Comox Valley REGIONAL DISTRICT

Staff Report

DATE: May 13, 2021

FILE: 8500-20/CV

TO: Chair and Directors
Regional District Board

FROM: Russell Dyson
Chief Administrative Officer

Supported by Russell Dyson
Chief Administrative Officer

R. Dyson

RE: Comox Valley Transit Infrastructure Study

Purpose
To update the board on the Comox Valley Transit Infrastructure Study and to get direction on presenting to municipal councils for feedback.

Recommendation from the Chief Administrative Officer:
THAT the draft Comox Valley Transit Infrastructure Study report attached as Appendix A in the staff report dated May 13, 2021 be received and presented to municipal councils for feedback before coming back to the board for final approval.

Executive Summary
The Comox Valley Transit Infrastructure Study is focused on transit exchanges and transit priority measures and includes conceptual designs and cost estimates that will allow Comox Valley Regional District (CVRD) to pursue necessary approvals and funding opportunities.

- Urban Systems consultants have now completed a draft of the final report.
- The study was conducted with close staff collaboration from the City of Courtenay, Town of Comox, Village of Cumberland as well as Ministry of Transportation and Infrastructure (MOTI) and the transit system's contract operator PWTransit.
- This infrastructure is required in order to continue expanding and improving the regional transit system and to attract ridership and achieve desired mode shifts.
- In addition, some of the proposed infrastructure will also result in more efficient bus routing and in turn reduced operating costs.
- The implementation of these projects will be led by CVRD as the local government responsible for transit in partnership with BC Transit. Collaboration with member municipalities will also be an important aspect of project delivery.

Next steps with the project including seeking support from municipal councils before finalizing the report for board approval later in the year and in time for the 2022-2026 budget process.

Prepared by:

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General Manager of Planning and Development Services

Government Partners and Stakeholder Distribution (Upon Agenda Publication)

TMAC	✔
North Island College	✔
Ministry of Transportation and Infrastructure	✔

Background/Current Situation

The 2014 Comox Valley Transit Future Plan and the 2017 Comox Valley Frequent Transit Corridor Study identified the need and locations for improved transit exchanges and transit priority measures. The current Comox Valley Transit Infrastructure Study refines these concepts and locations and includes conceptual designs and cost estimates that will allow CVRD to pursue necessary approvals and funding opportunities. Urban Systems consultants have now completed a draft of the final report. The study was conducted with close staff involvement from the City of Courtenay, Town of Comox, Village of Cumberland as well as MOTI and the transit system's contract operator PWTransit. Their input and feedback has been incorporated into this draft report.

This infrastructure is required in order to continue expanding and improving the regional transit system and to attract ridership and achieve desired mode shifts. In addition, some of the proposed infrastructure will also result in more efficient bus routing and in turn reduced operating costs.

The implementation of these projects will be led by CVRD as the local government responsible for transit as well as BC Transit. The implementation plan is summarized in table 1.

Table 1 – Transit infrastructure project implementation

Phasing	Project	Capital Cost (estimated)	Leadership	Partner Agencies
2021-2025	South Courtenay Transit Exchange	$1.7-million	CVRD	BC Transit, City of Courtenay
	Ryan Rd / Old Island Hwy Queue Jump	$225,000	City of Courtenay	CVRD, BC Transit
	Downtown Courtenay Transit Exchange (advance planning and design work)	N/A	CVRD	BC Transit, City of Courtenay
2025-2030	Downtown Courtenay Transit Exchange	$600,000	CVRD	BC Transit, City of Courtenay
	Old Island Hwy / Comox Rd Queue Jump	$250,000	City of Courtenay	CVRD, BC Transit
	Oyster River Transit Exchange	$650,000	CVRD	MOTI, BC Transit, City of Campbell River
2030-2040	Downtown Comox Transit Exchange	$650,000	CVRD	Town of Comox, BC Transit
	North Island College Transit Exchange	$700,000	CVRD	North Island College, BC Transit
	Lerwick Rd / College Way NB left turn phase	$50,000	City of Courtenay	CVRD, BC Transit, MOTI, North Island College
	Ryan Rd / Cowichan Ave Signal	$350,000	MOTI	CVRD, BC Transit, City of Courtenay, North Island College
	Signal Priority (up to 9 locations)	$50,000 (per location)	City of Courtenay, Town of Comox	CVRD, BC Transit
	Ryan Road and Old Island Highway Bus Lanes	TBC	MOTI	CVRD, BC Transit, City of Courtenay

Next steps with the project including seeking support from municipal councils of the transit exchange concepts in their jurisdiction before finalizing the report for board approval later in the year and in time for the 2022-2026 budget process. Following this BC Transit and the CVRD will advance the projects for a funding application under the Investing in Canada Infrastructure Program (ICIP).

Subject to successful funding application under ICIP, the detailed project design, stakeholder/public engagement and ultimately project construction process would be led by BC Transit and CVRD.

It should be noted that each project would also be subject to the development and execution of a License of Occupation Agreement between the Parties to include the area for transit use. Responsibilities for maintenance, repair and facility operating costs of project assets through the course of normal operations will be assigned in the license of occupation and a funding agreement for ongoing maintenance will need to be negotiated between the parties.

Policy Analysis
This report has been written to provide an update to the board. No board policy exists for the topic.

Options
The board has the following options:

1. Receive the draft report and direct staff to proceed to solicit municipal council feedback before bring a final report back for board approval.
2. Provide direction to staff on any desired changes with respect to the report.

Moving forward with the identified transit infrastructure will help achieve the board's strategic priorities. This includes being fiscally responsible by targeting senior government funding programs, addressing the climate crisis by ensuring infrastructure is in place to allow improved transit service and collaborating with community partners such as the member municipalities and MOTI.

Financial Factors
CVRD's share of the cost of the transit infrastructure could be funded through a lease fee as part of the annual operating agreement with BC Transit. Subject to a successful ICIP application the eligible costs are shared at 20 per cent CVRD, 40 per cent Province of BC and 40 per cent Canada. Transit Priority measures as well as all property acquisition and pre-project planning activities are not ICIP eligible but could be cost shared under the traditional funding model (53.39 per cent local, 46.69 per cent provincial).

It is expected that the CVRD share of costs for all of the ICIP eligible transit exchanges infrastructure would range between $100,000 - $125,000 dollars on an annual basis over the life of the asset (~12 years) not including costs associated with property purchase which is undetermined at this time. The CVRD contributions for the transit exchanges, which would be paid to BC Transit, would begin upon completion of construction of the project. For the transit priority measures the CVRD share would need to be discussed with the applicable local jurisdiction where the project is located.

A more thorough financial analysis will be completed once the final report is complete and as part of the 2022 budget process.

It should also be noted that some of these projects will also result in a reduction in operating costs by enabling more efficient bus routing.

Legal Factors
A number of agreements and contracts will be required along the various phases of these infrastructure projects.

Staff have confirmed that the service establishment bylaw for the transit service allows for CVRD to pursue capital projects.

Regional Growth Strategy Implications
The identified transit infrastructure will enable the Comox Valley Regional Transit system to grow and improve which is critical to achieving transit mode targets in the regional growth strategy (2.5 per cent by 2030). Improving the transit system will also assist in in reducing community greenhouse gas emissions by providing better transportation options to the private automobile.

Intergovernmental Factors
The report was completed in close consultation with staff from the member municipalities and MOTI. Their input and feedback has been incorporated into the report and their participants on the Transit Management Advisory Committee have supported the direction of this staff report. These groups will also be key partners in project implementation.

Interdepartmental Involvement
This project is being led by staff from Planning and Development Services. Implementation of transit infrastructure would also include staff from other departments such as communication and finance.

Citizen/Public Relations
Public consultation was not specifically part of this study but was part of the transit future plan from which these projects were based.

The downtown Courtenay location was included in public consultation conducted by the City of Courtenay as part of their OCP process. Further direct engagement with the Downtown Courtenay BIA was also conducted on this location. North Island College staff have also been involved with site selection and designs on campus. Feedback to date has been supportive.

Broader and in depth public and stakeholder engagement will be conducted as part of the further planning and design work required to implement each project.

Attachments: Appendix A – Comox Valley Transit Infrastructure Study Draft Report

COMOX VALLEY **TRANSIT INFRASTRUCTURE STUDY**

May 2021

URBAN SYSTEMS

Submitted to

Comox Valley Regional District
770 Harmston Avenue
Courtenay, BC V9N 0G8

May 2021

Prepared by

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URBAN SYSTEMS

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File no. 003023.0014.01

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Executive Summary

The 2014 Comox Valley Transit Future Plan (TFP) identifies a 25-year plan for the Comox Valley Transit System. The TFP included the development of a Frequent Transit Network (FTN) as the "highest order" transit corridor that would allow riders to spontaneously travel without having to consult a transit schedule. The FTN is to consist of frequent transit service (i.e., 15-minute service during peak periods), a high level of bus stop amenities, transit priority measures, and service branding.

Through the Transit Future Plan and Frequent Transit Corridor Study (2017), the FTN has been confirmed along a corridor connecting South Courtenay, Downtown Courtenay, East Courtenay and Comox. With the FTN in-place, infrastructure improvements are identified through this study that include new transit exchange facilities to support service increases, ridership growth and an enhanced passenger experience, as well as transit priority opportunities that enhance transit operations along the FTN to reduce transit travel times and expand system ridership.

Transit Exchanges

Five (5) transit exchange locations are the focus of this study - South Courtenay, Downtown Courtenay, North Island College, Downtown Comox and Oyster River. A preferred location and configuration have been identified for each exchange location (described below), with consideration for transit passenger experience, safety, transit operations, community impact and coordination with community plans and implementation.

South Courtenay	A new on-street facility with three or four bus bays on the west side of Cliffe Avenue, immediately adjacent the Anfield Centre.
Downtown Courtenay	A new location at the south end of downtown with two bus bays for the Route 1 on 8th Street and four bus bays for local routes immediately adjacent on England Avenue.
North Island College	An expansion to the existing bus stops on College Way opposite the Comox Valley Aquatic Centre. This location provides access to the North Island College campus, as well as the Aquatic Centre and North Island Hospital.
Downtown Comox	An expansion to the existing facility on Port Augusta Road to include four bus bays on the east side, adjacent the Comox Mall.
Oyster River	An expansion of the current facility on Glenmore Road to include a second bus bay on the south side adjacent the Discovery Foods commercial centre.

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Transit Priority

Opportunities to prioritize transit operations along the identified FTN have been identified consistent with the TFP objective of growing ridership through an enhanced service on the identified TFN corridor. This includes making the FTN service competitive with vehicle travel by continually increasing service levels, coupled with reduced transit travel times and improved service reliability.

An in-depth study of transit priority opportunities was undertaken to determine where the FTN service could benefit from prioritizing transit operations. The focus was on addressing locations of congestion and delay where transit operations are negatively impacted, while also considering coordination with planned multi-modal improvements along the corridor. This includes ensuring that identified options do not unduly impact traffic conditions and do not preclude cycling facility upgrades on identified cycling corridors.

Opportunities for transit priority measures and future transit signal priority are identified in **Figure 1**. The focus of transit priority measures is on addressing congestion and transit delay along the Ryan Road / Old Island Highway corridor. Options for queue jump treatments at the Old Island Highway/ Comox Road and Old Island Highway / Ryan Road intersections are shown in **Figure 2**. There is also the possibility of dedicated bus lanes along Old Island Highway and Ryan Road at full build-out that would allow buses to bypass congestion without significant impact on general purpose traffic conditions.

FIGURE 1. QUEUE JUMP LANE OPTIONS AT OLD ISLAND HIGHWAY / COMOX ROAD (LEFT) AND OLD ISLAND HIGHWAY / RYAN ROAD (RIGHT)

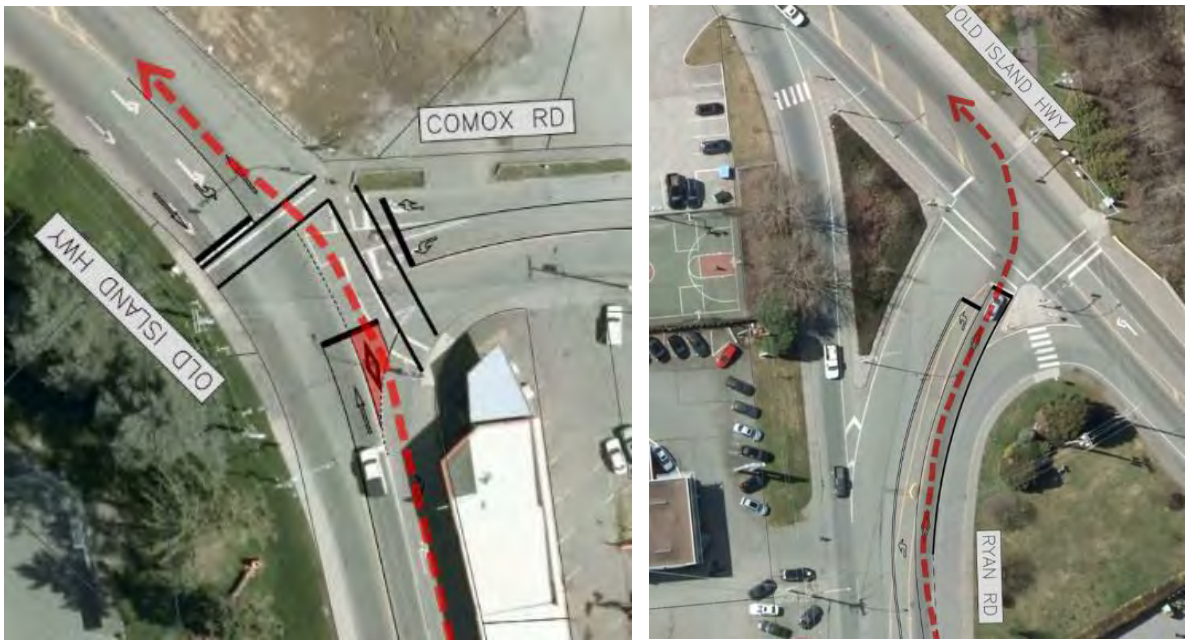

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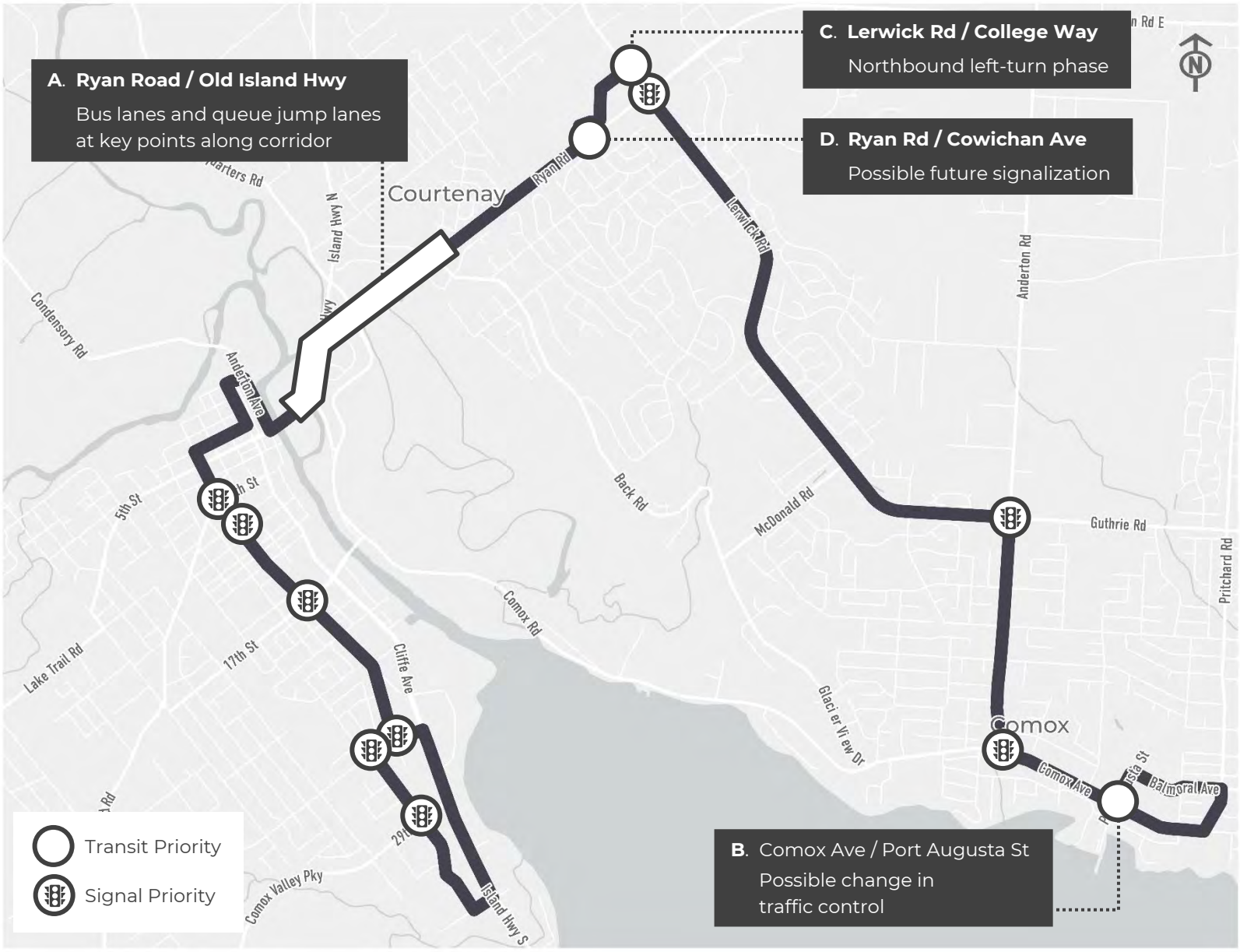
FIGURE 2. FTN CORRIDOR TRANSIT PRIORITY CONCEPT



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Implementation

A detailed implementation strategy has been developed led by the CVRD and BC Transit, and with the City of Courtenay, Town of Comox, Village of Cumberland, Ministry of Transportation and Infrastructure, and PW Transit as key project partners. The recommended implementation approach and project costs are identified in **Table 1**.

TABLE 1. RECOMMENDED IMPLEMENTATION APPROACH + PROJECT COSTS

Phasing	Project	Capital Cost (estimated)
Short-Term	South Courtenay Transit Exchange	$1.7-million
	Ryan Rd / Old Island Hwy Queue Jump	$225,000
	Downtown Courtenay Transit Exchange (advance planning and design work)	N/A
Medium-Term	Downtown Courtenay Transit Exchange	$600,000
	Old Island Hwy / Comox Rd Queue Jump	$250,000
	Oyster River Transit Exchange	$650,000
Long-Term	Downtown Comox Transit Exchange	$650,000
	North Island College Transit Exchange	$700,000
	Lerwick Rd / College Way NB left turn phase	$50,000
	Ryan Rd / Cowichan Ave Signal	$350,000
	Signal Priority (up to 9 locations)	$50,000 (per location)
Future Possibilities	Ryan Road and Old Island Highway Bus Lanes	TBC

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1.0 Overview

The Comox Valley Transit System provides transit service throughout the Comox Valley Regional District (CVRD), including the K'omoks First Nation lands and three incorporated municipalities – Courtenay, Comox and Cumberland. The region covers approximately 1,700 km^2 and has a population of approximately 66,000, the majority residing in the urban areas of Courtenay, Comox and Cumberland.

The 2014 Comox Valley Transit Future Plan (TFP) identifies a 25-year plan for the Comox Valley Transit System. The TFP included the development of a Frequent Transit Network (FTN) as the "highest order" transit corridor that would allow riders to spontaneously travel without having to consult a transit schedule. The FTN is to consist of frequent transit service (i.e., 15-minute service during peak periods), a high level of transit stop amenities, transit priority measures, and service branding.

Through the Transit Future Plan and more recent Frequent Transit Corridor Study, the FTN has been confirmed along a corridor connecting South Courtenay, Downtown Courtenay, East Courtenay and Comox. A route restructuring and increases in service hours have been added in recent years.

With the FTN in-place, the next logical step is to identify infrastructure improvements that support improved frequent service, enhance the passenger experience, and accommodates future service and ridership growth. This is to be achieved through this technical study that specifically considers opportunities to improve transit travel times through priority measures and the location and design of future transit exchanges that support the FTN and local routes.

The following are the specific objectives and outcomes for this study:

- Identify preferred transit exchange locations and design options for five locations (South Courtenay, Downtown Courtenay, North Island College, Downtown Comox, Oyster River);
- Identify and test possible transit priority opportunities that would allow buses to operate more efficiently along the FTN corridor;
- Develop cost estimates for the identified transit infrastructure; and
- Create a prioritized implementation plan for infrastructure investments.

An important consideration and outcome for this study is establishing regional priorities with respect to transit infrastructure investment to maximize opportunities to achieve external funding support.

1.1 Consultation

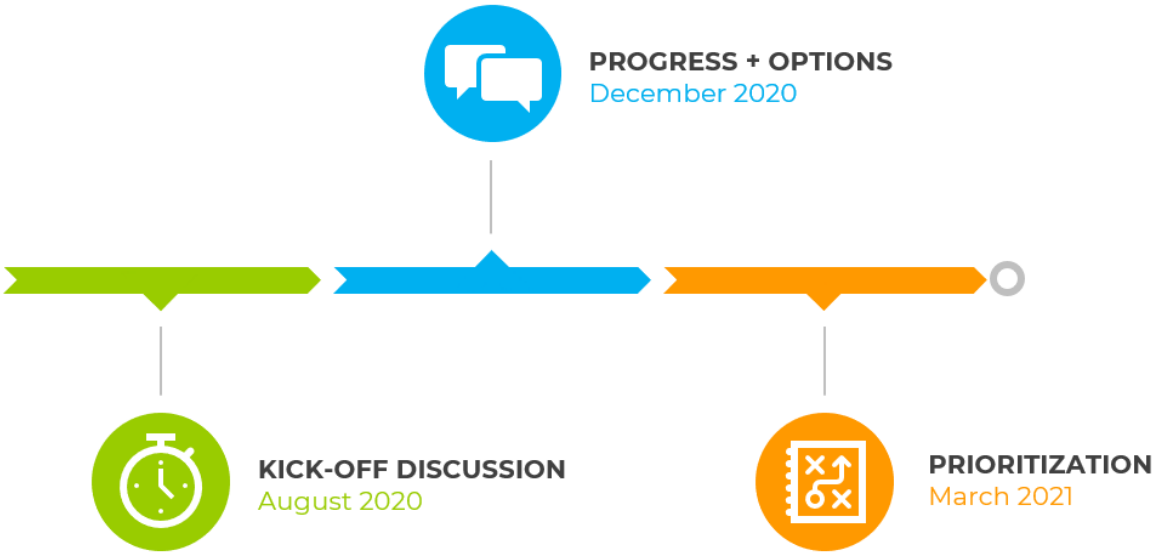
A Project Working Group was assembled to provide background understanding and information to the consulting team, and help guide the recommendations of the study. The Project Working Group included representatives from the following organizations:

- City of Courtenay
- Town of Comox
- Village of Cumberland
- Comox Valley Regional District
- PW Transit Services (local system operator)
- Ministry of Transportation & Infrastructure
- BC Transit

Meetings and targeted discussions were held with Project Working Group members at the following points in the project:

- August 26 2020 – Group meeting
- December 2020 – Targeted discussions with each agency
- March 11 2021 – Group meeting

Targeted outreach was also undertaken with organizations with a specific interest in the transit infrastructure options being given consideration through the project. These included representatives from North Island College, the Downtown Courtenay Business Improvement Association (BIA), and private property owners with a specific stake in select infrastructure locations.



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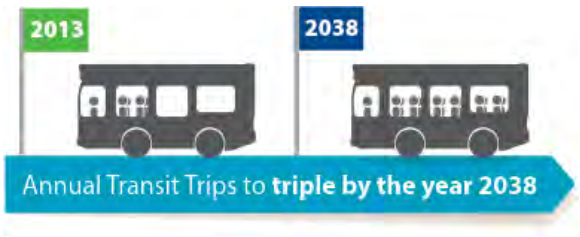
2.0 Background

Comox Valley Transit Future Plan

The Comox Valley Transit Future Plan (TFP) was prepared in 2014 and identifies a 25-year plan for the Comox Valley Transit System. The plan included the development of a Frequent Transit Network (FTN) between South Courtenay and Downtown Comox via Downtown Courtenay and North Island College. The FTN is the "highest order" transit corridor that would allow riders to spontaneously travel without having to consult a transit schedule. It is to consist of frequent transit service (i.e., 15-minute service during peak periods), a high level of transit stop amenities, transit priority measures, and service branding.

The TFP sets a transit mode share target of three percent of all trips by 2038, which will require transit ridership in the Comox Valley to grow from 790,000 (as of 2019) to 2.7 million trips per year. It is acknowledged in the TFP that a number of factors such as transit system growth and investment and transit supportive land use are required to meet this target.



Long-term requirements are established for transit exchanges in Downtown Courtenay and North Island College, as well as Anfield Centre / Driftwood Mall and Downtown Comox.

Transit priority measures are identified as an opportunity to improve transit service. The TFP makes note of the need to consider transit priority opportunities in municipal and regional transportation planning initiatives, specifically noting the Ryan Road, 5th Street and Comox Road corridors as locations of congestion where transit priority may be considered.

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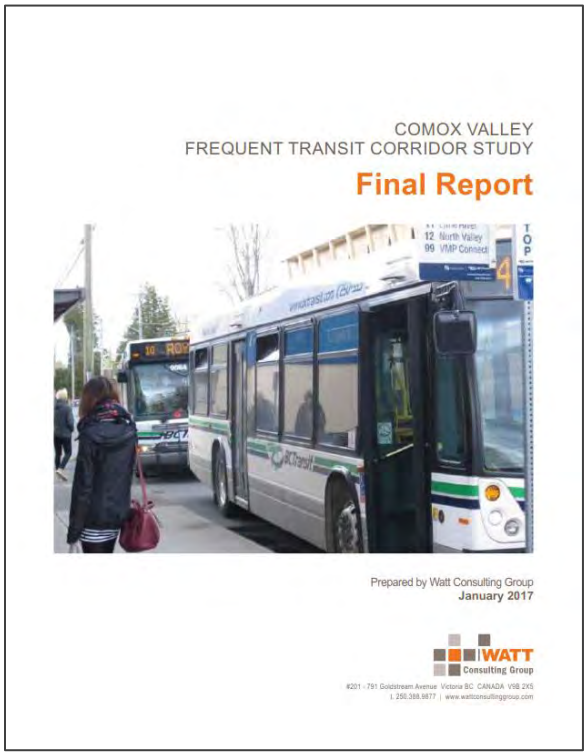
Comox Valley Frequent Transit Corridor Study

The Comox Valley Frequent Transit Corridor Study was completed in 2017. This report compared the FTN corridor identified in the TFP against an alternative alignment focused on Cliffe Avenue, as shown in **Figure 1**. The study considered a number of factors in assessing the possible advantages of each of the two corridor options, including transit travel time, potential ridership, land use context and capital cost. The study recommended the same alignment included in the TFP (focused on Fitzgerald Avenue) primarily due to the reduced transit travel time associated with this corridor.

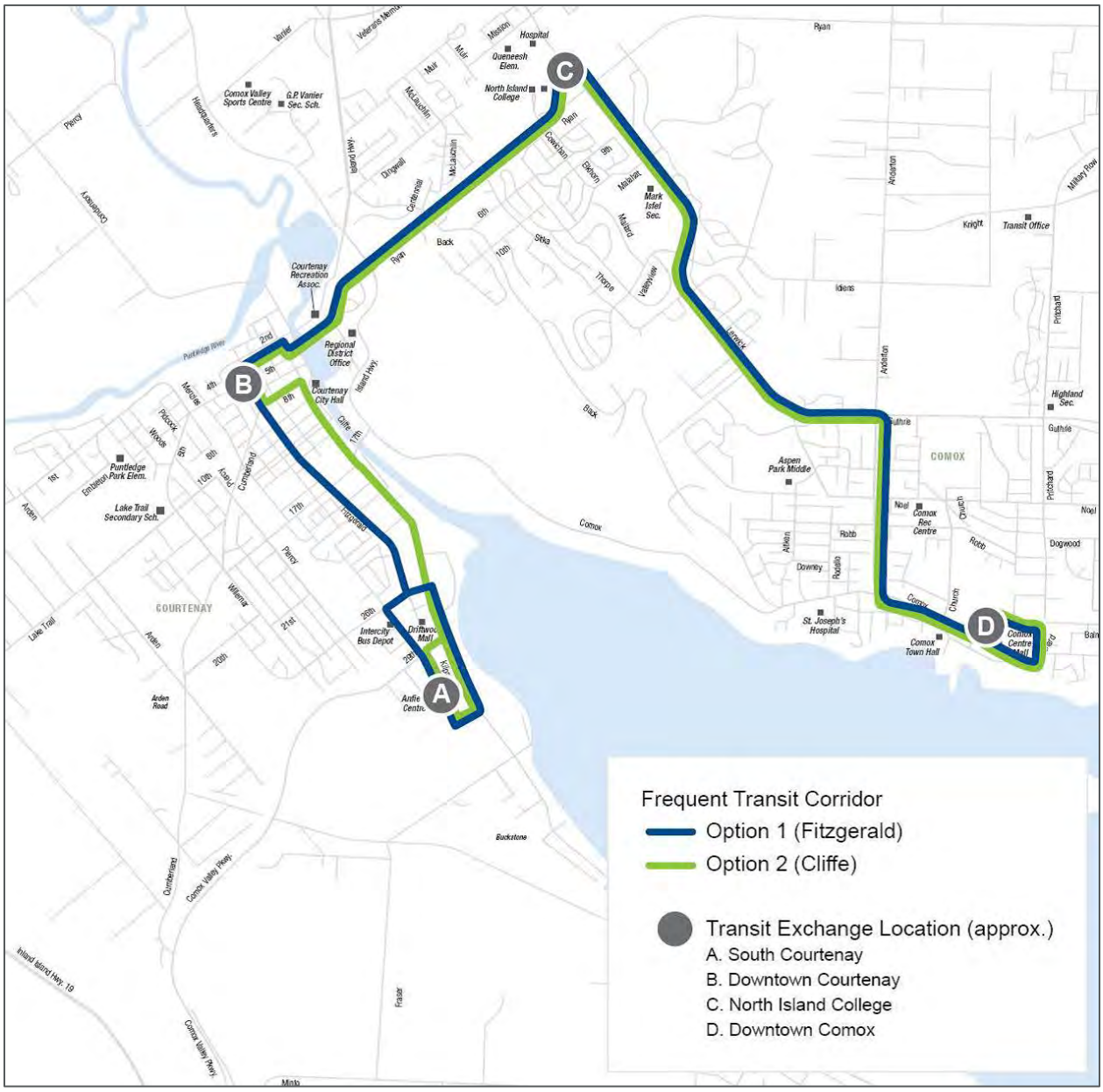


Route restructuring has occurred since the 2017 study, including establishing the Route 1 – Anfield Centre / Comox Mall along the FTN alignment, as shown in **Figure 2**, and prioritizing service frequency on this route.

In addition to establishing the preferred FTN alignment, the 2017 study also identifies preferred transit exchange locations and layouts, as well as opportunities for transit priority measures along the identified FTN corridor. Preferred exchange locations were identified for four of the exchange locations that are the focus of this study – South Courtenay, Downtown Courtenay, North Island College, Downtown Comox (see **Figure 3**). These concepts have been included in ***Section 3*** and are given consideration throughout this study.

Transit priority measures were recommended for four key locations of congestion along the FTN corridor, as shown in **Figure 3**. These included the Cliffe Avenue / 5th Street, Old Island Highway / Ryan Road, Ryan Road / Island Highway and Ryan Road / Cowichan Avenue intersections. None of the transit priority measures have been implemented to-date. The identified locations have been given consideration throughout this study.

FIGURE 1. FREQUENT TRANSIT CORRIDOR OPTIONS, FREQUEN TRANSIT CORRIDOR STUDY[1]



[1] Watt Consulting Group, Comox Valley Frequent Transit Corridor Study, January 2017, Page 4 , Map 1.

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FIGURE 2. ROUTE 1 – ANFIELD CENTRE / COMOX MALL

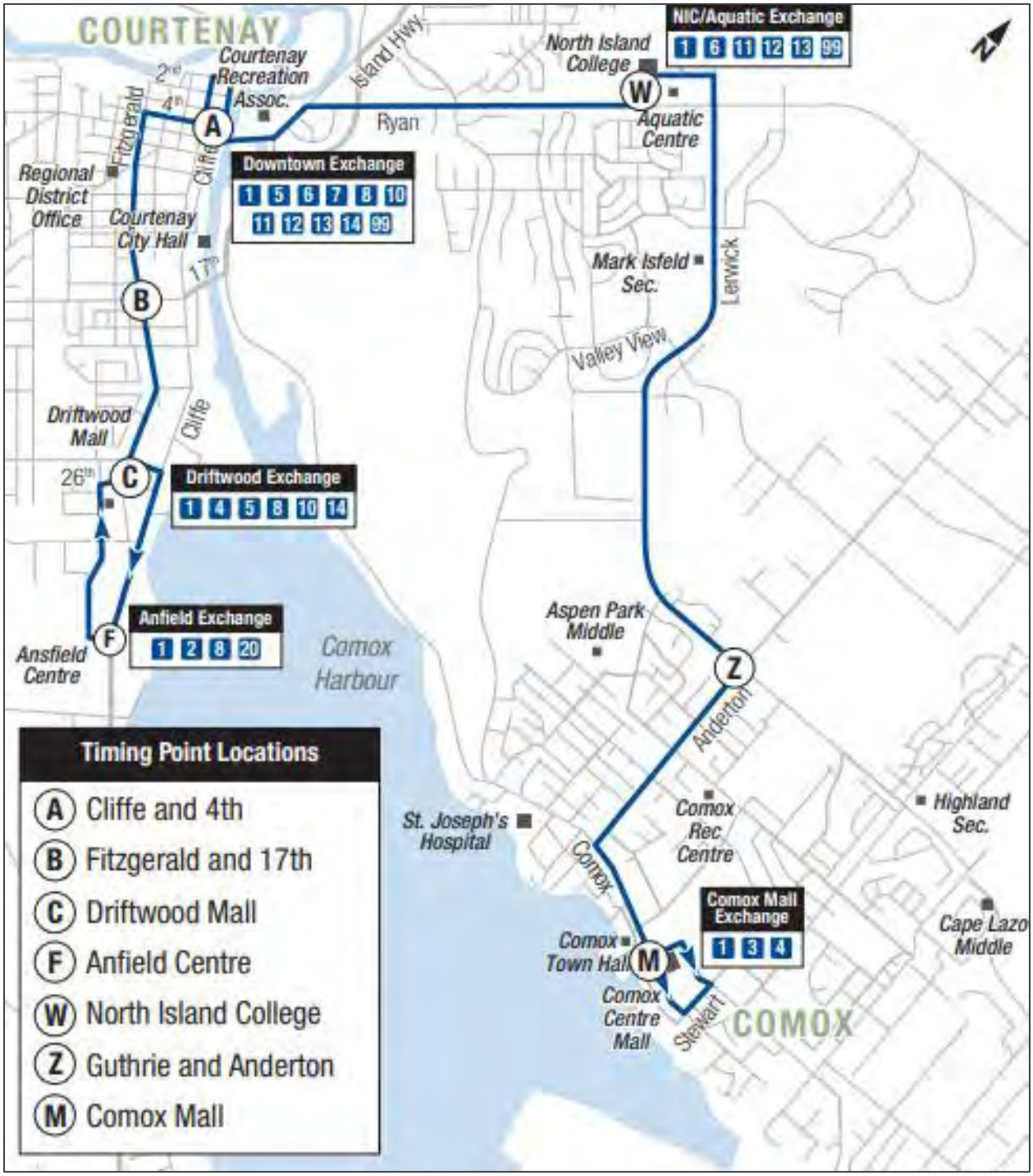
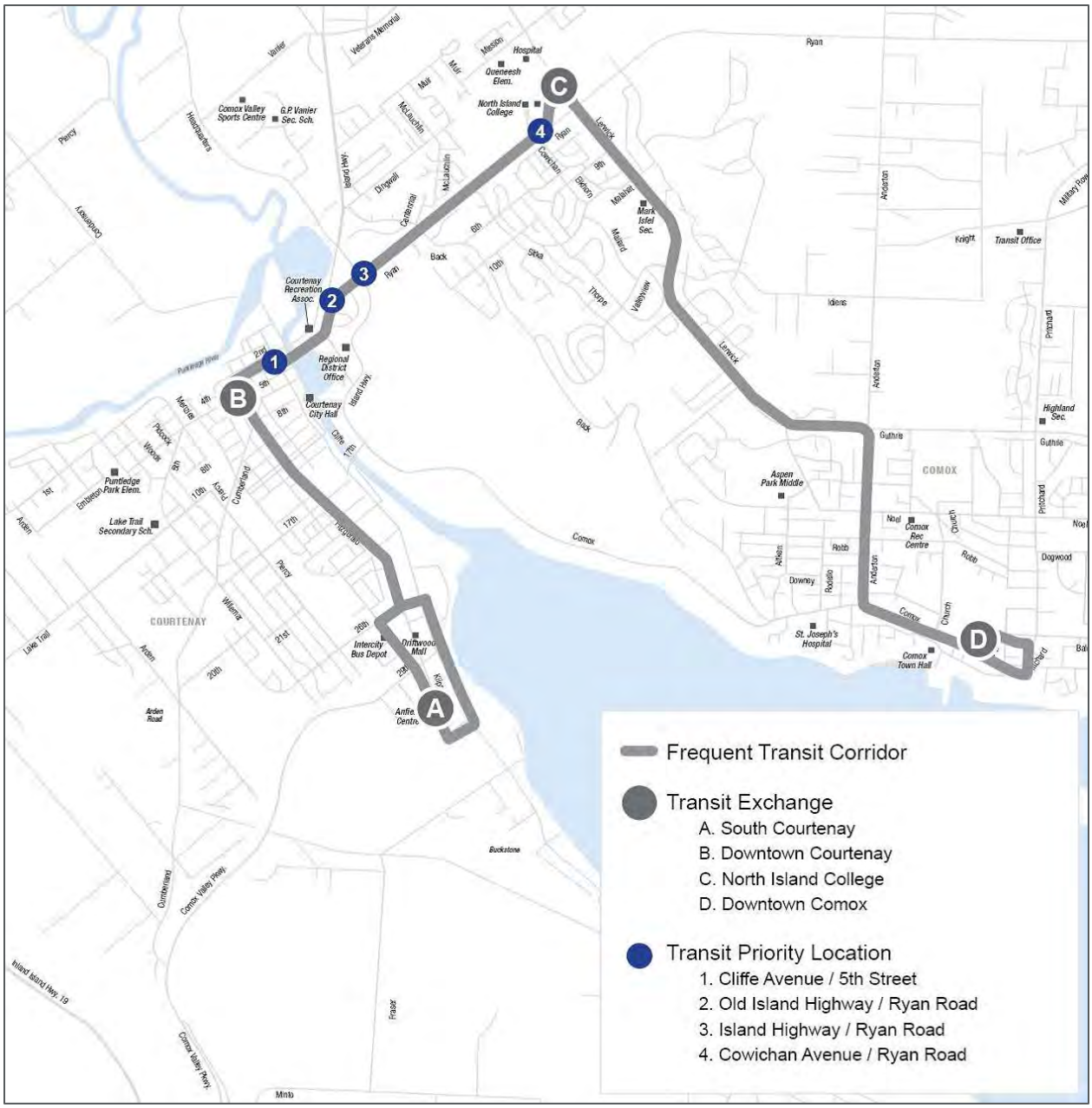


FIGURE 3. TRANSIT EXCHANGE + TRANSIT PRIORITY LOCATIONS[2]



[2] Watt Consulting Group, Comox Valley Frequent Transit Corridor Study, January 2017, Page 7 , Map 2

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Courtenay Transportation Master Plan

Completed in 2019, the Courtenay Transportation Master Plan supports the TFP by planning for improvements to bus stops, transit exchanges and transit priority measures that reduce the impacts of delay on transit operations. Transit priority measures were recommended for three locations of congestion along the FTN corridor, including the following:

- Signal upgrades at the Cliffe Avenue / 5th Street intersection to allow for transit priority;
- A westbound queue jump lane and transit signal priority at the Old Island Highway / Ryan Road intersection (consistent with recommendation from 2017 Study); and
- A pedestrian activated crossing at the Cowichan Avenue / Ryan Road intersection with on-board signal communications to facilitate bus turns in/out of North Island College.

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3.0 Transit Exchanges

Exchange Locations

This study specifically addresses the following five (5) transit exchange locations:

A. South Courtenay
B. Downtown Courtenay
C. North Island College
D. Downtown Comox
E. Oyster River

Capacity

The number of buses intended to be accommodated at each exchange location is identified in **Table 1**.

TABLE 1. EXCHANGE CAPACITY NEEDS

	Bus Bays Required	Buses per Hour
A. South Courtenay	4	16
B. Downtown Courtenay	6	20
C. North Island College	4	12
D. Downtown Comox	4	10
E. Oyster River	2	2

Site Selection

The following is considered in determining possible transit exchange locations:

- Exchanges may be on- or off-street, and public or private property may be utilized (with additional outreach needed where private land).
- Locations nearby areas of high activity are preferred, including those in a downtown area or commercial centre.
- Route deviation (i.e., distance) from the FTN corridor should be limited (does not apply to Oyster River).
- Safe and efficient access / egress must be achievable for buses, avoiding congestion, queuing and unsafe turn movements.
- Sites should provide high visibility to pedestrians, motorists and others, minimizing personal safety concerns for passengers using the facility in evenings and at other off-peak times.
- Limit negative impacts on adjacent land uses, such as noise, parking loss or driveway/circulation impacts.
- Sites must have the ability to meet the bus bay capacity requirements identified in **Table 1**.

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Design + Amenities

The following design and amenities are to be considered for transit exchanges:

- Bus bays are to accommodate standard 12m buses
- Buses should be able to arrive and depart from platforms independently
- Concrete pads in the bus platform area to expand road life (optional).
- Changes may be required to road geometry, signage, traffic control, laning or transit priority measures to accommodate a new transit exchange and bus movements
- Passenger waiting area should have a hard surface landing/waiting area and be universally accessible
- Passenger facilities should include:
    - Passenger amenities, including weather protection, seating, pedestrian-oriented lighting, waste bins and bicycle storage
    - Accessibility to all areas of the exchange for persons with disabilities
    - Bus stop ID posts, wayfinding signage and customer information
- Exchanges should include access to an operator washroom with multi-stalled men's and women's washrooms
- Public washrooms (optional)

Methodology

A three-step process was undertaken in determining the preferred transit exchange location and concept design for each of the five locations, as follows:

Step 1. Preliminary Screening

Identify and screen possible exchange locations to consider the general suitability, feasibility and effectiveness of each option with the intent to determine where options have significant obstacles that are not to be given further consideration. Preliminary screening criteria are included in **Table 2**.

Step 2. Assess Candidate Locations

A more thorough investigation of candidate locations was undertaken, including developing concept designs for each. Each candidate location was considered using the criteria identified in **Table 3**.

Step 3. Identify Preferred Location

The preferred location and design option has been selected for each of the five locations and a cost estimate developed to understand the relative cost of each.

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TABLE 2.
PRELIMINARY SCREENING CRITERIA

Category	Criteria	Measures
Feasibility	Physical feasibility	Availability of site of sufficient size for exchange(s)
Riders	Walking distance	Proportion of land use / generators within 400 m of transit exchange(s)
	Amenities	Room to accommodate transit amenities
	Clarity	Ease of understanding of routes, connections and stop locations
Local Gov't Plans	Alignment	Consistency with and support for local government plans
Community	Neighbours	Potential benefits and impacts to adjacent land uses
	Parking	Changes to parking
Cost	Operating	Efficiency of transit routing
	Capital	Order-of-magnitude costs of transit exchange(s)

Evaluation Ratings

The various transit exchange options have been evaluated on the following pages for each of the evaluation criteria identified in **Table 3**. The evaluation rating is based on the following:

High The exchange option achieves high scoring for the identified criteria

Moderate The exchange option achieves moderate scoring for the identified criteria

Low The exchange option achieves low scoring for the identified criteria

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TABLE 3.
EVALUATION CRITERIA FOR CANDIDATE LOCATIONS

Category	Criteria	Measures
Rider Experience	Proximity	Walking distance to key trip origins / destinations
	Clarity	Ease of understanding of routes, connections and stop locations
	Amenities	Room to accommodate transit amenities, opportunities/amenities provided on adjacent properties
	Integration	Fit with transportation options providing access to/from the exchange, including surrounding pedestrian network
Safety	Pedestrians/Cyclists	Potential for conflicts with pedestrians and cyclists
	Traffic	Potential for bus-motor vehicle conflicts
	Personal	Issues associated with personal safety, visibility at night and access to assistance
Community	Parking	Impacts on parking
	Neighbours	Potential benefits and impacts to adjacent land uses
	Traffic	Impacts on vehicle circulation or traffic operations
	Appearance	Visual impact of transit service and facilities
Transit Operations	Travel Time	FTN route deviation required due to exchange location
	Delays	Potential for delays to buses
Local Gov't Plans	Alignment	Consistency with and support for local government plans (i.e., Official Community Plan, Local Area Plan, Transportation Plan)
Implementation	Capital Cost	Extent of works involved in developing transit exchange and associated improvements (note: full cost estimates to be developed for preferred options)
	Feasibility	Level of coordination required to pursue exchange (i.e., property acquisition, use of private land, agency coordination, etc)

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3.1 South Courtenay (A)

The South Courtenay area is focused on the Anfield Centre and Driftwood Mall as key generators of transit trips, as well as more recent residential densification focused on Kilpatrick Avenue and Cliffe Avenue.

South Courtenay is the western terminus of the FTN corridor. Exchanges are currently provided at both Driftwood Mall and Anfield Centre. Route 1 – Anfield Centre / Comox Mall currently terminates at the Anfield Centre.

This location is an opportunity for transfer between the FTN service and local routes operating in South Courtenay (i.e., 4, 5, 8), as well as services extending south to Cumberland (2, 20). Royston (10, 14, 20) and Union Bay (10, 14).

An improved South Courtenay exchange is to accommodate four bus bays. The location is to be in the vicinity of the Anfield Centre or Driftwood Mall.

3.1.1 Preliminary Screening

Seven possible exchange locations were included in the preliminary screening, shown in **Figure 4**. Each location was considered at a high level for its suitability and to be brought forward for further consideration as a candidate location. The results are shown below in **Table 4**.

TABLE 4. PRELIMINARY SCREENING, SOUTH COURTENAY EXCHANGE

		Comments
✗	1	• Constrained roadway on 26th Street with relatively high traffic volumes • Transit travel is slowed through Driftwood Mall site
✗	2	• Possible off-street exchange with direct access to Cliffe Street • Would result in significant parking loss on Driftwood Mall site
✓	3	• Opportunity for on-street bus bays with pedestrian access to Driftwood Mall • May make use of centre left turn lanes on Kilpatrick Avenue
✓	4	• On-street bus bays close to Anfield Centre and nearby residential sites • Kilpatrick Avenue alignment makes for challenging sightlines
✗	5	• Space for 3-4 bus bays on Anfield Centre entry (identified in 2017 Study) • Challenging location due to traffic entering/exiting Anfield Centre
✓	6	• Space for 3-4 bus bays on Cliffe Avenue (Anfield Centre frontage) • Impacts on boulevard landscape, unless one southbound travel removed
✓	7	• On-street bus bays making use of extra lanes on Anfield Road

FIGURE 4.
SOUTH COURTENAY
TRANSIT EXCHANGE LOCATIONS

Candidate Location

Alternative Location

URBAN SYSTEMS

3.1.2 Candidate Locations

The results of the preliminary screening (above) identified four candidate transit exchange locations for more in-depth consideration:

- Kilpatrick Avenue / Driftwood Mall (3)
- Kilpatrick Avenue / 30th Street (4)
- Cliffe Avenue at Anfield Centre (6)
- Anfield Road / Cliffe Avenue (7)

Each location was evaluated using the defined evaluation criteria. The evaluation results are summarized in **Table 5** below, with detailed results and explanation included in **Appendix A**.

The Cliffe Avenue location (6) is identified as the preferred location due primarily to the limited impacts and location nearby a major commercial centre. The key considerations are the impact on boulevard landscape, as well as the requirement to access the adjacent commercial site to locate a portion of sidewalk and driver washroom. The concept design included on the following page highlights how this location would provide a logical south terminus for the FTN service and exchange opportunities to other local routes.

TABLE 5. EVALUATION SUMMARY, SOUTH COURTENAY

Category	Criteria	Location 3. KILPATRICK / DRIFTWOOD MALL	Location 4. KILPATRICK / 30th	Location 6. CLIFFE @ ANFIELD CENTRE	Location 7. ANFIELD / CLIFFE
Rider Experience	Proximity	●●	●	●●	●●
	Clarity	●●	●●●	●●	●●
	Amenities	●●	●	●●	●●
	Integration	●●	●	●●	●●
Safety	Pedestrians / Cyclists	●●	●●	●●	●●●
	Traffic	●●●	●●●	●●	●●●
	Personal	●●	●	●●●	●●
Community	Parking	●●●	●●●	●●●	●●●
	Neighbours	●●●	●●	●●●	●●●
	Traffic	●●●	●●	●●●	●●●
	Appearance	●●●	●●	●●	●●●
Transit Operations	Travel Time	●●	●●●	●●●	●●●
	Delays	●●●	●●	●●	●●
Local Gov't Plans	Alignment	●●	●	●●	●●
Implementation	Capital Cost	●●●	●●	●●	●●●
	Feasibility	●●●	●●●	●●	●●

3.1.3 Preferred Location

The preferred exchange concept includes up to four bus bays along the west side of Cliffe Avenue, immediately adjacent Anfield Centre. Refer to **Figure 5**. The concept includes a series of shelters, modifications to the current walkway and boulevard landscape, and new driver restroom facilities. Traffic capacity on Cliffe Avenue remains unchanged.

FIGURE 5. SOUTH COURTENAY TRANSIT EXCHANGE CONCEPT

This Cliffe Avenue location was chosen after the evaluation of the candidate locations (refer to Section 3.1.2) and through conversations with the City of Courtenay. This option provides many of the same benefits of the Anfield Road location, but with a safer location with improved surveillance and reduced walking distance to key locations within Anfield Centre.

The preferred location will impact existing boulevard landscape and trees along the Anfield Centre frontage, as well as require that a portion of the sidewalk and driver facilities are located on the Anfield Centre property (note: the current sidewalk is partially on the Anfield Centre property). Retaining structures will be required due to grades through the boulevard / landscape area, with further consideration given at detailed design stage to sidewalk grades at the south end of the exchange facility to ensure they meet accessibility guidelines.

An alternative option could be considered for this location as the improvement is advanced that includes the reduction of one southbound travel lane. This would allow for bus bays to be located along the existing curb and without impacts on the adjacent boulevard area. The cost associated with this option would be approximately half the cost of the primary option.

The preferred location will require that northbound buses (10, 14, 20) make a left turn at Anfield Road and circulate through the Anfield Centre site to access the exchange location. Turns within the Anfield Centre site were tested and found to be sufficiently wide to accommodate bus turning. Consideration may also be given to alternative bus stop locations for certain routes to avoid added route deviation and extra travel time.

As the exchange is relocated from its current location at the north entry to Driftwood Mall to Cliffe Avenue, changes in routing to the FTN Route 1 and nearby bus stops are required. This includes re-routing the northbound FTN Route 1 route along Kilpatrick Avenue to 26th Street so that it no longer circulates through the Driftwood Mall site, a new stop location on 26th Street immediately east of Kilpatrick Avenue (adjacent the theatre site), and improved bus stop amenities at both 26th Street bus stop locations. Refer to **Figure 6**. This change in routing presents a modest reduction in the northbound FTN travel time.

FIGURE 6. DRIFTWOOD MALL RECONFIGURATION

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3.2 Downtown Courtenay (B)

The existing Downtown Courtenay exchange is centred on the 4th Street / Cliffe Avenue intersection. The location provides the opportunity for transfer between the Route 1 - Anfield Centre / Comox Mall route and 10 local routes, including routes operating in West Courtenay (i.e., 6, 7), South Courtenay and communities south of Courtenay (10, 13, 14) and areas in East Courtenay (5, 11, 99).

In addition to facilitating transfers, the exchange is a key boarding location and alighting point for transit passengers destined for Downtown Courtenay.

An improved Downtown Courtenay exchange is to accommodate six bus bays in a location that is central to downtown, allowing transit riders to walk between the exchange and their end destination.

3.2.1 Preliminary Screening

Eight possible exchange locations were included in the preliminary screening. Locations are shown in **Figure 7**.

Each location was considered at a high level for its suitability as a transit exchange and to be brought forward for further consideration as a candidate location. The results are shown below in **Table 6**.

TABLE 6. PRELIMINARY SCREENING, DOWNTOWN COURTENAY

		Comments
✓	1	• Expansion of existing location
✗	2	• Possible on-street exchange in the centre of downtown • Significant impacts to parking
✓	3	• On-street exchange on 6th Street
✗	4	• On-street bus bays on 4th Street • Negative impacts on adjacent residential uses
✗	5	• On-street bus bays on Fitzgerald Avenue • Incompatible with cycling facilities installed in recent years
✓	6	• On-street bus bays on England Avenue, low traffic street • Requires turn restrictions on Cumberland Road
✓	7	• On-street bus bays on 8th Street • Limited parking impact • Possible issues with buses on slope
✗	8	• On-street bus bays using wide right-of-way on Harmston Avenue • Location beyond centre of downtown

FIGURE 7.
DOWNTOWN COURTENAY
TRANSIT EXCHANGE LOCATIONS

URBAN SYSTEMS

3.2.2 Candidate Locations

The results of the preliminary screening (above) identified four candidate transit exchange locations for more in-depth consideration - Cliffe Avenue / 4th Street (1), 6th Street (3), England Avenue (6), 8th Street (7).

Each location was evaluated using the defined evaluation criteria. The results of the evaluation are summarized in **Table 7** below, with detailed results and explanation included in **Appendix A**.

Generally, the results of the evaluation favour the England Avenue and existing Cliffe Avenue / 4th Street locations. The England Avenue location was discussed among Working Group members, City of Courtenay staff and presented to the Downtown Courtenay Business Improvement Association (BIA), and received support due to its location and the potential for reduced circulation and travel time, as well as the limited impacts on parking and traffic.

TABLE 7. EVALUATION SUMMARY, DOWNTOWN COURTENAY

Category	Criteria	Location 1. CLIFFE / 4th STREET	Location 3. 6th STREET	Location 6. ENGLAND AVENUE	Location 7. 8th STREET
Rider Experience	Proximity	••	•••	•••	••
	Clarity	••	•••	•••	••
	Amenities	•••	••	••	••
	Integration	•••	•••	•••	•••
Safety	Pedestrians / Cyclists	•••	•••	•••	••
	Traffic	•••	•••	•••	••
	Personal	••	•••	•••	••
Community	Parking	••	•	••	••
	Neighbours	•••	•	••	•••
	Traffic	••	•••	••	•••
	Appearance	•••	•	•••	•••
Transit Operations	Travel Time	••	••	••	•••
	Delays	••	•••	•••	••
Local Gov't Plans	Alignment	•••	•••	••	••
Implementation	Capital Cost	••	••	••	•••
	Feasibility	•••	•	•••	•••

3.2.3 Preferred Location + Configuration

The England Avenue location (6) is the preferred downtown Courtenay location. Exchange design options were considered that best fit the available space, minimize surrounding impacts and achieve functional and efficient transit routing. The preferred configuration is shown in **Figure 8**, which includes two bus bays on 8th Street intended to be used by the FTN route and four bus bays on England Avenue immediately north of 8th Street that would facilitate local routes.

Buses on the FTN would remain on 8th Street, whereas local routes would flow through the exchange circulating via 8th Street and 6th Street. Circulation is explored in more detail on the following pages. A key consideration associated with the changes in routing is the need to provide FTN service to downtown Courtenay by way of bus stops as close to the Cliffe Avenue / 5th Street intersection as possible (preferably on Cliffe Avenue between 5th and 6th Street, details to be determined).

Pedestrian activity is accommodated across 8th Street via the existing crosswalk location, facilitating transfers between regional and local routes. Modest infrastructure improvements are needed to increase space for passenger loading/unloading and shelters.

FIGURE 8. DOWNTOWN COURTENAY EXCHANGE CONCEPT

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Circulation

A key consideration for the preferred England Avenue exchange concept is transit circulation through downtown streets, particularly along 6th Street where turn geometry is tight and enhanced cycling facilities are envisioned in future as part of the City's *Cycling Network Plan* implementation[3]. A route realignment and circulation concept has been included in **Figure 9** that identifies how the FTN and local routes may be realigned to provide service to the exchange location.

The concept includes re-routing the FTN service along Fitzgerald Avenue, 8th Street and Cliffe Avenue in both the eastbound and westbound directions. This results in a more efficient service due to reductions of approximately 450m in trip distance[4] and 1-2 minutes in travel time[5]. With an overall trip time of 25-30 minutes along the length of the FTN route (dependent on time-of-day), a savings of 1-2 minutes is a meaningful improvement to the service and operating cost.

Local route realignment is also identified that would allow routes to/from west Courtenay (7, 8) to serve the bus bays on the west side of the exchange, and routes primarily to/from east Courtenay and communities to the north to serve the bus bays on the east side of the exchange. Some alteration may be required as local routes and service levels are confirmed.

Overall the proposed changes represent a reduction of approximately 4,800 km in annual trip distance among all routes, representing an annual operational cost savings of approximately $50,000. The full impact of the proposed route realignment is summarized in **Table 8**.

The exchange relocation and associated route realignment will result in reduced transit service to the downtown north end / Old Orchard area. As exchange improvements are advanced, consideration should be given to opportunities to extend local service nearby the current exchange location to continue to serve important destinations in these areas with transit, such as the Florence Filberg Centre.

Consideration may also be required for additional intersection geometric improvements to allow for bus turn movements (particularly right-turns).

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[3] More information on the City of Courtenay's *Cycling Network Plan* available online at: https://www.courtenay.ca/EN/main/departments/engineering/traffic-programs-studies/connecting-courtenay-transportation-master-plan-2019.html

[4] Current routing differs in each direction, resulting in changes in travel distance of approximately 200m westbound and 700m eastbound

[5] Travel time estimates based on Google Maps

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FIGURE 9. PROPOSED ROUTE REALIGNMENT FOR ENGLAND AVENUE EXCHANGE

TABLE 8. SERVICE CHANGES FOR ENGLAND AVENUE EXCHANGE[6]

Route(s)		Trips per Year	Distance (portion in Downtown only)		Total Distance Difference
			Existing	Proposed	
1 - Anfield / Comox	WB	10,474	884 m	668 m	-2,262 km
	EB	10,475	1,389 m		-7,552 km
5 - Vanier		2,354	940 m	1,638 m	+1,643 km
6 - Uplands		4,634			+3,235 km
7 - Arden		3,270	1,415 m	1,087 m	-1,073 km
8 - Willemar		8,414			-2,760 km
10 - Fanny Bay		3,166	1,051 m	683 m	-1,166 km
11 - Little River		4,020	940 m	1,638 m	+2,806 km
12 - North Valley		2,708			+1,890 km
13 - Seal Bay / Merville		309			+216 km
14 - Union Bay / Downtown		309			+216 km
Total					**-4,807 km**

[6] Bus routing assessment provided by BC Transit Planning staff members

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3.2.4 Alternate Options

The England Avenue location and configuration option is the preferred option for the Downtown Courtenay exchange. It is acknowledged that there are details of bus circulation, property acquisition and further public and business owner conversation required before this option is advanced.

In the case that these details cannot be successfully addressed, two alternative options have been identified. Each is described below.

Alternative 1. England Avenue, Turnaround

In the case that bus circulation on 6th Street required to serve the preferred England Avenue concept cannot be realized, an option that includes a bus turnaround on England Avenue has been developed that would allow all bus circulation to occur to/from 8th Street. See **Figure 10**. This option would not allow for general purpose traffic to travel east-west on England Avenue and would result in Cumberland Road being closed to through traffic at the south end, including the loss of approximately 35 parking spaces. This option would provide the opportunity to create new public open space adjacent the 6th Street / England Avenue intersection as part of the City's downtown enhancement initiatives. The cost of the turnaround option ($1.4-million) is approximately twice the preferred option.

FIGURE 10. ALTERNATE ENGLAND AVENUE EXCHANGE CONCEPT (BUS TURNAROUND)

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Alternative 2. Expanded Current Location

In the case that a suitable England Avenue option cannot be achieved, the current downtown exchange location focused on the Cliffe Avenue / 4th Street intersection could be improved and expanded to accommodate six bus bays. A concept for the facility expansion is included in **Figure 11** that includes two bus bays on 4th Street and four bays on Cliffe Avenue.

Improvements at this location may include re-routing the FTN service along Cliffe Avenue and 4th Street in both directions (served by eastbound and westbound stops on 4th Street), eliminating the current routing via Anderton Avenue and 1st Street in the westbound direction and presenting time savings of 1-2 minutes. Improvements to the Cliffe Avenue / 5th Street intersection northwest corner would be required to facilitate the westbound right-turn bus movement.

FIGURE 11. ALTERNATE DOWNTOWN COURTENAY EXCHANGE CONCEPT (EXPANDED EXISTING FACILITY)

3.2.5 Next Steps

While the conversations regarding the England Avenue location were generally supportive, this represents a significant change from the current Cliffe Avenue / 4th Avenue location. Further investigation and conversations are recommended before confirming the preferred location and configuration. This has been included in the implementation strategy contained within this study (Section 5).

Next steps should include:

- Outreach to the Downtown Courtenay BIA and area businesses to confirm support for the England Avenue location
- Conversations with property owners in the vicinity of the England Avenue location to identify any key challenges and gauge support
- Confirm alignment with the City of Courtenay's downtown planning directions, including as through the Official Community Plan (OCP) review being carried out while this study was undertaken
- Confirm ability for bus circulation on portions of 6th Street in combination with possible future cycling improvements
- Explore options to adjust local routes to address loss of service in the downtown Courtenay north end / Old Orchard area
- Confirm location and space availability for new bus stops on Cliffe Avenue immediately south of the 5th Street intersection (to provide service nearby the center of downtown Courtenay)

3.3 North Island College (C)

The North Island College transit exchange location serves the College, North Island Hospital and Comox Valley Aquatic Centre, all key destinations within the Comox Valley.

The current location, directly adjacent the Aquatic Centre, is served by the Route 1 - Anfield Centre / Comox Mall route and 6 local routes, including those extending north of Courtenay (i.e., 12, 13).

In future, the exchange is intended to continue to be a key location along the FTN corridor, with transfer to local routes and access to key civic uses. The facility is to be expanded with capacity for up to six bus bays, as well as improved pedestrian connections to nearby destinations.

3.3.1 Preliminary Screening

Two possible exchange locations were included in the preliminary screening. Locations are shown in **Figure 12**.

Each location was considered at a high level for its suitability as a transit exchange and to brought forward for further consideration. The results are shown below in **Table 9**.

TABLE 9. PRELIMINARY SCREENING, NORTH ISLAND COLLEGE

		Comments
✓	1	• On-street bus bays directly adjacent the Aquatic Centre and backside of the hospital • Careful consideration of crosswalk required • Location not immediately adjacent North Island College key entrances
✓	2	• On-street bus bays near Ryan Road entrance and future student housing site • Not directly adjacent North Island College key entrances, nor adjacent Aquatic Centre and hospital rear access

FIGURE 12.
NORTH ISLAND COLLEGE
TRANSIT EXCHANGE LOCATIONS

URBAN SYSTEMS

3.3.2 Candidate Locations

The two candidate locations were evaluated using the defined evaluation criteria. The results of the evaluation are summarized in **Table 10** below, with detailed results and explanation included in **Appendix A**.

The results generally show that the College Way / Aquatic Centre location provides better access to the Aquatic Centre and North Island Hospital, as well as to the North Island College campus. This location also provides more direct access to established sidewalks and would provide for better personal security due to open sightlines and the presence of activity associated with the Aquatic Centre. Through conversations with North Island College staff, this location was also determined to be aligned with long-range campus development plans and generally meet their needs.

TABLE 10. EVALUATION SUMMARY, NORTH ISLAND COLLEGE

Category	Criteria	Location 1. COLLEGE WAY / AQUATIC CENTRE / HOSPITAL	Location 2. COLLEGE WAY / RYAN ROAD
Rider Experience	Proximity	●●●	●●●
	Clarity	●●●	●●●
	Amenities	●●●	●●
	Integration	●●●	●
Safety	Pedestrians / Cyclists	●●●	●
	Traffic	●●	●●
	Personal	●●	●●
Community	Parking	●●●	●●
	Neighbours	●●●	●●●
	Traffic	●●●	●●●
	Appearance	●●●	●●●
Transit Operations	Travel Time	●●●	●●●
	Delays	●●●	●●●
Local Gov't Plans	Alignment	●●●	●●
Implementation	Capital Cost	●●	●●
	Feasibility	●●	●●

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3.3.3 Preferred Location

The location adjacent the Aquatic Centre is identified as the preferred location primarily due to immediate access to the Aquatic and North Island Hospital, as well as good access to the rest of the North Island College campus. The proposed design concept, shown in **Figure 13**, includes two bus bays on either side of the primary NIC east access that would remove stationary buses from through travel lanes, minimizing impacts on vehicle traffic. The recently installed crosswalk is retained and provides access between the bus stops on either side of the street, through to the Aquatic Centre and Hospital. A dedicated walkway through the Aquatic Centre parking lot would help facilitate pedestrian access. The west side sidewalk and shelters are partially location on the Hospital site.

Improvements may be pursued in a phased approach, with short-term investments in shelters and stop amenities aligned around the current bus stop locations. Amenities installed in the short-term could be relocated into positions consistent with the preferred design as those improvements are made.

North Island College has also historically considered a future transit exchange on the internal access / turnaround directly adjacent the main building access to the College (Discovery Hall, Puntledge Hall). This preferred location would eliminate the need for the internal access / turnaround location, eliminating the need for internal campus circulation and minimizing transit travel time through the campus.

As this location is advanced, consideration may be given to a possible transit exchange and associated parking facility improvements on the Aquatic Centre site. This is a Regional District facility and could be pursued entirely by the CVRD. Some change in parking lot circulation and drive aisle widening may be required to accommodate transit operations.

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FIGURE 13. NORTH ISLAND COLLEGE EXCHANGE CONCEPT

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3.4 Downtown Comox (D)

The Downtown Comox transit exchange is the eastern terminus of the FTN corridor. The current exchange location is on the east side of Port Augusta Road, directly adjacent the Comox Mall.

The location provides an opportunity for transfer between Route 1 – Anfield Centre / Comox Mall route and FTN service and local routes operating in Comox (i.e., 3, 4).

An improved Downtown Comox exchange is to be expanded with capacity for four bus bays. The location is to provide service to the centre of Downtown Comox via Comox Avenue, and ideally within walking distance of key downtown destinations.

3.4.1 Preliminary Screening

Four possible exchange locations were included in the preliminary screening. Locations are shown in **Figure 14**.

Each location was considered at a high level for its suitability as a transit exchange and to be brought forward for further consideration as a candidate location. The results are shown below in **Table 11**.

TABLE 11. PRELIMINARY SCREENING, DOWNTOWN COURTENAY

		Comments
✓	1	• On-street facility on the west side of Port Augusta Road • New crosswalk required on Port Augusta Road and sidewalk connection to Comox Avenue
✓	2	• Expansion of current exchange facility
✗	3	• Opportunity for on-street bus bays on Balmoral Avenue adjacent Comox Mall • Location is further removed from Comox Avenue
✗	4	• Opportunity for on-street bus bays on Beaufort Avenue • Part of a possible terminating loop of the FTN service via Beaufort Avenue • Grades on local streets may be a challenge (buses, pedestrian)

FIGURE 14.
DOWNTOWN COMOX
TRANSIT EXCHANGE LOCATIONS

Candidate Location

Alternative Location

URBAN SYSTEMS

3.4.2 Candidate Locations

The results of the preliminary screening (above) identified two candidate transit exchange locations for more in-depth consideration - Port Augusta Road, West Side (1) and Port Augusta Road, East Side (2). Each location was evaluated using the defined evaluation criteria. The results of the evaluation are summarized in **Table 12** below, with detailed results and explanation included in **Appendix A**.

The results generally show that the east side of Port Augusta Road is the preferred location due to reduced walking distance to the Comox Mall, eliminating the need for a crosswalk to cross Port Augusta Road. and better personal security due to natural surveillance and existing lighting. The east side location was confirmed to be the preferred location in conversations with Town of Comox staff and was the preferred location identified in the 2017 *Frequent Transit Corridor Study*.

TABLE 12. EVALUATION SUMMARY, DOWNTOWN COMOX

Category	Criteria	Location 1. PORT AUGUSTA, WEST SIDE	Location 2. PORT AUGUSTA, EAST SIDE
Rider Experience	Proximity	●●	●●●
	Clarity	●●	●●
	Amenities	●●●	●●●
	Integration	●●	●●●
Safety	Pedestrians / Cyclists	●●	●●●
	Traffic	●●●	●●●
	Personal	●●	●●●
Community	Parking	●●●	●●
	Neighbours	●●●	●●●
	Traffic	●●●	●●●
	Appearance	●●●	●●●
Transit Operations	Travel Time	●●	●●
	Delays	●●●	●●
Local Gov't Plans	Alignment	●●●	●●●
Implementation	Capital Cost	●●	●●●
	Feasibility	●●●	●●●

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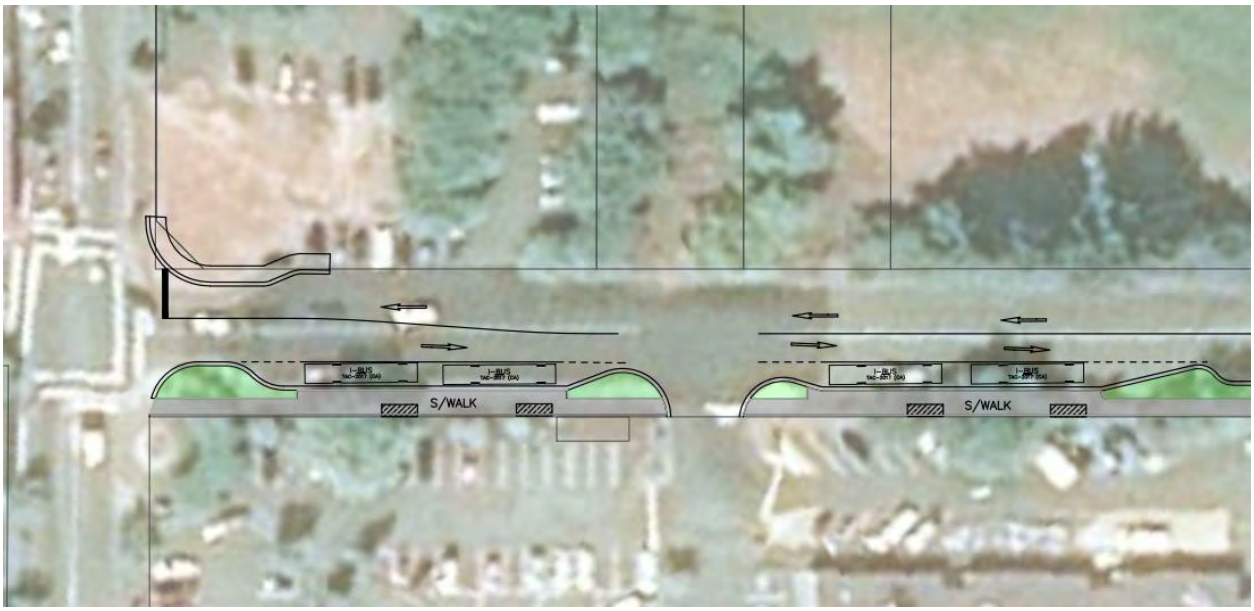
3.4.3 Preferred Location

The preferred exchange concept for Downtown Comox includes four bus bays on the east side of Port Augusta Street, as shown in **Figure 15**. This builds on the existing two bus bays that are in-place and allows for facility expansion and improved amenities as exchange improvements are required.

Improvements are being considered by the Town of Comox at the Comox Avenue / Port Augusta Street intersection to better facilitate westbound right-turn bus movements and has been reflected in the concept design. This would allow buses to access the proposed exchange facility from both directions. This also allows for the possible removal of the westbound bus stop on Comox Avenue (ID 111323) (buses would stop on Port Augusta Street instead) to increase on-street parking supply by 2 – 3 spaces, although further analysis on the impact to transit customer experience is required prior to considering change to this stop location.

FIGURE 15. PREFERRED EXCHANGE CONCEPT, DOWNTOWN COMOX



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3.5 Oyster River (E)

Oyster River is where the Comox Valley and Campbell River transit systems overlap, facilitating transfer between Route 12 – Oyster River / Downtown (Comox Valley) and Route 6 – Oyster River / Willow Point (Campbell River) routes. This provides the opportunity for Comox Valley residents to access employment, health care, education and other services in Campbell River (and vice versa).

There is currently one bus stop on Glenmore Road (north side) opposite the Discovery Foods grocery store that facilitates transfer between the two routes. The current configuration is particularly challenging for the Comox Valley Route 12 bus as it requires added circulation and travel time to properly align buses at the north-side bus stop. Improvements to this facility are to include capacity for two buses.

3.5.1 Preliminary Screening

Four possible exchange locations were included in the preliminary screening. Locations are shown in **Figure 16**.

Each location was considered at a high level for its suitability as a transit exchange and to brought forward for further consideration. The results are shown below in **Table 13**.

TABLE 13. PRELIMINARY SCREENING, OYSTER RIVER EXCHANGE

		Comments
✓	1	• Potential for bus layover on Lambeth Road, with service through bus stops on Glenmore Road • Eliminates stopped buses impeding access to Discovery Foods site
✓	2	• Improvement to current bus stop on Glenmore Road, with additional bus stop on Discovery Foods site frontage
✓	3	• Opportunity for bus bays in Regent Road right-of-way • Bus turn arounds may be accommodated in wide road right-of-way
✗	4	• On-street bus bays adjacent fire hall, with bus circulation through fire hall site • Bus circulation may impact emergency response

FIGURE 16.
OYSTER RIVER
TRANSIT EXCHANGE LOCATIONS

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3.5.2 Candidate Locations

The results of the preliminary screening (above) identified three candidate transit exchange locations for more in-depth consideration:

- Glenmore Road at Discovery Foods (1)
- Glenmore Road east of Discovery Foods (2)
- Island Highway / Regent Road (3)

Each location was evaluated using the defined evaluation criteria. The results of the evaluation are summarized in **Table 14** below, with detailed results and explanation included in **Appendix A**.

The results suggest that the location immediately adjacent the Discovery Foods centre to be preferred due to greater proximity to key destinations (the commercial centre), limited impact of surrounding neighbours, and limited impact on traffic, parking and visually.

TABLE 14. EVALUATION SUMMARY, OYSTER RIVER

Category	Criteria	Location 1. GLENMORE RD AT DISCOVERY FOODS	Location 2. GLENMORE RD, EAST OF DISCOVERY FOODS	Location 3. REGENT ROAD
Rider Experience	Proximity	●●●	●●	●
	Clarity	●●●	●●●	●●●
	Amenities	●●	●●	●
	Integration	●●	●●	●
Safety	Pedestrians / Cyclists	●●	●●	●
	Traffic	●●	●●●	●●
	Personal	●●	●●	●
Community	Parking	●●●	●●●	●●●
	Neighbours	●●●	●●	●●●
	Traffic	●●●	●●●	●●●
	Appearance	●●●	●●●	●●●
Transit Operations	Travel Time	●●	●●	●
	Delays	●●●	●●●	●●●
Local Gov't Plans	Alignment	●●	●●	●
Implementation	Capital Cost	●●●	●●●	●●●
	Feasibility	●●	●●●	●●●

3.5.3 Preferred Location

The preferred exchange concept shown in **Figure 17** includes an expansion of the current facility to include bus bays on both the north and south side of Glenmore Road to facilitate buses approaching the facility from both the Comox Valley and Campbell River systems. The concept includes a crossing of Glenmore Road to facilitate exchange between the two bus stops, as well as access between the northside stop and the Discovery Foods commercial centre. A dedicated pedestrian space is shown along the Discover Foods frontage to facilitate safe, comfortable pedestrian travel between the two bus stops, which may also present opportunities for landscape and drainage at the roadside.

Exchange improvements may be accompanied by traffic safety improvements at the Highway 19a / Glenmore Road intersection to further prevent illegal turn movements, particularly where they may present safety concern relative to transit operations and related pedestrian infrastructure.

As an alternative, the recommended bus bay location on the south side of Glenmore Road could be relocated approximately 100m to the west. While a solution to avoid possible conflict with vehicles exiting the highway, this alternate location is not preferred due to visibility / surveillance concerns and added walking distance for passengers making transfers and access commercial businesses nearby.

Given the overall cost of improvements in this location relative to the other exchange locations in the system, consideration should be given to pursuing funding available through the Ministry of Transportation and Infrastructure's *Transit Minor Betterment Program*.

FIGURE 17. PREFERRED EXCHANGE CONCEPT, OYSTER RIVER

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4.0 Transit Priority

Opportunities to prioritize transit operations along the identified FTN have been identified consistent with the TFP objective of growing ridership through an enhanced service on the identified TFN corridor. This includes making the FTN service competitive with vehicle travel by continually increasing service levels, coupled with reduced transit travel times and improved service reliability.

An in-depth study of transit priority opportunities was undertaken to determine where the FTN service could benefit from prioritizing transit operations. The focus was on addressing locations of congestion and delay where transit operations are negatively impacted, while also considering coordination with planned multi-modal improvements along the corridor. This includes ensuring that identified options do not unduly impact traffic conditions and do not preclude cycling facility upgrades on identified cycling corridors.

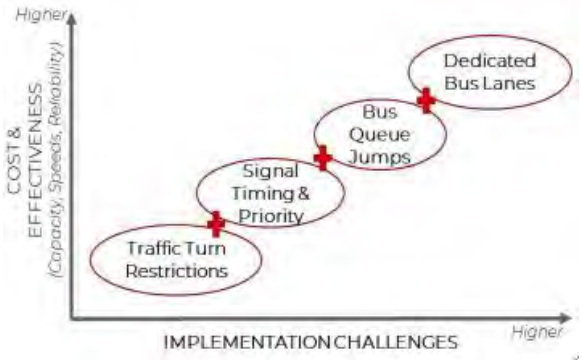
4.1 Background

Transit Priority Toolkit

The range of possible transit priority interventions available to help improve transit operations along the FTN can broadly be considered in four categories, as shown in **Figure 19**, each with differing costs, effectiveness and implementation challenges.

The objective is to determine for each identified location which transit priority option best suits the, with consideration of key variables such as the magnitude of delay and queuing, right-of-way availability, adjacent land use and context, and reasonable cost allocation.

FIGURE 19. TRANSIT PRIORITY MEASURES



Each transit priority measure is described in greater detail on the following pages.

Guidance from the *Transit Street Design Guide* resource is used in understanding the "toolkit" of transit priority measures

Option 1.
Manage Conflicts

The presence of left- and/or right-turn vehicles at key intersection can add to overall delay and reduce capacity for buses. Turn movements may be managed in strategic locations along the FTN to minimize delay to transit operations.

Option 2.
Signal Timing + Priority

Options to prioritize transit operations through signal modifications.

a. Signal Progression

Coordination of signals along a transit corridor to allow buses to move efficiently through intersection without delay.

b. Signal Pre-emption

Technology allowing buses to communicate to a traffic signal on approach to hold a green light to allow transit to clear the intersection without delay.

b. Signal Priority

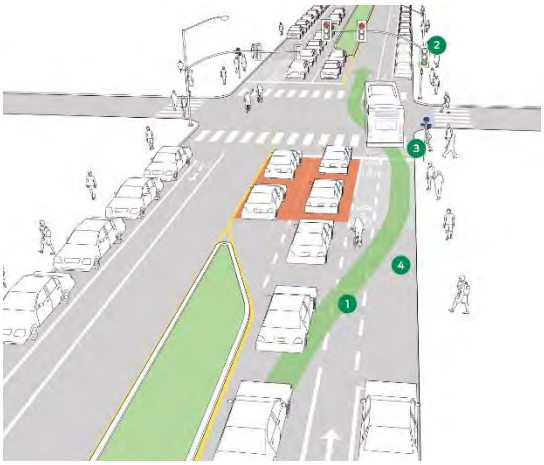
Signal timing / phasing modifications that favour transit operations or specific movements made by buses.

Option 3.
Bus Queue Jump Lane

Dedication of priority lanes near key intersections of congestion and delay that allow buses to proceed more efficiently through the intersection.

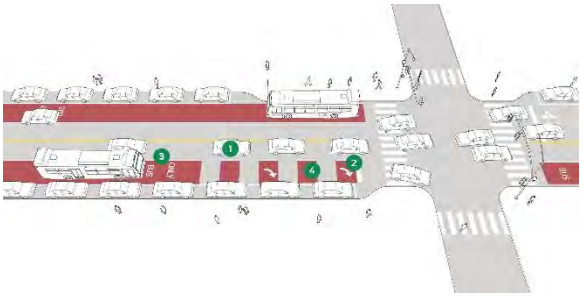
a. Queue Jump Lane

Dedicated transit queue jump lane that allows buses to bypass vehicle queues.



b. Right-turn Shared Lane

Where a low-volume right-turn lane is shared between vehicles and buses



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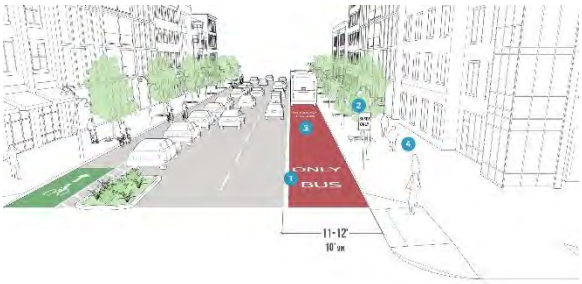
Option 4.

Dedicated Bus Lanes

Dedicated travel lanes that allow buses to travel entirely independent of vehicle traffic to improve transit operations along key corridors.

a. Curb Bus Lane

Where the outer-most lane is reserved for buses, may be mixed with right-turn vehicles.

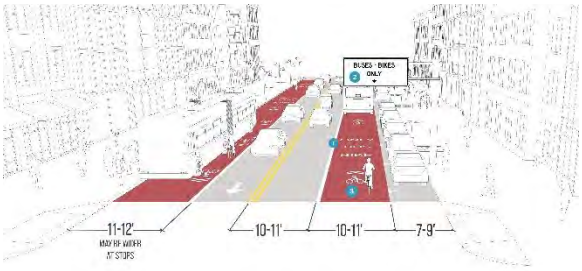


b. Peak-Only Bus Lane

Where the curb lane operates as a bus lane during peak periods but accommodates other activities during off-peak perdios, such as on-street parking.

c. Shared Bus-Bike Lane

Dedicated bus lanes that may also be occupied by bicycles in the absence of a high-level cycling facility.



d. Bus-On-Shoulder Lane

Similar to curb bus lanes, bus-on-shoulder lanes are found in rural areas and make use of the roadside shoulder for bus travel.

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Past Study

As introduced earlier in this document, the 2017 Frequent Transit Corridor Study identified opportunities for transit priority at four locations, as follows:

1. Cliffe Avenue / 5th Street

   A dedicated protected-permitted left turn signal phase to reduce delay for buses making the southbound left turn.

2. Old Island Highway / Ryan Road

   A queue jump lane for the westbound left turn to move buses more quickly through this location.

3. Ryan Road / Island Highway

   Signal prioritization for through movements on Ryan Road that holds the "green" phases to allow approaching buses to progress through the intersection.

4. Ryan Road / Cowichan Ave

   Consideration of signalizing this location to create gaps in traffic on Ryan Road to facilitate bus turns in/out of North Island College.

The locations and recommendations from past study are being considered as part of this study, along with other possible locations where transit priority may help reduce travel time.

4.2 Corridor Assessment

Transit travel times along the FTN corridor have been assessed to identify locations where transit operations are impacted by queuing and delay.

Median automobile travel speeds are shown along the FTN corridor for the AM peak hour (8am to 9am) in **Figure 18** and for the PM peak hour (4pm to 5pm) in **Figure 19**. The travel speed data was obtained from "big data" provider TomTom[7] for the period of September 1, 2019 to October 31, 2019 (pre-COVID conditions). This data excludes weekends and statutory holidays so that it represents typical weekday conditions.

As illustrated in the figures on the following pages, the median travel speeds along the FTN corridor are generally greater than 40 km/hr along much of the corridor, with median speeds reduced on the approaches to major intersections and through downtown Courtenay, south Courtenay and on the approach to downtown Comox. The median travel speeds are generally lower in the PM peak hour compared to the AM peak hour, resulting in longer delays and queue lengths in the PM peak hour. The median travel speed data also suggests a relatively balanced travel pattern, whereby median travel speed (and presumably queue length and delay) are relatively balanced in opposing directions during peak hours.

A few key locations are noted where travel speeds are lowest:

- Most streets within downtown Courtenay, a result of the small block sizes and traffic control (stop signs, signals) in place at most intersection causing vehicles to slow.
- The Ryan Road / Old Island Highway corridor between the 5th Street Bridge and Back Road, with median travel speeds lowest at the Old Island Highway / Ryan Road and Ryan Road / Highway 19a intersections.
- At major intersections along the Fitzgerald Avenue / Kilpatrick Avenue corridor, including 17th Street, 26th Street and 29th Street.
- On Comox Avenue on the approach to downtown Comox, particularly focused on the Comox Avenue / Port Augusta Street intersection.
- At the Lerwick Road / Ryan Road intersection and on Lerwick Road in the vicinity of North Island College and through the College campus (where context and street design precludes fast travel).
- At the Guthrie Road / Anderton Road and Anderton Road / Comox Avenue intersections in Comox.

[7] TomTom website: https://www.tomtom.com/products/historical-traffic-stats/

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FIGURE 18. MEDIAN TRAVEL SPEED, AM

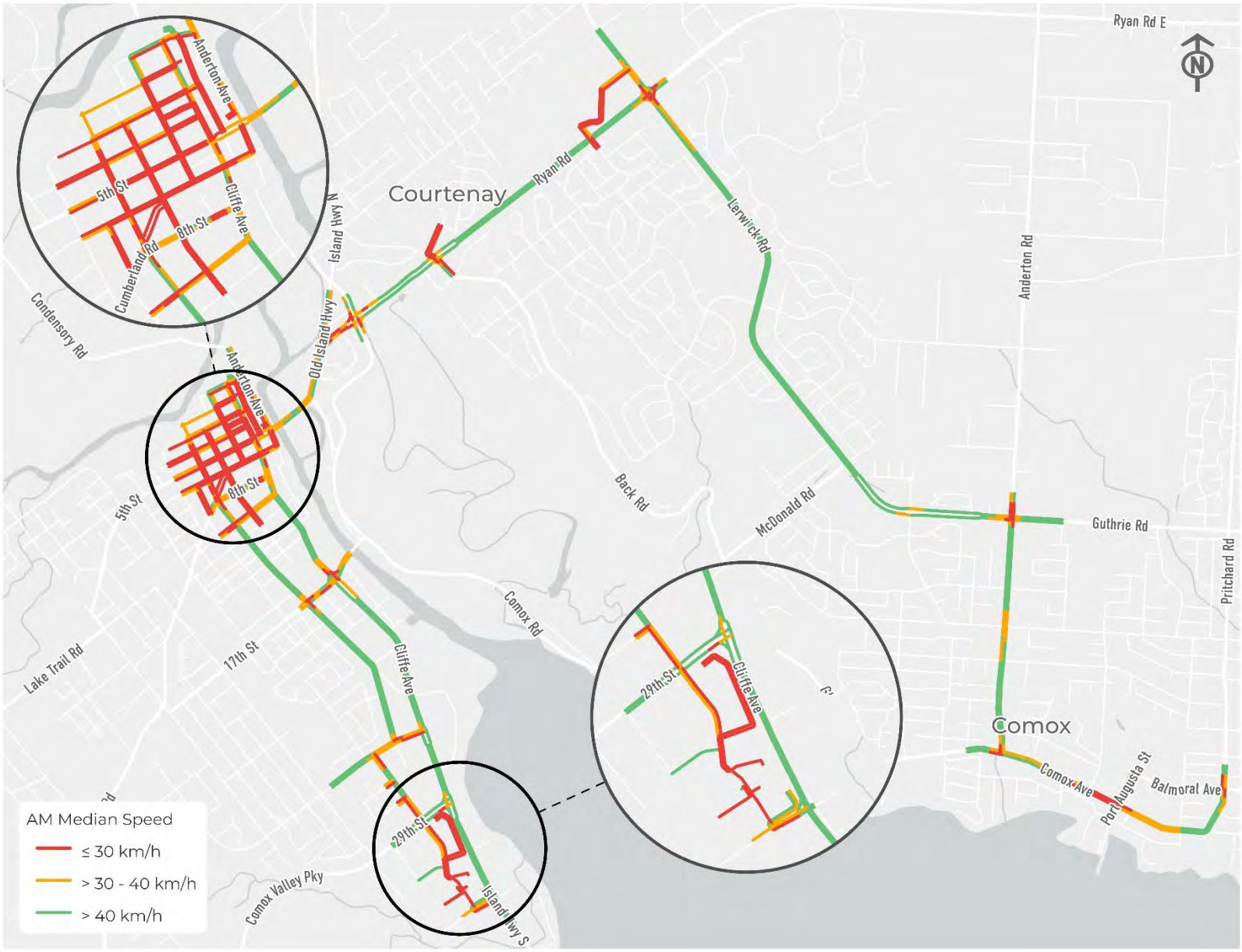

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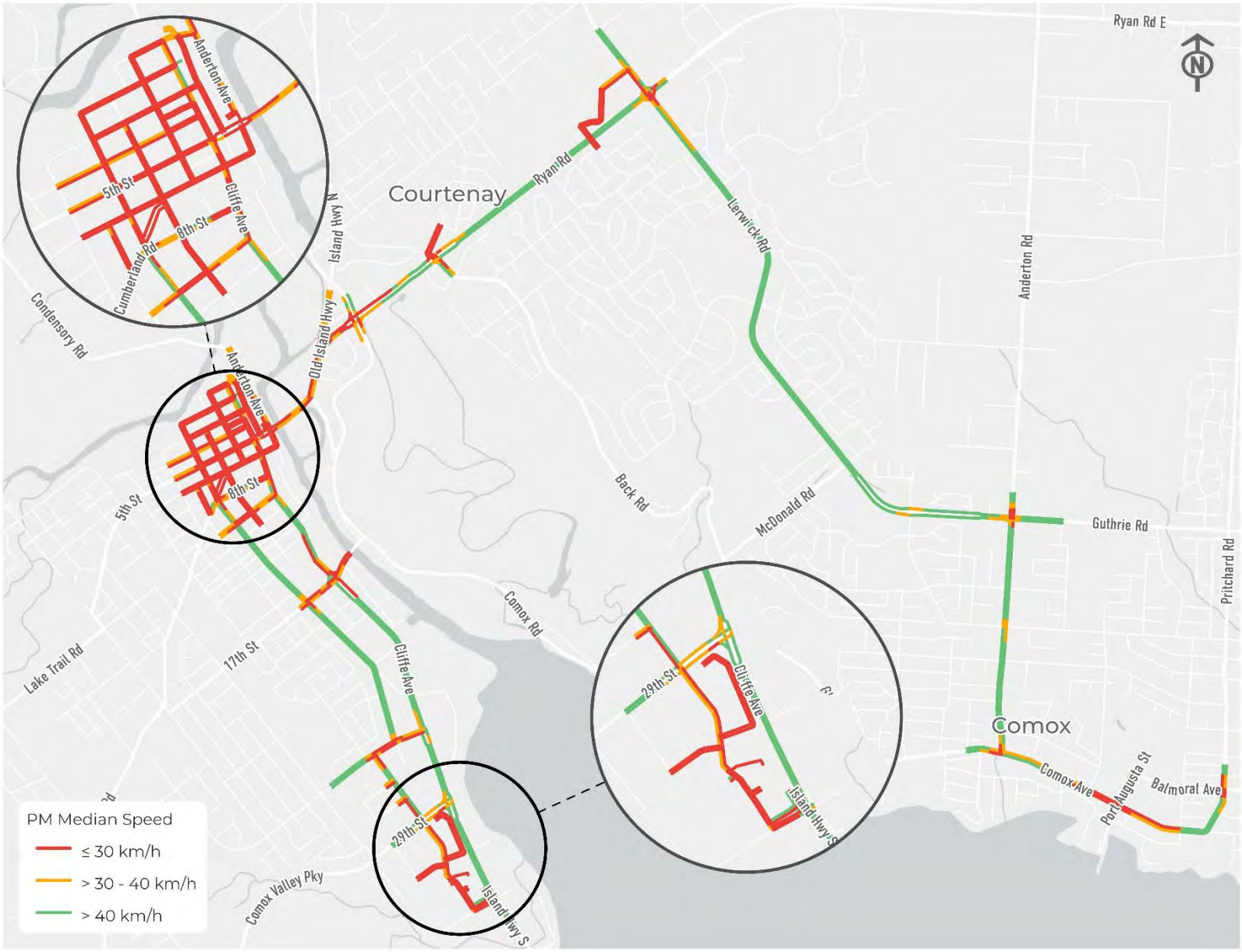
FIGURE 19. MEDIAN TRAVEL SPEED, PM



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4.3 Transit Priority Concept

A long-term transit priority concept has been developed for the FTN corridor. The concept identifies opportunities to prioritize transit operations through locations where median travel speeds are low and transit operations may be improved through targeted interventions. The long-term transit priority concept is identified in **Figure 20**. A description of some of the key locations and priority measures are described below.

Improvement Types

Transit priority opportunities have been identified as three generalized types, each referring to a general timeframe for implementation.

1. Interim Improvements – Opportunities that may reasonable be pursued in the short-term as conditions warrant and funding is available.

2. Protecting Possibilities – Opportunities that may not be possible currently but should be pursued if/when road construction or land development occurs.

3. Ultimate Build-Out – Improvement options that represent the long-term ("ultimate") build-out of the frequent transit network.

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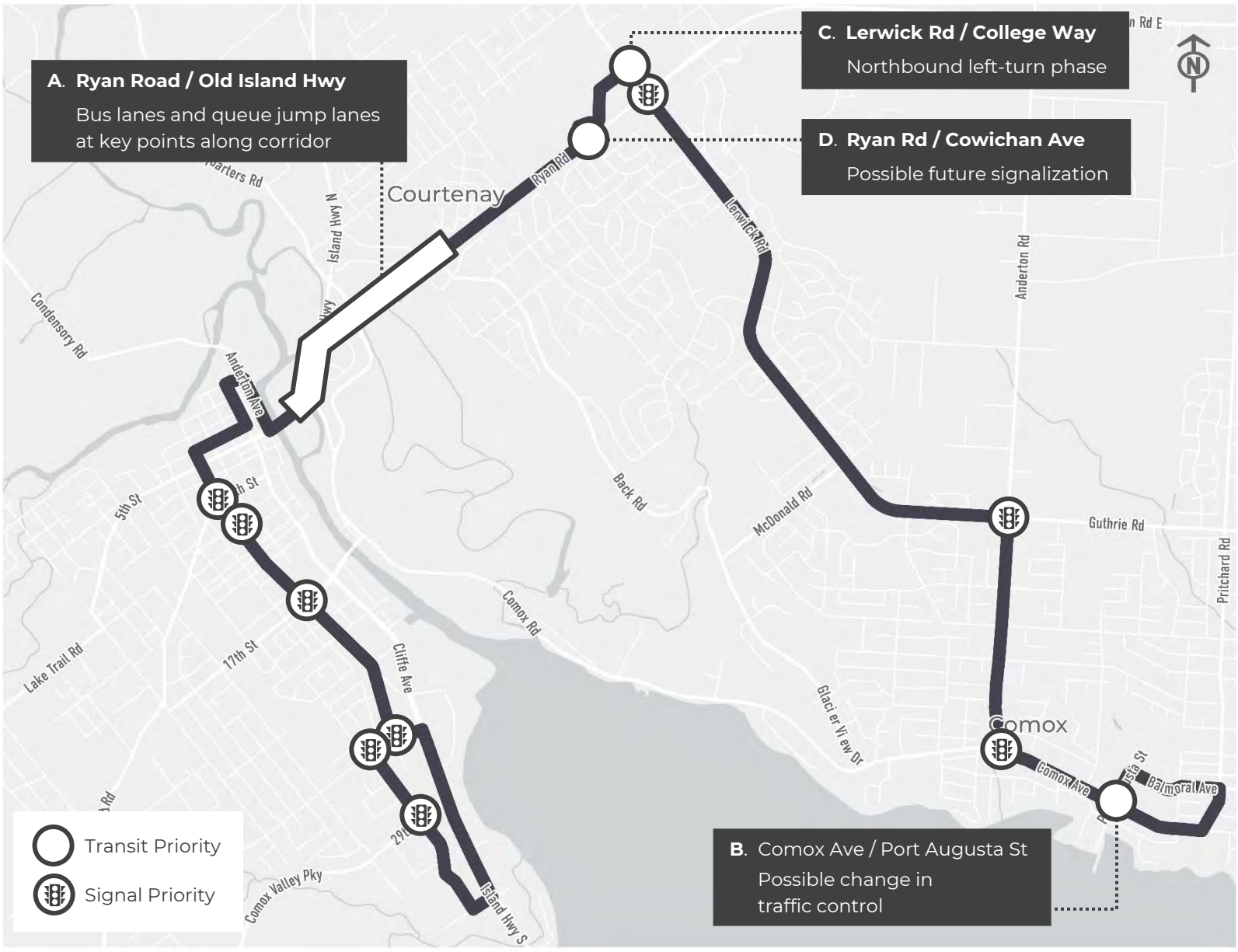
FIGURE 20. FTN CORRIDOR TRANSIT PRIORITY CONCEPT



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Key Locations

A. Ryan Road / Old Island Highway

The most challenging location along the FTN corridor in terms of reduced transit travel speed and delay is the Ryan Road / Old Island Highway corridor between Comox Road (west) and Back Road (east). These challenges are well documented in the Courtenay Transportation Master Plan (2019) and Comox Valley Frequent Transit Corridor Study (2017).

The ultimate and long-term solution to address congestion and reduced transit performance along these corridors is dedicated bus lanes in both the eastbound and westbound directions. Bus lanes would allow buses to bypass queued vehicles at key locations of congestion and proceed along the corridor with reduced travel time as compared to general purpose traffic. This would make transit an increasingly desirable travel option, help support increases in ridership and reduce operating costs.

The addition of dedicated bus lanes would have little to no impact on general purpose traffic conditions as buses would operate in dedicated runningways created by widening the roadway and without adding dedicated signal phases (as a queue jump lane would).

The dedicated bus lane concept is a long-term intervention that would come at both a high capital cost and require property acquisition along much of the corridor. Preferred cross-sections have been developed for the subject sections of Ryan Road and Old Island Highway, as shown in **Figure 21** and **Figure 22**, that align with the City's *Transportation Master Plan* and confirmed with the MOTI.

It is recommended that any infrastructure upgrades or improvements made along the corridors do not preclude achieving dedicated bus lanes in the long-term. Further, as subdivision and redevelopment occurs along these corridors, it is recommended that property is acquired along the frontage consistent with the identified cross-section and overall right-of-way width identified for each corridor.

A more detailed account of the right-of-way expansion required to achieve the full build-out is included in **Appendix B**.

Example of dedicated bus lanes on Douglas Street in Victoria

FIGURE 21. CROSS-SECTION FOR LONG-TERM TRANSIT PRIORITY, RYAN ROAD

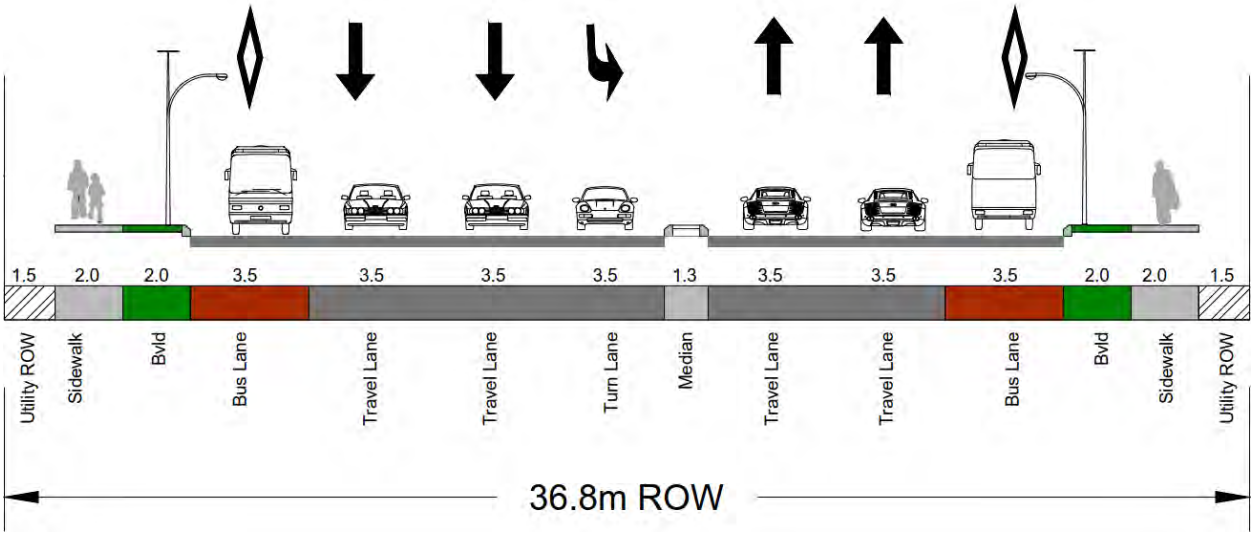
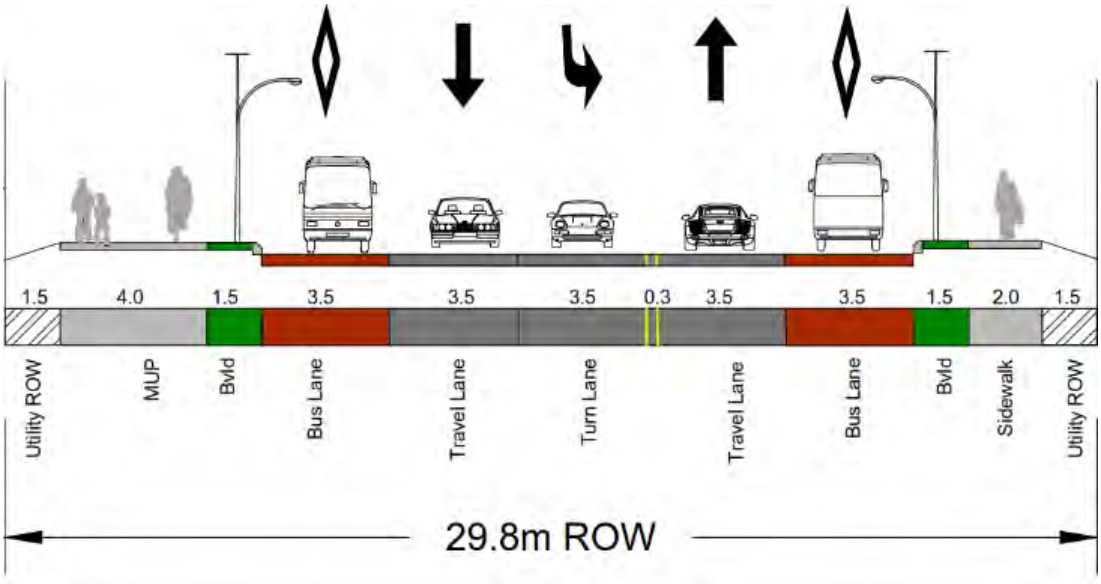


FIGURE 22. CROSS-SECTION FOR LONG-TERM TRANSIT PRIORITY, OLD ISLAND HIGHWAY



Given the long-term nature of the dedicated bus lanes concept identified above, there are interim queue jump lane improvements that may be pursued within the current road right-of-way at relatively low capital cost. The following specific intersection locations have been identified:

- Old Island Highway / Comox Road

  Repurpose the eastbound right-turn lane as a shared queue jump / right-turn lane to allow buses to bypass vehicle queues and clear the intersection more quickly, as illustrated in **Figure 23**.

- Old Island Highway / Ryan Road

  Reallocate space on the intersection's east leg to add a westbound queue jump lane that would allow buses to bypass queued left-turn vehicles (identified in 2017 Transit Priority Corridor Study), as illustrated in **Figure 24**.

- Ryan Road / Back Road

  Widening on the eastbound approach where sufficient right-of-way is in-place to achieve a right-turn / queue jump lane that would allow buses to bypass queued vehicles.

Portions of this corridor are under the City of Courtenay's and Ministry of Transportation and Infrastructure's jurisdiction and would require the cooperation of both organizations.

B. Comox Avenue / Port Augusta Street

The Comox Avenue / Port Augusta Street intersection is currently a 4-way stop. As transit exchange options are being explored for the section of Port August Street north of Comox Avenue, there may be opportunities to alter traffic control at this intersection to better accommodate transit operations along the FTN corridor. Options to consider may include:

1. A traffic signal
2. Two-way stop control (stop on Port Augusta St, free flow on Comox Ave)

C. Lerwick Road / College Way

A dedicated northbound left-turn phase may be pursued for the Lerwick Road / College Way intersection to allow buses (and left turn vehicles) entering North Island College to clear the intersection prior to southbound through traffic moving through the intersection, eliminating any delay experienced by buses in making this movement. A dedicated northbound left-turn lane is already in-place with approximately 30m storage length (approx. 4 vehicles, 2 buses), requiring that only signal modifications are made to facilitate this improvement.

D. Ryan Road / Cowichan Avenue

Historically a traffic signal has been considered for the Ryan Road / Cowichan Avenue intersection as an opportunity to create gaps in through traffic on Ryan Road to allow buses to enter / exit North Island College, as well as to facilitate safe crossing of Ryan Road by pedestrians and cyclists (this concept was explored in the 2017 Frequent Transit Corridor Study). It is understood that an enhanced pedestrian crossing is to be installed in 2021 or 2022, and that signalization of this location would be a long-term improvement.

E. Signal Priority (various)

A number of locations are identified along the FTN corridor where traffic signal timing may be altered to favour specific movements where the FTN transit service operates. These improvements would involve giving more "green time" to key transit movements, allowing both buses and general traffic to make these movements more efficiently. The impact that each location may have in improving transit operations will depend on the slow down / delay incurred at each location and the level of signal prioritization that is granted to transit movements.

The capital costs associated with these improvements would vary depending on the capability of the traffic controller that is in-place.

The locations specifically identified for consideration as part of the transit priority concept include the following:

- Kilpatrick Avenue / 29th Street
- Kilpatrick Avenue / 26th Street
- Fitzgerald Avenue / 26th Street
- Fitzgerald Avenue / 17th Street
- Fitzgerald Avenue / 8th Street
- Ryan Road / Lerwick Road
- Guthrie Road / Anderton Road

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FIGURE 23.
OLD ISLAND HIGHWAY / COMOX ROAD EASTBOUND QUEUE JUMP LANE CONCEPT

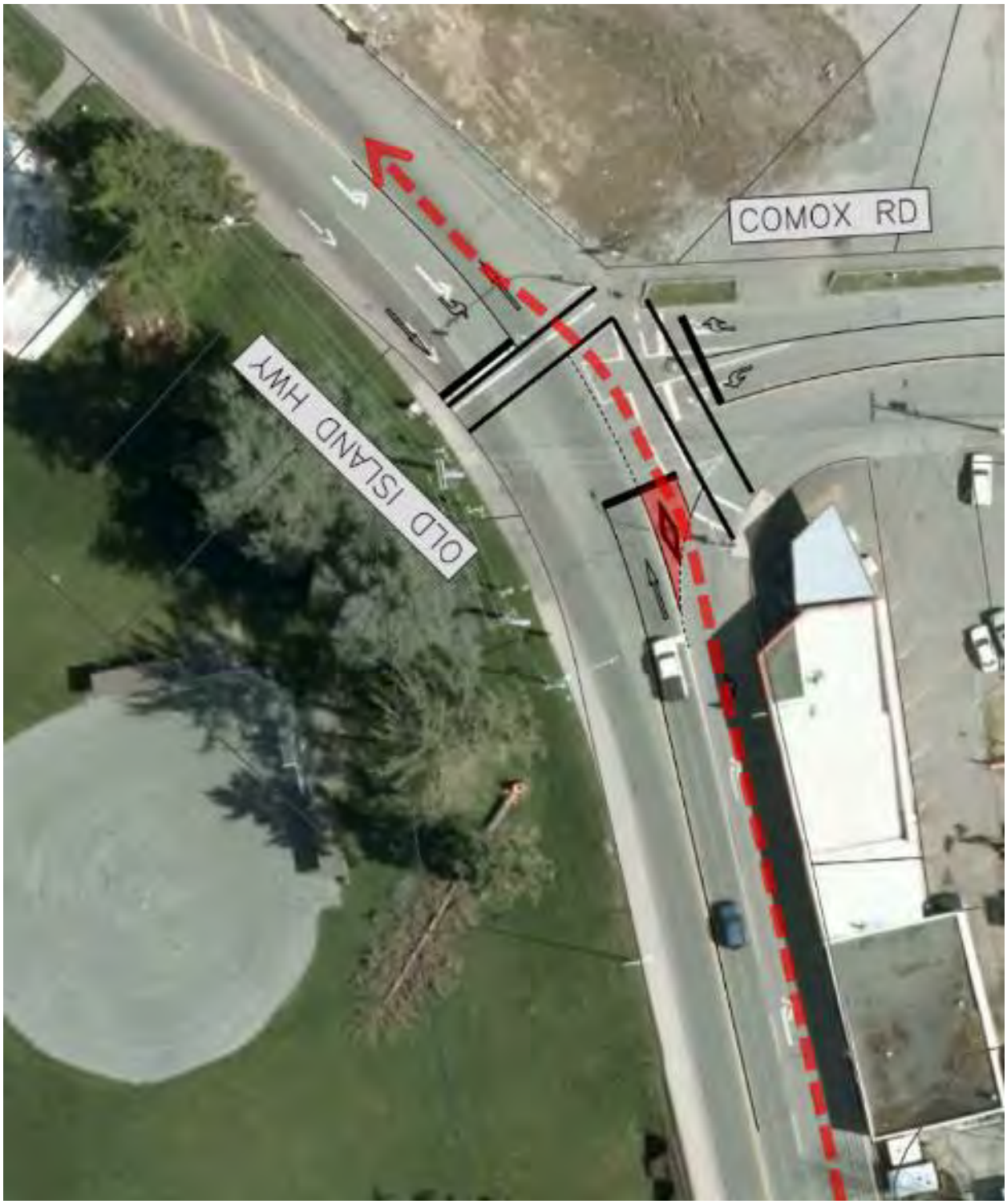

FIGURE 24.
RYAN ROAD / OLD ISLAND HIGHWAY WESTBOUND QUEUE JUMP LANE CONCEPT

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Impacts of Transit Priority

High-level traffic analysis has been completed that considers the impact of each transit priority measures in improving transit operations. The review also considers impacts on general purpose traffic. The results are summarized in **Table 15**.

While traffic and transit operations are important considerations, additional criteria such as multi-modal safety, as well as capital cost, should be given consideration in determining candidate transit priority locations.

It should be noted that the analysis considers PM peak hour conditions only, which have been shown to represent the greatest levels of delay and congestion. The analysis is based on high-level functional options that would need to be proven out through design to confirm and refine the impacts on transit operations and general purpose traffic.

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TABLE 15. SUMMARY OF TRANSIT PRIORITY OPTIONS ON TRANSIT + GENERAL PURPOSE TRAFFIC OPERATIONS (PM PEAK HOUR)

Location	Transit Priority Measures	Movement	Existing Conditions			Future (20 Years) Conditions		
			Impact on Transit Delay	General Purpose Traffic		Impact on Transit Delay	General Purpose Traffic	
				Base LOS	Updated LOS		Base LOS	Updated LOS
Short-Term Improvements								
A. 5th Street / Comox Road	Bus queue jump (EB)	EB thru	< 10 sec	A	B	< 10 sec	B	B
		EB right	--	A	A	--	A	A
		WB thru	(10 sec)	A	B	(10 sec)	A	C
A. Old Island Hwy / Ryan Rd	Bus queue jump (WB left)	WB left	60 – 90 sec	F	F	90 – 120 sec	F	F
		WB right	--	A	C	--	A	C
		NB thru	(30 – 45 sec)	E	F	(30 – 45 sec)	F	F
		SB thru	--	B	B	--	B	C
A. Ryan Rd / Back Rd	Bus queue jump (EB)	EB thru	< 10 sec	B	B	15 sec	C	C
		WB thru	--	C	D	-	B	B
B. Comox Ave / Port Augusta St	Two-way stop	EB left	< 10 sec	B	A	N/A		
		WB thru	5 – 15 sec	B	A			
	Signal	EB left	< 10 sec	B	A			
		WB thru	< 10 sec	B	A			
C. Lerwick Rd / College Access	Advanced left-turn phase (NBL)	NB left	< 10 sec	A	A			
Long-Term Improvements								
Ryan Rd / Old Island Hwy Corridor	Bus lane (EB, WB)	EB thru	60 – 90 sec	--	--	120 – 150 sec	--	--
		WB thru	60 – 120 sec	--	--	60 – 120 sec	--	--

5.0 Implementation Strategy

A detailed implementation strategy has been developed identifying how the transit infrastructure investments identified in this study are to be pursued. This includes consideration of project costs, level of importance / priority, and timeline for implementation.

The implementation strategy is the outcome of a collaborative process led by the CVRD and BC Transit, and with the City of Courtenay, Town of Comox, Village of Cumberland, Ministry of Transportation and Infrastructure, and PW Transit as key project partners. From this perspective, it represents the collective vision of priorities and investment in infrastructure throughout the Comox Valley system from all local partners. This unified approach and commitment is important to pursuing and securing possible external funding opportunities.

The recommended implementation approach for pursuing transit infrastructure investments in the Comox Valley is summarized in the following section.

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5.1 Cost Estimates

Cost estimates have been prepared as the basis for understanding the capital cost associated with each transit infrastructure improvement. Cost estimates for each identified transit infrastructure project are summarized in **Table 16** below.

TABLE 16. TRANSIT INFRASTRUCTURE COST ESTIMATES

Project	Cost
Transit Exchanges	
a. South Courtenay	$1.7-million
b. Downtown Courtenay	$600,000
c. North Island College	$700,000
d. Downtown Comox	$650,000
e. Oyster River	$650,000
Transit Priority	
Ryan Rd / Old Island Hwy Queue Jump	$225,000
Old Island Hwy / Comox Rd Queue Jump	$250,000
Lerwick Rd / College Way NB Left Phase	$50,000
Ryan Rd / Cowichan Ave Signalization	$350,000
Signal Priority (up to 9 locations)[8]	$50,000 (per location)

Cost estimates are order-of-magnitude (Class "D") estimates suitable for prioritization and budgeting purposes. Costing includes construction contingency (50%) and allocations for engineering, administration and construction supervision. Estimates do not address any required underground utility improvements or lighting relocation or additions, and do not account for environmental mitigation and/or remediation, municipal and utility type charges, legal and topographic surveys and any required property acquisition or legal fees.

Further cost estimate refinements will be required as each improvement project is progressed to subsequent design phases. Cost escalation is anticipated to occur in future, which may require that added budget and/or further cost refinements are undertaken to understand the full cost associated with projects.

[8] Cost estimate assumes $35,000 in signal upgrades per location, plus $6,000 per bus (20 buses) to equip with transponder technology

5.2 Project Prioritization

A prioritization exercise has been undertaken to identify and support the preferred sequencing of transit infrastructure investments. Prioritization was considered through conversations with the CVRD, BC Transit and local partner agencies, supported by an objective prioritization method that considers each project across specified criteria. Reference was made to BC Transit's *Project Prioritization Framework* to ensure the process used for the Comox Valley aligns with the Province-wide approach to prioritization.

The following criteria were used in understanding project priority:

		Transit Exchanges	Transit Priority
Capacity	The extent to which transit service is negatively impacted by a current lack of exchange capacity (i.e., bus bays) and the improvement will help support system growth.	✓	
Operations	The extent to which transit travel times and schedules will be enhanced by the improvement.	✓	✓
Enhancement	The level of enhancement that the improvement would provide over current facilities, including personal safety, comfort, aesthetics and passenger amenities.	✓	
Condition	The physical condition and remaining lifespan of current facilities, and the benefit afforded by the improvement.	✓	
Community	The level of support from established community plans and/or public commentary.	✓	
Environment	Consideration of how the improvement supports greenhouse gas emissions reduction and represents responsible environmental stewardship.	✓	✓
Value	The capital cost of the improvement relative to other projects, in consideration of the overall benefit afforded by the investment.	✓	✓
Coordination	Opportunities to realize the identified improvement concurrent with other planned works in the vicinity and / or likelihood of receiving external funding.	✓	✓

5.3 Implementation Summary

A targeted and strategic approach to implementation is recommended that prioritizes investments that have the greatest immediate need and represent good value. Prioritization has been established based on an improvements overall benefit to the Comox Valley system.

The recommended implementation approach is summarized in **Table 17**. The highest priority investments that are recommended as the focus of short-term implementation over the next five years include the following:

1. **South Courtenay Transit Exchange**

   The South Courtenay Transit Exchange is identified as the highest priority project as the expanded exchange capacity would facilitate expanded local service in South Courtenay, as well as create a more logical southern terminus for the FTN route inline with FTN direction and the more recent *Frequent Transit Corridor Study*. This location also eliminates the need to serve the current Driftwood Mall location, improving operations for the FTN route and other local routes.

2. **Ryan Road / Old Island Highway Queue Jump Lane**

   The Ryan Road / Old Island Highway Queue Jump Lane improvement decreases westbound / southbound transit travel times by approximately 60 - 90 seconds, providing significant benefit to transit operations at relatively limited cost. The improvement requires only new signal infrastructure and line painting, and can otherwise be achieved within existing curb geometry. This improvement was identified in both the *Frequent Transit Corridor Study* and the City of Courtenay's *Transportation Master Plan*.

3. **Downtown Courtenay Transit Exchange**

   The Downtown Courtenay Transit Exchange is identified as a short-term improvement. A key recommendation of this study is further investigation, coordination with the City of Courtenay and community / stakeholder engagement to confirm the location and configuration of this facility. These activities should be pursued as a short-term priority, followed by establishing budget and pursuing implantation.

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TABLE 17. SUMMARY OF RECOMMENDED IMPLEMENTATION

Phasing	Project	Capital Cost (estimated)	Leadership	Partner Agencies
	South Courtenay Transit Exchange	$1.7-million	CVRD	BC Transit, City of Courtenay
	Ryan Rd / Old Island Hwy Queue Jump	$225,000	City of Courtenay	CVRD, BC Transit
	Downtown Courtenay Transit Exchange (advance planning and design work)	N/A	CVRD	BC Transit, City of Courtenay
	Downtown Courtenay Transit Exchange	$600,000	CVRD	BC Transit, City of Courtenay
	Old Island Hwy / Comox Rd Queue Jump	$250,000	City of Courtenay	CVRD, BC Transit
	Oyster River Transit Exchange	$650,000	CVRD	MOTI, BC Transit, City of Campbell River
	Downtown Comox Transit Exchange	$650,000	CVRD	Town of Comox, BC Transit
	North Island College Transit Exchange	$700,000	CVRD	North Island College, BC Transit
	Lerwick Rd / College Way NB left turn phase	$50,000	City of Courtenay	CVRD, BC Transit, MOTI, North Island College
	Ryan Rd / Cowichan Ave Signal	$350,000	MOTI	CVRD, BC Transit, City of Courtenay, North Island College
	Signal Priority (up to 9 locations)	$50,000 (per location)	City of Courtenay, Town of Comox	CVRD, BC Transit
	Ryan Road and Old Island Highway Bus Lanes	TBC	MOTI	CVRD, BC Transit, City of Courtenay

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Phasing

A recommended implementation timeframe has been identified for each of the identified infrastructure projects to establish expectations for when each project might be pursued, help guide implementation of transit infrastructure by partner agencies, and communicate regional priorities for possible infrastructure funding agencies (i.e., Provincial, Federal).

The phasing assigned to each infrastructure project has been assigned based on the definitions below:

Short-Term Improvements

Highest priority projects that are to be the focus of implementation efforts over the first five years.

Medium-Term Improvements

Projects of secondary priority that are to be pursued once short-term projects have been completed.

Long-Term Improvements

Lower priority projects that are to be pursued once short- and medium-term projects have been completed.

Future Possibilities

Projects that are unlikely to be realized in the timeframe of this initiative, but are valuable long-term improvements that partner agencies are to work to retain the ability to achieve if / when investments are warranted.

5.4 Next Steps

The preceding material summarizes the recommended implementation sequencing for transit infrastructure improvements. A series of follow-up action items are suggested to begin realizing the directions identified in this study, as follows:

- The CVRD, in cooperation with BC Transit and the municipal system partners, should liaise with each government organization to assess the level of support for the identified infrastructure investments and recommendation prioritization. This may include formal endorsement from the CVRD Regional Board and/or municipal councils.
- Confirm the priority infrastructure investments, including exploring opportunities to align transit improvements with other planned capital investments among the CVRD, member municipalities and the Ministry of Transportation + Infrastructure.
- Once infrastructure priorities have been confirmed, each project is advanced through execution of a project term sheet, business case prepared by BC Transit, and a formal project agreement confirming intent from member municipalities, the CVRD and BC Transit to pursue the project.

Recent experiences developing transit infrastructure in other B.C. communities has shown that it takes a minimum of two years between confirming intent to pursue a project and new facilities becoming operational.

The following is a step-by-step process and approximate timeline that should be expected as transit exchange projects are advanced:

- Local Government approval of option(s) and project term sheet execution
- Approval of BC Transit business case (3-6 months)
- Investing in Canada Infrastructure Program (ICIP) application made (3 months)
- ICIP application approved (3-6 months)
- Negotiation period and signature of project agreement (3 months)
- Complete engineering and design (6 months)
- Tendering and construction contract award (6-9 months)
- Project completion

Appendix A.

DETAILED ASSESSMENT, CANDIDATE TRANSIT EXCHANGE LOCATIONS

EVALUATION CRITERIA

Category	Criteria	Measures
Rider Experience	Proximity	Walking distance to key transit trip origins / destinations
	Clarity	Ease of understanding transit routes, connections and bus stop locations
	Amenities	Opportunities to accommodate transit amenities, as well as supporting amenities and opportunities provided on adjacent properties
	Integration	Fit with transportation options providing access to/from the exchange, including surrounding pedestrian network and barrier-free access
Safety	Pedestrians/Cyclists	Level of safe, comfortable pedestrian and cyclist access provided
	Traffic	Level of safe transit operations within the roadway, including avoiding possible bus-vehicle conflict
	Personal	Issues associated with personal safety, visibility at night and access to assistance
Community	Parking	Impacts on parking
	Neighbours	Potential benefits and impacts to adjacent land uses
	Traffic	Impacts on vehicle circulation or traffic operations
	Appearance	Visual impact of transit service and facilities
Transit Operations	Travel Time	FTN route deviation and/or added travel time resulting from the exchange location
	Delays	Potential for delay to buses
Local Gov't Plans	Alignment	Consistency with and support for local government plans (i.e., Official Community Plan, Local Area Plan, Transportation Plan)
Implementation	Capital Cost	Extent of works involved in developing transit exchange and associated improvements (note: full cost estimates to be developed for preferred options)
	Feasibility	Level of coordination required to pursue exchange (i.e., property acquisition, use of private land, agency coordination, etc)

EVALUATION RATINGS

●●●	**High**	The exchange option achieves high scoring for the identified criteria
●●	**Moderate**	The exchange option achieves moderate scoring for the identified criteria
●	**Low**	The exchange option achieves low scoring for the identified criteria

SOUTH COURTENAY
SUMMARY

Category	Criteria	Location 1. KILPATRICK / DRIFTWOOD MALL	Location 2. KILPATRICK / 30th	Location 3. CLIFFE @ ANFIELD CENTRE	Location 4. ANFIELD / CLIFFE
Rider Experience	Proximity	●●	●	●●	●●
	Clarity	●●	●●●	●●	●●
	Amenities	●●	●	●●	●●
	Integration	●●	●	●●	●●
Safety	Pedestrians / Cyclists	●●	●●	●●	●●●
	Traffic	●●●	●●●	●●	●●●
	Personal	●●	●	●●●	●●
Community	Parking	●●●	●●●	●●●	●●●
	Neighbours	●●●	●●	●●●	●●●
	Traffic	●●●	●●	●●●	●●●
	Appearance	●●●	●●	●●	●●●
Transit Operations	Travel Time	●●	●●●	●●●	●●●
	Delays	●●●	●●	●●	●●
Local Gov't Plans	Alignment	●●	●	●●	●●
Implementation	Capital Cost	●●●	●●	●●	●●●
	Feasibility	●●●	●●●	●●	●●

SOUTH COURTENAY

KILPATRICK / DRIFTWOOD MALL (LOCATION 1)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●	Located immediately adjacent Driftwood Mall, although with rear mall access not open at all times potentially creating longer walking distances
	Clarity	●●	Bus travel in one direction may be more difficult to intuitively understand
	Amenities	●●	Ability to fit all necessary bus stop amenities, drivers and passengers may benefit from amenities at Driftwood Mall
	Integration	●●	Connected to rear access to Driftwood Mall
Safety	Pedestrians / Cyclists	●●	No conflicts with pedestrians or cyclists, crosswalk in front of EB bus bay not preferable
	Traffic	●●●	Limited bus-vehicle conflict expected, buses enter/exit through travel lane to access bus bays
	Personal	●●	Location has limited public activity, not particularly visible
Community	Parking	●●●	No impact on parking
	Neighbours	●●●	No issue anticipated with adjacent neighbours, Driftwood Mall to benefit from added pedestrian traffic
	Traffic	●●●	Limited impact on traffic, removal of centre left turn lane
	Appearance	●●●	Limited visual impact, facility mid-block on a collector road
Transit Operations	Travel Time	●●	Located directly on FTN alignment, not located directly at the end of Route 1 and may require some bus dead-heading and/or re-routing to align buses on the east side of Kilpatrick Ave
	Delays	●●●	No delay to transit operations
Local Gov't Plans	Alignment	●●	Area identified as Commercial Shopping Centre and Industrial in existing OCP (OCP being reviewed)
Implementation	Capital Cost	●●●	Capital costs include new sidewalk on east side of Kilpatrick Ave and curb extensions on Kilpatrick Ave
	Feasibility	●●●	Limited coordination required with adjacent property owners

SOUTH COURTENAY

KILPATRICK / 30TH (LOCATION 2)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	•	Approx. 200-400m from key destinations at Anfield Centre
	Clarity	•••	Easily identified, two-directional bus routing
	Amenities	•	Ability to fit all necessary bus stop amenities, not located adjacent supplementary passenger and driver amenities
	Integration	•	Relatively poor access to surrounding networks
Safety	Pedestrians / Cyclists	••	No conflicts with pedestrians or cyclists Maintains all sidewalk facilities, added sidewalks on west side New crosswalk to connect stops, crosswalk in front of EB bus bay not preferable
	Traffic	•••	Limited bus-vehicle conflict expected, buses enter/exit through travel lane to access bus bays
	Personal	•	Location has limited public activity, not particularly visible
Community	Parking	•••	No impact on parking
	Neighbours	••	Added residential density in vicinity may not like noise associated with bus facilities
	Traffic	••	Limited impact on traffic, removal of centre left turn lane
	Appearance	••	Limited visual impact, facility mid-block on a collector road
Transit Operations	Travel Time	•••	Located directly on FTN alignment, not located directly at the end of Route 1 and may require some bus dead-heading
	Delays	••	Modest delays through Anfield Centre site
Local Gov't Plans	Alignment	•	Area identified as Commercial Shopping Centre in existing OCP (OCP being reviewed)
Implementation	Capital Cost	••	Capital costs include new sidewalks and related bus stop infrastructure, existing curb work retained
	Feasibility	•••	Limited coordination required with adjacent property owners

SOUTH COURTENAY

CLIFFE AT ANFIELD CENTRE (LOCATION 3)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●	Approx. 50-250m from key destinations at Anfield Centre
	Clarity	●●	Bus travel in northbound direction may be more difficult to understand due to deviation through Anfield Centre
	Amenities	●●	Ability to fit all necessary bus stop amenities (although will require access to Anfield Centre property), drivers and passengers may benefit from amenities at Anfield Centre
	Integration	●●	Walking access to Anfield Centre, poor cycling conditions on Cliffe Ave
Safety	Pedestrians / Cyclists	●●	No conflicts with pedestrians or cyclists, limited direct cyclist access
	Traffic	●●	Limited bus-vehicle conflict expected, although some possible conflict with southbound right-turn vehicles and buses exiting bus bays to travel southbound toward Royston merging into inside lane
	Personal	●●●	Location has good visibility due to steady traffic on Cliffe Ave and activity at adjacent mall site
Community	Parking	●●●	No impact on parking
	Neighbours	●●●	No issue anticipated with adjacent neighbours, Anfield Centre to benefit from added pedestrian activity
	Traffic	●●●	No impact on traffic (note: alternative option to reduce to one southbound travel lane should include traffic study)
	Appearance	●●	Impact on existing boulevard landscape and trees
Transit Operations	Travel Time	●●●	Located directly at the western terminus of the FTN alignment, located directly on the corridor, involved minor route deviation for routes originating/destined to the south
	Delays	●●	Routing through Anfield Centre may result in modest delay
Local Gov't Plans	Alignment	●●	Facility adjacent lands identified Commercial Shopping Centre
Implementation	Capital Cost	●●	High capital cost due to need for sidewalk replacement, retaining walls and inclusion of driver washroom
	Feasibility	●●	Coordination required with commercial property to locate a portion of sidewalk and driver washroom on mall site

SOUTH COURTENAY

ANFIELD / CLIFFE (LOCATION 4)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●	Approx. 100-300m from key destinations at Anfield Centre
	Clarity	●●	Bus travel in one direction may be more difficult to intuitively understand, drop-off / pick-up on Cliffe Ave may not be intuitive
	Amenities	●●	Ability to fit all necessary bus stop amenities, drivers and passengers may benefit from amenities at Anfield Centre
	Integration	●●	Pedestrian access to Anfield Centre, poor cycling connections
Safety	Pedestrians / Cyclists	●●●	No conflicts with pedestrians or cyclists, improved crosswalk at Mallard Park
	Traffic	●●●	Limited bus-vehicle conflict expected, some possible conflict with southbound and westbound right-turn movements conflicting with buses enter/exit through travel lane
	Personal	●●	Location has limited public activity / not particularly visible, although much of the passenger drop-off and pick-up activity would occur at up- and downstream stops
Community	Parking	●●●	No impact on parking
	Neighbours	●●●	No issue anticipated with adjacent neighbours, Anfield Centre to benefit from added pedestrian activity
	Traffic	●●●	Loss of capacity with removal of westbound travel lane on Anfield Rd
	Appearance	●●●	Limited visual impact, facility is at the rear of Anfield Centre, possible conflict opposite Mallard Park
Transit Operations	Travel Time	●●●	Located directly at the western terminus of the FTN alignment, located directly on the corridor
	Delays	●●	Routing through Anfield Centre may result in modest delay
Local Gov't Plans	Alignment	●●	Facility adjacent lands identified Commercial Shopping Centre
Implementation	Capital Cost	●●●	Capital costs include widened sidewalk on north side of Anfield Rd and improved crosswalk
	Feasibility	●●	Coordination required with commercial properties and park interests, necessary right-of-way is in-place

DOWNTOWN COURTENAY
SUMMARY

Category	Criteria	Location 1. CLIFFE / 4th STREET	Location 2. 6th STREET	Location 3. ENGLAND AVENUE	Location 4. 8th STREET
Rider Experience	Proximity	●●	●●●	●●●	●●
	Clarity	●●	●●●	●●●	●●●
	Amenities	●●●	●●	●●	●●
	Integration	●●●	●●●	●●●	●●●
Safety	Pedestrians / Cyclists	●●●	●●●	●●●	●●
	Traffic	●●●	●●●	●●●	●●
	Personal	●●	●●●	●●●	●●
Community	Parking	●●	●	●	●●
	Neighbours	●●●	●	●●	●●●
	Traffic	●●	●●●	●	●●●
	Appearance	●●●	●	●●●	●●●
Transit Operations	Travel Time	●●	●●	●●	●●●
	Delays	●●	●●●	●●●	●●
Local Gov't Plans	Alignment	●●●	●●●	●●	●●
Implementation	Capital Cost	●●	●●	●●	●●●
	Feasibility	●●●	●	●●●	●●●

DOWNTOWN COURTENAY

CLIFFE / 4th STREET (LOCATION 1)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●	Location near centre of downtown, good walking distance to activities on 5th and 6th Street
	Clarity	●●	Easily comprehended, builds on current exchange location
	Amenities	●●●	Bus stop amenities located with right-of-way, added space on 4th Street, possible access to nearby public uses
	Integration	●●●	Good sidewalk coverage in the vicinity, small block sizes allow for short walking distance
Safety	Pedestrians / Cyclists	●●●	No conflicts with pedestrians or cyclists, improved crossing design at 4th St / Cliffe Ave
	Traffic	●●●	No issues with traffic safety or bus-vehicle conflict
	Personal	●●	Located in an area of high pedestrian activity, some concerns over concentration of social services in this location
Community	Parking	●●	Removal of a small number of parking spaces on Cliffe Ave
	Neighbours	●●●	Limited impact on neighbouring uses, builds on existing transit exchange location
	Traffic	●●	Option for bus stopping in-lane on 4th Street will result in reduced vehicle travel times
	Appearance	●●●	Expansion of existing facility
Transit Operations	Travel Time	●●	No change in FTN routing
	Delays	●●	No added delay
Local Gov't Plans	Alignment	●●●	Aligned with community plans
Implementation	Capital Cost	●●	Limited capital cost, includes new side on 4th Street
	Feasibility	●●●	Builds on current transit exchange infrastructure

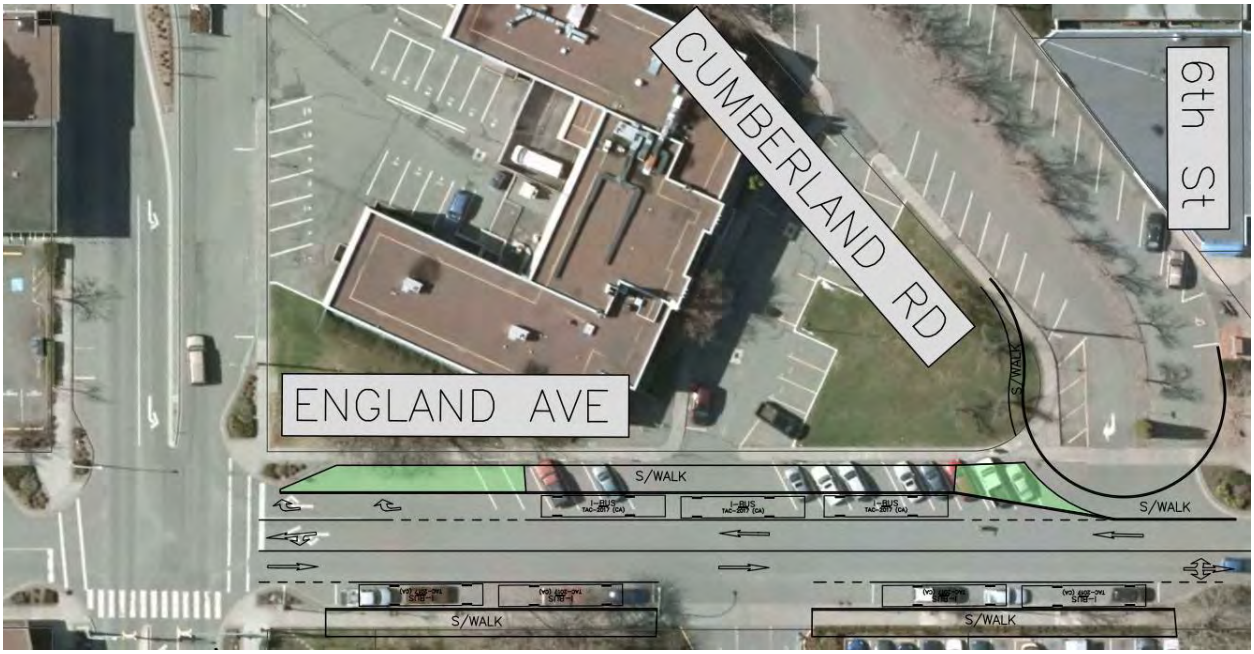
DOWNTOWN COURTENAY

6th STREET (LOCATION 2)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●●	Good proximity to the centre of downtown Courtenay
	Clarity	●●●	Good clarity, two-directional routing with only minimum route deviation for Fitzgerald Ave
	Amenities	●●	Bus stop amenities, possible access to adjacent retail amenities
	Integration	●●●	Good sidewalk coverage in the vicinity, great access from cycling facilities on Fitzgerald Ave
Safety	Pedestrians / Cyclists	●●●	Good sidewalk coverage, opportunities to access the exchange from buffered cycling facilities on Fitzgerald Ave
	Traffic	●●●	No traffic safety concerns
	Personal	●●●	Good surveillance, nearby pedestrian activity
Community	Parking	●	Significant loss of on-street parking
	Neighbours	●	Likely concern over sound, visual and air quality concerns from adjacent retail businesses
	Traffic	●●●	Limited impact on traffic conditions
	Appearance	●	Bus facilities may negative impact visual appearance of retail commercial activities
Transit Operations	Travel Time	●●	Route deviation required from Fitzgerald Ave via 6th St / England Ave / 8th St
	Delays	●●●	Limited delays
Local Gov't Plans	Alignment	●●●	Located within identified downtown area
Implementation	Capital Cost	●●	Moderate costs associated with expanded curb extensions, sidewalks largely in-place
	Feasibility	●	Coordination with adjacent business owners required, likely to be unsupported due to loss of on-street parking

DOWNTOWN COURTENAY

ENGLAND AVENUE (LOCATION 3)



Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●●	Good proximity to the centre of downtown Courtenay
	Clarity	●●●	Two-direction routing with small deviation from Fitzgerald Ave
	Amenities	●●	Bus stop amenities, access to downtown retail activities although not immediately adjacent
	Integration	●●●	Well integrated with surrounding context, limited volume road where transit does not impact traffic operations, good access for pedestrians
Safety	Pedestrians / Cyclists	●●●	Good sidewalk coverage nearby, crossing opportunities on 6th St and 8th St
	Traffic	●●●	No traffic safety impact
	Personal	●●●	Good natural surveillance, moderate pedestrian activity
Community	Parking	●	Significant loss of on-street parking
	Neighbours	●●	Impacts on driveway access / circulation on adjacent western property
	Traffic	●	Impacts on traffic circulation (Cumberland Rd closure)
	Appearance	●●●	Well suited to this location, limited immediately adjacent fronting land uses
Transit Operations	Travel Time	●●	FTN route deviation required via 8th St / England Ave / 6th St
	Delays	●●●	No delay to transit operations
Local Gov't Plans	Alignment	●●	At the edge of the identified downtown area
Implementation	Capital Cost	●●	Makes use of existing sidewalks, some addition sidewalk width and boulevard required to narrow roadway
	Feasibility	●●●	Coordination required with adjacent property owners primarily regarding circulation and access

DOWNTOWN COURTENAY

8th STREET (LOCATION 4)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●	8th Street location is further from the centre of downtown than other options
	Clarity	●●●	Location would facilitate two directional bus service with adjacent crosswalk, no issue with clarity
	Amenities	●●	Limited amenities in the immediate vicinity, adequate sidewalk width for shelters
	Integration	●●●	Full sidewalk coverage on adjacent streets
Safety	Pedestrians / Cyclists	●●	No cycling infrastructure in-place and not part of the identified long-term cycling network
	Traffic	●●	Possible conflict with stationary buses accelerating up 8th Street while merging with through traffic
	Personal	●●	Limited pedestrian activity as compared to other downtown locations
Community	Parking	●●	Modest loss of on-street parking
	Neighbours	●●●	Little issue with compatibility with neighbouring uses, greater number of surface parking and building setback from the street as compared to other locations
	Traffic	●●●	No impact on traffic
	Appearance	●●●	Limited visual impact, facility is adjacent lower density commercial uses
Transit Operations	Travel Time	●●●	FTN route would be re-routed via 8th Street and Cliffe Avenue, resulting in most improvements in transit travel time
	Delays	●●	Location would result in rerouting FTN via 8th Street, with possible challenges for buses navigating southbound right-turn at 8th St / Cliffe Ave
Local Gov't Plans	Alignment	●●	Located outside the identified downtown area
Implementation	Capital Cost	●●●	Limited capital cost, makes use of existing sidewalks
	Feasibility	●●●	Limited coordination required with adjacent property owners

NORTH ISLAND COLLEGE
SUMMARY

Category	Criteria	Location 1. COLLEGE WAY / AQUATIC CENTRE / HOSPITAL	Location 2. COLLEGE WAY / RYAN ROAD
Rider Experience	Proximity	●●●	●●●
	Clarity	●●●	●●●
	Amenities	●●●	●●
	Integration	●●●	●
Safety	Pedestrians / Cyclists	●●●	●
	Traffic	●●	●●
	Personal	●●	●●
Community	Parking	●●●	●●
	Neighbours	●●●	●●●
	Traffic	●●●	●●●
	Appearance	●●●	●●●
Transit Operations	Travel Time	●●●	●●●
	Delays	●●●	●●●
Local Gov't Plans	Alignment	●●●	●●
Implementation	Capital Cost	●●	●●
	Feasibility	●●	●●

NORTH ISLAND COLLEGE

COLLEGE WAY / AQUATIC CENTRE / HOSPITAL (LOCATION 1)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●●	Located immediately adjacent Aquatic Centre and North Island Hospital, further from the future student residence building as compared to other exchange option
	Clarity	●●●	Easily understood, two-way bus travel
	Amenities	●●●	Bus stop amenities, access to nearby civic uses
	Integration	●●●	Good integration, immediately adjacent walkway to hospital
Safety	Pedestrians / Cyclists	●●●	Good connections to pedestrian facilities
	Traffic	●●	Bus bays provided, no traffic safety concerns
	Personal	●●	Good activity levels at adjacent Aquatic Centre providing natural surveillance
Community	Parking	●●●	No impact on parking
	Neighbours	●●●	Compatible with adjacent Aquatic Centre, no impact
	Traffic	●●●	No impact on traffic
	Appearance	●●●	No visual impact on campus entrance
Transit Operations	Travel Time	●●●	No impact on transit travel time
	Delays	●●●	No delays
Local Gov't Plans	Alignment	●●●	Not obviously aligned with community plans
Implementation	Capital Cost	●●	New sidewalk and bus bays
	Feasibility	●●	Coordination with North Island College and Aquatic Centre

NORTH ISLAND COLLEGE

COLLEGE WAY / RYAN ROAD (LOCATION 2)

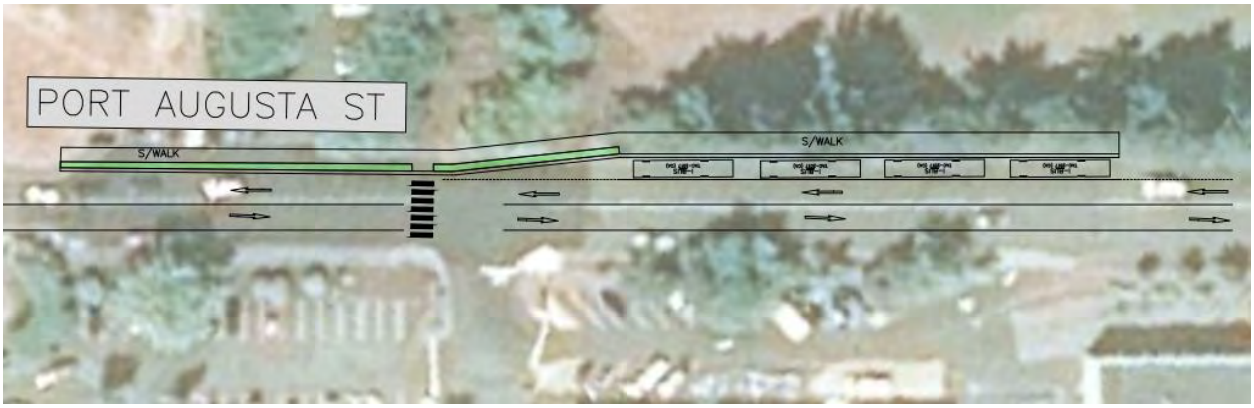
Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●●	Located immediately adjacent future student residence building, further from Aquatic Centre and North Island Hospital as compared to other exchange option
	Clarity	●●●	Easily understood, two-way bus travel
	Amenities	●●	Bus stop amenities, no land uses immediately nearby
	Integration	●	Limited sidewalk coverage nearby, may require pedestrians walk through parking lots and/or new walkway are constructed
Safety	Pedestrians / Cyclists	●	Poor surrounding pedestrian facilities
	Traffic	●●	Bus stops on curved road may lead to sightline challenges
	Personal	●●	No immediately adjacent land use or pedestrian activity
Community	Parking	●●	Modest parking lot in gravel parking area
	Neighbours	●●●	Limited adjacent uses, no impact
	Traffic	●●●	No impact on traffic conditions
	Appearance	●●●	No visual impact
Transit Operations	Travel Time	●●●	No impact on transit travel time
	Delays	●●●	No delays
Local Gov't Plans	Alignment	●●	Not obviously aligned with community plans
Implementation	Capital Cost	●●	New sidewalks and bus bays
	Feasibility	●●	Coordination required with North Island College

DOWNTOWN COMOX
SUMMARY

Category	Criteria	Location 1. PORT AUGUSTA, WEST SIDE	Location 2. PORT AUGUSTA, EAST SIDE
Rider Experience	Proximity	●●	●●●
	Clarity	●●	●●
	Amenities	●●●	●●●
	Integration	●●	●●●
Safety	Pedestrians / Cyclists	●●	●●●
	Traffic	●●●	●●●
	Personal	●●	●●●
Community	Parking	●●●	●●
	Neighbours	●●●	●●●
	Traffic	●●●	●●●
	Appearance	●●●	●●●
Transit Operations	Travel Time	●●	●●
	Delays	●●●	●●
Local Gov't Plans	Alignment	●●●	●●●
Implementation	Capital Cost	●●	●●●
	Feasibility	●●●	●●●

DOWNTOWN COMOX

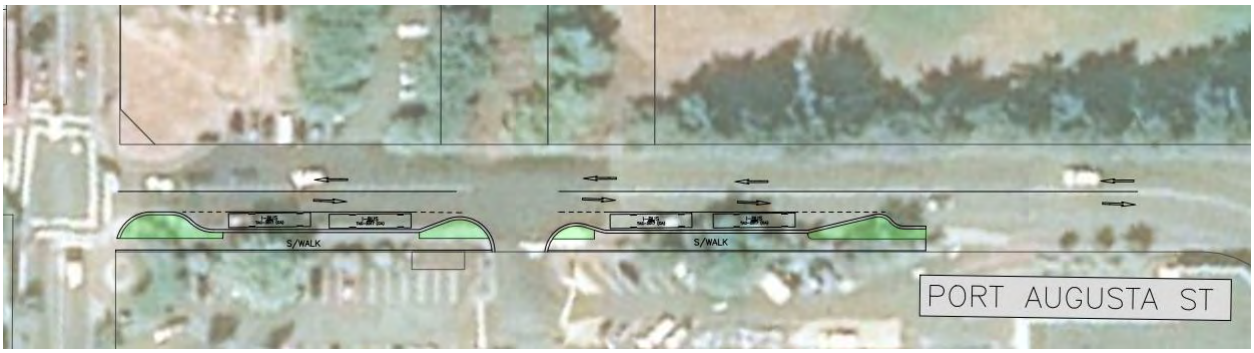
PORT AUGUSTA STREET, WEST SIDE (LOCATION 1)



Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●	Located opposite Port Augusta St from Comox Mall
	Clarity	●●	Requires that eastbound bus circulate via Comox Ave / Pritchard Rd / Balmoral Ave to access bus stops
	Amenities	●●●	Good bus stop amenities, with access to Comox Mall
	Integration	●●	Sidewalk extension required to Comox Ave to connect pedestrians, crosswalk required on Port Augusta St
Safety	Pedestrians / Cyclists	●●	Requires both a crosswalk on Port Augusta St and sidewalk extension to Comox Ave to provide safe pedestrian connections
	Traffic	●●●	No traffic safety concern
	Personal	●●	Bus stops located adjacent property frontage (golf course) with limited activity / surveillance
Community	Parking	●●●	No impact on parking
	Neighbours	●●●	No impact on adjacent land uses
	Traffic	●●●	No impact on traffic
	Appearance	●●●	No significant visual impact
Transit Operations	Travel Time	●●	Added circulation required via Balmoral Ave / Pritchard Rd
	Delays	●●●	No significant delay to transit service
Local Gov't Plans	Alignment	●●●	Located within identified town centre
Implementation	Capital Cost	●●	Cost associated with new bus bays, sidewalk improvements and crosswalk
	Feasibility	●●●	No issue, coordination with adjacent property owner suggested

DOWNTOWN COMOX

PORT AUGUSTA STREET, EAST SIDE (LOCATION 2)



Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●●	Located immediately adjacent Comox Mall
	Clarity	●●	Requires that westbound bus circulate via Balmoral Ave / Pritchard Rd / Comox Ave on exiting bus stop location
	Amenities	●●●	Good bus stop amenities, with access to adjacent Comox Mall
	Integration	●●●	Well integrated with sidewalk network
Safety	Pedestrians / Cyclists	●●●	Good pedestrian facilities in the vicinity
	Traffic	●●●	No traffic safety concern
	Personal	●●●	Located immediate adjacent Comox Mall and parking lot, with good surveillance
Community	Parking	●●	Modest loss of on-street parking on Port Augusta St
	Neighbours	●●●	No impact on adjacent land uses
	Traffic	●●●	No impact on traffic
	Appearance	●●●	No significant visual impact
Transit Operations	Travel Time	●●	Added circulation required via Balmoral Ave / Pritchard Rd
	Delays	●●	Possible delay on eastbound left-turn at Comox Ave / Port Augusta St (improvement options to be explored)
Local Gov't Plans	Alignment	●●●	Located within identified town centre
Implementation	Capital Cost	●●●	Low capital cost, makes use of existing sidewalk infrastructure
	Feasibility	●●●	No issues, coordination with adjacent property owner suggested

OYSTER RIVER
SUMMARY

Category	Criteria	Location 1. GLENMORE RD AT DISCOVERY FOODS	Location 2. GLENMORE RD, EAST OF DISCOVERY FOODS	Location 3. REGENT ROAD
Rider Experience	Proximity	●●●	●●	●
	Clarity	●●●	●●●	●●●
	Amenities	●●	●●	●
	Integration	●●	●●	●
Safety	Pedestrians / Cyclists	●●	●●	●
	Traffic	●●	●●●	●●
	Personal	●●	●●	●
Community	Parking	●●●	●●●	●●●
	Neighbours	●●●	●●	●●●
	Traffic	●●●	●●●	●●●
	Appearance	●●●	●●●	●●●
Transit Operations	Travel Time	●●	●●	●
	Delays	●●●	●●●	●●●
Local Gov't Plans	Alignment	●●	●●	●
Implementation	Capital Cost	●●●	●●●	●●●
	Feasibility	●●	●●●	●●●

OYSTER RIVER

GLENMORE ROAD AT DISCOVERY FOODS (LOCATION 1)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●●	Immediately adjacent Discovery Foods and other retail uses
	Clarity	●●●	Easily understood, two-way service (one bay for each of Comox Valley and Campbell River services)
	Amenities	●●	Full bus stop amenities provided, access to basic facilities at adjacent retail uses
	Integration	●●	Moderate integration with nearby walking routes
Safety	Pedestrians / Cyclists	●●	Limited walking and cycling infrastructure, challenging crossing of Island Hwy to residential areas to the west
	Traffic	●●	Possible conflict with northbound right-turn vehicles exiting Island Hwy and bus bay on south side of Glenmore Rd
	Personal	●●	Exchange located with good surveillance from Discovery Food and retail activities
Community	Parking	●●●	No impact on parking
	Neighbours	●●●	Added customer base for adjacent commercial uses
	Traffic	●●●	No impact on traffic
	Appearance	●●●	No visual impact
Transit Operations	Travel Time	●●	Modest circulation required via Regent Rd to allow buses to access exchange location (similar to current circulation pattern)
	Delays	●●●	No additional delays
Local Gov't Plans	Alignment	●●	Located adjacent identified commercial uses
Implementation	Capital Cost	●●●	Limited capital costs include two bus bays and associated pedestrian improvements
	Feasibility	●●	Coordination with MoTI and adjacent commercial property owner required over change in driveway / site access

OYSTER RIVER

GLENMORE ROAD, EAST OF DISCOVERY FOODS (LOCATION 2)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	●●	Located nearby Discovery Foods and other retail uses
	Clarity	●●●	Easy comprehension
	Amenities	●●	Bus stop amenities and access to nearby businesses
	Integration	●●	Moderate integration with nearby walking routes
Safety	Pedestrians / Cyclists	●●	Limited walking and cycling infrastructure, challenging crossing of Island Hwy to residential areas to the west
	Traffic	●●●	No concern with traffic safety
	Personal	●●	Bus bays located away from Discovery Foods and retail uses, more limited natural surveillance
Community	Parking	●●●	No impact on parking
	Neighbours	●●	Exchange adjacent residential uses, although transit activity will be limited and residential uses are more rural than elsewhere in the system
	Traffic	●●●	No impact on traffic
	Appearance	●●●	No visual impact
Transit Operations	Travel Time	●●	Modest circulation required via Regent Rd to allow buses to access exchange location (similar to current circulation pattern)
	Delays	●●●	No additional delays
Local Gov't Plans	Alignment	●●	Located adjacent identified commercial uses
Implementation	Capital Cost	●●●	Limited capital costs (2 bus bays)
	Feasibility	●●●	Coordination with MoTI required

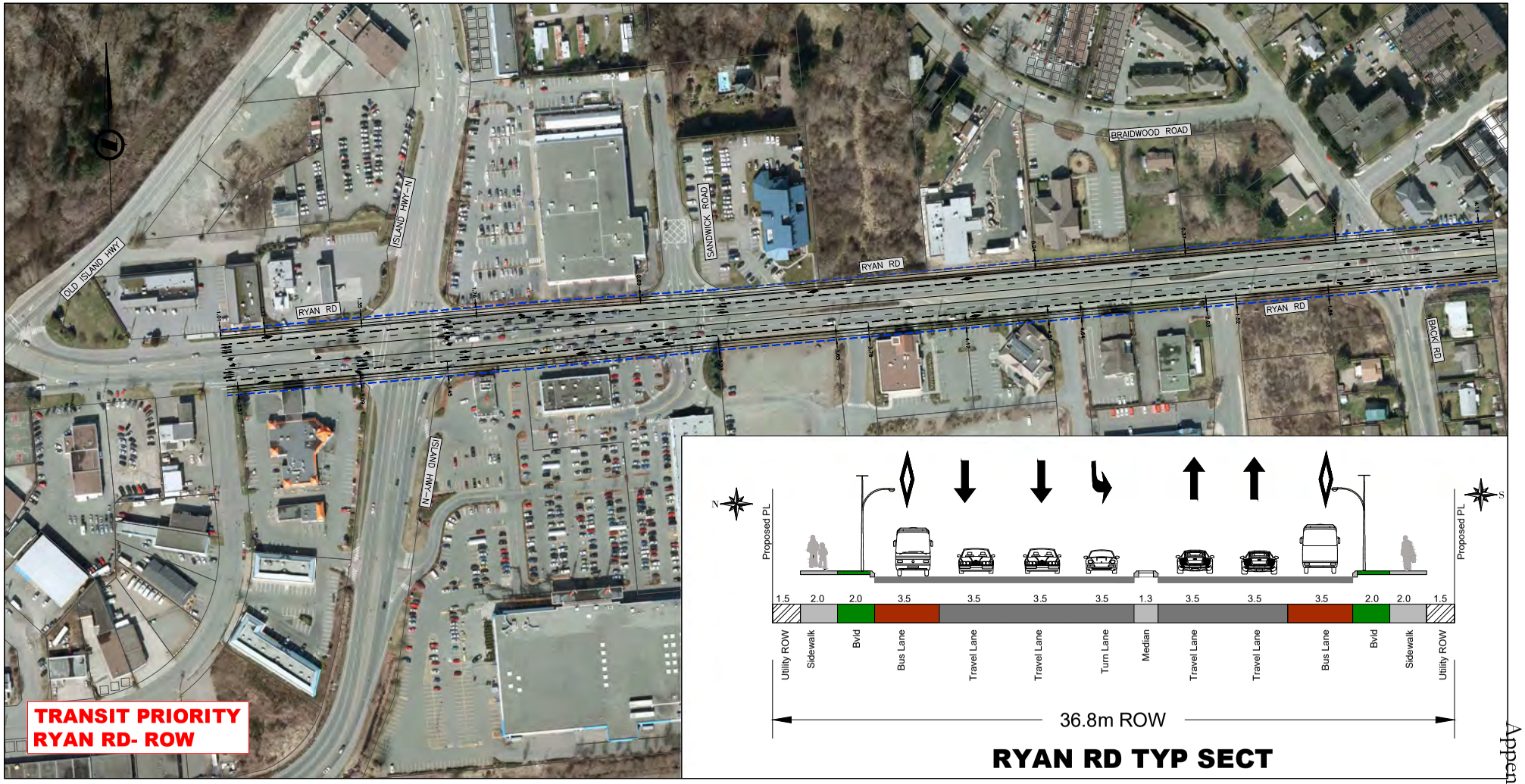
OYSTER RIVER

REGENT ROAD (LOCATION 3)

Category	Criteria	Evaluation	Notes
Rider Experience	Proximity	•	Limited ability to walk to nearby destinations, no nearby transit trip generators
	Clarity	•••	Easily transfer between Comox Valley and Campbell River systems
	Amenities	•	No amenities
	Integration	•	Limited transportation opportunities
Safety	Pedestrians / Cyclists	•	Does not connect with walking infrastructure, challenging crossing of Island Hwy to Catherwood Rd and areas to the west
	Traffic	••	Possible challenge with northbound right-turn vehicles
	Personal	•	No activity in the area, limited surveillance
Community	Parking	•••	No impact on parking
	Neighbours	•••	No impact on neighbouring uses
	Traffic	•••	No impact on traffic
	Appearance	•••	No visual impact
Transit Operations	Travel Time	•	Results in excessive re-routing of buses through Regent Rd / Saratoga Beach area to access the Island Hwy
	Delays	•••	No delays anticipated (other than excessive circulation, per above)
Local Gov't Plans	Alignment	•	Not reflected in community plans, not located within identified village areas or future growth areas
Implementation	Capital Cost	•••	Low cost, only single platform required
	Feasibility	•••	Coordination required to locate new bus stops in Ministry of Transportation and Infrastructure right-of-way

Appendix B.

TRANSIT CORRIDOR RIGHT-OF-WAY REQUIREMENTS, RYAN ROAD + OLD ISLAND HIGHWAY



URBAN SYSTEMS

ISSUED FOR DISCUSSION ONLY
2021-01-26
urbansystems.ca

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Client/Project
COMOX VALLEY
TRANSIT PRIORITY- RYAN RD
Revision Date / **Figure**
2021-01-26 / A3
3043.0014.01 / **Title**
TRANSIT OPTION -ROW

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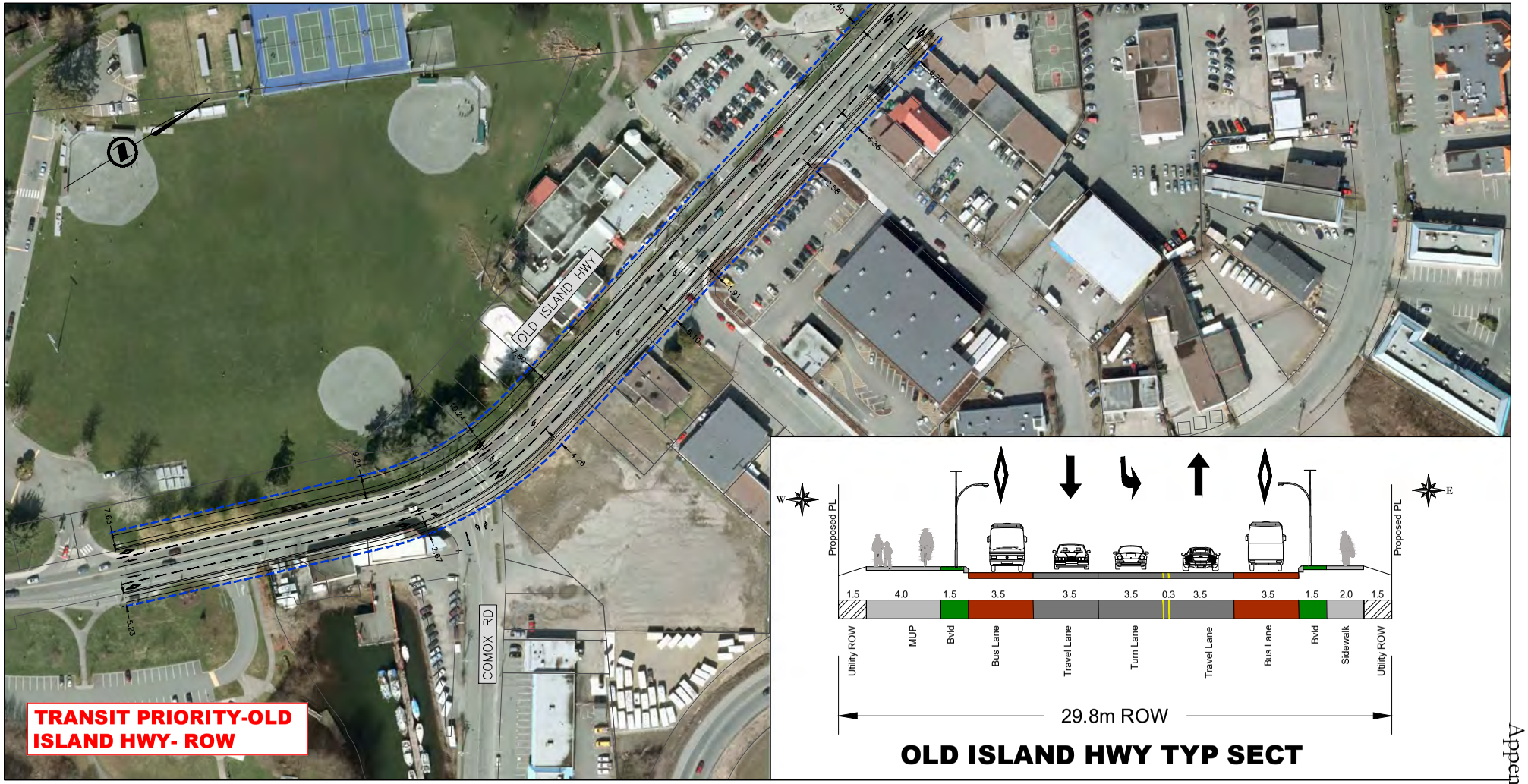

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2021-01-26
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1:750 0 15 30m

Client/Project
COMOX VALLEY
TRANSIT PRIORITY- OLD ISLAND HWY
Revision Date / **Figure**
2021-01-26 / A3
3043.0014.01 / **Title**
TRANSIT OPTION -ROW

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