STAFF REPORT TO COMMITTEE

DATE OF REPORT	January 20, 2025
MEETING TYPE & DATE	Electoral Area Services Committee Meeting of February 5, 2025
FROM:	Development Services Division Land Use Services Department
SUBJECT:	Application No. RZ24A02 (746, 750, 754, 760, and 766 Handy Road and 2673 and 2691 Mill Bay Road, PIDs: 001-293-605, 000-697-770, 001-293-648, 001-293-613, 001-293-630, 001-293-621, 001-349-325)
FILE:	RZ24A02

PURPOSE/INTRODUCTION

The purpose of this report is to introduce a Zoning Bylaw and Official Community Plan (OCP) amendment application for the properties located at 746, 750, 754, 760, and 766 Handy Road and 2673 and 2691 Mill Bay Road (PIDs: 001-293-605, 000-697-770, 001-293-648, 001-293-613, 001-293-630, 001-293-621 and 001-349-325).

The applicant proposes to amend the Zoning Bylaw and OCP to permit the development of two apartment buildings (122-139 units) and four blocks of townhouses (22 units) on these parcels to be consolidated.

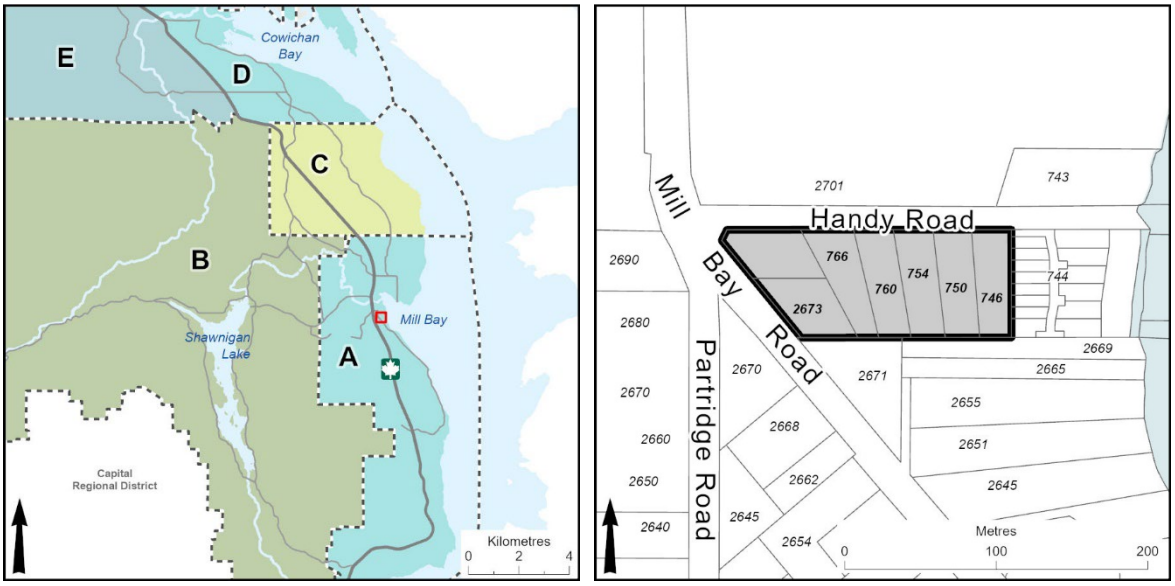
RECOMMENDED RESOLUTION

That it be recommended to the Board that Application No. RZ24A02 (746, 750, 754, 760, and 766 Handy Road and 2673 and 2691 Mill Bay Road, PIDs: 001-293-605, 000-697-770, 001-293-648, 001-293-613, 001-293-630, 001-293-621, 001-349-325), be referred to the following external agencies and First Nations:

1. Ministry of Transportation and Transit;
2. Ministry of Land, Water, and Resource Stewardship:
   a. Water authorizations (water licensing);
   b. Ecosystems (*Water Sustainability Act*); and
   c. Fish Habitat (RAPR);
3. BC Hydro;
4. Cowichan Valley School District (School District 79);
5. Electoral Area A – Mill Bay/Malahat Advisory Planning Commission;
6. Electoral Area A – Mill Bay/Malahat Parks Advisory Commission;
7. Cowichan Tribes;
8. Ts'uubaa-asatx First Nation;
9. Stz'uminus First Nation;
10. Tsawout First Nation;
11. Tsartlip First Nation;
12. Pauquachin First Nation;
13. Tseycum First Nation;
14. Te'mexw Treaty Association; and

15. Malahat Nation.

LOCATION MAP



BACKGROUND

The subject properties are within Electoral Area A - Mill Bay/Malahat. They are within the Mill Bay Village and adjacent to the Mill Bay Marina. The site is next to Brentwood College to the north, Mill Bay Shopping Centre to the west, townhouses and Mill Bay Marina to the east, and properties with detached dwellings to the south. The site comprises seven parcels; six of which are currently occupied by older single detached dwellings. Six of the properties are currently zoned R-3, and one, 750 Handy Road, is zoned R-3A.

A development is proposed to be built on the above properties, proposed to be consolidated, with a total site area of about 1.2 ha. It would include four blocks of 3-storey townhouses (22 units) and two 5-6 storey apartment buildings (122-139 units), along with an underground parkade, surface parking areas, a courtyard and landscaping throughout the site.

Frontage improvements are also being proposed or considered, such as new pedestrian paths along Handy Road and a pedestrian crossing of Mill Bay Road at Handy Road to connect to the adjacent Mill Bay Shopping Centre and the bus stop. The development concept plans can be found in Attachment C.

POLICY AND REGULATION CONSIDERATIONS

Official Community Plan:

The site is presently designated “Residential” in the Official Community Plan Schedule L, and “Village Residential” in the Area A Local Area Plan. The lands are within the Growth Containment Boundary. Desired density is not specified in the Village Residential designation. The land use designation for the site in the proposed draft Modernized OCP (Bylaw 4373) is Village Residential,

which allows a density between 25 and 50 units per hectare. The MOCP also places the site in the Central Mill Bay Comprehensive Development Special Study Area.

OCP Land Use Policies:

4.10.1.1 Provide a wide range of housing and lifestyle options for various stages of life and different community lifestyles, as the community demographics continue to change.

4.10.2.4 Encourages development of multi-family housing in a manner that is clustered and is not disruptive to the environment and existing adjacent human-made structures.

4.11.1.1 Supports the provision of water and sewer services that will meet the needs of existing residents within settlement nodes and protect public health and the natural environment.

4.13 Encourages roadside paths and infrastructure for pedestrians and cyclists.

LAP Policies:

1.9.17.1 Provide an affordable housing option in Mill Bay Village.

2.9.18.1 Considers development variances for siting to preserve views or natural features.

Development Permit Areas:

The subject properties are currently subject to the following Development Permit Areas (DPAs): DPA-1 Riparian Protection, DPA-4 Aquifer Protection, and DPA-5 Wildfire Hazard. The OCP would need to be amended to include this site in DPA 10 Multi-Family Residential Development and DPA-13 Energy and Water Conservation; Green House Gas Emissions.

South Cowichan Zoning Bylaw No. 3520:
The R-3 Zone - Village Residential allows primarily single-family dwelling use, with the R-3A Zone also permitting parking and office uses; both zones also allow a number of accessory uses. The property at 750 Handy Road is currently in office use for the Mill Bay Marina.

Service Areas

The properties are within Mill Bay Waterworks District, Mill Spring Sewer System and Mill Bay Fire Service Area.

COMMISSION / AGENCY / DEPARTMENTAL CONSIDERATIONS

The application was referred to internal divisions and the Mill Bay Waterworks District, and preliminary comments have been received (Attachment E).

Key feedback includes:

Mill Bay Waterworks

Mill Bay Waterworks District does not have any excess water for this development. The developer would have to source its own potable/fire-fighting water supply and construct all of the on-site and

off-site infrastructure to connect to the District. The developer and the District have yet to enter into talks for an agreement for future water connections.

Environmental Services

The Mill Bay Waterworks District relies on water from Aquifer 206 (Mill Bay). The 2017 Preliminary Groundwater Budgets for Cobble Hill and Mill Bay notes that there is a strong deficit in Aquifer 206. As such, this community water supply stress issue should be addressed prior to proceeding with the development.

Parks & Trails Division

The Parks and Trails Master Plan identifies a roadside pathway/walkway along Handy Road. The roadside pathway would ideally be located on the south side of Handy Road along the frontage of the development and connect to a future roadside pathway along Mill Bay Road.

A public amenity contribution towards the Electoral Area A Mill Bay/Malahat Parks capital reserve fund should be considered as part of this rezoning proposal, given the development will increase demand for local parks services.

Building Division

The buildings will need to be equipped with sprinkler systems and served with multiple fire hydrants and tall ladder fire trucks. The Fire Department has no concern with these requirements.

Sewer (CVRD Utilities)

The seven properties within this application have been included within the Mill Springs Sewer Service area, and have purchased 25 sewer service capacity units. Further review will be required to determine required wastewater capacity for this project.

Transit

The proposed controlled pedestrian crossing along the Mill Bay Road & Handy Road intersection and roadside path along Handy Road would support better access to transit service.

External Agency Referrals:

Should the Board choose to proceed with the application, external referrals to the following agencies are recommended:

- Ministry of Transportation & Transit
- Ministry of Land, Water, and Resource Stewardship
- Electoral Area A – Parks Advisory Commission (PAC)
- First Nations
- BC Hydro
- Electoral Area A – Advisory Planning Commission (APC)
- Cowichan Valley School District (School District 79)

First Nations:

Nations that may have interests within the area, according to Provincial mapping, include:

- Cowichan Tribes
- Te'Mexw Treaty Association
- Tsawout First Nation
- Tseycum First Nation
- Tsartlip First Nation
- Malahat Nation
- Stz'uminus First Nation
- Ts'uubaa-asatx First Nation
- Pauquachin First Nation

PLANNING ANALYSIS

The development concept is in line with the current OCP and LAP as outlined above. There has been a long history in Mill Bay of infill developments being supported in areas close to the Mill Bay Centre. The location is suitable for density increase sought by this rezoning application, which would permit higher density, multi-unit dwellings such as apartments and townhouses, and set basic zoning parameters such as setback, height, coverage, etc.

The concept design of the project seeks to fit the buildings with the shape of the land and provide connection with and separation from surrounding areas. Building volume and height decrease towards the waterfront. The proposed new walking paths and crosswalks help to improve walkable connection with Mill Bay Marina, Mill Bay Shopping Centre and public transit. Other contributions to enhance public amenity will be considered and negotiated through the subsequent review and referral processes. A Traffic Impact Assessment (Attachment D) is provided to support the proposed development. While the report indicates no significant impact on traffic, some technical perimeters and parking recommendations will need to be refined in the subsequent review process.

The site is within a number of Development Permit Areas (DPAs). A number of preliminary technical reports have been provided to address these as well as environmental, geotechnical and drainage aspects of the development. The reports indicate that the development is feasible and detailed technical issues will be addressed in the DP application process. To implement detailed design, it is recommended that the Official Community Plan be amended to include the site in relevant Form and Character DPAs.

Through the initial referral process, new water supply has been identified as critical to the development. In a broader context, new water source is a major constraint for denser future development in the Mill Bay Village area. The site is included within the Central Mill Bay Comprehensive Development Special Study Area of the MOCP. The purpose of the Special Study Area is to better understand development constraints, including new potable water sources. Resolving the water supply issue will require coordinated efforts among multiple property owners and the local community that have an interest in the underlying aquifer. Certainty in water supply for the development and community and First Nations support for the new water source should be considered a prerequisite for final approval of this rezoning application.

The applicant is working with Brentwood College on a new well drilled on their property. The water licence will require Mill Bay Waterworks District to be a co-applicant, and will require an agreement to expand the water system. Further study of water quantity, quality and impact on the aquifer will be conducted through that process.

It is recommended that the application proceed to the next stage, which includes referral to external agencies. The Board may choose to hold a public information meeting after external feedback has been received.

Once the stage above is completed, staff will prepare a report to the Board for consideration of next steps in the application process which may include presentation of draft amendment bylaws. Optionally, as discussed above, given the importance of water supply to new developments in this area, the Board may choose to postpone decision on the amendment bylaws until a comprehensive development plan for the Central Mill Bay Special Study Area has been completed and adopted into the MOCP.

OPTIONS

Option 1 (Advance the application to external referral):

That it be recommended to the Board that Application No. RZ24A02 (746, 750, 754, 760, and 766 Handy Road and 2673 and 2691 Mill Bay Road, PIDs: 001-293-605, 000-697-770, 001-293-648, 001-293-613, 001-293-630, 001-293-621, 001-349-325), be referred to the following external agencies and First Nations:

1. Ministry of Transportation and Transit;
2. Ministry of Land, Water, and Resource Stewardship:
    a. Water authorizations (water licensing);
    b. Ecosystems (*Water Sustainability Act*); and
    c. Fish Habitat (RAPR);
3. BC Hydro;
4. Cowichan Valley School District (School District 79);
5. Electoral Area A – Mill Bay/Malahat Advisory Planning Commission;
6. Electoral Area A – Mill Bay/Malahat Parks Advisory Commission;
7. Cowichan Tribes;
8. Ts'uubaa-asatx First Nation;
9. Stz'uminus First Nation;
10. Tsawout First Nation;
11. Tsartlip First Nation;
12. Pauquachin First Nation;
13. Tseycum First Nation;
14. Te'mexw Treaty Association; and
15. Malahat Nation.

Staff recommend Option 1.

Option 2 (Request additional information):

That it be recommended to the Board that staff report back with additional information regarding the application as required by the Board prior to advancing the application.

Option 3 (Deny the application):

That it be recommended to the Board that Application No. RZ24A02 (746, 750, 754, 760, and 766 Handy Road and 2673 and 2691 Mill Bay Road, PIDs: 001-293-605, 000-697-770, 001-293-648, 001-293-613, 001-293-630, 001-293-621, 001-349-325), be denied.

Prepared by:

Yuli Siao
Senior Planner

Reviewed by:

Michelle Pressman, RPP, MCIP, MPlan
Manager

Ann Kjerulf, MCP, RPP, MCIP
General Manager

Reviewed for form and content and approved for submission to the Committee:

Resolution:

☒ Corporate Officer

Financial Considerations:

☒ Corporate Financial Officer

ATTACHMENTS:
Attachment A – Background Table
Attachment B – Rationale Letter
Attachment C – Development Concept Plans
Attachment D – Traffic Impact Assessment
Attachment E – Preliminary Referral Comments

BACKGROUND TABLE

File: RZ24A02

Applicant:	Purdey Group
Registered Property Owner:	Purdey Group
Civic Address/PID:	746, 750, 754, 760, and 766 Handy Road and 2673 and 2691 Mill Bay Road, PIDs 001-293-605, 000-697-770, 001-293-648, 001-293-613, 001-293-630, 001-293-621, 001-349-325
Legal Description:	LOT 1, LOT 2, LOT 3, LOT 4, LOT 5, LOT 6 SECTIONS 1 AND 2, RANGE 9, SHAWNIGAN DISTRICT, PLAN 30142 LOT 1 SECTION 1 RANGE 9 SHAWNIGAN DISTRICT PLAN 29781
CVRD Covenants on Title:	none
Size of Existing Parcel(s):	1.2 ha
Existing Use of Parcel(s):	Sigle detached houses, surface parking, office
Natural Hazards:	None identified
Archaeological Site:	Nearby at Mill Bay Marina
Environmentally Sensitive Areas:	None identified
Species at Risk:	Red listed species area
Agricultural Land Reserve (ALR):	Not within
Land Use Designation:	Residential
Containment Boundary:	within
Development Permit Areas (DPA's):	• DPA 1 – Riparian Protection • DPA 4 – Aquifer Protection • DPA-5 Wildfire Hazard
Zoning:	R3, R3A
Fire Service Area:	Mill Bay Fire Service Area
Existing Water Service:	Mill Bay Waterworks District
Existing Sewerage Service:	Mill Spring Sewer System
Existing Drainage Service:	None

April 16th, 2024

Cowichan Valley Regional District
175 Ingram Street
Duncan, BC V9L 1N8

Attention: Development Services

Re: Rezoning Application, 746-766 Handy Road and 2673 Mill Bay Road, Electoral Area A

The Purdey Group of Companies is pleased to submit this Rezoning Application for the properties located at 746-766 Handy Road and 2673 Mill Bay Road, in Mill Bay, BC., proposing a new village residential apartment and townhouse development with a small commercial component to support the existing Mill Bay Marina.

The Site and Neighbourhood Context
The properties are within Electoral Area A - Mill Bay/Malahat of the Cowichan Valley Regional District (CVRD) and are uniquely located within the village core of the Mill Bay community and adjacent to the Mill Bay Marina, which is owned by the Purdey Group. The site is neighboured by Brentwood College School to the north, the Mill Bay Shopping Centre to the west, medium-density townhouses with the marina and restaurant beyond to the east and the surrounding residential neighbourhood to the south.

The site comprises seven separate lots, six of which are currently developed with older single-family dwellings. The properties are currently zoned R-3 in the South Cowichan Zoning Bylaw, with one property, 750 Handy Road, zoned R-3A. The R-3 Zone - Village Residential allows primarily single-family dwelling use, with the R-3A Zone also permitting parking and office uses; both zones also allow a number of accessory uses. The property at 750 Handy Road is currently in office use for the Mill Bay Marina.

Mill Bay's character is strongly influenced by its maritime setting and long history of human settlement. The lands are within the traditional territory of the Coast Salish Nations of Malahat, Cowichan, Tsawout, Tsartlip, Pauquachin with the Malahat people establishing significant village sites in the area now known as Mill Bay. The Purdey Group proudly presents this application which has been developed in consultation with the MÁLEXEŁ (Malahat) Nation, and reflects our partnership toward positive community growth together. The application is also supported by our valued neighbour, Brentwood College School. We partnered with them (and other local businesses) to help initiate critical infrastructure changes needed to support the community now and in the future.

Mill Bay has a small town charm but has long been envisioned as a more complete community, with a greater mix of housing to support local economic prosperity and livability for residents of all ages and stages in life. This proposal strives to help support the community's growth, with guiding objectives to:

- Complement the existing Mill Bay Marina and residential setting with new housing and small-scale commercial uses;
- Create greater housing choice with more attainable housing suited for staff and local workforce, seniors downsizing and families;
- Consider a range of housing types and tenures for a more diverse and inclusive community;
- Support local shops and services by having more population within the core area of Mill Bay; and, importantly,
- Secure long-term, sustainable site servicing for water and sewer infrastructure.

Village Living Proposal
The proposal includes two clusters of 3-storey townhouses and two 5-6 storey multi-family residential buildings, along with a small commercial component for an expansion of the marina office, marina storage and associated parking.

The plan proposes approximately 122-139 market residential multi-family apartment units, with the final unit mix and sizes to be determined at the future Development Permit stage, and 17 townhouse units, for an approximate residential density of 102 - 116 units per hectare. The apartment units have underground parking and the townhouse units have individual garages and driveway parking spaces. A central green space is proposed for shared amenity use and gathering. The proposal includes frontage improvements to support a more walkable core, such as new pedestrian sidewalks and the potential to participate in a crossing of Mill Bay Road at Handy Road, to connect to the adjacent Mill Bay Shopping Centre and the bus stop. The project provides bicycle parking and infrastructure to also support active modes of transportation.

Alignment with Regional and Local Planning Policies
The current Cowichan Valley Regional District Official Community Plan (OCP) designates the land as "Residential" regionally, and "Village Residential" in the Mill Bay/Malahat Local Area Plan. The site is within the Growth Containment Boundary and can contribute to the envisioned village core setting. The OCP generally encourages the provision of "a wide range of housing and lifestyle options for various stages of life and different community lifestyles, as the community demographics continue to change." The LAP's Village Residential designation "is intended to accommodate a range of housing types. These diverse housing opportunities include affordability, special needs, rental and seniors' housing."

The OCP positions the region to manage anticipated growth and support greater sustainability. The OCP outlines the community's values, vision, goals, objectives and policies and envisions a "vibrant, diverse and sustainable economy, natural environment and society in a resilient community that has adapted effectively to climatic, technological and other change."

The proposal supports many of the OCP goals and objectives. It represents growth in the right place to help manage growth in identified areas within the Growth Containment Boundary. It will improve and expand the range of housing, while also supporting natural systems through sensitive environmental design. It offers viable and sustainable solutions to site servicing that have been proven out through extensive technical analysis.

Development of the site supports a more complete community outcome, with a mix of housing to accommodate people at all stages of life, in proximity to a range of jobs and easy access to stores and services to meet daily needs. A complete community also supports more active transportation, providing residents with choices about how to walk, cycle, take transit or drive within the community. Importantly, a complete community also supports well-being, through access to open spaces, the waterfront, and culture.

The proposed development represents a tangible move to a more resilient future for Mill Bay, with more intensive land use that mitigates and responds to climate change impacts. Our collaboration with the Malahat Nation on this project demonstrates a strengthened relationship with our First Nation communities. We are also partners with the Malahat on the Malahat Business Park and look forward to working with them on other projects in the future.

It is recognized that the CVRD is in the process of updating and modernizing the OCP and, responding to Provincial Government directives, is also preparing an update to the Housing Needs Assessment to help guide long-range growth in the region. The current Housing Needs Assessment, 2021, acknowledges that new housing is needed to support anticipated population growth and that a greater diversity of housing is required, including smaller, more affordable homes, rental housing, and more attainable senior and family-friendly homes.

This application responds to those needs and is aligned with existing and emerging community planning directions.

Community Engagement

Development planning for the site has been underway since early 2015, when the Purdey Group began assembling properties following the successful marina development. Early concepts were explored in 2018 with key stakeholders, and significant work has been completed to address site servicing requirements. The early development planning culminated in a June 2022 open house and engagement session seeking feedback from the broader community.

The open house session helped the project team gain an understanding of what's important to the community to guide the next steps in the development planning process. The team presented the ambition to achieve a positive and viable plan that enhances the current and future community as a whole, while balancing multiple interests. The design intention is to complement the existing neighbourhood fabric while looking to the future potential of Mill Bay.

We heard support for including a mix of housing types and tenures that would be suited to seniors downsizing or 'rightsizing' but wishing to remain in Mill Bay, as well as housing that supports the local workforce with more affordable options over large-lot single-family homes.

We also heard about young individuals and families seeking more attainable housing in proximity to shops, services and schools. We were encouraged to consider a range of housing to welcome a diversity of households. We received encouragement to consider the trees, the existing community character, parking and the transportation network in the development plans and the importance of confirming infrastructure requirements will be met without impacting existing residents. Of particular interest were sidewalks to improve pedestrian safety and a crosswalk to cross Mill Bay Road near Handy Road to connect to and from the shopping centre.

Site and Neighbourhood Design
The project concept is to optimize livability through thoughtful integration of architectural and site design. The buildings are shaped and positioned to complement the natural topography and to mitigate view and sunlight impacts to neighbouring homes and public spaces. The buildings step down in height from a six storey multi-family building, located on Mill Bay Road, down to three story townhomes and a two story commercial building, providing a sensitive transition to the adjoining townhomes. The apartment buildings will provide a range of unit types and sizes (1 to 2 bedroom units), and the townhomes are anticipated to have 3 bedroom layouts. The townhomes are angled to the waterfront views and step down the slope along Handy Road, defining a comfortably scaled street frontage. A vehicle lane loops through the site, providing off-street access to each building as well as to visitor parking and the shared central green space. The vehicle lanes, pedestrian paths and landscaped areas integrate with the proposed buildings to create a connected and livable site. Through careful building siting and consideration of landscape buffers, the proposal demonstrates how infill density can merge harmoniously with the ecology and neighbourhood character of Mill Bay.

Tree Preservation and Landscape Concept
Much of the site has been largely cleared through previous single-family residential development. Small patches of trees remain on the lots, and the majority of the area has been landscaped, but overgrown with invasive species. An arborist report has been prepared and where possible, some existing trees are proposed to be retained.

A detailed landscape plan will be prepared at the Development Permit stage for each phase of the development. The guiding landscape concept is to achieve a naturalized landscape result, with restoration of the protected areas through invasive species removal and replanting with drought tolerant native plant species. The central open space is intended as a resident gathering space and could include seating and planting areas for food production, and to support local pollinators, birds and wildlife species.

Transportation and Parking
Bunt & Associates Engineering Ltd. (Bunt) reviewed transportation impacts including the proposed parking supply for the proposed residential and commercial development, and prepared a detailed report submitted in support of the application. The report concludes that the traffic estimated to be generated by the site is not anticipated to result in significant operational impact to the adjacent road network.

The proposal includes parking supply to meet anticipated demand, considering the site's location, proximity to local shops and services, and the size and type of units. The proposal

includes approximately 114 vehicle parking spaces on-site (not including an additional 21 on-street spaces intended to serve the neighbourhood).

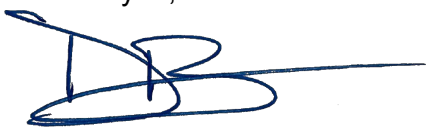
Site Servicing
The site will be serviced by the Mill Bay Water District, with water confirmed through partnership with our neighbour, Brentwood College School. This water has been confirmed and the licensing process is being worked on now with discussions with Mill Bay Water District. The site will be connected to the CVRD's sewer system as part of the joint venture work currently underway for the latest upgrade.

Tenant Support
Four of the existing dwellings are tenanted, some by employees of the Mill Bay Marina. Tenants have been notified of the development application and will be kept updated on the key milestone dates of the process.

Summary
The site is uniquely positioned in Mill Bay's village core area to contribute to creating a more complete community by introducing long-awaited new housing that offers greater choice. Townhouses and multi-family apartment homes are needed to support anticipated population growth and to welcome existing and new Mill Bay residents to enjoy the ease and convenience of village living.

We are encouraged by the positive community conversations that have helped shape the Rezoning Application and look forward to our work with the CVRD.

Thank you,



Daniel Behrens, P. Eng.
Capital Projects Director
Purdey Group of Companies

TRANSPORTATION PLANNERS AND ENGINEERS

740 Handy Road

Transportation Impact Assessment

Version 7

Prepared for

Purdey Group of Companies

Date

September 25, 2024

Project No.

08-24-0001

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.

September 25, 2024
08-24-0001

Daniel Behrens
Capital Projects Director
Purdey Group of Companies
Email: dbehrens@purdeygroup.com

Dear Daniel:

Re: 740 Handy Road Mixed Use Development
Transportation Impact Assessment V07

Bunt & Associates Engineering Ltd. (Bunt) has reviewed transportation impacts for the proposed residential and commercial development at 740 Handy Road in Mill Bay, BC. This report provides an overview of the existing transportation conditions in the area, the future transportation conditions with the proposed development traffic, and the proposed on-site parking provisions along with the Transportation Demand Management (TDM) measures applicable to the site. Our study methodology and findings are discussed in the attached report.

Yours truly,
Bunt & Associates

Amanda Reale, EIT
Transportation Analyst

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

CORPORATE AUTHORIZATION

Prepared By: Amanda Reale, EIT

Bunt & Associates Engineering Ltd.
1550-1050 West Pender Street
Vancouver, BC V6E 3S7
Canada

Reviewed By: Jason Potter, M.Sc., PTP
Senior Transportation Planner

Telephone: +1 604 685 6427
Facsimile: +1 604 685 6579

Date: 2024-09-25
Project No. 08-24-0001

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

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

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EXECUTIVE SUMMARY

Purdey Group is proposing to develop 740 Handy Road in Mill Bay, BC. The site is currently zoned R3A Zone. The proposal seeks rezoning to allow for the development of a residential development comprised of approximately 125 market residential apartment units and 22 townhouse units or a total of 147 residential units.

The development proposes an on-site parking supply of approximately 148 spaces. On-site parking will be provided in a one-level parkade under the apartment building and surface spaces throughout the site.

The 148 on-site parking spaces provide 134 spaces for residents and 14 spaces for external site use as per previous agreements with the neighbouring marina and restaurant. The 134 residential parking spaces equates to an average rate of 0.91 spaces per unit.

Previous site plans have included on-street parking spaces along the site's Handy Road frontage however this current site plan iteration does not include on-street parking. If on-street parking spaces were added to the site plan these spaces could potentially be used to fulfill the 14-stall external parking obligation, as it is noted that on-street parking spaces would likely be preferred by waterfront visitors rather than having to navigate into the proposed development residential area.

It is recommended that the proposed 0.72 parking space to apartment unit ratio be supported with the addition of further Transportation Demand Management (TDM) offerings such as the provision of two car-share vehicles in addition to the development's proposed TDM elements that are anticipated to positively impact the walkability of the area. Another alternative to improve the parking ratio for the apartments would be for the 14-stall external parking obligation be provided along the site's Handy Road frontage, this would increase the on-site apartment parking ratio to 0.83 spaces per unit.

The proposed development is estimated to generate approximately a total of 62 two-way vehicles in the PM peak hour. This volume of anticipated vehicle traffic equates to approximately one vehicle either entering or exiting the site each minute during peak periods. The traffic anticipated to be generated by the site is not anticipated to result in significant operational impact to the adjacent road network. Our analysis indicates that no traffic control mitigation is required as a result of the proposed development.

The development is however encouraged to consider participating in the introduction of a pedestrian crossing of Mill Bay Road in alignment with Handy Road's south edge. This connection from the site to the shopping centre would provide improved pedestrian access to local area amenities, services and the bus stop on Mill Bay Road. However, this pedestrian crossing should be done in coordination with the neighbouring Mill Bay shopping centre to ensure pedestrian path continuity into the shopping centre. In addition to this potential pedestrian connection, the proposed development will encourage bicycle use by providing well designed bicycle storage facilities for all residents and visitors, as well as a bicycle repair station on site.

1. INTRODUCTION

1.1 Study Purpose & Objectives

Purdey Group is proposing a mixed-use development comprised of apartments and townhouses located at 740 Handy Road, Mill Bay, BC. The location of the site is illustrated in **Exhibit 1.1**. The site is currently occupied with 4 single detached houses. The proposed development seeks rezoning to allow for the proposed development.

1.2 Study Scope & Area

The study area includes two intersections which are indicated in **Exhibit 1.1**.

1.3 Proposed Development

The proposed development will include a combination of residential apartment units and townhouse units, which is summarized in **Table 1.1**. The proposed site plan is shown in **Exhibit 1.2**.

Table 1.1: Proposed Land Uses

LAND USE	DENSITY	UNITS
Apartment	125 Units	147
Townhouses	22 Units	
	147 UNITS	

The residential units will be modest in size with all being either studio, 1- or 2-bedroom units. Approximately 62% of the units are either 1-bedroom units or 1-bedroom with den units.

The development plan includes two vehicle parking space for each townhome within a garage structure and in their driveway, 74 underground parkade spaces for apartment building residents and 30 at-grade surface parking spaces which include 14 spaces for external contractual obligations for a neighbouring property.

This results in a total of 148 on-site vehicle spaces. Currently the site plan does not include on-street parking spaces along the site's Handy Road frontage.

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Exhibit 1.1

Site Location and Study Area

740 Handy Road
April 2024

08-24-0001

bunt & associates

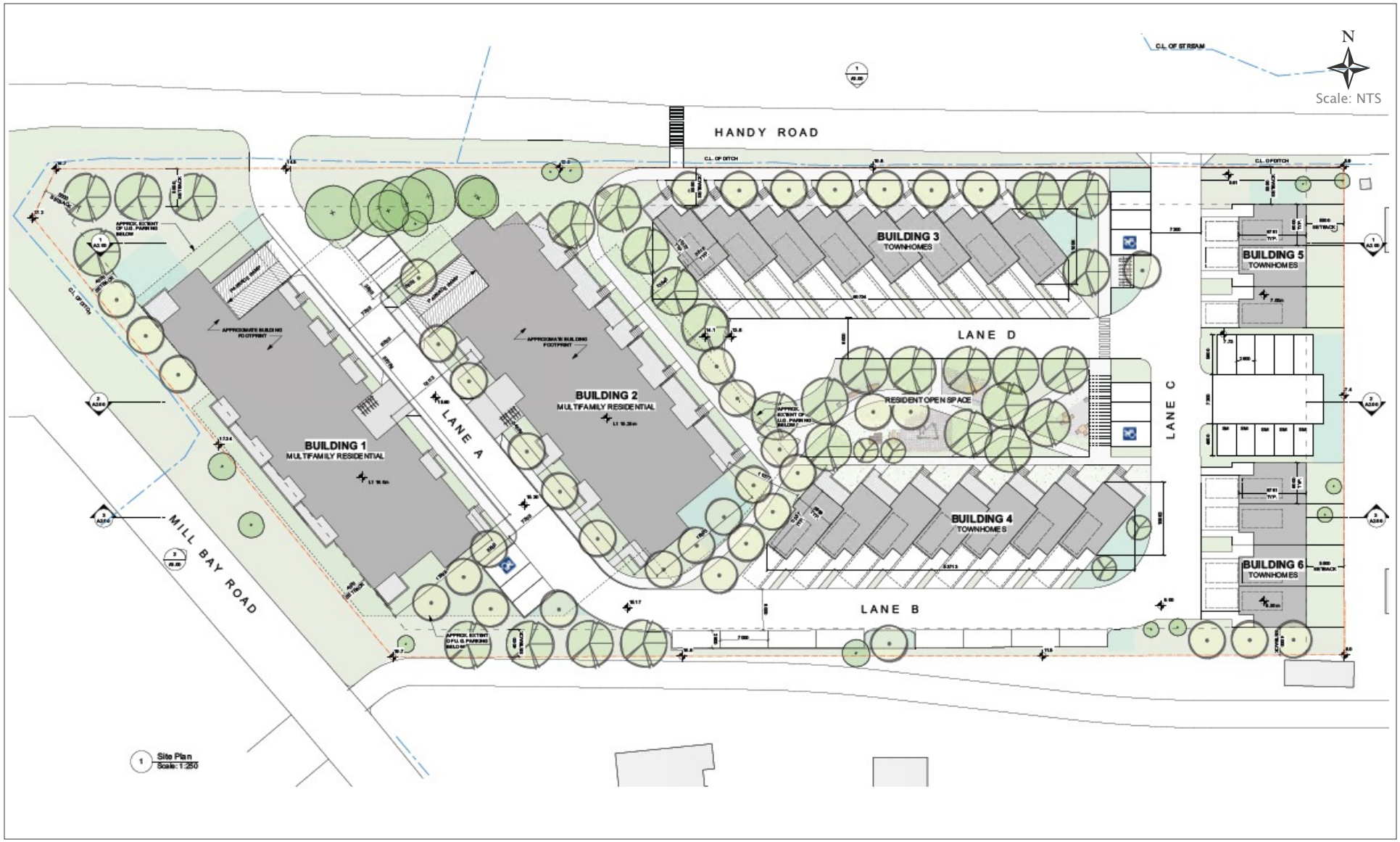

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Exhibit 1.2

Site Plan

740 Handy Road
September 2024

08-24-0001

bunt & associates

2. EXISTING CONDITIONS

2.1 Land Use

The site is currently zoned R-3A Village Residential 3A District. The site is within a residential area, with neighbouring single family and multi-family residential buildings. Mill Bay Shopping Centre is across Mill Bay Road from the proposed development.

2.2 Existing Transportation Network

2.2.1 Road Network

The site is located on Mill Bay Road, which runs along the property's west edge and is classified as a collector road. Handy Road runs along the site's north frontage and operates as a local route.

Handy Road intersects with Mill Bay Road as well as an access to the Mill Bay Shopping Centre to form a four-leg intersection. The intersection operates under minor approach stop control with free flow traffic on Mill Bay Road.

Mill Bay Road extends to Deloume Road/Solarium Road which provides an east-west connection to Trans-Canada Highway 1.

The road network is shown in **Exhibit 1.1**.

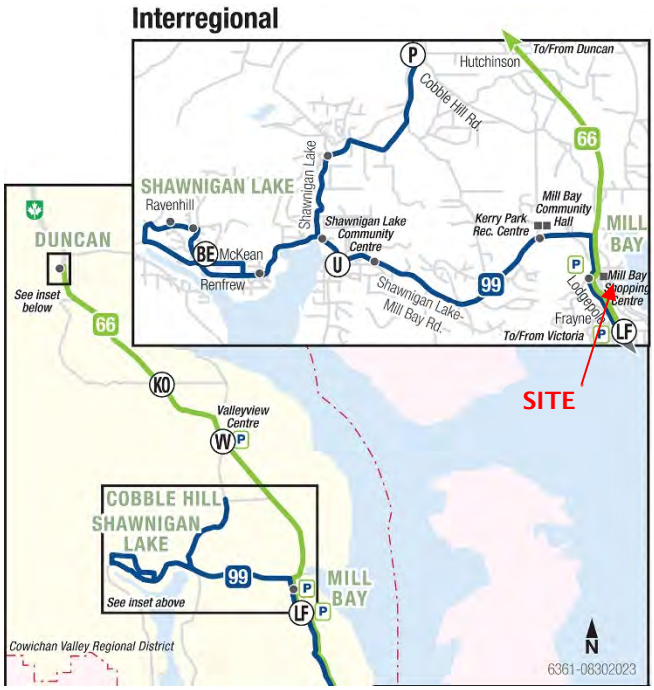
2.2.2 Transit Network

Transit routes are available within walking distance of the site. Bus stops along Mill Bay Road and Deloume Road are within an approximate 5-10-minutes walk of the site, providing connections to surrounding communities such as Duncan. **Table 2.1** presents nearby transit routes and approximate distances from each stop to the proposed development site. Buses along these routes are designed to accommodate wheelchairs, strollers, and mobility aids. **Figure 2.1** indicates the location of the site in relation to each bus route.

Table 2.1: Nearby Transit Routes

ADDRESS	ROUTE NUMBER	TRAVEL DIRECTION	DISTANCE FROM SITE
Deloume Rd at Barry Rd	8, 9	E/W	600 m
Deloume Rd at Lodge Pol Rd	66, 99	E/W	800 m

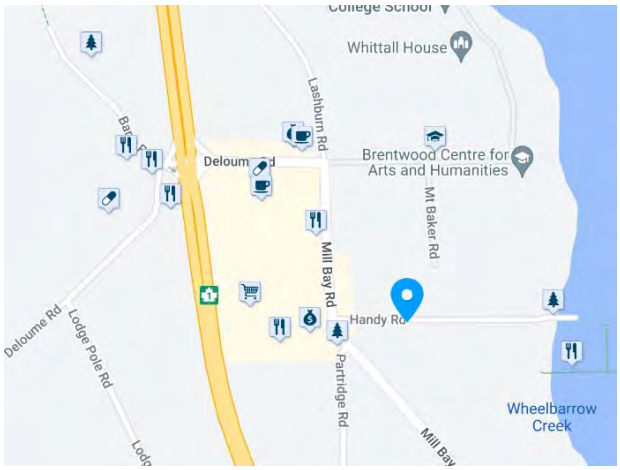
Figure 2.1: Regional Bus Connections



2.2.3 Pedestrian Networks

The property has a Walk Score[1] of 57, classifying it as "Somewhat Walkable", which is defined as "Some errands can be accomplished on foot". Specifically, the Mill Bay commercial centre offers a wide range of retail opportunities and services within a 200 m walking distance, or less than an approximate 5-minute walk. **Figure 2.2** is a screen capture from the Walkscore website that shows nearby amenities.

Figure 2.2: Walkscore Amenity Map of Local Area



2.3 Existing Traffic Volumes

2.3.1 Traffic Data Collection Program

Bunt & Associates collected weekday PM peak hour traffic volume data on Tuesday, November 15, 2022, as illustrated in **Exhibit 2.1**. It is noted that during these counts the Bridgeman Bistro restaurant was closed, therefore additional traffic volumes were added to the study area traffic model as background traffic to account for the restaurant being open. This is further discussed in Section 3.1.1.

Traffic data is provided in **Appendix A**.

[1] Walkscore.com Walkscore measures the walkability of an address by examining distances to nearby amenities, population density, and road metrics such as block length and intersection density.

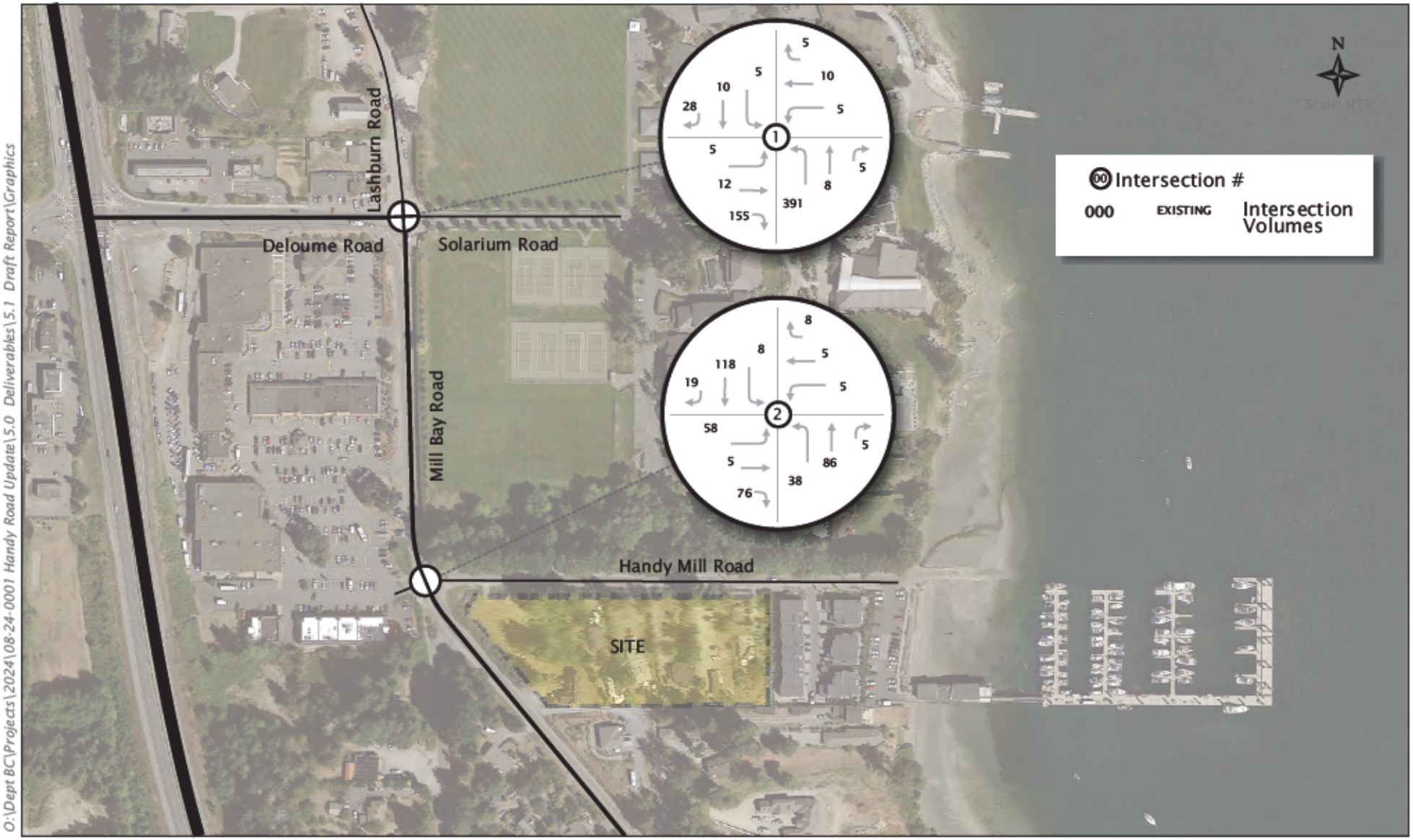


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Exhibit 2.1

Existing Weekday PM Peak Hour Vehicle Traffic Volumes

740 Handy Road
08-24-0001 January 2024

bunt & associates

2.4 Existing Operations

2.4.1 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 10 analysis software (Build 915). 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 2.2 below summarizes the LOS thresholds for the six Levels of Service, for unsignalized intersections.

Table 2.2: Intersection Level of Service Thresholds

LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
	UNSIGNALIZED
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>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.

As directed by the Cowichan Valley Regional District (CVRD), 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:

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.

In interpreting of the analysis results, note that the HCM methodology reports performance differently for various types of intersection traffic control. In this report, the performance reporting convention is as follows:

- For unsignalized two-way stop-controlled intersections: HCM 2000 LOS and V/C output is reported just for individual lanes as the HCM methodology does not report overall performance; and,

- For unsignalized All-way Stop controlled intersections: HCM 2000 unsignalized LOS is reported for the overall intersection as well as by intersection approach LOS. The HCM 2000 methodology does not report an overall V/C ratio for All Way Stop controlled intersections. Degree of Utilization calculated with the HCM 2000 methodology is reported for individual movements in place of V/C, which is not part of the HCM 2000 report.

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

2.4.2 Existing Conditions Analysis Assumptions

The south-most access for the Mill Bay Shopping Centre is considered a part of the intersection on Mill Bay Road at Handy Road. Therefore, this intersection is deemed as four-leg minor stop-controlled intersection.

2.4.3 Existing Operational Analysis Results

Based on Bunt's collected data, the existing traffic operation is summarized in **Table 2.3**.

Table 2.3: Existing (2022) Traffic Operations

INTERSECTION/ TRAFFIC CONTROL	MOVEMENT	PM		
		LOS	V/C	95TH Q (M) [1]
Mill Bay Road/Lashburn Road & Deloume Road/Solarium Road (*All Way Stop*)	*OVERALL*		-	
	EBLT	A	0.15	20
	EBR		0.03	
	WBLT	A	0.03	5
	NBLT	A	0.62	5
	NBR		0.01	
	SBLT	A	0.02	-
	SBR		0.04	
Mill Bay Road & Handy Road/Plaza Access (*Minor Stop Control*)	*OVERALL*			
	EBLTR	B	0.21	10
	WBLTR	A	0.02	10
	NBLTR	A	0.03	25
	SBLTR	A	0.01	10

Note 1 -. The 95th percentile queue is rounded to the nearest 5 meters
Note 2 - EBTL = Eastbound Though Left

Based on Table 2.3 above, the existing traffic operates well within acceptable thresholds.

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. Background vehicle volumes were estimated by increasing the existing vehicle volumes by an annual linear 1.5% growth rate to account for general population growth.

While Bunt was conducting traffic volume collection, Bunt noted the Bridgeman's Bistro restaurant on the waterfront was not open. Bunt calculated that the business in the waterfront area would generate up to approximately 90 trips in a peak hour period (45 inbound and 45 trips outbound). This is based on the assumption that all parking spaces at the restaurant and Marina are occupied based on an average one-hour occupancy. This is anticipated to be a conservative estimate of restaurant trips. **To account for peak conditions with the restaurant open these trips have been added to the background traffic in the future scenarios**.

3.1.2 Site Traffic

Trip Generation

This section presents and discusses the estimated site vehicle trip generations for the weekday PM peak hour based on trip rates listed in the Institute of Transportation Engineers' (ITE) Trip Generation Manual (11th Edition). **Table 3.1** summarizes the trips generation rates and PM peak hour site generated traffic volume estimates. Weekday AM peak hour trip generation rates are approximately 15% lower than the weekday PM peak hour site trips and correspondingly background traffic at nearby MOTI count station (2021 Data at DV06S_MillBay 11-036NS) indicate the Weekday AM period peak hour volumes are approximately 4% lower than the PM peak hour volumes. These data points were used to confirm that the weekday PM period was the critical period for traffic analysis.

Table 3.1: Peak Hour Vehicle Trip Rates

LAND USE	UNITS	PM PEAK HOUR TRIP RATES		
		IN	OUT	RATE
Multifamily Residential (Apartment, 221)	125 dwelling units	61%	39%	0.39 trips/du
Single Attached House (Townhouse, 215)	22 dwelling units	59%	41%	0.57 trips/du

Table 3.2 summarizes the anticipated vehicle trips from the development.

Table 3.2: Estimated Peak Hour Site Vehicle Trips

LAND USE	PM PEAK HOUR VEHICLE TRIPS		
	IN	OUT	TOTAL
Multifamily Residential (Apartment, 221)	30	19	49
Single Attached House (Townhouse, 215)	8	5	13
	38	24	62

Bunt's Synchro analysis used a higher trip generation rate of 70 trips per peak hour due to a previous site plan. Using the higher trip generation rate was retained as it adds a layer of conservatism to the analysis and is considered to be within an acceptable margin of error.

As shown in the **Table 3.2**, the proposed development is estimated to generate approximately 62 total trips during the weekday PM peak hours. Spread evenly across the hour, this equivalent to approximately 1 vehicle per minute either entering or exiting the site during peak traffic periods.

The assumed assignment and distribution of the site generated traffic is illustrated in **Exhibit 3.1**. The future Background and Total traffic forecasts for Opening Day (2025) are shown in **Exhibit 3.2**. The future Background and Total traffic forecasts for Opening Day + 10 Years (2035) are shown in **Exhibit 3.3**.

Daily vehicle trips generated by the site using the same ITE rates equate to 583 vehicle trips per day, or 290 inbound and 290 outbound. This is equivalent to each vehicle making two external site trips per day. Due to proximity of amenities of the proposed site we believe this estimate to be high for this site.

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Exhibit 3.1

Site Traffic Forecasts - Weekday PM Peak Hour

740 Handy Road
January 2024

08-24-0001

bunt & associates

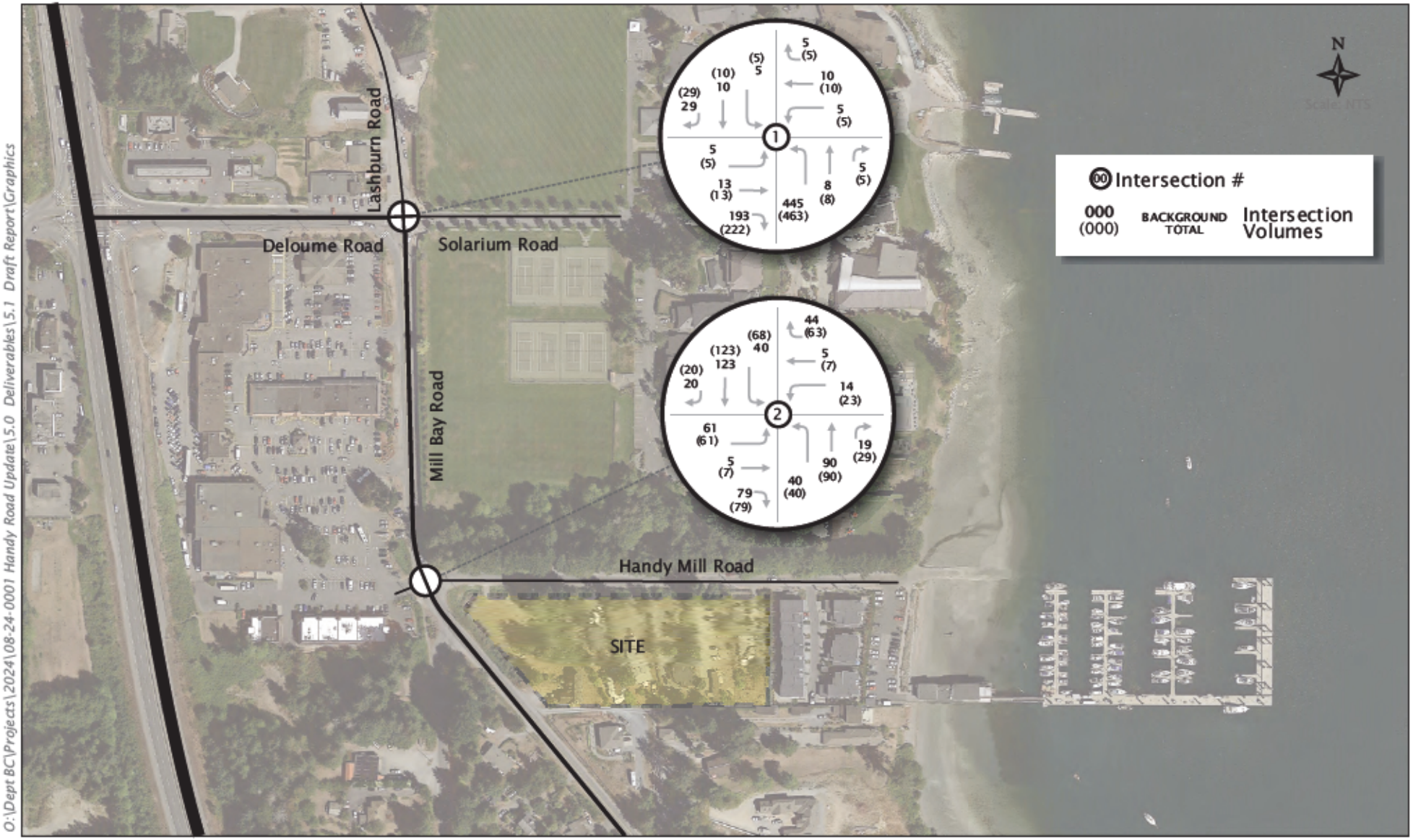

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Exhibit 3.2

Opening Day (2025) Weekday PM Background and Total Traffic Forecasts

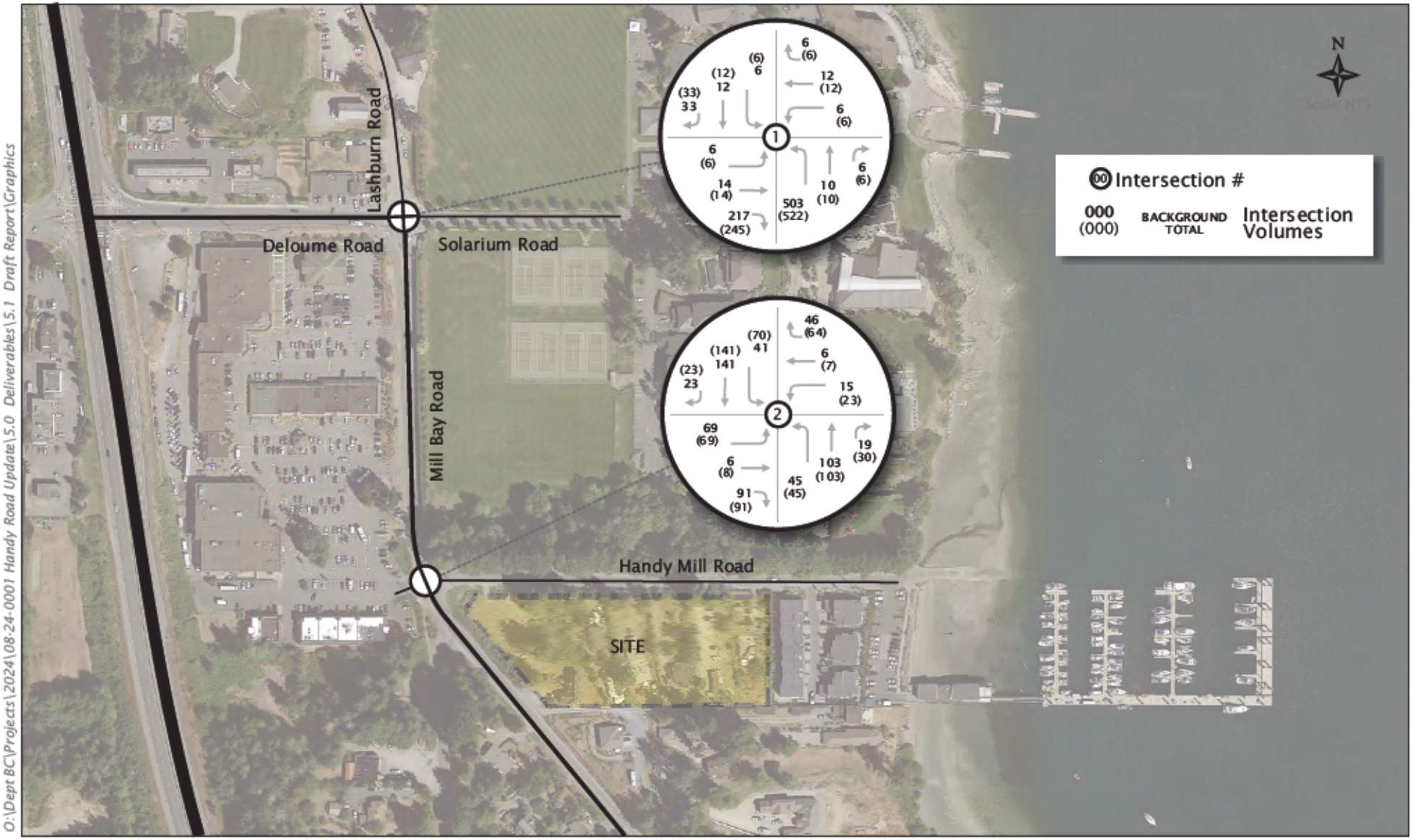

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Exhibit 3.3

Opening Day + 10 Years (2035) Weekday PM Background and Total Traffic Forecasts

740 Handy Road
January 2024

08-24-0001

bunt & associates

3.2 Future Traffic Operations

Future total traffic includes the forecasted background traffic and the anticipated site generated vehicle trips. **Table 3.3** summarizes the future traffic operations on the Opening Day (2025) in both the Background (without site traffic) and Total (with site traffic) scenarios.

Table 3.3: 2025 Background and Total Traffic Operation Results

INTERSECTION (TRAFFIC CONTROL)	MOVEMENT	BACKGROUND 2025 PM			TOTAL 2025 PM		
		LOS	V/C	95TH Q (M) [1]	LOS	V/C	95TH Q (M) [1]
Mill Bay Road/Lashburn Road & Deloume Road/Solarium Road (*All Way Stop*)	*OVERALL*	-	-	-	-	-	-
	EBLT	A	0.03	10	A	0.03	10
	EBR	A	0.19	-	A	0.21	-
	WBLTR	A	0.03	10	A	0.03	10
	NBLT	C	0.71	30	C	0.74	30
	NBR	A	0.01	10	A	0.01	10
	SBLT	A	0.02	10	A	0.02	10
	SBR	A	0.04	15	A	0.04	15
Mill Bay Road & Handy Road/Plaza Access (*Minor Stop Control*)	*OVERALL*	-	-	-	-	-	-
	EBLTR	B	0.25	20	B	0.28	25
	WBLTR	B	0.05	15	B	0.09	15
	NBLTR	A	0.03	10	A	0.03	10
	SBLTR	A	0.03	5	A	0.05	10

Note: 1. The 95th percentile queue is rounded to the nearest 5 meters

Based on Table 3.3 above, both study area intersections operate well within acceptable thresholds in both the Background and Total scenarios. The additional traffic is expected to have a negligible impact on the study intersections during Opening Day (2025).

Table 3.4 summarizes the future traffic operations on the Opening Day + 10 Years (2035) in both the Background (without site traffic) and Total (with site traffic) scenarios.

Table 3.4: 2035 Background and Total Traffic Operation Results

INTERSECTION (TRAFFIC CONTROL)	MOVEMENT	BACKGROUND 2035 PM			TOTAL 2035 PM		
		LOS	V/C	95TH Q (M) [1]	LOS	V/C	95TH Q (M) [1]
Mill Bay Road/Lashburn Road & Deloume Road/Solarium Road (*All Way Stop*)	*OVERALL*	-	-	-	-	-	-
	EBLT	A	0.03	10	A	0.03	10
	EBR	A	0.21	-	A	0.24	-
	WBLTR	A	0.04	10	A	0.04	10
	NBLT	C	0.81	35	D	0.84	45
	NBR	A	0.01	10	A	0.01	10
	SBLT	A	0.03	15	A	0.03	15
	SBR	A	0.04	15	A	0.04	15
Mill Bay Road & Handy Road/Plaza Access (*Minor Stop Control*)	*OVERALL*	-	-	-	-	-	-
	EBLTR	B	0.30	25	C	0.34	25
	WBLTR	B	0.06	15	B	0.10	15
	NBLTR	A	0.04	10	A	0.04	10
	SBLTR	A	0.03	5	A	0.05	5

Note 1 -The 95th percentile queue is rounded to the nearest 5 meters.

As shown in Table 3.4 all movements at the study intersections are expected to continue operating within acceptable thresholds in the Opening Day + 10 Years Background and Total scenarios. The northbound left/through movement at Mill Bay Road/Lashburn Road & Deloume Road/Solarium Road is expected to see increased queuing in 2025 in both Background and Total scenarios, with 95th percentile queues of 35m and 45m respectively. However, sufficient stacking distance is anticipated to be available.

The results included in Tables 3.3 and 3.4 demonstrate the traffic operations when Mill Bay Road and Handy Road is maintained as a two-way stop-controlled intersection. In order to better serve pedestrians, the intersection could be converted to an all-way stop intersection which would provide pedestrians with a safer crossing opportunity from the site to the shopping centre amenities. **Table 3.5** below shows the traffic operations at Mill Bay and Handy Road as an all-way stop, in which all movements operate well within acceptable operational thresholds.

Table 3.5: 2025 & 2035 Total Traffic Operation Results – Mill Bay Road and Handy Road All-way Stop

INTERSECTION (TRAFFIC CONTROL)	MOVEMENT	TOTAL 2025 PM			TOTAL 2035 PM		
		LOS	V/C[2]	95TH Q (M)[1]	LOS	V/C[2]	95TH Q (M)[1]
Mill Bay Road & Handy Road/Plaza Access (*All-way Stop Control*)	*OVERALL*	-	-	-	-	-	-
	EBLTR	A	0.22	20	A	0.26	20
	WBLTR	A	0.06	15	A	0.06	15
	NBLTR	A	0.23	25	A	0.27	25
	SBLTR	A	0.31	15	B	0.35	20

1. The 95th percentile queue is rounded to the nearest 5 meters.
2. Degree of Utilization reported in place of V/C ratio

4. BYLAW PARKING REQUIREMENTS

4.1 Parking Supply

4.1.1 Vehicle Parking

Application of CVRD's Off-Street Parking bylaw using the South Cowichan Zoning Bylaw No. 3520 for Electoral Areas A (Bylaw) designation results in 233 vehicle spaces as shown in **Table 4.1**.

In addition to the 233 spaces required per CVRD bylaw, a term of the development includes replacement of 14 parking spaces that are currently located on the site which serve the neighbouring Marina and restaurant property for a total site requirement of 247 spaces.

Table 4.1: Vehicle Parking Supply Requirement & Provision

LAND USE		DENSITY	BYLAW RATE	REQUIREMENT	PROVIDED	DIFFERENCE
Residential	Single Family Residence	22	2 spaces per dwelling unit which may be in tandem; 1 space per dwelling unit for parcels under 460m^2 in area	44	44	-
	Multifamily dwelling unit	125	1.5 spaces for each 1 and 2 bedroom dwelling unit	188	90	-98
External Obligations	Neighbouring Property	-		14	14	-
				246	148	-98

The total site bylaw requirement of 246 vehicle parking spaces and 148 spaces being provided on-site, results in a parking variance of 98 parking spaces.

The development proposes an on-site parking supply of 148 spaces. Each townhome has a garage and a driveway parking space which is compliant with bylaw. The 74 underground spaces and 16 of the 30 at-grade spaces would be for residents of the apartment buildings which equates to 0.72 spaces per apartment, this represents a variance from bylaw. The remaining 14 at-grade spaces will be reserved for external obligations for the neighbouring marina and restaurant.

CVRD bylaw does not require residential visitor parking, however, it is practically recognized that visitor peak demand is typically in the range of 0.05 -0.08 spaces per unit which would equate to approximately 7 to 12 spaces for the full site.

It is recognized that the on-street parking provision does not count towards the site's parking supply counts and that the on-street parking spaces along Handy Road are no longer on the development site plans. However, it is noted that the on-street spaces are likely to be preferred by visitors to the waterfront

area, as such these highly visible on-street spaces may be best to serve obligations to the neighbouring property. Vehicles visiting the neighbouring site would be unlikely to enter this site to seek parking when free on-street parking is available. As such it is recommended that on-street parking be provided and that it be counted towards fulfilling external obligations. Recognizing this would allow more on-site surface parking spaces to be provided to residents, which would increase the apartment's the parking ratio from 0.72 spaces per unit to 0.83 spaces per unit.

It is noted that the Institute of Transportation Engineers (ITE) Parking Generation Manual suggests 0.68 stalls per dwelling unit for 1bedroom units and 1.23 stall per dwelling unit for 2+ bedrooms. The proposed parking rates are comparable with ITE rates which are typically achieved with little to no Transportation Demand Management support. When applied to the proposed development and its studio to two-bedroom apartments, these rates are generally consistent with anticipated parking supply of 104 spaces at 740 Handy Road, if the 14 spaces are not reserved for external uses. The proposed apartment parking rates are also consistent with recently approved or recently built similar developments in comparable communities such as Sooke, Gibsons and Central Saanich.

A minimum of two accessible stalls are planned, which reflects 1% of the overall parking supply as required in the bylaw.

5. TDM & ACTIVE MODES

5.1 Definition

Transportation Demand Management (TDM) is defined as the "application of strategies and policies to reduce travel demand (specifically that of single-occupancy private vehicles), or to redistribute this demand in space or in time"[2]. A successful TDM program can influence travel behaviour away from Single Occupant Vehicle (SOV) travel during peak periods towards more sustainable modes such as High Occupancy Vehicle (HOV) travel, transit, cycling or walking. The responsibility for implementation of TDM measures can range across many groups, including regional and municipal governments, transit agencies, private developers, residents/resident associations, or employers.

5.2 Recommended TDM Measures for Site

5.2.1 Augmented Pedestrian Network

The site is located a short walking distance away from Mill Bay Shopping Centre which provides access to a large variety of amenities, as well as a transit stop. As such, the development is encouraged to promote local area walking. To do this it is recommended that the development consider participating in the introduction of a pedestrian crossing of Mill Bay Road in alignment with Handy Road's south edge. However, this pedestrian crossing should be done in coordination with the neighbouring Mill Bay shopping centre to ensure pedestrian path continuity into the shopping centre.

In addition to improved pedestrian connections, the site will encourage bicycle use by providing well designed bicycle storage facilities for all residents and visitors as well as a bicycle repair station on site. CVRD does not specify bicycle storage requirements.

5.2.2 Car-Share

Car-share programs such as MODO provide a viable transportation option for trips not easily conducted by foot, cycling or by transit. While the impact of a car-share vehicle on vehicle dependence depends on various factors such as location, various sources suggest a car-share vehicle has the potential to take as many as 15 privately owned vehicles off the street[3]. In the Handy Road context, where no other car-share vehicles currently exist in the Mill Bay area, this potential offering may be both impactful to the proposed development's parking demand and also an asset for the larger Mill Bay community.

[2] http://ops.fhwa.dot.gov/tdm/index.htm FHWA Travel Demand Management home page

[3] https://www.strongtowns.org/journal/2024/5/30/how-car-sharing-can-make-your-community-stronger

MODO typically also provides memberships and driving credits to the equivalent value of the vehicle which further promotes the uptake within the proposed development. It is also noted that MODO typically prefers on-street locations for its vehicles so that they are visible and more easily accessible for the wider community.

6. CONCLUSIONS & RECOMMENDATIONS

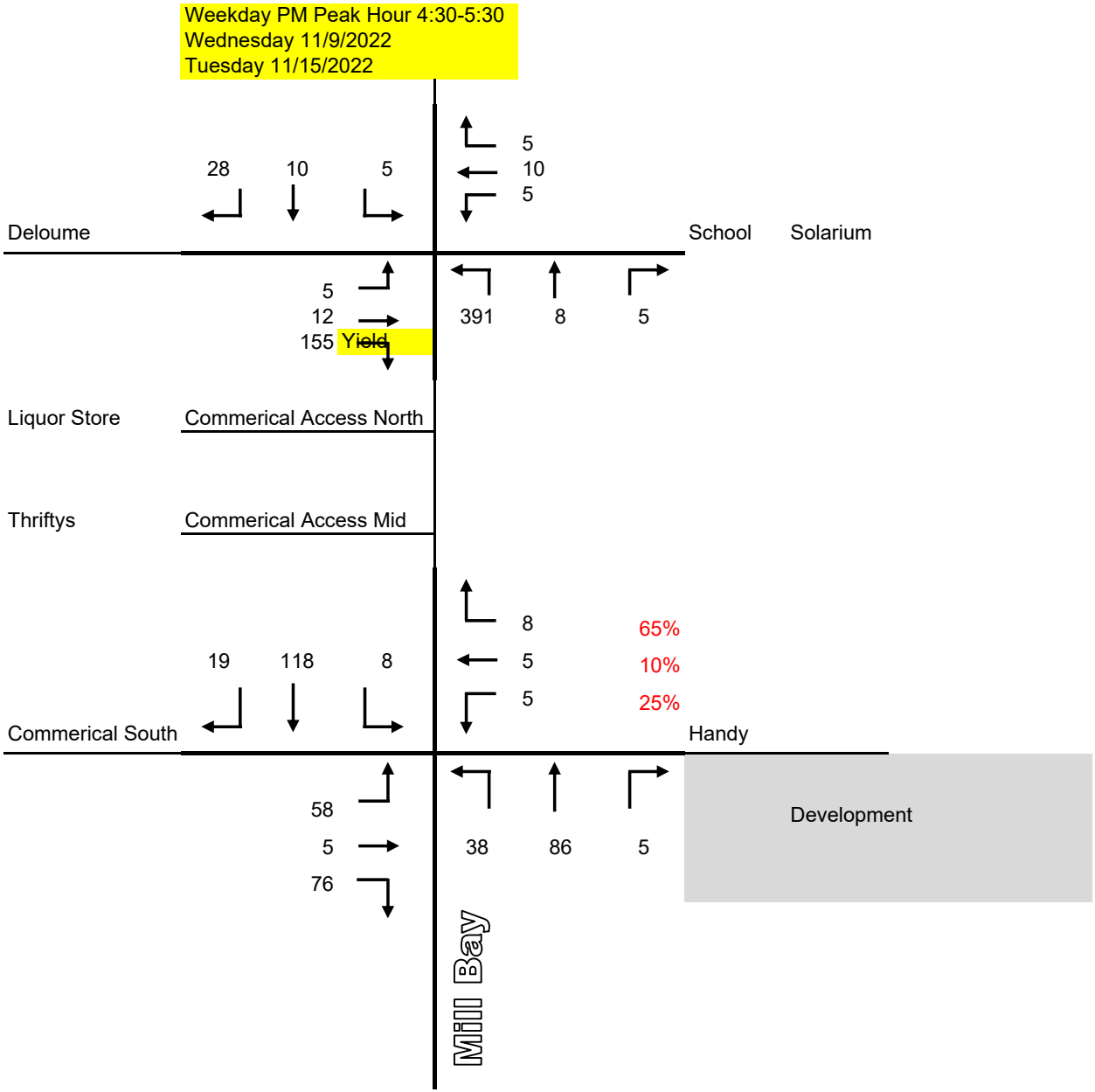
- The proposed residential and commercial development at 740 Handy Road consists of a total of 147 residential units, comprised of 125 apartment residential units, 22 townhouse units.
- The site is well serviced with transit and is within walking range to a wide variety of commercial and service amenities.
- The proposed development is estimated to generate a total of approximately 62 two-way vehicles in the PM peak hour. This volume of anticipated vehicle traffic equates to approximately one vehicle each minute either entering or exiting the site during peak periods. The traffic anticipated to be generated by the site is not anticipated to result in significant operational impact to the adjacent road network.
- The development proposes an off-street parking supply of 148 spaces. It is recommended that this supply be considered sufficient to meet the needs of the site, as well as to replace the 14 parking spaces currently serving the neighbouring property through a contractual obligation.
- The total site bylaw requirement of 246 vehicle parking spaces and 148 spaces being provided on-site, results in a parking variance of 98 parking spaces. The variance is for the apartment units as the townhomes each have two parking spaces. The proposed parking supply is anticipated to accommodate the site's vehicle parking demand, considering the size of the units and the high proportion of apartment units.
- It is recognized that the on-street parking provision does not count towards the site's parking supply counts and that the previously shown on-street parking spaces along Handy Road are no longer on the development site plans. However, it is noted that the on-street spaces are likely to be preferred by visitors to the waterfront area, and as such these highly visible on-street spaces may be best to serve obligations to the neighbouring property. Vehicles visiting the neighbouring site would be unlikely to enter this site to seek parking when free on-street parking is visible and available. As such it is recommended that on-street parking be provided and that it be counted towards fulfilling external obligations. Recognizing this would allow more on-site surface parking spaces to be provided to residents, which would increase the overall parking ratio for the apartments from 0.72 spaces per unit to 0.83 spaces per unit.
- If the off-site parking obligations cannot be altered to be provided along the site's Handy Road frontage, then it is recommended that the proposed development provide two car-share vehicles to support the current 0.72 vehicle per apartment unit parking ratio. Providing two MODO car-share vehicles would also be accompanied with car-share memberships and driving credits to equivalent value of the vehicles as per MODO recent practice.
- It is recommended that the development consider participating in the introduction of a pedestrian connection from the site to the shopping centre by introducing a controlled pedestrian crossing along the Mill Bay Road & Handy Road intersection's south leg. In addition to pedestrian connections, the

proposed development will encourage bicycle use by providing well designed bicycle storage facilities for all residents and visitors, as well as a bicycle repair station on site.

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.

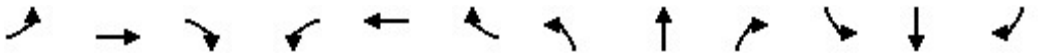
APPENDIX A

Traffic Data


Weekday PM Peak Hour 4:30-5:30
Wednesday 11/9/2022
Tuesday 11/15/2022
28
10
5
5
10
5
Deloume
School
Solarium
5
12
155
Yield
391
8
5
Liquor Store
Commerical Access North
Thriftys
Commerical Access Mid
8
5
5
65%
10%
25%
19
118
8
Commerical South
Handy
58
5
76
38
86
5
Development
Mill Bay

APPENDIX B

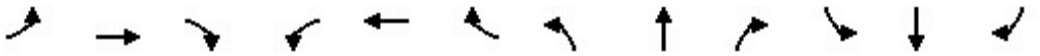
Synchro and SimTraffic Reports



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	12	155	5	10	5	391	8	5	5	10	28
Future Volume (vph)	5	12	155	5	10	5	391	8	5	5	10	28
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)	5	13	168	5	11	5	425	9	5	5	11	30

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	18	168	21	434	5	16	30
Volume Left (vph)	5	0	5	425	0	5	0
Volume Right (vph)	0	168	5	0	5	0	30
Hadj (s)	0.07	-0.57	-0.06	0.52	-0.68	0.19	-0.67
Departure Headway (s)	5.2	3.2	5.1	5.2	4.0	5.1	4.3
Degree Utilization, x	0.03	0.15	0.03	0.62	0.01	0.02	0.04
Capacity (veh/h)	623	1121	643	691	901	687	815
Control Delay (s)	8.4	6.8	8.2	15.1	5.8	7.1	6.2
Approach Delay (s)	6.9		8.2	15.0		6.5	
Approach LOS	A		A	B		A	

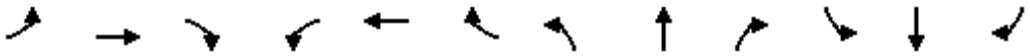
Intersection Summary				
Delay	12.1			
Level of Service	B			
Intersection Capacity Utilization	40.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	5	76	5	5	8	38	86	5	8	118	19
Future Volume (Veh/h)	58	5	76	5	5	8	38	86	5	8	118	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			-8%			2%	
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)	63	5	83	5	5	9	41	93	5	9	128	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	341	336	138	420	344	96	149			98		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	341	336	138	420	344	96	149			98		
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 %	89	99	91	99	99	99	97			99		
cM capacity (veh/h)	589	566	912	480	560	964	1432			1495		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	151	19	139	158
Volume Left	63	5	41	9
Volume Right	83	9	5	21
cSH	730	988	1432	1495
Volume to Capacity	0.21	0.02	0.03	0.01
Queue Length 95th (m)	5.9	0.4	0.7	0.1
Control Delay (s)	11.2	10.5	2.4	0.5
Lane LOS	B	B	A	A
Approach Delay (s)	11.2	10.5	2.4	0.5
Approach LOS	B	B		

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	39.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	61	7	79	23	7	63	40	90	29	68	123	20
Future Volume (veh/h)	61	7	79	23	7	63	40	90	29	68	123	20
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)	66	8	86	25	8	68	43	98	32	74	134	22
Approach Volume (veh/h)		160			101			173			230	
Crossing Volume (veh/h)		233			207			148			76	
High Capacity (veh/h)		1154			1178			1233			1305	
High v/c (veh/h)		0.14			0.09			0.14			0.18	
Low Capacity (veh/h)		952			973			1024			1089	
Low v/c (veh/h)		0.17			0.10			0.17			0.21	

Intersection Summary					
Maximum v/c High	0.18				
Maximum v/c Low	0.21				
Intersection Capacity Utilization	38.0%	ICU Level of Service		A	

2: Mill Bay Rd & Plaza Access/Handy Rd Performance by movement

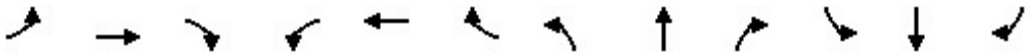
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.3	0.2	0.2	0.4	0.2	0.1	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	1.6	2.2	1.5	3.0	4.5	2.8	1.7	2.7	1.9	8.2	8.8	8.7

2: Mill Bay Rd & Plaza Access/Handy Rd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	4.6

Intersection: 2: Mill Bay Rd & Plaza Access/Handy Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.5	7.9	8.7	10.3
Average Queue (m)	3.4	1.8	2.9	3.0
95th Queue (m)	11.2	8.1	10.0	10.5
Link Distance (m)	22.9	134.7	32.4	206.9
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	69	8	91	23	7	64	45	103	30	70	141	23
Future Volume (veh/h)	69	8	91	23	7	64	45	103	30	70	141	23
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)	75	9	99	25	8	70	49	112	33	76	153	25
Approach Volume (veh/h)		183			103			194			254	
Crossing Volume (veh/h)		254			236			160			82	
High Capacity (veh/h)		1135			1151			1222			1299	
High v/c (veh/h)		0.16			0.09			0.16			0.20	
Low Capacity (veh/h)		935			949			1013			1083	
Low v/c (veh/h)		0.20			0.11			0.19			0.23	

Intersection Summary				
Maximum v/c High	0.20			
Maximum v/c Low	0.23			
Intersection Capacity Utilization	41.2%	ICU Level of Service		A

2: Mill Bay Rd & Plaza Access/Handy Rd Performance by movement

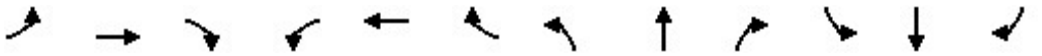
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	1.7	2.4	1.7	3.2	4.7	3.0	2.0	2.8	1.7	8.4	8.7	9.2

2: Mill Bay Rd & Plaza Access/Handy Rd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	4.6

Intersection: 2: Mill Bay Rd & Plaza Access/Handy Rd

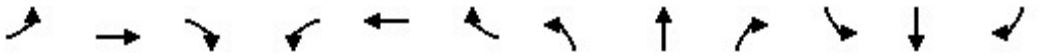
Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	14.6	11.9	12.8	7.3
Average Queue (m)	4.8	3.2	4.9	2.0
95th Queue (m)	14.7	11.7	14.4	8.2
Link Distance (m)	22.9	134.7	32.4	206.9
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	13	193	5	10	5	445	8	5	5	10	29
Future Volume (vph)	5	13	193	5	10	5	445	8	5	5	10	29
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)	5	14	210	5	11	5	484	9	5	5	11	32

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	19	210	21	493	5	16	32
Volume Left (vph)	5	0	5	484	0	5	0
Volume Right (vph)	0	210	5	0	5	0	32
Hadj (s)	0.07	-0.57	-0.06	0.52	-0.68	0.19	-0.67
Departure Headway (s)	5.4	3.2	5.2	5.2	4.0	5.2	4.3
Degree Utilization, x	0.03	0.19	0.03	0.71	0.01	0.02	0.04
Capacity (veh/h)	601	1121	618	682	900	679	804
Control Delay (s)	8.5	6.9	8.4	18.5	5.8	7.1	6.3
Approach Delay (s)	7.1		8.4	18.4		6.6	
Approach LOS	A		A	C		A	

Intersection Summary				
Delay	14.2			
Level of Service	B			
Intersection Capacity Utilization	43.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	5	79	14	5	44	40	90	19	40	123	20
Future Volume (Veh/h)	61	5	79	14	5	44	40	90	19	40	123	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			-8%			2%	
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)	66	5	86	15	5	48	43	98	21	43	134	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	452	436	145	514	436	108	156			119		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	452	436	145	514	436	108	156			119		
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 %	86	99	90	96	99	95	97			97		
cM capacity (veh/h)	467	485	905	405	485	948	1424			1469		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	157	68	162	199
Volume Left	66	15	43	43
Volume Right	86	48	21	22
cSH	637	1343	1424	1469
Volume to Capacity	0.25	0.05	0.03	0.03
Queue Length 95th (m)	7.3	1.2	0.7	0.7
Control Delay (s)	12.5	10.4	2.2	1.8
Lane LOS	B	B	A	A
Approach Delay (s)	12.5	10.4	2.2	1.8
Approach LOS	B	B		

Intersection Summary				
Average Delay	5.8			
Intersection Capacity Utilization	34.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection: 1: Mill Bay Rd/Lashburn Rd & Deloume Rd/Solarium Rd

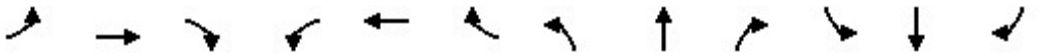
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LTR	LT	R	LT	R
Maximum Queue (m)	5.6	5.4	26.6	5.5	8.9	9.2
Average Queue (m)	2.8	2.6	17.2	2.1	4.6	6.0
95th Queue (m)	7.7	7.3	27.8	8.5	11.8	13.0
Link Distance (m)	89.2	77.5	211.3		85.6	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				6.0		6.0
Storage Blk Time (%)			27	1	1	2
Queuing Penalty (veh)			1	2	0	0

Intersection: 2: Mill Bay Rd & Plaza Access/Handy Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (m)	19.4	10.1	9.1	5.3	2.0
Average Queue (m)	13.0	4.1	5.9	1.9	0.5
95th Queue (m)	21.9	12.3	13.0	8.0	3.6
Link Distance (m)	30.4	142.4		40.0	211.3
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (m)			6.0		
Storage Blk Time (%)		2	3		
Queuing Penalty (veh)		1	1		

Network Summary

Network wide Queuing Penalty: 6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	14	217	6	12	6	503	10	6	6	12	33
Future Volume (vph)	6	14	217	6	12	6	503	10	6	6	12	33
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)	7	15	236	7	13	7	547	11	7	7	13	36

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	22	236	27	558	7	20	36
Volume Left (vph)	7	0	7	547	0	7	0
Volume Right (vph)	0	236	7	0	7	0	36
Hadj (s)	0.08	-0.57	-0.07	0.52	-0.68	0.21	-0.67
Departure Headway (s)	5.6	3.2	5.4	5.2	4.0	5.3	4.4
Degree Utilization, x	0.03	0.21	0.04	0.81	0.01	0.03	0.04
Capacity (veh/h)	586	1122	608	682	892	652	784
Control Delay (s)	8.8	7.0	8.7	25.1	5.8	7.3	6.4
Approach Delay (s)	7.2		8.7	24.9		6.7	
Approach LOS	A		A	C		A	

Intersection Summary				
Delay	18.3			
Level of Service	C			
Intersection Capacity Utilization	48.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	6	91	15	6	46	45	103	19	41	141	23
Future Volume (Veh/h)	69	6	91	15	6	46	45	103	19	41	141	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			-8%			2%	
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)	75	7	99	16	7	50	49	112	21	45	153	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	504	486	166	578	488	122	178			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	504	486	166	578	488	122	178			133		
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 %	82	98	89	96	98	95	96			97		
cM capacity (veh/h)	426	451	882	357	450	931	1398			1452		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	181	73	182	223
Volume Left	75	16	49	45
Volume Right	99	50	21	25
cSH	596	1223	1398	1452
Volume to Capacity	0.30	0.06	0.04	0.03
Queue Length 95th (m)	9.7	1.4	0.8	0.7
Control Delay (s)	13.7	10.9	2.3	1.7
Lane LOS	B	B	A	A
Approach Delay (s)	13.7	10.9	2.3	1.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	36.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection: 1: Mill Bay Rd/Lashburn Rd & Deloume Rd/Solarium Rd

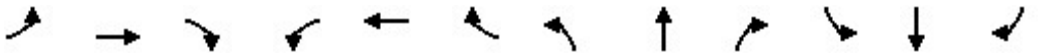
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LTR	LT	R	LT	R
Maximum Queue (m)	6.2	6.7	37.1	9.0	11.6	14.6
Average Queue (m)	3.5	3.2	23.9	2.3	5.7	7.0
95th Queue (m)	8.5	8.3	36.8	8.8	14.3	16.2
Link Distance (m)	89.2	77.5	211.3		85.6	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				6.0		6.0
Storage Blk Time (%)			36	1	1	3
Queuing Penalty (veh)			3	3	1	1

Intersection: 2: Mill Bay Rd & Plaza Access/Handy Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (m)	23.1	12.9	10.3	8.1	5.4
Average Queue (m)	14.1	5.5	7.1	2.0	0.9
95th Queue (m)	22.5	14.2	13.7	8.8	5.2
Link Distance (m)	30.4	142.4		40.0	211.3
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (m)			6.0		
Storage Blk Time (%)		3	3		
Queuing Penalty (veh)		1	1		

Network Summary

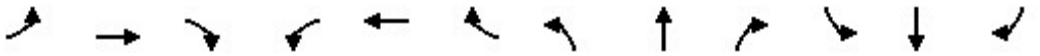
Network wide Queuing Penalty: 9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	13	222	5	10	5	463	8	5	5	10	29
Future Volume (vph)	5	13	222	5	10	5	463	8	5	5	10	29
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)	5	14	241	5	11	5	503	9	5	5	11	32

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	19	241	21	512	5	16	32
Volume Left (vph)	5	0	5	503	0	5	0
Volume Right (vph)	0	241	5	0	5	0	32
Hadj (s)	0.07	-0.57	-0.06	0.52	-0.68	0.19	-0.67
Departure Headway (s)	5.4	3.2	5.3	5.2	4.0	5.2	4.3
Degree Utilization, x	0.03	0.21	0.03	0.74	0.01	0.02	0.04
Capacity (veh/h)	594	1122	612	683	900	677	801
Control Delay (s)	8.6	7.1	8.5	20.0	5.8	7.1	6.3
Approach Delay (s)	7.2		8.5	19.9		6.6	
Approach LOS	A		A	C		A	

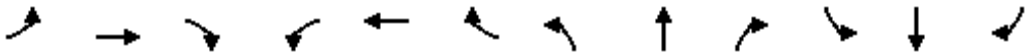
Intersection Summary				
Delay	14.9			
Level of Service	B			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	7	79	23	7	63	40	90	29	68	123	20
Future Volume (Veh/h)	61	7	79	23	7	63	40	90	29	68	123	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			-8%			2%	
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)	66	8	86	25	8	68	43	98	32	74	134	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	531	509	145	583	504	114	156			130		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	531	509	145	583	504	114	156			130		
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 %	83	98	90	93	98	93	97			95		
cM capacity (veh/h)	396	431	905	356	434	941	1424			1455		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	160	101	173	230
Volume Left	66	25	43	74
Volume Right	86	68	32	22
cSH	571	1148	1424	1455
Volume to Capacity	0.28	0.09	0.03	0.05
Queue Length 95th (m)	8.7	2.2	0.7	1.2
Control Delay (s)	13.7	11.2	2.1	2.7
Lane LOS	B	B	A	A
Approach Delay (s)	13.7	11.2	2.1	2.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	38.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	61	7	79	23	7	63	40	90	29	68	123	20
Future Volume (vph)	61	7	79	23	7	63	40	90	29	68	123	20
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)	66	8	86	25	8	68	43	98	32	74	134	22

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	160	33	68	173	230
Volume Left (vph)	66	25	0	43	74
Volume Right (vph)	86	0	68	32	22
Hadj (s)	-0.22	0.40	-0.68	-0.03	0.04
Departure Headway (s)	4.9	6.1	5.0	4.8	4.8
Degree Utilization, x	0.22	0.06	0.09	0.23	0.31
Capacity (veh/h)	668	540	651	697	701
Control Delay (s)	9.3	8.3	7.3	9.3	10.0
Approach Delay (s)	9.3	7.6		9.3	10.0
Approach LOS	A	A		A	A

Intersection Summary				
Delay	9.3			
Level of Service	A			
Intersection Capacity Utilization	38.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection: 2: Mill Bay Rd & Plaza Access/Handy Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (m)	20.7	11.3	11.8	23.0	16.6
Average Queue (m)	12.9	6.6	8.5	13.6	9.8
95th Queue (m)	21.2	14.1	14.2	23.5	17.1
Link Distance (m)	30.4	142.4		40.0	211.3
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (m)			6.0		
Storage Blk Time (%)		2	5		
Queuing Penalty (veh)		2	2		

Intersection: 1: Mill Bay Rd/Lashburn Rd & Deloume Rd/Solarium Rd

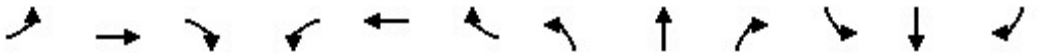
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LTR	LT	R	LT	R
Maximum Queue (m)	6.2	6.6	29.6	8.1	10.1	13.0
Average Queue (m)	3.4	3.4	20.0	1.8	3.9	6.9
95th Queue (m)	8.3	8.4	31.2	7.7	12.1	15.6
Link Distance (m)	89.2	77.5	211.3		85.6	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				6.0		6.0
Storage Blk Time (%)			31	0	1	3
Queuing Penalty (veh)			2	2	0	0

Intersection: 2: Mill Bay Rd & Plaza Access/Handy Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (m)	22.2	13.0	11.8	8.9	6.8
Average Queue (m)	14.0	7.2	8.5	2.7	2.4
95th Queue (m)	24.0	15.5	14.3	9.4	8.0
Link Distance (m)	30.4	142.4		40.0	211.3
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (m)			6.0		
Storage Blk Time (%)		4	5		
Queuing Penalty (veh)		3	2		

Network Summary

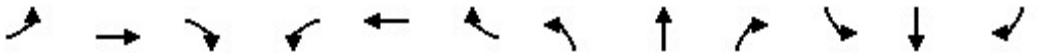
Network wide Queuing Penalty: 9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	14	245	6	12	6	522	10	6	6	12	33
Future Volume (vph)	6	14	245	6	12	6	522	10	6	6	12	33
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)	7	15	266	7	13	7	567	11	7	7	13	36

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	22	266	27	578	7	20	36
Volume Left (vph)	7	0	7	567	0	7	0
Volume Right (vph)	0	266	7	0	7	0	36
Hadj (s)	0.08	-0.57	-0.07	0.52	-0.68	0.21	-0.67
Departure Headway (s)	5.7	3.2	5.5	5.2	4.0	5.3	4.4
Degree Utilization, x	0.03	0.24	0.04	0.84	0.01	0.03	0.04
Capacity (veh/h)	586	1122	608	683	892	650	781
Control Delay (s)	8.9	7.2	8.7	27.9	5.8	7.3	6.5
Approach Delay (s)	7.3		8.7	27.6		6.8	
Approach LOS	A		A	D		A	

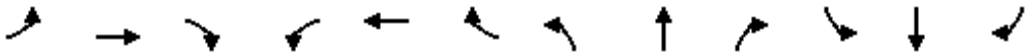
Intersection Summary				
Delay	19.7			
Level of Service	C			
Intersection Capacity Utilization	49.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	8	91	23	7	64	45	103	30	70	141	23
Future Volume (Veh/h)	69	8	91	23	7	64	45	103	30	70	141	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			-8%			2%	
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)	75	9	99	25	8	70	49	112	33	76	153	25
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)						1						
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	583	560	166	648	556	128	178			145		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	583	560	166	648	556	128	178			145		
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 %	79	98	89	92	98	92	96			95		
cM capacity (veh/h)	362	400	882	314	403	924	1398			1437		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	183	103	194	254
Volume Left	75	25	49	76
Volume Right	99	70	33	25
cSH	535	1047	1398	1437
Volume to Capacity	0.34	0.10	0.04	0.05
Queue Length 95th (m)	11.5	2.5	0.8	1.3
Control Delay (s)	15.2	11.7	2.2	2.6
Lane LOS	C	B	A	A
Approach Delay (s)	15.2	11.7	2.2	2.6
Approach LOS	C	B		

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	69	8	91	23	7	64	45	103	30	70	141	23
Future Volume (vph)	69	8	91	23	7	64	45	103	30	70	141	23
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)	75	9	99	25	8	70	49	112	33	76	153	25

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	183	33	70	194	254
Volume Left (vph)	75	25	0	49	76
Volume Right (vph)	99	0	70	33	25
Hadj (s)	-0.23	0.40	-0.68	-0.02	0.03
Departure Headway (s)	5.1	6.3	5.2	5.0	4.9
Degree Utilization, x	0.26	0.06	0.10	0.27	0.35
Capacity (veh/h)	648	520	621	674	684
Control Delay (s)	9.8	8.5	7.6	9.8	10.6
Approach Delay (s)	9.8	7.9		9.8	10.6
Approach LOS	A	A		A	B

Intersection Summary				
Delay	9.8			
Level of Service	A			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection: 2: Mill Bay Rd & Plaza Access/Handy Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (m)	20.9	11.5	13.0	23.1	16.6
Average Queue (m)	14.4	6.4	8.9	14.6	11.1
95th Queue (m)	22.0	13.7	15.2	23.9	18.1
Link Distance (m)	30.4	142.4		40.0	211.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)			6.0		
Storage Blk Time (%)		3	6		
Queuing Penalty (veh)		2	2		

Intersection: 1: Mill Bay Rd/Lashburn Rd & Deloume Rd/Solarium Rd

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LT	LTR	LT	R	LT	R
Maximum Queue (m)	6.2	7.9	41.6	9.1	10.2	12.2
Average Queue (m)	3.3	3.9	25.6	3.0	5.0	6.0
95th Queue (m)	8.3	9.6	42.7	10.0	12.6	14.3
Link Distance (m)	89.2	77.5	211.3		85.6	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)				6.0		6.0
Storage Blk Time (%)			38	1	2	3
Queuing Penalty (veh)			3	4	1	1

Intersection: 2: Mill Bay Rd & Plaza Access/Handy Rd

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (m)	23.8	13.7	13.0	10.3	6.5
Average Queue (m)	15.4	7.0	9.0	3.1	1.6
95th Queue (m)	24.7	15.8	15.2	10.3	6.3
Link Distance (m)	30.4	142.4		40.0	211.3
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (m)			6.0		
Storage Blk Time (%)		5	6		
Queuing Penalty (veh)		3	2		

Network Summary

Network wide Queuing Penalty: 13

Summery of Preliminary Referral Comments for RZ24A02

Mill Bay Waterworks Improvement District (MBWD)

1. We do not have any excess water at this time. In fact, we are operating at a slight deficit.
2. Further, MBWD does not have the connections to support development in the area being proposed, or surplus reservoir water capacity that is not being considered for pending 'Infill' development.
3. For the Purdy Group to connect to MBWD, the developer would have to source their own potable / firewater supply and construct all of the on-site and off-site infrastructure to connect to our district.
4. MBWD and the Purdy Group have yet to enter into talks for an agreement for future water connections.

Environmental Services

1. Recognizing that the proposed development is within the Mill Bay Waterworks District service area and the MBWD relies on water from is from aquifer 206 (Mill Bay), the 2017 Preliminary Groundwater Budgets for Cobble Hill and Mill Bay notes the following assessment and recommendation:
   The water balance suggests there is a strong deficit in Aquifer 0206, likely due to the assumed consumptive uses. Experience indicates high yield wells cannot be sustained pointing to a lack of storage in the aquifer, perhaps on a seasonal basis. Allocation of groundwater should consider existing uses and the seasonal depletion of the aquifers.
2. As such, it is recommended that this community waster supply stress issue be addressed prior to proceeding with the development.
3. It is recommended that if the proposed development is to proceed, connection is made to the central community wastewater treatment system for Mill Bay as noted in the South Cowichan Liquid Waste Management Plan.
4. The InvasivesBC database notes that there are Giant Hogweed sites on the lot for the proposed development. It is expected that these would be managed in accordance with the CVRD Noxious Weed Control Bylaw and CVRD disposal procedures.
5. Bird Creek runs along the North Side of Handy Road. It is recommended that a rainwater management plan be established to reduce impacts of proposed development to the adjacent freshwater and marine water features.

Environmental Planning

1. Limitations to development include setbacks to streams. Subsequent planning stages will require an understanding of natural heritage constraints to inform proposed development.
1. The site plan is not informed by DPA-1 requirements.
2. Tree inventory prepared by Bartlett Tree Experts (January 22, 2024) should be used to inform tree protection zones of trees protected under DPA -1, as applicable.
3. Stormwater management plan proposes discharge to the ditch along Handy Road, instead of identifying onsite stormwater management.
4. Landscape plan is not informed by DPA-1 requirements, but may be suitable. CVRD supports native species use adjacent to ditches as illustrated in sheet L3.01. MOTI approval likely required for off-site planting and invasive species management.

Parks and Trails

1. The Mill Bay/Malahat Community Parks & Trails Master Plan identifies a roadside pathway / walkway along Handy Rd. The roadside pathway should be located on the south side of Handy Rd along the frontage of the development and connect to a future roadside pathway along Mill Bay Rd. We are not in favour of having the pathway on private property. It is standard practice of CVRD Parks & Trails to place the roadside pathway within MOTI Right of Way (ROW) under a License of Occupation. The site will need to be assessed on how this can be accommodated in conjunction with landscaping and treatment of the roadside ditches.
2. The existing Mill Bay Boat Launch is currently under review for relocation, but the waterfront walkway will remain a community amenity that will see increased use and demand moving forward. Once the boat launch is removed, the space will be transformed into a more pedestrian friendly water access park setting with access for recreational uses such as kayaking.
3. A public amenity contribution towards the Electoral Area A Mill Bay/Malahat Parks capital reserve fund would be encouraged given the above observations. Further support in developing a roadside pathway would also be recommended. We anticipate the development will increase demand for local parks services. Therefore, a community amenity contribution should be considered as part of this rezoning proposal.
4. The application will also be referred to the local Community Parks Advisory Commission (CPAC) for Electoral Area A – Mill Bay / Malahat for comment and recommendation.

Utilities

1. The seven properties within this application have been included within the Mill Springs Sewer Service area as of October 30, 2024. Bylaw 4559 – Mill Springs Sewer System Amendment (Boundary Extension) and will therefore have the ability to connect to a CVRD sewer system. Sewer infrastructure has been installed on Handy Road, fronting these lands and is capable of connection.
2. Owners and their consultants will require consultation and approval with the CVRD for their infrastructure during design and construction, and may need to upgrade components for the system, if required.
3. The owners have purchased 25 sewer capacity units for these lands. Review of these drawings will be required to determine what wastewater capacity will be required for this development.

Fire Department

Design of Lane D on the site plan is unsuitable for fire vehicle turnaround. The fire department should be consulted in detailed design of fire access roads in development and building permit applications. No concern with ladder truck height.

Transit Services

1. The goals of the CVRD's Transit Future Plan (2012) are to:
   - Make transit an attractive transportation alternative to the private vehicle;
   - Reduce the community's impact on the environment; and
   - Make the transit system more efficient.
2. Transit friendly land use practices such as compact development in appropriately dense areas and travel demand management practices support these goals.
3. The South Cowichan Local Area Transit Plan (LATP) was endorsed by the Board in 2023, and prioritized transit improvements to: create more direct routing; improve service frequency; and maintain transit service to key destinations.

4. The proposed development is located within 200 m of a transit stop at Mill Bay Centre (Bus Stop ID 136295), providing access to routes travelling southbound to Mill Bay Ferry; northbound to Cobble Hill and Duncan; and west towards Shawnigan Lake and other areas within South Cowichan.
5. The <200 m walking distance from the subject property to this bus stop is consistent with BC Transit standards for pedestrians to access transit service. Associated with the proposed development, we recommend that access to transit via pedestrian and cyclist friendly infrastructure be improved; as well as improvements to the bus stop infrastructure (Bus Stop ID 136295). The proposed controlled pedestrian crossing along the Mill Bay Road & Handy Road intersection and roadside path along Handy Road would support this recommendation. If this development proceeds, we recommend that BC Transit be included as an external referral agency.