**REGIONAL DISTRICT OF NANAIMO ("RDN")**

**(for Coombs-Hilliers Volunteer Fire Department)**

6300 Hammond Bay Road  
Nanaimo, BC  
V9T 6N2

AND

**DASHWOOD VOLUNTEER FIRE DEPARTMENT ("DVFD")**

230 Hobbs Road  
Qualicum Beach, BC  
V9K 2B2

(Collectively the "Parties")

**WHEREAS:**

- A. The Town of Qualicum Beach is the registered owner in fee simple of the lands located at 130 Rupert Road East, Qualicum Beach, BC, V9K 1R3, legally described as PID: 029-317-487 Lot A, District Lot 78, Newcastle District, Plan EPP38935 (the "Lands");
- B. A fire department training facility structure is located on the Lands, as shown in bold outline on the attached Schedule "A" (the "Facility");
- C. The Facility was funded through a joint grant application between the Dashwood Volunteer Fire Department, the RDN's Coombs-Hilliers Volunteer Fire Department and Qualicum Beach Fire Rescue.
- D. The Town's municipal fire department, the Qualicum Beach Fire Rescue Department (QBFR) manages the Facility on behalf of the Town and facility partners RDN & DVFD;



- E. The Town agrees to grant a non-exclusive license to the RDN and DVFD to occupy and use the Facility, based on the terms and conditions of this Agreement.

**NOW THEREFORE** in consideration of the payment of one dollar (\$1.00) and other good and valuable consideration, from each the RDN and the DVFD, to the Town, the receipt and sufficiency is hereby acknowledged, the Parties covenant and agree as follows:

**1. Grant of License**

- 1.1.** The Town hereby grants to the Parties, and its employees, volunteers, contractors and invitees a non-exclusive license to use and occupy the Facility, with or without equipment and machinery, for the sole purpose of training it's fire personnel (the "Permitted Use"), on the terms and conditions set out in this Agreement.
- 1.2.** The Parties shall only use the Facility for the Permitted Use and for no other purpose.
- 1.3.** The Parties acknowledge that the rights granted under this Agreement are non-exclusive and that the Town may use, and may license others to use, the Facility during the Term.

**2. Term**

- 2.1.** The term of this Agreement is five (5) years, effective upon the execution date of this Agreement by the Parties (the "Term").
- 2.2.** The License shall be automatically renewed for an additional five (5) year term, unless terminated or updated in agreement with the other parties.

**3. Facility Scheduling**

- 3.1.** The Parties shall make all effort to provide to the QBFR, in writing, by December 15th the dates and times it wishes to use the Facility during the following Term (the "Schedule").
- 3.2.** The Parties will at all times make effort to mitigate any scheduling conflicts with other Parties.
- 3.3.** The Parties agree and acknowledge that the QBFR may not be able to accommodate the Schedule requested by the remaining Parties.

**4. Equipment**

- 4.1.** The Parties shall, at its sole cost, provide any tools and equipment that may be necessary for the Permitted Use.
- 4.2.** The Parties shall not use equipment likely to damage the facility in, on, or around the facility or the lands on which the facility sits.

## **5. RDN's Representations and Warrantees**

- 5.1.** The Parties represent and warrant to the Town that the Parties and their instructors have the expertise, knowledge, experience and resources necessary to provide the Permitted Use in a professional and competent manner.

## **6. Termination**

- 6.1.** Notwithstanding any other provision of this Agreement, any of the Parties may terminate the Agreement by providing ninety (90) days' written notice to the other party.
- 6.2.** The Town shall not be liable to compensate the Parties for damages, costs or losses resulting from the exercise of this right of termination or any termination of this Agreement.
- 6.3.** The Parties shall not be liable to compensate the Town for damages, costs or losses resulting from the exercise of this right of termination or any termination of this Agreement.
- 6.4.** The Town, in its sole discretion, may terminate this Agreement immediately by providing the Parties with written notice if the Parties are in default of one of the terms of this Agreement and that default persists for 30 days after written notice by the Town or the QBFR.

## **7. Facility Closure**

- 7.1.** In the event that the Town is required to close any part of the Facility for any reason during the Term, including due to equipment failure, health hazard, budget reason, emergency, or physical deterioration of any kind, the QBFR shall, where possible, provide the Parties with advance notice of such closure by email or phone call on behalf of the Town.

## **8. Instructors**

- 8.1.** The Parties shall be responsible for supplying instructors for the Permitted Use at the Facility, and if any of the Parties chooses to do so, the following shall apply:
- 8.1.1.** The Parties shall properly screen its instructors per industry standards related to the Permitted Use. The Parties shall provide the QBFR with proof that it has properly screened its instructors and firefighters upon request by the QBFR; and
- 8.1.2.** The QBFR shall require the Parties' instructors to complete an orientation session prior to being permitted to teach in the Facility.
- 8.1.3.** The Parties' instructors shall perform the Permitted Use in accordance with industry standards related to the Permitted Use, and in compliance with all applicable federal, provincial and municipal laws and enactments.

## **9. Safety**

- 9.1.** The Parties' instructors shall, before each use of the facility, do a safety walkthrough of the facility.
- 9.2.** The Parties' instructors shall, before each use, ensure all employees, volunteers, contractors and invitees using the facility have participated in a facility orientation.
- 9.3.** The Parties shall exercise the utmost care in its use and occupation of the Facility and shall take all reasonable precautions to ensure the safety of all persons using the Facility.
- 9.4.** During the use of the facility the Parties' employees, firefighters, contractors and invitees shall follow all applicable legislation, regulations including Workers Compensation act and related regulations.
- 9.5.** The Parties shall promptly report the occurrence of any safety incidents or accidents to the QBFR.
- 9.6.** The Parties shall promptly report any and all deficiencies in the facility or lands that may pose a safety risk to persons using the facility.
- 9.7.** The QBFR shall promptly assess any reported deficiencies or safety concerns to determine if the facility must be closed until repaired and shall make prompt repairs to the facility to reduce facility closures for the Parties.

## **10. Facility Use, Condition and Access**

- 10.1.** The Parties confirm they have inspected the Facility and accepted it for its intended use, accepts the Facility "as is," and acknowledges that the Town has not made any representations or warranties respecting the Facility, including its suitability for the Permitted Use.

## **11. Costs**

- 11.1.** The QBFR shall be responsible for all costs incurred in relations to regular maintenance of the facility.

## **12. Upgrades**

- 12.1.** The Parties may be responsible for upgrades to the facility as mutually agreed upon.
- 12.2.** The Parties shall be responsible for one third of the cost for agreed upon upgrades to the training facilities.

## **13. Facility Maintenance**

- 13.1.** The Parties shall keep the Facility in a reasonably clean and neat condition during its use of the Facility, including keeping the Facility free of any rubbish, litter and debris.
- 13.2.** The Parties shall be responsible for repairs stemming from improper use of the facility or any uses of the Facility outside of the permitted use.
- 13.3.** The Parties shall promptly repair any damage to the Facility arising out of its improper use of the Facility to the satisfaction of the QBFR Fire Chief or designate.

**13.4.** The Parties shall pay any additional staff and maintenance costs incurred by the Town in connection with repairing damage directly caused by the Parties' improper use of the facility.

**14. Condition on Termination**

**14.1.** At the termination of this Agreement, the Parties shall cease all use and occupation of the Facility.

**15. Compliance with Laws and Guidelines**

**15.1.** The Parties shall carry on the Permitted Use in the Facility in compliance with any and all laws, statutes, enactments, bylaws, regulations, Town policies, orders, and the Parks and Recreation Department Code of Conduct, as may be in force from time to time, and shall obtain all required approvals and permits thereunder.

**15.2.** The Parties shall follow the QBFR operational guidelines, rules and policies regarding the use of the Facility, which is attached hereto as Schedule "B" (the Training Building and Tower Use Guideline").

**16. Alterations**

**16.1.** The Parties shall not make any alterations, improvements, additions, installations, renovations or modifications or changes to the Facility without the prior written consent of the QBFR.

**17. Risk**

**17.1.** The Parties agree that during the Term, they shall use the Facility at their own risk, and the Town shall not be liable in respect of any loss of life, personal injury, damage to property, loss of property or other loss or damage suffered by the Parties, its directors, officers, contractors, subcontractors, agents, invitees, employees or any other person arising out of this Agreement or the use and occupation of the Facility by the Licensee.

**18. Indemnity**

**18.1.** The Parties agree that they shall indemnify, defend, and save harmless the Town, and any of its elected officials, officers, employees, agents, successors and assigns (the "Indemnified Parties") from and against all liabilities, actions, causes of action, claims, suits, proceedings, judgements, damages, expenses, costs, legal costs on a solicitor and own client basis, demands and losses (the "Losses"), suffered, made, incurred, sustained, brought, prosecuted, threatened to be brought or prosecuted, in any manner caused, based upon, occasioned by or attributable to:

**18.1.1.** any personal injury or death;

**18.1.2.** damage to or loss of property; and

**18.1.3.** wilful or negligent acts or omissions or other actionable wrongs arising directly or indirectly from or in connection with the granting of the license under this Agreement, any breach or default of the Parties under this Agreement, the performance or non-performance of any of the Parties' obligations under this Agreement, the use and occupation of the Facility by the Parties, or any of its directors, officers, employees,



volunteers, contractors, agents, invitees or anyone for whom the Parties are responsible at law, or any incident, occurrence, wrongful act, omission or negligence of the Parties or the Parties' employees, volunteers, contractors, except where such Losses result from any negligence on the part of the Town. This indemnity survives the expiry or earlier termination of this Agreement.

## **19. Release**

**19.1.** The Parties shall release and discharge the Indemnified Parties from any and all Losses arising from, caused by, or in any way connected to the Permitted Use, the Parties' occupation and use of the Facility, or the performance of this Agreement. This release shall survive the expiry or earlier termination of this Agreement.

## **20. Insurance**

**20.1.** The Parties shall obtain and maintain during the Term, at its own cost, comprehensive liability insurance in respect of claims by third parties for personal injury, death, and property damage arising from the Parties' use of the Facility under this Agreement, in an amount of not less than five million dollars (\$5,000,000.00) per incident (the "Insurance Policy").

**20.2.** The Insurance Policy shall:

**20.2.1.** Name the Town as an additional insured;

**20.2.2.** Be issued by an insurance company entitled to carry on the business of insurance under the laws of British Columbia;

**20.2.3.** Contain a cross liability clause and a waiver of subrogation clause in favour of the Town;

**20.2.4.** Contain a clause to the effect that any release from liability entered into by the Town prior to any loss shall not affect the right of the Town to recover; and

**20.3.** All insurance required to be maintained by the Parties hereunder shall be on terms and with insurers satisfactory to the Town, acting reasonably.

**20.4.** The Parties shall provide the Town with a certificate of insurance evidencing the Insurance Policy within 30 days of being requested by the Town.

## **21. Assignment**

**21.1.** The Parties shall not assign or transfer this Agreement or any of its rights under this Agreement.

## **22. Notices**

Any notice, demand, request, consent, approval or communication given pursuant to this Agreement shall be sufficiently given if it is emailed, or in writing and delivered by hand or mailed by prepaid registered mail in writing addressed to the other party at the addresses

as follows; or such address as may have been specified by notifying the other party of the change of address.

**22.1. To the Town of Qualicum Beach:**

201 – 660 Primrose St, Qualicum Beach, BC, V9K 1S7

Attention: Heather Svensen, Corporate Administrator ([hsvensen@qualicumbeach.com](mailto:hsvensen@qualicumbeach.com))

**22.2. To the RDN:**

6300 Hammond Bay Road, Nanaimo, BC, V9T 6N2

Attention: Manager of Emergency Services ([emergencyservices@rdn.bc.ca](mailto:emergencyservices@rdn.bc.ca))

**22.3. To the Dashwood Volunteer Fire Department**

230 Hobbs Rd., Qualicum Beach, BC V9K 2B2

Attention: Fire Chief ([firechief@dashwoodvfd.com](mailto:firechief@dashwoodvfd.com))

**22.4.** A notice shall be deemed to be received on the day it is delivered, if delivered by email or hand, or 3 days after the date it was mailed or if that day is not a business day, the next day that is a business day. If mailed, should there be at the time of mailing or between the time of mailing and the deemed receipt of the notice, a mail strike or slowdown, labour or other dispute which might affect the delivery of such notice by the mails, then such notice shall only be effective if delivered by hand or sent by facsimile transmission.

**23. Enurement.** This Agreement shall enure to the benefit of and be binding upon the Parties and their heirs, executors, administrators, permitted successors and assigns.

**24. Waiver.** Waiver by the Town of any breach by the Parties of any of its obligations under this Agreement shall not be considered to be a waiver of any subsequent default or continuing default by the Parties.

**25. Severability.** In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

**26. No Lease –** The Parties acknowledge and agree that this Agreement is a license and is not a lease. Nothing herein contained shall be deemed or construed by the parties or by any third party as creating the relationship of landlord and tenant between the parties.

**27. No Effect on Laws or Powers –** Nothing contained or implied herein prejudices or affects the Town's rights and powers in the exercise of its functions pursuant to the *Local Government Act* or the *Community Charter* its rights and powers under any enactment to the extent the same are applicable to the Facility, all of which may be fully and effectively exercised in relation to the

Facility as if this Agreement had not been fully executed and delivered.

**28. Time of the Essence.** Time is of the essence in this Agreement.

**29. Joint and Several.** If any party hereto is comprised of more than one person, all covenants and obligations of those persons shall be joint and several.

**30. Headings -** Section headings are inserted for ease of reference and are not to be used in interpreting this Agreement.

**31. Entire Agreement.** The entire agreement between the parties hereto is contained in this Agreement and the exhibits hereto, and this Agreement supersedes all of their previous understandings and agreements, written and oral, with respect to this transaction. This Agreement may be amended only by written instrument executed by the parties subsequent to the date hereof.

**31.1.** This agreement shall not have any impact on any other agreements between the parties.

**32. Counterparts and Electronic Delivery.** This Agreement may be executed in any number of counterparts and delivered by e-mail, each of which shall be deemed to be an original and all of which taken together shall be deemed to constitute one and the same instrument, provided that any party delivering this Agreement by e-mail shall also deliver to the other party an originally executed copy of this Agreement.

**33. IN WITNESS WHEREOF**, the parties have executed this Agreement as of the day and year first above written.

**TOWN OF QUALICUM BEACH** by its authorized signatories:

\_\_\_\_\_  
Corporate Officer:

Date: \_\_\_\_\_

**REGIONAL DISTRICT OF NANAIMO**, by its authorized signatories:

\_\_\_\_\_  
Name:

\_\_\_\_\_  
Name:

Date: \_\_\_\_\_

**DASHWOOD VOLUNTEER FIRE DEPARTMENT**, by its authorized signatories:

\_\_\_\_\_  
Name:

\_\_\_\_\_  
Name:

Date: \_\_\_\_\_





**Town of Qualicum Beach  
FIRE RESCUE DEPARTMENT**

**M E M O R A N D U M**

**TO:** Lou Varela, CAO

**FOR:** Regular Council Meeting July 17, 2024

**FROM:** Peter Cornell, Fire Chief

**SUBJECT:** Fire Rescue Department Report for Quarter 2 2024

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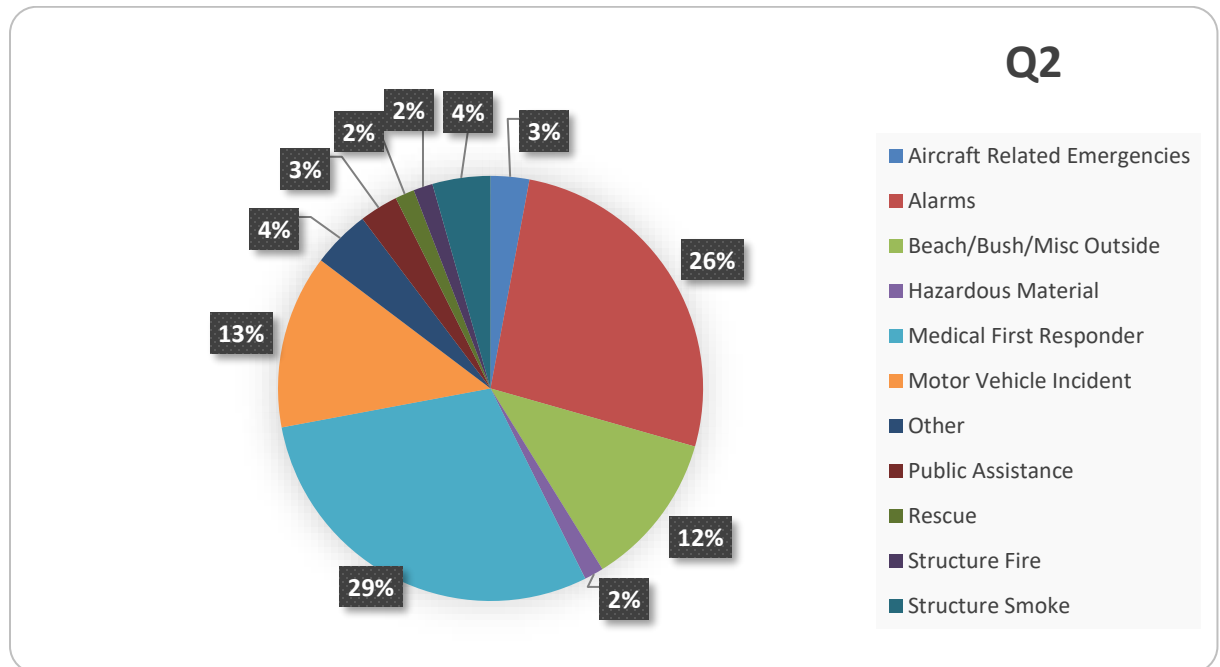
**PURPOSE**

To provide Council with an update regarding Fire Rescue Department activities within Quarter 2.

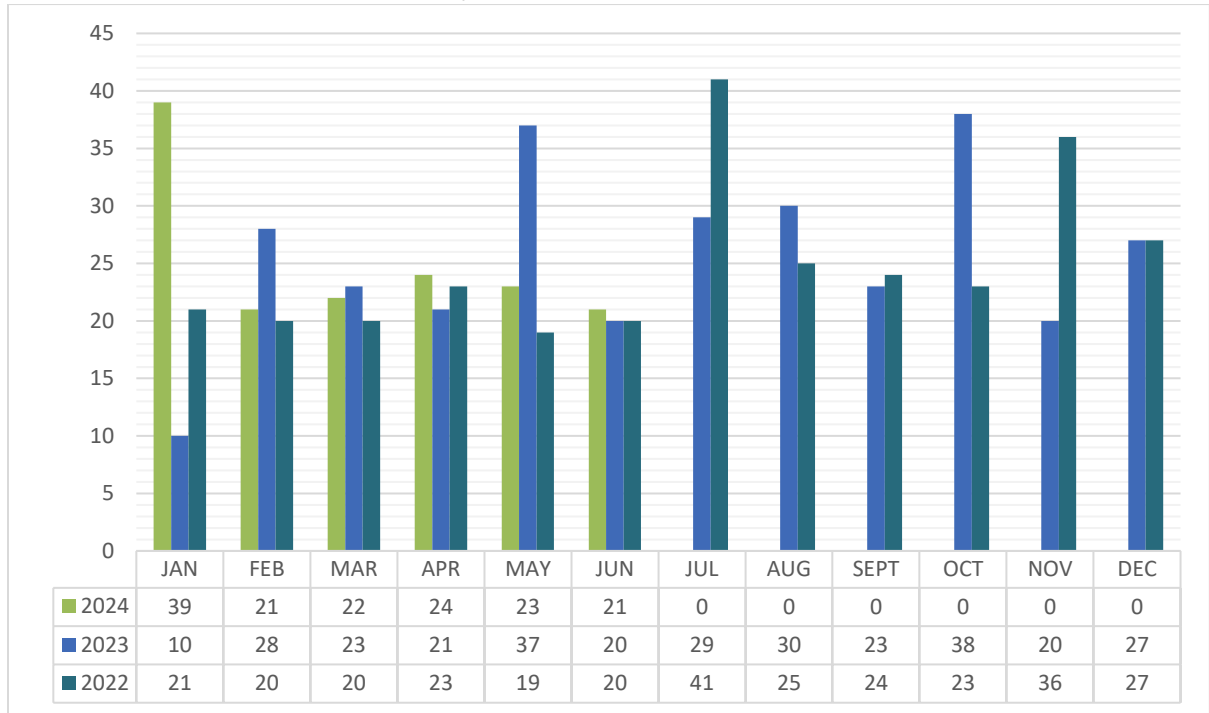
**Q2 CALLS FOR SERVICE AND INCIDENT STATISTICS**

- Incident Hours: 60 hours, 10 minutes
- Average # of Personnel responding: 9.82 (Full Time: 2.31 | On-Call: 7.51)
- Incident Staff Hours: 298 hours, 55 minutes

**INCIDENTS BY TYPE**



### CALLS FOR SERVICE - TOTAL NUMBER, YEAR OVER YEAR



### Q2 OPERATIONS/ADMINISTRATION

- Captain Sumando and Golob were each awarded their Fire Officer 4 certification from the Justice Institute of BC.
- Staff worked with Diamond Head Consulting on the completion of the Community Wildfire Resiliency Plan.
- Staff attended the Initial meeting of the Oceanside FireSmart and Resilience Committee.
- Members participated in the Family Day Parade.
- Recruitment of Paid On-Call firefighters is building with a booth at Family Day and attendance at the Saturday Farmers Market.
- Two wildfire response trailers were purchased and outfitted as part of a joint UBCM grant application with the RDN, Nanoose, Dashwood and Coombs-Hilliers Fire Departments.
- All Fire Apparatus had Commercial Vehicle Inspection completed.
- All frontline apparatus underwent annual pump servicing and testing. During this testing, each apparatus is required to flow up to 1750 Imperial Gallons per minute for 60 minutes to ensure it will perform during a fire.
- Annual ground ladder testing and cleaning was completed.

### NUMBER OF PERSONNEL

|                                                                      |    |
|----------------------------------------------------------------------|----|
| Career Staff Members:                                                | 4  |
| Paid On-call Members:<br>(excludes non-operational and Career staff) | 29 |
| Change from previous quarter:                                        | -2 |

#### PERSONNEL BY TYPE

| REGULAR DUTY  |   | NON-OPERATIONAL               |   |
|---------------|---|-------------------------------|---|
| Officer:      | 6 | Special Duty (Assistant FFs): | 2 |
| Full-Service: | 9 |                               |   |
| Interior:     | 5 |                               |   |
| Exterior:     | 0 |                               |   |
| Recruits:     | 9 |                               |   |

#### Q2 TRAINING

|                      | SESSIONS   | SUBJECTS   | SESSION HOURS | INSTRUCTOR HOURS | STAFF HOURS  |
|----------------------|------------|------------|---------------|------------------|--------------|
| Q2 Total:            | 72         | 74         | 335           | 154              | 1,551        |
| Q1 Total:            | 75         | 80         | 330           | 244              | 1,634        |
| <b>Annual Total:</b> | <b>147</b> | <b>154</b> | <b>665</b>    | <b>398</b>       | <b>3,185</b> |

#### TRAINING HIGHLIGHTS

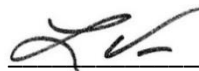
- Training subjects covered in Quarter 2 included: tender shuttle drills, emergency vehicle operations, wildfire training, first responder medical endorsements, hose and nozzle work, auto extrication, salvage and overhaul, and technical rope rescue.
- The Fire Department hosted 60 firefighters from 20 different fire departments for Nozzle Forward, a 24-hour nozzle and hose handling training program.
- Two members attended an Advanced Heavy Rescue Symposium in Olds, Alberta.

#### Q2 FIRE PREVENTION

62 Inspections; 146 YTD | 1 Public Education Events | 7 Public Outreach | 3 Fire Smart Assessments | 0 Pre-Incident Plans | 11 Construction Site Inspection



Peter Cornell, ECFO  
Fire Chief  
Report Writer



Lou Varela, RPP, MCIP  
CAO  
Concurrence