

City of Nanaimo

Woodgrove Transit Exchange Site Options Report

Report

2025-11-21



BRIAN MILLS AND ASSOCIATES
STRATEGY AND PLANNING



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Executive Summary

The purpose of the *Woodgrove Transit Exchange Site Options Report* is to identify and evaluate potential site locations for a new Woodgrove Transit Exchange. The evaluation included input from a Steering Committee that included the Regional District of Nanaimo, and the Ministry of Transportation and Transit. Key outputs include potential sites for the exchange and estimates of the transit service capacity required for peak and daily vehicle trips, fleet types, requirements and concepts for layover and breaks.

This document is intended to be a resource in the acquisition and development of the new transit exchange within the Woodgrove Urban Centre, by providing guidance on the potential location, design and operations that meet both current and future demands and City Plan objectives. Further assessments will be necessary to confirm the optimal site and configuration for the transit exchange.

The evaluation was guided by the following:

- **City Plan: Nanaimo Reimagined (2022):** City's strategic planning document, that provides direction for the coming 25 years. Policies envision the Woodgrove Secondary Urban Centre transforming into a complete community with diverse housing, transportation and amenity options, centered around a transit exchange.
- **Integrated Action Plan (2023):** A tool to action and prioritize *City Plan* policies. In 2023, Council identified the preparation of a Woodgrove Area Plan as a priority, to better understand how to achieve a complete community in the Woodgrove Secondary Urban Centre. The plan is intended to provide more detailed policy guidance, transportation and utility infrastructure planning, and identify amenity needs.
- **Transit-Oriented Areas Designation Bylaw (2025):** A Provincial mandated initiative through Bill 47, which designates Woodgrove as a Transit Oriented Area. The bylaw regulates residential densities, heights and parking restrictions within a 400-metre radius of a transit exchange.
- **Regional District of Nanaimo Transit Redevelopment Strategy (2022):** A plan focused on improving transit services over the next five years in the Regional District of Nanaimo (RDN). The plan recommends a new location for the transit exchange to enable quick and easy connections between the Regional, Rapid and Frequent Lines as well as improved transit vehicle capacity, and passenger amenities.
- **Existing Transit Exchange:** The need to upgrade and relocate the existing transit exchange to address the lack the capacity for expected growth and miss alignment with City Plan goals and objectives and the Transit Oriented Area legislation.

Evaluation Process

The evaluation process included eight workshops with partner agencies to identify options, develop criteria and analyze potential sites. An evaluation matrix was used to compare several factors including:

- Land use considerations;
- Transit passenger experience;
- Pedestrian experience;
- Space required;
- Transit operating cost;

- Community/street impact;
- Interface with other agencies;
- Layover (break facility) land siting and availability; and
- Overall cost.

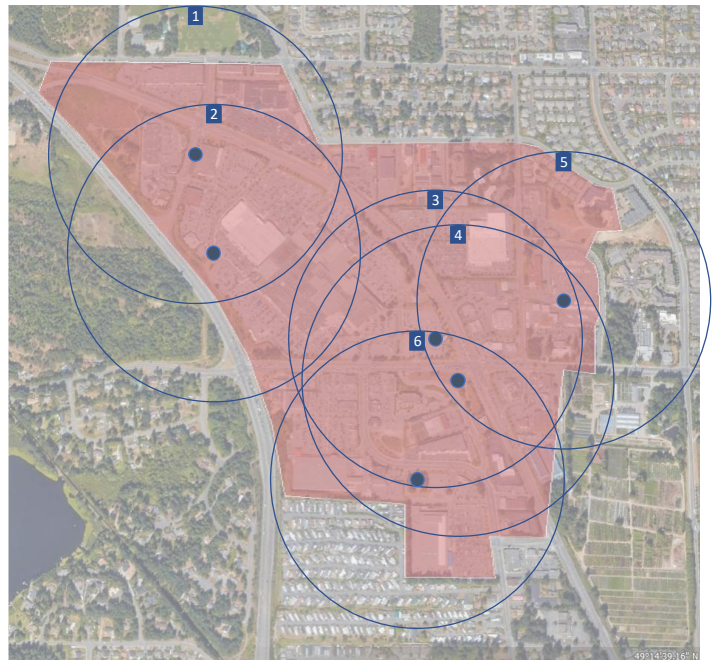
The evaluation matrix was designed as a decision support tool and not a definitive scoring system.

Site Considerations & Evaluation

Six potential sites for the transit exchange were identified in the map below and a total of thirteen transit exchange concepts were developed.

General Areas for Transit Exchange Evaluation

1. Mary Ellen
2. Existing Location
3. Aulds NW
4. Aulds SW
5. Hammond Bay at Applecross
6. Metral at Superstore



Notional site location showing
400m radius

A 400-metre buffer was drawn around each potential site, to understand the implications of the Transit Oriented Area regulations. Each site was then reviewed using the evaluation matrix.

Conclusion and Recommendations

Based on the results of the evaluation matrix, the Steering Committee's recommendation is to locate the new transit exchange in a centralized location within the Woodgrove Secondary Urban Centre (see 'Conceptual Zone for Long-Term Transit Exchange Siting' map below). For the purpose of this assessment and scenario testing for the Woodgrove Area Plan project, the centralized location is identified as the intersection at Aulds Road, Hammond Bay Road and the Highway 19A. A specific site was not identified, as further assessments will be necessary to confirm the optimal site and configuration for the transit exchange. This assessment is anticipated to either be triggered through additional hours of service as outlined in the Transit Redevelopment Strategy, or by private development located adjacent to the conceptual zone.

Conceptual Zone for Long-Term Transit Exchange Siting



These findings are intended to provide guidance on the future relocation of the transit exchange within the Woodgrove Urban Centre, and ensure that the location, design and operations of new transit exchange meet both current and future demands and City Plan objectives.

PART A – PROJECT OVERVIEW

A1 Purpose

The purpose of the *Woodgrove Transit Exchange Site Options Report* is to identify and evaluate long-term options for a new Woodgrove Transit Exchange that considers both bus and customer capacity, and alignment with *City Plan: Nanaimo Reimagined*.

Key outputs include identifying potential sites for the exchange and estimates of the transit service capacity required for peak and daily vehicle trips, fleet types, requirements and concepts for layover and breaks.

The results and recommendations are intended to provide guidance to both government and private developers on the potential location, design and operations of a new transit exchange. Further assessments will be necessary to confirm the optimal site and configuration for the transit exchange.

A2 Objectives and Principles

The objectives of the evaluation included:

- Understanding the implication that future growth may have on the Woodgrove Urban Centre through the preparation of a Woodgrove Area Plan.
- Understand the implications of the 500 percent increase in transit demand forecasted over the next 25 years.
- Understanding the implications the new Transit Oriented Area legislation (Bill 47) may have on future development in the Woodgrove Urban Centre, notably if the transit exchange is relocated.
- Understanding the implications that retaining the current transit exchange location, particularly as it relates to its citing on private property and potential future redevelopment of the property.

The principles for the planning of potential alternative transit exchange locations included:

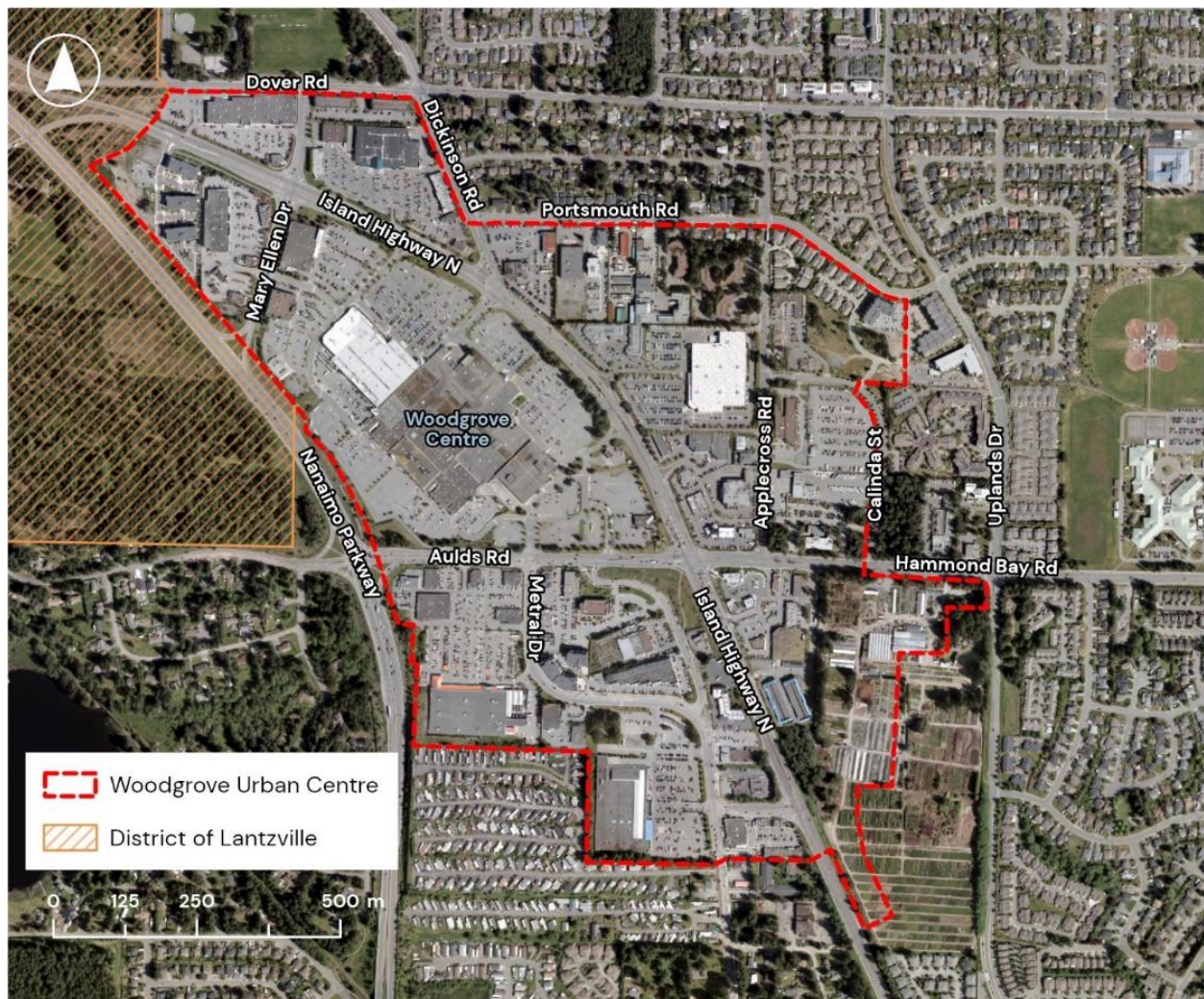
- Support city planning and city building objectives;
- Plan for long term needs, big enough but not too big;
- Plan in the context of the future transit network including hierarchy of services, routes, frequency, other transit exchanges, and future transit service including vehicle type, size and technology;
- Consider existing and potential future operational requirements and practices, including labour agreements;
- Consider alignment with HandyDART and other modes including taxi/ride hail, bicycles, shared micro mobility such as bikes, scooters, etc.; and
- Consider alternative design concepts.

A3 Study Area Context

The scope of the *Woodgrove Transit Exchange Site Options Report* includes the Woodgrove Secondary Urban Centre, within which the existing transit exchange is located. The Woodgrove Urban Centre is located in the northwest area of the City of Nanaimo (see Figure 1). It functions as the City's northern

gateway, sharing boundaries with the Regional District of Nanaimo and the District of Lantzville. The area prominently includes the Woodgrove Centre mall and its surrounding lands.

Figure 1 - Woodgrove Urban Centre



A4 Timeline

The project ran from August to October 2024. Further consultation on the results occurred through November 2024 – June 2025 as part of Woodgrove Area Plan engagement.

A5 Stakeholder Engagement

A Steering Committee was established to support the selection and evaluation process. The committee was comprised of the City of Nanaimo, Regional District of Nanaimo, and Ministry of Transportation and Transit (MoTT)¹. Staff from each agency comprised the committee including:

¹ At the time it was the Ministry of Transportation and Infrastructure (MoTI)

- City of Nanaimo
 - Transportation
 - Planning
- Regional District of Nanaimo
 - Operations
 - Planning and scheduling
- MOTT
 - Operations

The process was designed with several key principles, recognizing the timing constraints. Principles included:

- Engage with relevant partner agencies;
- Analyze and quantify issues where possible;
- Develop and apply evaluation criteria for a range of relevant issues;
- Maintain transparency in process and analysis;
- Identify and evaluate a range of potential site locations; and
- Create site concepts illustrating realistic transit exchange ideas.

Steering Committee meetings were supported by consultants from Brian Mills and Associates (facilitation and transit subject matter expertise) and Bunt & Associates Ltd. (transportation engineering including CAD analysis). During the process, a total of eight workshops were held (see Appendix 1). The agencies were all represented at the meetings throughout, except MoTT during the 2024 provincial election period. All agencies were invited to contribute input during and between meetings including identification of sites, development of evaluation criteria, and filtering of concepts according to insight from the evaluation process.

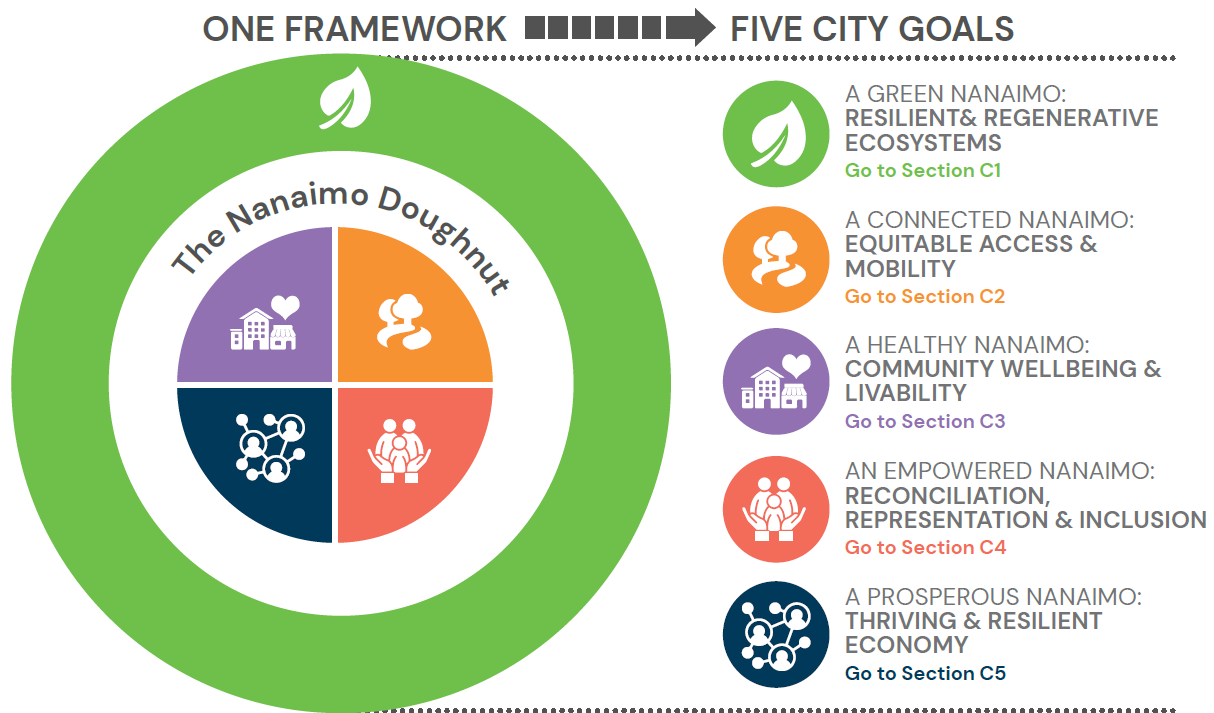
A6 Planning Framework

The planning framework for this evaluation was driven by strategic planning, funding, and policies that span municipal, regional, and provincial levels of government. They include:

A6.1 City Plan: Nanaimo ReImagined (2022)

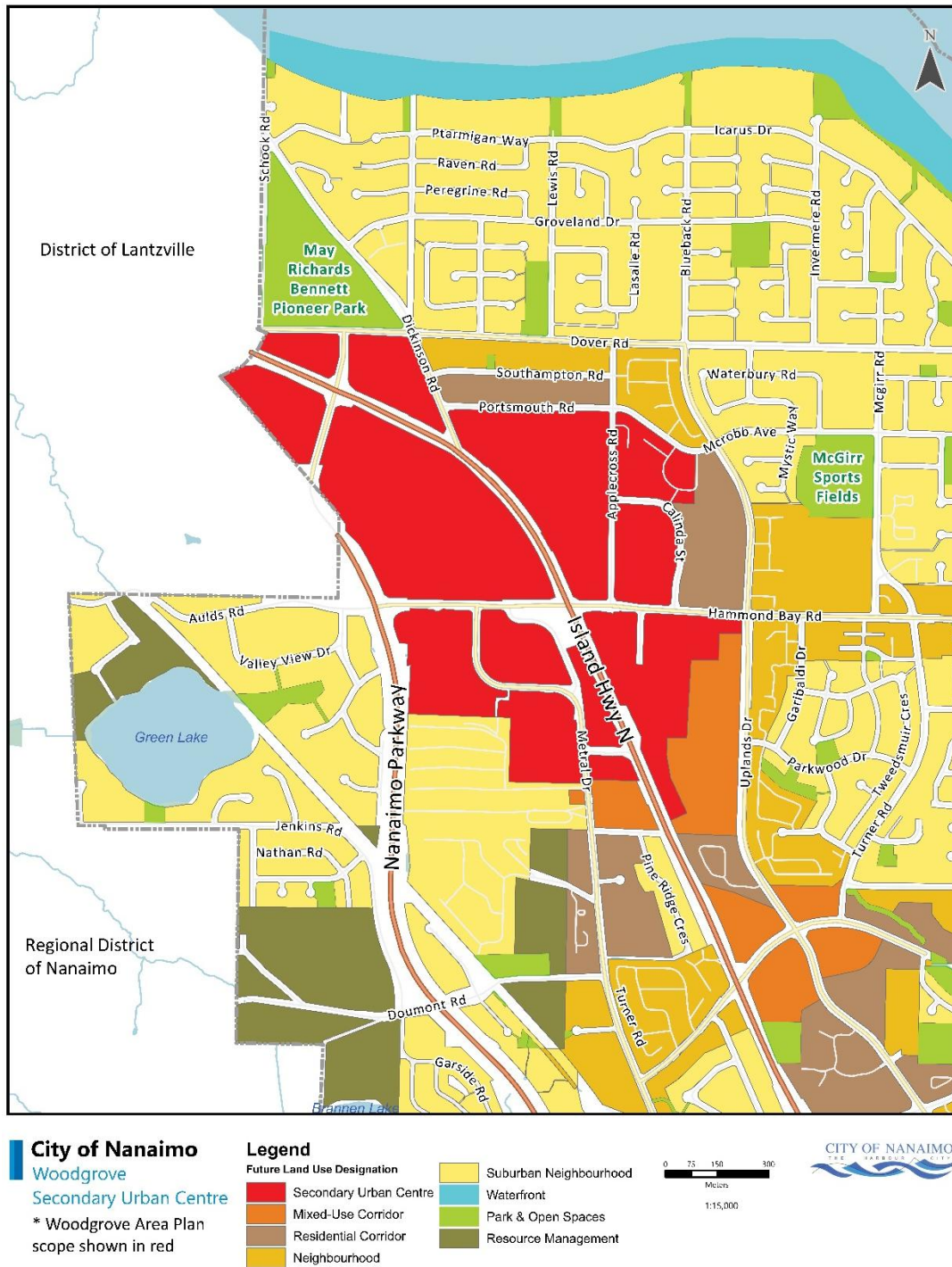
Nanaimo's *City Plan - Nanaimo ReImagined* is the City's strategic plan for the 25-year period from 2022. City Plan has five broad goals (see Figure 2). The plan identifies a set of Integrated Policy Areas including the priority of walking, rolling, cycling, and transit over other transportation modes. The plan also identifies and describes urban centres that reinforce the concepts of a connected Nanaimo including accessible car-free daily needs, and active transportation network, walkable blocks and an attractive, easy-to reach transit exchange that links people between urban centres, along corridors, and to the broader region.

Figure 2 - City Plan Goals



The plan identifies Downtown and a set of secondary urban centres, including Woodgrove Secondary Urban Centre (see Figure 3). Woodgrove is identified as the highest priority, along with South Gate, after Downtown for City investments. It is recognized as the city's northern gateway, serving a city-wide and regional centre functions for commercial activity. The City intends to develop Woodgrove as the northern mobility hub where major regional and city-wide mobility networks connect. Safe and accessible walking, rolling, cycling, and transit connections will be a priority in this centre and the City will support development forms that contribute to the function of Woodgrove Urban Centre as a mixed-use centre with an integrated mix of residential, commercial, recreational, and cultural components.

Figure 3 - Woodgrove Urban Centre – Future Land Use Designation



A6.2 Transit Redevelopment Strategy (2022)

Public Transit in Nanaimo is provided as a partnership between the Regional District of Nanaimo (RDN) and BC Transit, a Provincial Crown Corporation. Funding is shared by the authorities according to a funding formula and service levels are set by the RDN. The City of Nanaimo assigns representatives to the RDN Board.

The RDN approved its *Transit Redevelopment Strategy* (TRS) in February 2022. It is described as a “comprehensive and implementable priority plan for improving the RDN’s conventional transit services over the next five years.” (2022 – 2027). The plan outlined strategies to “focus future investment in service and infrastructure to increase ridership, better align mobility with future development and population changes, and integrate transit with active transportation.”

Core to the RTS is a strategy for restructuring the transit network to improve directness, simplify routing, and better align service levels with ridership and demand.

The plan features a hierarchy of transit routes (see Figure 4), introducing:

- Primary Routes
- Neighbourhood Routes
- Connector Routes

Primary Routes are designed to attract ridership as a viable alternative to driving as the highest frequency spine of the system connecting key destinations such as urban centres and major destinations along major corridors. They include the planned **1 Nanaimo Rapid Line**, a limited stop service on the full length of Highway 19A and Highway 1 in the City of Nanaimo, and two frequent services – **2 VIU Line** and **3 Nanaimo Hospital Line** – also connecting key destinations and corridors with high frequency services.

A fourth route – **Route 9 Intercity** – provides a regular connection between Nanaimo and municipalities to the north including Qualicum Beach and Parksville.

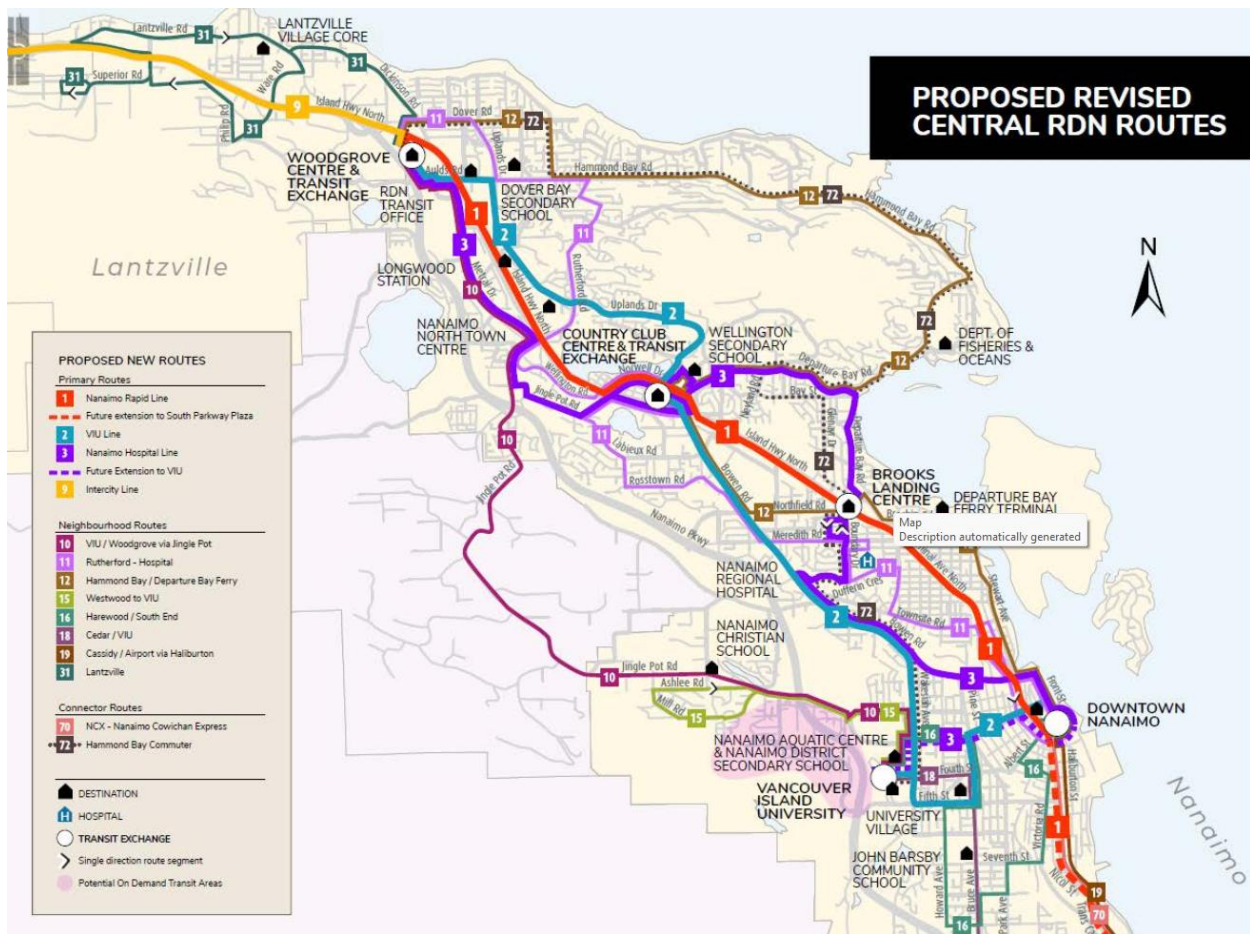
Neighbourhood Routes provide service as community coverage to ensure convenient access to transit in medium- and lower-density residential and employment areas that connect to the Primary Routes at key points. Their minimum frequency set by the RDN’s Service Design Standards established in the 2014 Transit Future Plan, and routes may be relatively indirect since they are designed to prioritize access for people in the community.

Connector Routes serve targeted travel needs, such as work and school **commuter routes** and as well as **interregional services** connecting the RDN to other regions, such as the Cowichan Valley and Comox Valley Regional Districts. Some operate in peak periods or at specific times according to the demand at their destinations.

The TRS is intended to establish this network, however, the service frequencies and capacity required to fully align with development and achieve desired outcomes such as City Plan’s desired increase in the level of transit ridership and significant changes in the share of trips by transit would be achieved over the longer term, beyond the TRS’s five-year horizon.

The TRS also identifies a need for redevelopment of Woodgrove Exchange in the long-term, recommending a new exchange with improved transit vehicle capacity, passenger amenities, located to enable quick and easy connections between the Regional, Rapid and Frequent Lines.

Figure 4 - TRS future route network for City of Nanaimo (TRS p5)



Aligned with the recommendations in the TRS, the RDN is planning a new location for the exchange at Woodgrove Centre. In the near-term to accommodate the evolution of the route 50 into the 1 Nanaimo Rapid Line, it is recommended that the route use Mary Ellen Drive for drop-off and pick-ups at Woodgrove Exchange. Connections with routes coming in from the north (routes 9, 31 etc.) would also occur here. Also, in the near term, it is anticipated that the Route 1 will serve the existing exchange to enable connections with other routes (routes 2 and 3 specifically).

In the long-term, the TRS calls for a new exchange with improved transit vehicle capacity, passenger amenities, located to enable quick and easy connections between the Regional, Rapid and Frequent Lines is recommended. These recommendations stem from the transit exchange being on private property at Woodgrove Centre Mall, and its limited ability to support anticipated network growth in the coming years. Securing a permanent transit exchange location is now more urgent, given Transit Oriented Area legislation and the need to align with *City Plan* goals.

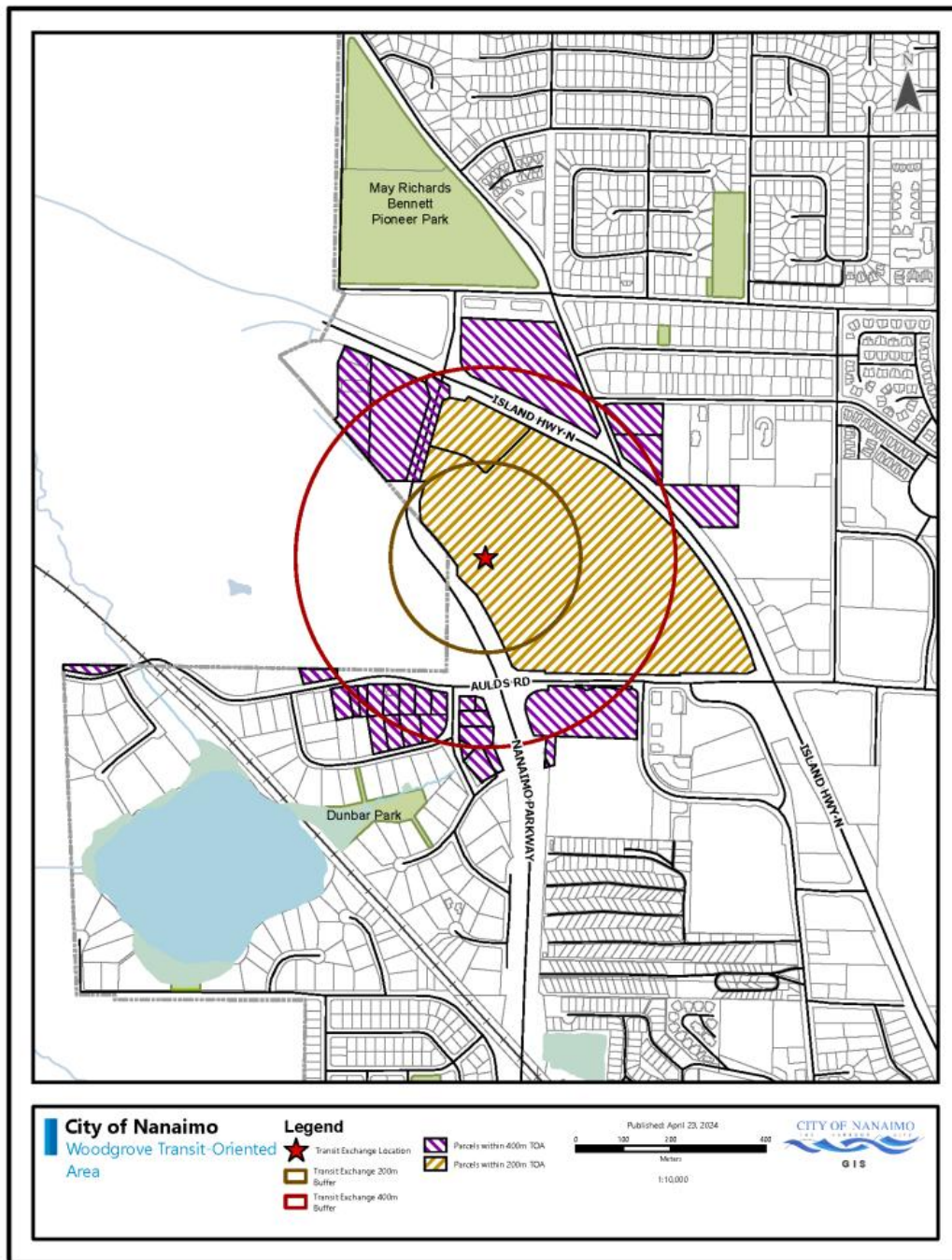
A6.3 Integrated Action Plan (2023)

The *Integrated Action Plan* is a supporting document to *City Plan: Nanaimo Reimagined* and lists the “library of actions” the City of Nanaimo is already doing, and would like to do, over the immediate and long term to implement the policies in *City Plan: Nanaimo Reimagined*. In 2023, Nanaimo City Council identified the preparation of a Woodgrove Area Plan as a priority, to better understand how to achieve a complete community in the Woodgrove Secondary Urban Centre. The plan is intended to provide more detailed policy guidance, transportation and utility infrastructure planning, and identify amenity needs, including considering the relocation of the transit exchange.

A6.4 Transit Oriented Area Designation Bylaw (2024)

The provincial legislated Bill 47 (Housing Statutes (Transit-Oriented Areas) Amendment Act, 2023), mandates the City of Nanaimo to establish three Transit-Oriented Areas (TOA) at the Woodgrove, Country Club and Vancouver Island University transit exchanges. The TOAs, which are established through the Transit-Oriented Areas Designation Bylaw 2024 No. 7382, regulate the minimum residential densities, heights and off-street parking requirements within 400 m radius of a transit exchange. The Woodgrove TOA captures parcels outside of the Woodgrove Secondary Urban Centre, which are either designated in City Plan with a Suburban Neighbourhood Future Land Use Designation, parcels intended for low-density development, as well as unserviced parcels within the jurisdiction of the District of Lantzville (see Figure 5).

Figure 5 City Bylaw 7382, Schedule A showing TOA-affected parcels for existing Woodgrove Exchange



PART B – EVALUATION CRITERIA & PROCESS

B1 Evaluation Criteria

The evaluation was developed recognizing that it is complex, and the aim of this project was to provide insight and tools for the benefit of key decision makers. As such, the evaluation matrix was intended to identify issues and highlight information as a decision support tool and not to perform as a decision-making tool. The tool provided relative ratings of concepts within each evaluation criterion (reading across rows) but did not attempt to develop a single aggregate score or rating for each transit exchange location and concept.

To support this, it attempted to be:

- Broadly comprehensive within the time constraints of the project
- Visually intuitive
- Transparent

Broadly comprehensive

The project developed a set of evaluation criteria that represent a range of factors relevant to the siting of transit exchanges. The Steering Committee identified a set of themes and developed criteria that represented each theme, these included:

- Land use considerations;
- Transit passenger experience;
- Pedestrian experience;
- Space required;
- Transit operating cost;
- Community/street impact;
- Interface with other agencies;
- Layover/break facility;
- Land siting/availability; and
- Cost.

For each theme, one or more criteria were identified including both quantitative and qualitative measures. For quantitative measures, the consultants and Steering Committee identified supporting data and undertook an appropriate analysis within the time constraints and recorded the results.

Visually intuitive

The evaluation table was designed to assign colours to scores using Excel conditional formatting using a system with a graduated scale from green through amber to salmon/red. Colour coding was assigned relative to the best performing score in that category which was coloured green. Lower performing elements in that category were automatically assigned colour shared approaching salmon/red colour according to their numerical score relative to the lowest performing and best performing concept. The concept is illustrated in Figure 6.

Qualitative measures were ranged on a scale of -2 (poor) to +2 (good) where 0 was neutral. The consultants populated the initial scoring and these were refined by the Steering Committee during

workshops and email discussions. Colours were assigned to each score according to the same system as described above.

Figure 6 - Evaluation Matrix Excerpt

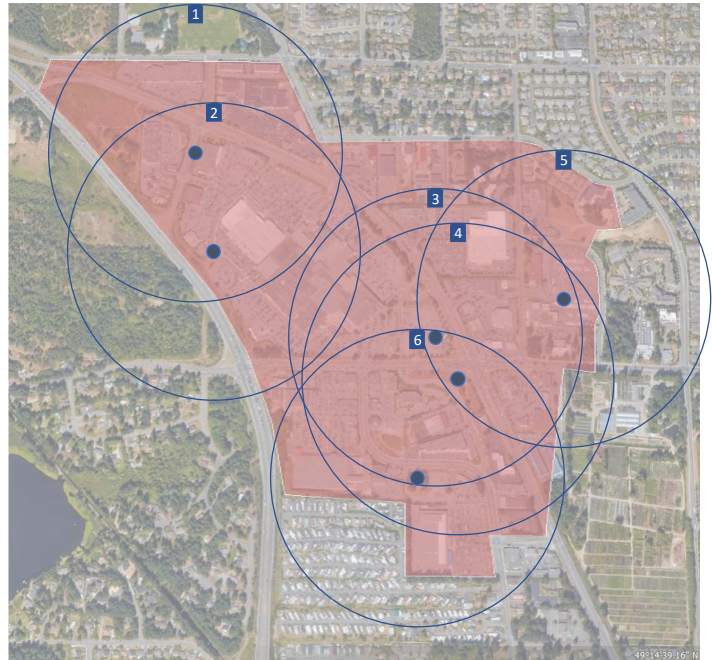
Good	2
	1
	0
	-1
	-2
Neutral	0
Poor	-1
	-2

Scenario	3a	3b	3c	3d	4a	5a	6a
Exchange	Aulds NW	Aulds NW	Aulds at Metral	Aulds at Metral	Aulds SW	Hammond Bay at Applecross	Metral at Superstore
Format	Curbside	Centre Island	Centre Island	Curbside	Curbside	Curbside	Centre Island
Layover	Adjacent	Adjacent	Adjacent	Adjacent	Adjacent	RDN	Boomerang

	Yes	Yes	Yes	No	Yes	Yes	Yes
	0	0	4	1	5	11	13
	No	No	No	No	No	No	No
	Yes	Yes	Yes	Yes	No	No	Yes
	Yes	Yes	Yes	Yes	No	No	Yes
	Yes	Yes	No	Yes	No	No	No
	Yes	Yes	Yes	Yes	Yes	Yes	No
ents	38,000	56,000	32,000	57,000	0	24,000	8,000
	8	14	6	11	7	10	10
en buses (including within exchange)	230	120	135	120	195	250	215
	2	0	0	0	1	0	0
n between buses	1	1	1	2	0	1	2
	-1	1	0	1	-1	1	2
	Parts adjacent to both Hwy 10A and Aulds	Set back from but close to both Hwy 10A and Aulds	Parts adjacent to Aulds	Parts adjacent to Aulds	Parts adjacent to both Hwy 10A and Aulds	Parts adjacent to Hammond Bay Rd	No major road nearby
	-1	-2	-2	-2	-1	0	-1

Figure 7 – General Areas for Transit Exchange Evaluation

1. Mary Ellen
2. Existing Location
3. Aulds NW
4. Aulds SW
5. Hammond Bay at Applecross
6. Metral at Superstore



Notional site location showing
400m radius

In the second workshop, the Steering Committee discussed assumptions and requirements that would affect the project including the planning horizon and assumptions on land use, future fleet expectations, RDN transit operational practice and requirements, integration of modes, design, scheduling features in the future route network, and the scale of capacity required for the future exchange.

Key factors in the scale of the exchange included the requirement to plan for a 500 percent increase in transit demand over the *City Plan's* 25-year time horizon and the design of the future transit network as planned in the TRS. As such, the exchange will be the terminus point for all the routes serving it, requiring a means to accommodate operator breaks; however, the number of buses terminating simultaneously will vary depending on operating practice. With a system assumption that future transit buses will be zero emission vehicles, the exchange will also require space allocated to battery electric bus charging equipment.

The consultants provided a primer on transit exchange functional concepts describing a variety of configurations for transit exchanges, responding to different system needs, land use conditions, and roadway configurations. These included:

- On-street exchanges where all the bus stops are within public right of way.
- Off-street exchanges where all the bus stops are on land parcels and not in the public right-of-way.
- Hybrid exchanges where some functions are on-street and others are off-street.

The primer included illustrative examples including several precedents in British Columbia, including Nanaimo. The consultants provided a brief introduction to the future transit system design highlighting the general function of the Woodgrove exchange, notably its role as a primary terminus in the system.

For each of the broad sites identified, the consultants also developed a set of initial terminus descriptions based on these principles, as a tool to support discussions. This included identifying alternative concepts for most of the initial notional sites; over the course of the project a total of thirteen concepts were identified for the six notional sites. Illustrations of the concepts are in Appendix 6 | Refined Exchange Concepts (initial site and conceptual access) and Appendix 7 | Transit Exchange Concepts and Analysis (conceptual designs). This was not an evaluation and was not used to screen the concepts. Each description identified potential access routings for buses, conceptual locations for a layover area and considerations for exchange size, configuration, pedestrian and customer access. These descriptions are reproduced in Appendix 3 | Initial Terminus Descriptions.

Following comments by the Steering Committee, the consultants undertook technical analysis of the locations to develop initial design concepts, also as a tool for understanding and discussion. To enable this, they developed:

- Initial estimates of the capacity requirements for each bus position to inform design requirements, expecting future analysis would be required. It was also anticipated that additional configurations may be possible to refine initial concepts.
- Initial routing and access concepts.
- Refined conceptual exchange requirements and observations.

The consultants also developed a set of scaled conceptual design illustrations to explore different exchange concepts from a high-level feasibility perspective (see Appendix 7). The illustrations revealed issues and opportunities for access and egress, site geometry, potential placement of the exchange and layover facility, overall land requirements, potential interaction with adjacent land uses, transit customer movements and waiting areas spaces, considerations for non-transit pedestrians, potential impacts on land uses including buildings and parking spaces, road and traffic issues such as adjacency to intersections and queueing, and the like. Through the process:

- Various elements of the analysis informed the evaluation criteria.
- The consultants presented the concepts to the Steering Committee for discussion and refinement.
- The consultants modified and refined some concepts in response to input and clarifying information from the Steering Committee.

B3 Evaluation

Following the analysis, the evaluation matrix was populated and the Steering Committee met to review the preliminary findings. In the discussion, several criteria were refined, some criteria were eliminated because they were deemed to offer little value in distinguishing between exchange concepts, and some criteria were added. Several exchange locations and concepts were screened out early in the process due to the implications of the Transit Oriented Area Legislation. These include extending high-density development outside the City of Nanaimo's municipal boundary into the District of Lantzville, lands not serviced by sewer and water infrastructure. Because *City Plan: Nanaimo ReImagined* calls for the Woodgrove Secondary Urban Centre to become a primary growth node, locations centrally located within the urban centre were prioritized.

The Steering Committee was also provided with copies of the evaluation matrix for off-line review and comments, and the consultants prepared a refined version of the matrix based on any inputs received (see Appendix 8).

The Steering Committee then met to consider the evaluation with the primary objective of eliminating less-promising concepts from further evaluation. As further preparation, the participating agencies were asked to identify three sites that best meet the project's needs, based on their perspectives and understanding of the project objectives.

From this discussion, the group reduced the number of concepts to four, Appendix 9 | Final Shortlist Evaluation.

B4 Evaluation Summary

The evaluation process revealed the essential attributes of each concept. For the shortlisted concepts, the following highlighted the key issues and differences.

Land use considerations

The 400-metre radius of all sites touch some land parcels that extend beyond the Woodgrove Urban Centre boundary, and these parcels would be affected by provincial legislation. Two concepts are on private land. One concept, Superstore, is not located centrally within the existing Woodgrove Urban Centre, with potential land use implications for the urban centre's boundary (see Figure 8).

Figure 8 - Evaluation, Land Use

		Rank: City RDN			
		1	2	3	4
		Woodgrove Mall	Boomerang	Transit Yard/ RDN Office/	Superstore
		Centre Island	Curbside	Curbside	Centre Island
		Layover	Adjacent	Adjacent	RDN
Evaluation Criteria	Units				
400 m TOA radius outside Woodgrove SUC Boundary	Yes or No	Yes	Yes	Yes	Yes
Parcels located outside of Woodgrove SUC Boundary	Number of parcels	4	5	11	13
400 m TOA radius intersects parcels west of parkway	Yes or No	No	No	No	No
Exchange sited on private land	Yes or No	Yes	No	No	Yes
Property leases in effect	Yes or No	Yes	No	No	Yes
Building demolition required	Yes or No	No	No	No	No
Exchange not centrally located in Woodgrove SUC	Yes or No	Yes	Yes	Yes	No

Transit passenger experience

These criteria address factors that affect the experience of transit passengers, a key factor in the success of transit as a mode of choice (see Figure 9).

- *Incremental distance (km) travelled* and *number of turns* measure how direct the service feels to customers and are scaled by the annual total to reflect the aggregate experience of customers on the busiest routes. The Boomerang concept would induce the least additional distance overall and the others are in comparison to it.
- *Walk distance between buses* reveals how far customers need to walk to make connections. Shorter distances are preferable.
- *Vehicle lanes crossed* is a measure of comfort, safety and speed for transit passengers to get to adjacent land uses. Lower numbers are preferable.

- The *legibility* score is a qualitative measure of the ease of navigating to and through the exchange. Higher scores were given for concepts where all the buses are adjacent such as the centre island concepts.
- *Customer waiting experience: traffic noise* is a qualitative measure that rates the anticipated noise levels for customers waiting between buses. Exchanges that are closer to busier roads are expected to be noisier than exchanges that are on quieter streets, have buildings shielding them, or are farther from busy roads.
- *Near term customer waiting experience: traffic noise* is a qualitative measure of the expected noise experience of each exchange concept during the initial years, before new development results in the desired built environment. As above, noise from adjacent roads is expected to affect the customer experience.
- *Street animation* is a measure of the potential long-term experience, anticipating land uses possible as the urban centre develops.

Figure 9 - Evaluation, Customer Experience

		Good 2 1 Neutral 0 -1 Poor -2			
		Rank: City 3 1 2 2 3			
		RDN 1 2 3 4			
		Scenario 1 2 3 4			
		Woodgrove Mall Boomerang RDN Office/ Transit Yard Superstore			
		Format Centre Island Curbside Curbside Centre Island			
		Layover Adjacent Adjacent RDN RDN			
Evaluation Criteria	Units				
Frequent and rapid route directness	Incremental km travelled	32,000	0	24,000	8,000
	Number of turns from common segments	6	7	10	10
Walk distance to connect between buses	Longest walk between buses (m)	135	195	250	215
Vehicle lanes crossed by passengers connecting	Max lanes crossed to exchange between buses (including within exchange)	0	1	0	0
Legibility	Customer ease of navigating exchange between buses	1	0	1	2
Customer waiting experience: traffic noise	Use scale	0	-1	1	2
	Notes for above	Parts adjacent to Aulds Parts adjacent to both Hwy 19A and Aulds Parts adjacent to Hammond Bay Rd No major road nearby			
Near-term customer waiting experience: street animation	Use scale	-2	-1	0	-1
	Notes for above	Island isolated from development Curbside but limited potential for development Curbside but no development Island isolated from development, and some curbside			
Potential customer waiting experience: street animation	Use scale	-2	-1	2	-1
	Notes for above	Island isolated from development Curbside but limited potential for development Assumes streetscape adjacent platforms Island isolated from development			

Pedestrian experience

In addition to transit customers, non-transit pedestrians are expected to need to navigate around the transit exchange. This criterion is a count of the number of vehicle lanes pedestrians may need to cross to make such a trip (see Figure 10).

Figure 10 - Evaluation, Pedestrian Experience

		Rank: City 3 1 2 2 3			
		RDN 1 2 3 4			
		Scenario 1 2 3 4			
		Woodgrove Mall Boomerang RDN Office/ Transit Yard Superstore			
		Format Centre Island Curbside Curbside Centre Island			
		Layover Adjacent Adjacent RDN RDN			
Evaluation Criteria	Units				
Vehicle lanes crossed by non-transit pedestrians and cyclists	Max lanes crossed to pass through/around exchange	2	2	0	8

Space required

These criteria measure the approximate area required for each exchange concept and the number of parking spaces that would need to be converted for dedicated transit exchange use. In general, curbside exchanges required less dedication of space than centre island exchanges (see Figure 11).

Figure 11 - Evaluation, Space Required

		Rank: City 3 1 2 3 RDN 1 2 3			
		Scenario 1 2 3 4 Woodgrove Mall Boomerang RDN Office/ Transit Yard Superstore			
		Format Centre Island Curbside Curbside Centre Island			
		Layover Adjacent Adjacent RDN RDN			
Evaluation Criteria	Units				
Area required for exchange	M ² of purchase/dedication required for exchange	10,920	9,590	2,340	14,550
Number of parking spaces converted	Near term change in number of parking spaces	175	30	0	125

Transit operating cost

Transit efficiency can be affected significantly by the design of transit exchanges. These criteria measure the relative difference in kilometres, hours, and dollars. *Annual distance in service* measures additional kilometers relative to the most efficient concept, while *incremental annual hours* measures this in estimated hours of service.

The measures for service recovery indicate the estimated cost in dollars as well as annual hours, and cost for buses to circulate to the recovery location (see Figure 12).

Figure 12 - Evaluation, Transit Operating Cost

		Rank: City 3 1 2 3 RDN 1 2 3			
		Scenario 1 2 3 4 Woodgrove Mall Boomerang RDN Office/ Transit Yard Superstore			
		Format Centre Island Curbside Curbside Centre Island			
		Layover Adjacent Adjacent RDN RDN			
Evaluation Criteria	Units				
Annual distance in service	Incremental annual kms, from lowest concept	20,000	0	0	45,000
Annual cost of in service	Incremental annual hours, from lowest concept	2,100	0	6,800	1,500
	Incremental annual \$, from lowest concept	\$319,000	\$0	\$1,021,000	\$225,000
Service recovery travel minutes	Minutes for bus to circulate from drop off to pickup for recovery/breaks	0	0	2	8
Weekday daily minutes for service recovery circulation	Total estimated annual hours for recovery/break circulation (calculated)	0	0	1,000	6,000
Annual cost for service recovery circulation	Total estimated annual cost in dollars for recovery/break circulation (calculated)	\$0	\$0	\$186,000	\$929,000

Community/street impact

This measure counts daily bus trips operating to and from recovery locations on the road network without carrying customers (Figure 13).

Figure 13 - Evaluation, Community/Street Impact

		Rank: City 3 1 2 3 RDN 1 2 3			
		Scenario 1 2 3 4 Woodgrove Mall Boomerang RDN Office/ Transit Yard Superstore			
		Format Centre Island Curbside Curbside Centre Island			
		Layover Adjacent Adjacent RDN RDN			
Evaluation Criteria	Units				
Service recovery trips	Total weekday trips travelling on streets to layover	0	0	139	139

Interface with other agencies

This measure identifies the potential impact on MoTT roadways indicating the types of facilities needed to accommodate buses in, or adjacent to, highway right-of-way (see Figure 14).

Figure 14 - Evaluation, Interface with Other Agencies

		Rank: City 3 1 2 3			
		RDN 1 2 3 4			
		Scenario 1 2 3 4			
		Woodgrove Mall Boomerang RDN Office/ Transit Yard Superstore			
		Format Centre Island Curbside Curbside Centre Island			
		Layover Adjacent Adjacent RDN RDN			
Evaluation Criteria		Units			
Curbside stops on Provincial Highway		None, Bus Lane, Bus Bay, Moving Lane			
		None Bus Bay None None			

Layover/break facility, land siting/availability

This measure focuses on the requirement to secure space for layover facilities. It identifies whether on-site layover is possible or if a satellite location is needed. It includes a qualitative rating of challenges in securing sites for layovers (see Figure 15).

Figure 15 - Evaluation, Layover/Break Facility, Land Siting/Availability

		Good 2 1 0 Neutral -1 -2 Poor			
		Rank: City 3 1 2 3			
		RDN 1 2 3 4			
		Scenario 1 2 3 4			
		Woodgrove Mall Boomerang RDN Office/ Transit Yard Superstore			
		Format Centre Island Curbside Curbside Centre Island			
		Layover Adjacent Adjacent RDN RDN			
Evaluation Criteria		Units			
Satellite layover required		Public, Private			
Ease of securing and establishing site for layover/breaks		Use scale			
		Notes for above			
		No No Yes Yes			
		-2 2 2 2			
		Existing parking Willing public agency (MoTT) Curbside land with public owners Assumes use of RDN depot facility.			

Overall cost

These evaluation criteria display aggregate implications for cost factors including bus operating costs and a qualitative score for capital cost, as developed by City of Nanaimo (see Figure 16).

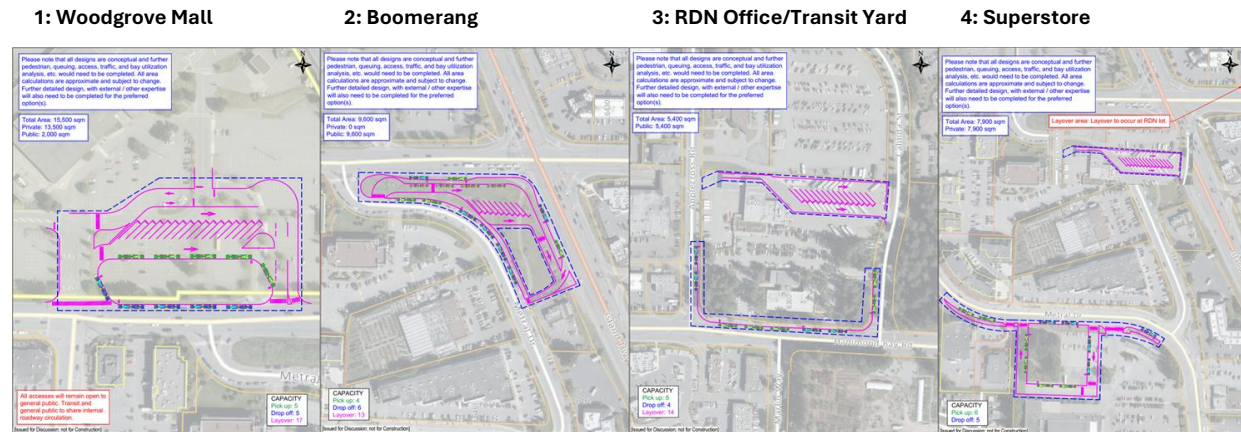
Figure 16 - Evaluation, Overall Cost

		Rank: City 3 1 2 3			
		RDN 1 2 3 4			
		Scenario 1 2 3 4			
		Woodgrove Mall Boomerang RDN Office/ Transit Yard Superstore			
		Format Centre Island Curbside Curbside Centre Island			
		Layover Adjacent Adjacent RDN RDN			
Evaluation Criteria		Units			
Induced bus operating hours		Sum of annual induced/saved hours, from lowest cost concept			
		2,100 0 7,800 7,500			
Induced/saved buses in service		Sum of induced buses, from lowest cost concept			
		1 0 3 3			
Estimated annual operating cost		Estimated total operating cost in \$2024, from lowest cost concept			
		\$319,000 \$0 \$1,207,000 \$1,154,000			
Total capital cost for construction		Use scale			
		0 2 1 0			

PART C – RECOMMENDATIONS

The project concluded with a shortlist of potential sites and conceptual configurations as shown in Figure 17. These were supported by the evaluation matrix as shown in Appendix 9 | Final Shortlist Evaluation.

Figure 17 - Shortlisted sites and concepts



The concepts require 0.7 – 1.8 hectares. This includes the area as estimated in the conceptual drawings above and an additional allowance of 0.2 ha for supporting uses such as HandyDART, pick-up/drop-off zone (commonly called kiss and ride), bike parking, bike/scooter share, and the like (see figure 18).

Figure 18 Space Requirement for Transit Exchange

Site	Transit operational space		Additional space for other functions (ha)	Total space required (ha)
	m ²	ha		
Woodgrove Mall	15,500	1.6	0.2	1.8
Boomerang	9,600	1.0	0.2	1.2
RDN Office/ Transit Yard	5,400	0.5	0.2	0.7
Superstore	7,900	0.8	0.2	1.0

*The Superstore site does not include layover space; it is assumed to be at the nearby RDN operations yard.

Following this, the Steering Committee recommended a conceptual zone be used for the purposes of the Woodgrove Area Plan scenario testing, as further analysis of the opportunities verse constraints of each site is still required. The conceptual zone is identified as the intersection of Aulds Road, Hammond Bay Road and Highway 19A, as illustrated in Figure 19.

Figure 19 - Conceptual Zone for Long-Term Transit Exchange Siting



The findings will serve as inputs to further planning phases, ensuring that the new transit exchange meets both current and future demands while aligning with Nanaimo's strategic objectives for sustainable urban development. Further assessments will be necessary to confirm the optimal site and configuration for the transit exchange. This assessment is anticipated to either be triggered through additional hours of service as outlined in the Transit Redevelopment Strategy, or by private development located adjacent to the conceptual zone.

APPENDICES

- Appendix 1 – Summary of Meetings
- Appendix 2 – Capacity Requirements
- Appendix 3 – Initial Terminus Descriptions
- Appendix 4 – Initial Capacity Estimates
- Appendix 5 – Initial Routing and Access Concepts
- Appendix 6 – Refined Exchange Concepts
- Appendix 7 – Transit Exchange Concept and Analysis
- Appendix 8 – Full Evaluation Matrix
- Appendix 9 – Final Shortlist Evaluation

Appendix 1 | Summary of Meetings

There were six workshops involving all partners and two focused meetings with RDN Transit

Date	Meeting	Consultants	City of Nanaimo	Regional District of Nanaimo	MoTT
2024-08-15	• Orientation • Input for criteria • Identification of sites of interest	Y	Y	Y	
2024-09-09	• Project Assumptions • Primer on transit exchanges • Future Nanaimo transit system • Review of notional sites	Y	Y	Y	Y
2024-09-13	• Review of notional sites (continuation)	Y	Y	Y	Y
2024-09-19	• Transit assumptions	Y		Y	
2024-10-10	• Exchange concepts • Evaluation criteria refinement	Y	Y	Y	
2024-10-11	• Exchange concepts (continued) • Evaluation criteria refinement continued	Y	Y	Y	
2024-10-17	• Review transit assumptions	Y		Y	
2024-10-18	• Evaluation	Y	Y	Y	

Appendix 2 | Capacity requirements

Transit access considerations

Planning for battery electric buses:

- Most charging at depot, overnight (mostly depot charging. Some layover charging)
- Status of requirements for charging at transit exchanges TBD
- Assume that charging stations are also available at other termini in the system
- Protect for articulated (length) and double decker (height) buses
- Use Transit Redevelopment Strategy network
- Frequent services do not have timed connections
- Timed connections between coverage services in near term, diminishing over time as frequency increases
- Plan for foreseeable future. Big enough but not too big.
- Consider roles of other exchanges in the system

No demand forecast available; estimate required capacities based on:

- City Plan
- Projected Nanaimo growth (population and land use patterns)
- Assumed future fleet
- Ridership services attract higher growth in demand
- Coverage services attract limited growth in demand
- Recovery requirement is 10% of trip run time, established in collective bargaining.
- RDN seeks scheduling efficiencies within the collective agreement (e.g. minimize the layover) and through bargaining.
- Consider innovations during design process.

Breaks are required in addition to layover time:

- Coffee, two per shift (10 min + recovery time)
- Meal, one per shift (Break 26 min)
- Actual amount varies (12 minutes to >26 minutes)

Various parameters and schedule considerations:

- Ensure integration of handyDART
- Assume rear entry handyDART vehicles
- Consider other modal connections including taxi/ride hail, bicycles, shared micro mobility such as bikes, scooters, etc.

Exchange functional requirements

Capacity

- Exchange capacity requirement starts with projected transit service levels
- Demand forecasts for transit have not been developed
- Can make estimates and test for reasonableness based on transportation growth projections

- Transit demand +500% (5x) by 2050
 - Focussed growth and focussed transit service in and between town centres (jobs, residences, activity centres)
 - Lower growth in areas not designated for densification
- Network based on Transit Redevelopment Strategy (TRS)
- Plan for 30 years (approximately 2054)
- Plan for
 - Potential articulated buses for rapid and frequent routes
 - Customer service functions: dropoff and pickup
 - Back of house functions: schedule recovery, coffee breaks and meal breaks
 - HandyDART service
 - All routes terminate at Woodgrove
- Reasonable levels of service and schedule optimization
 - Sharing of similar fleet between routes (interlining)
 - Scheduling longer breaks outside peak times to the extent possible

Standards or guidelines

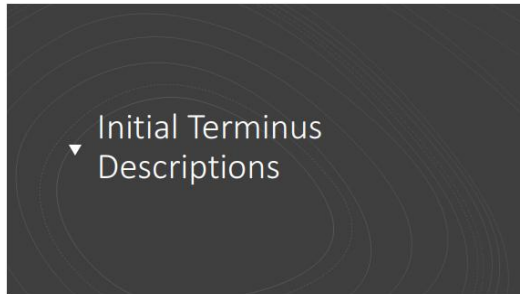
- [*BC Transit Infrastructure Design Guidelines \(DRAFT 2022\)*](#)
- *BC Transit operator restroom guidelines (in development during project period)*
- [*Coast Mountain Bus Company Crew Facility Guidelines*](#)

Other relevant documents

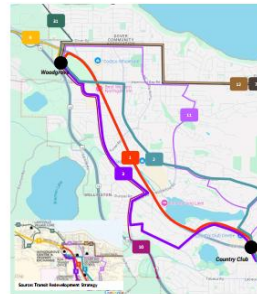
- [*Transit Future Plan, RDN \(2014\)*](#)
 - Enhanced Passenger Amenities (pp 63 – 64)
 - Transit Infrastructure (pp 83 – 88)

Appendix 3 | Initial Terminus Descriptions

From workshop, 2024-09-09



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Routes and relevant segments

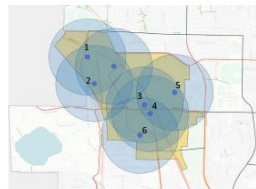
Route	Route Name	Direction
1	Namaste Rapid Line to South Parkway Plaza	Terminator
2	VNU Line	Terminator
3	Hospital Line to VNU	Terminator
8	Intervenor Line	Terminator
10	VNU / Woodgrove via Jingle Pier	Terminator
11	Rutherford + Hospital	Terminator
12	Hammond Bay / Departure Bay Ferry	Terminator
31	Lantzville	Terminator
72	Hammond Bay + NBH + VNU	Terminator

Exact routings in the vicinity of Woodgrove Exchange will vary in each exchange concept



37

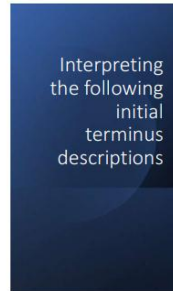
Initial scan of coverage share outside existing town centre



Site	Name	Area (ha)
1	Mary Ellen	19.9
2	Existing	18.6
3	Aulds NW	0.0
4	Aulds SW	1.3
5	Hammond Bay/Applecross	15.0
6	Metral at Superstore	13.8

Exact share will change depending on specific exchange location

38



- Initial scan to identify broad site opportunities and access issues
- Useful tool to prompt discussions and invite other ideas
- Not generally useful for screening, eliminating or selecting sites
- Drawings are conceptual and not to scale
- Routings are initial and can all be modified, refined, etc
- Routings generally assume directness priority for frequent and rapid (ridership-focused) services
 - Lower priority for other services
- Will be followed by evaluation (also high level)



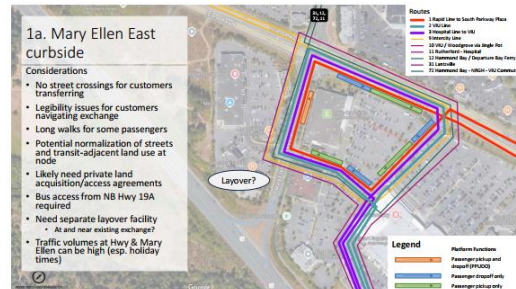
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1. Mary Ellen

Notional site location with 400m radius



40



41



42

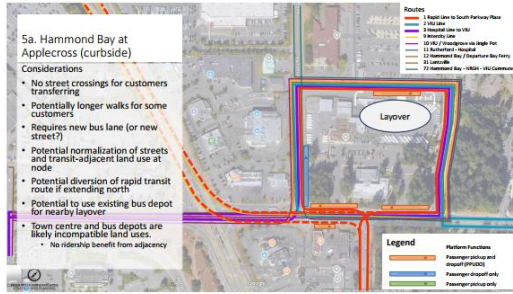
2. Existing Location

Notional site location with 400m radius

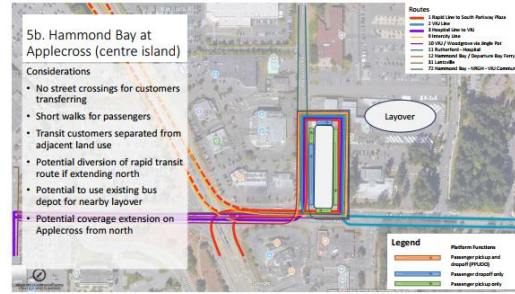


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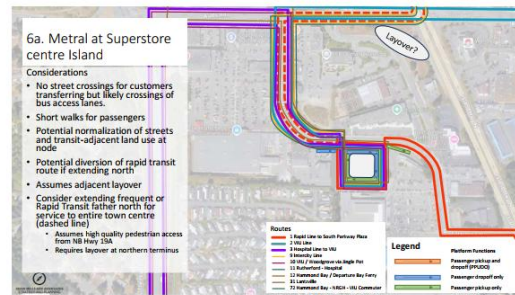
53

6. Metral at Superstore

Notional site location with 400m radius



54



55

Appendix 4 | Initial Capacity Estimates

Conceptual Requirements for Conventional Transit Exchange with in-bay and adjacent layover

Bus Service							Exchange Requirements			
Route	Direction	Peak Frequency	Buses / Hour	Max	Potential	Bays	Bay Capacity	Vehicle type	Bay Operation	Layover Spaces
				Simultaneous Terminating Buses	Simultaneous Terminating Buses					
1	Terminate	5	12	2	2	1	2	Articulated	FIFO	2
2	Terminate	2.5	24	4	2	1	2	Articulated	FIFO	3
3	Terminate	5	12	2	1	1	2	Articulated	FIFO	2
11	Terminate	12	5	3	2	1	1	Standard	Independent arrival and departure	1
12	Terminate	12	5	4	2	1	1	Standard	Independent arrival and departure	1
9	Terminate	15	4	2	1	1	1	Standard	Independent arrival and departure	1
10	Terminate	20	3	2	1	1	1	Standard	Independent arrival and departure	1
31	Terminate	30	2	1	1	1	1	Standard	Independent arrival and departure	1
72	Terminate	12	5	4	2	1	1	Standard	Independent arrival and departure	1
HD	PPUDO	15	4	2		1	2	Minibus		0
All	Drop Off		0		2	1	2	Articulated	Independent departure	0
			76			11	16			13

Definitions:

Bay

Designated location for pick up and drop off of customers

Bay Capacity

The number of buses potentially accommodated in a bay

Vehicle type

Standard=12m (40'); Articulated=18m (60'); Minibus=rear entry handyDART van

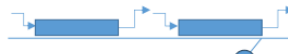
Layover spaces

Number of spaces not providing customer access where buses may lay over, away from the customer-facing parts of the exchange

Bay Operation

Level of independence, esp when a bay accommodates more than one bus at a time. Illustrations below:

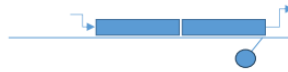
Fully independent



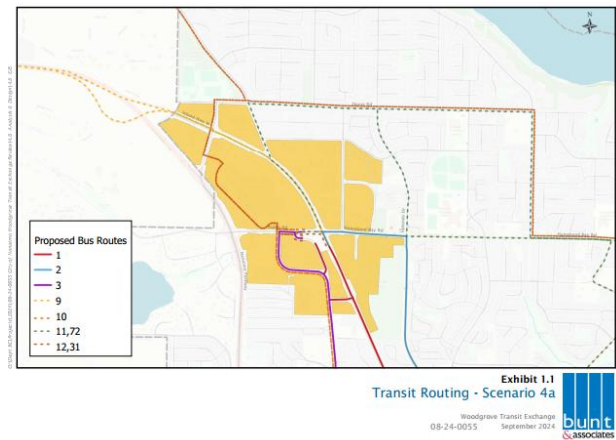
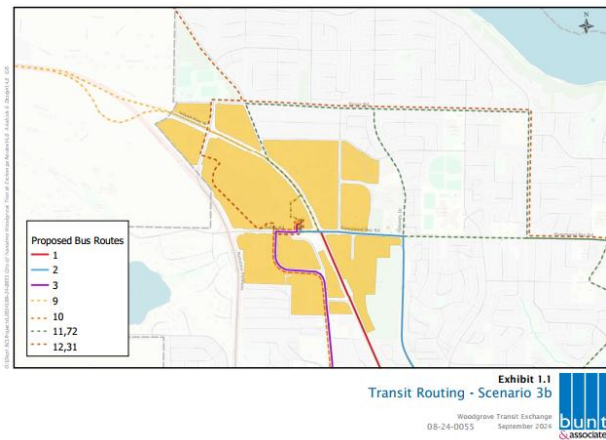
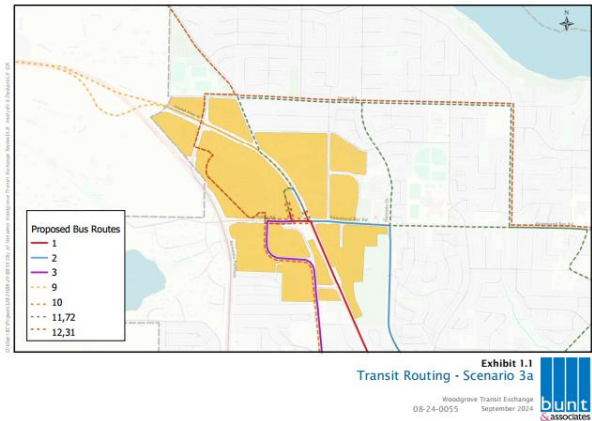
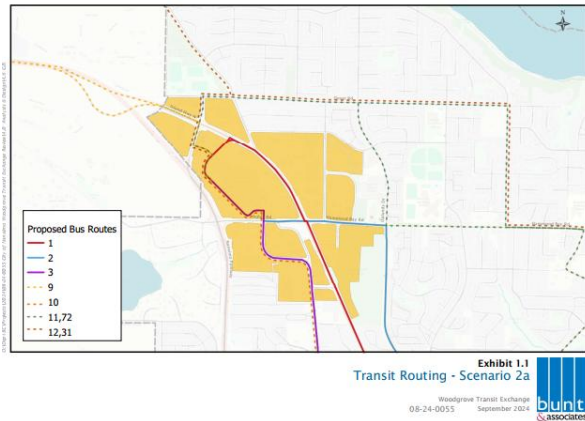
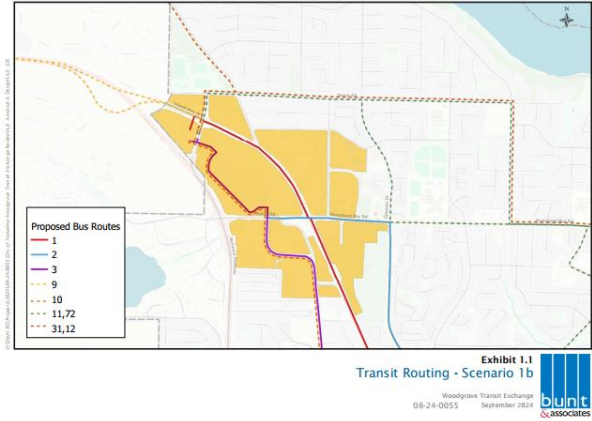
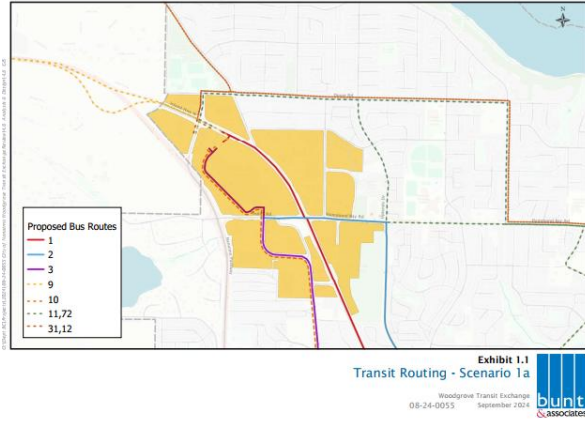
Independent departure

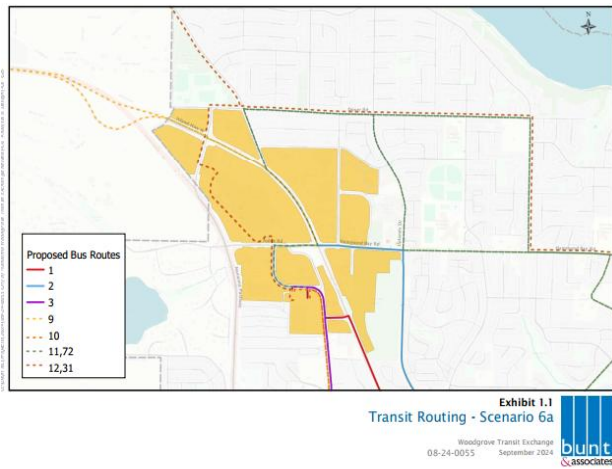
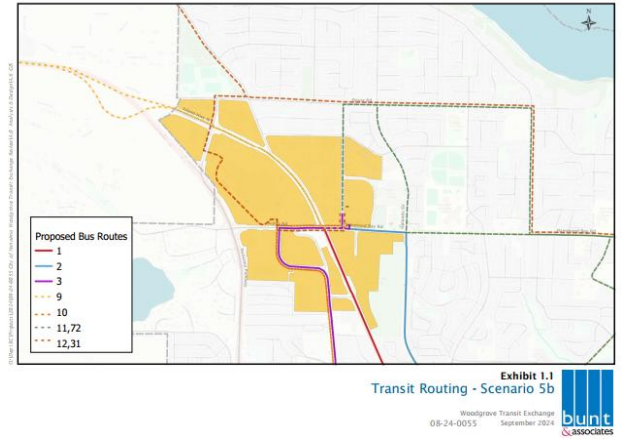
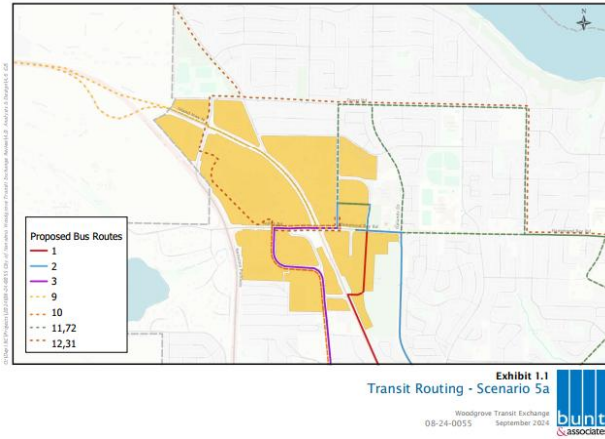


First In First Out (FIFO)

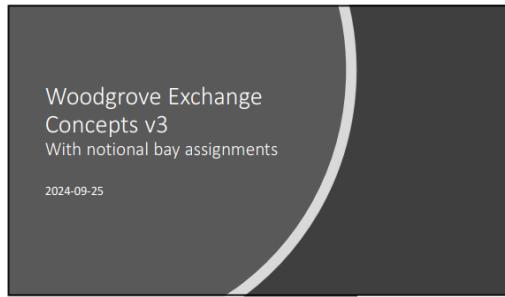


Appendix 5 | Initial Routing and Access Concepts

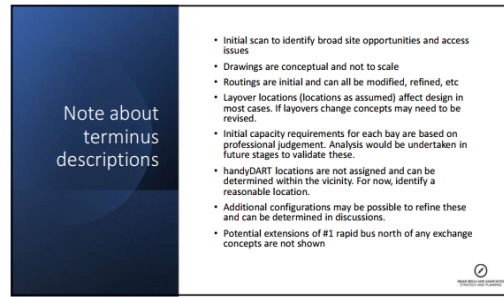




Appendix 6 | Refined Exchange Concepts



1



2

Summary of Bay Capacities (1)

Scenario	Exchange Description	Bay Type	Bay Movements	Capacity
1a	Mary Ellen East curbside (S/O: 10' of Mary Ellen)	1 Articulated (DSD)	17	1
		2 Articulated (DSD)	33	2
		3 Articulated (DSD)	33	3
		4 Articulated (DSD)	21	2
		5 Articulated (DSD)	21	2
		6 Articulated (DSD)	17	1
1a Total			142	10
1b	Mary Ellen West curbside (S/O: 10' of Mary Ellen)	1 Articulated (DSD)	38	2
		2 Articulated (DSD)	33	2
		3 Articulated (DSD)	33	2
		4 Articulated (DSD)	21	2
		5 Articulated (DSD)	17	1
1b Total			142	9
1c	Mary Ellen West curbside (S/O: 10' of Mary Ellen)	1 Articulated (DSD)	71	3
		2 Articulated (DSD)	17	1
		3 Articulated (DSD)	33	2
		4 Articulated (DSD)	21	2
1c Total			142	8

3

Summary of Bay Capacities (2)

Scenario	Exchange Description	Bay Type	Bay Movements	Capacity
2a	Full Property (Existing) Centre Island (S/O: Adjacent)	1 Articulated (DSD)	38	2
		2 Articulated (DSD)	33	2
		3 Articulated (DSD)	33	2
		4 Articulated (DSD)	21	2
		5 Articulated (DSD)	17	1
2a Total			142	7

4

Summary of Bay Capacities (3)

Scenario	Exchange Description	Bay Type	Bay Movements	Capacity
3a	Audubon 100 Curbside (S/O: Adjacent)	1 Articulated (DSD)	46	2
		2 Articulated (DSD)	14	2
		3 Articulated (DSD)	25	2
		4 Articulated (DSD)	57	2
		5 Articulated (DSD)	14	2
3a Total			142	11
3b	Audubon 100 Centre Island (S/O: Adjacent)	1 Articulated (DSD)	46	2
		2 Articulated (DSD)	25	2
		3 Articulated (DSD)	47	2
		4 Articulated (DSD)	24	2
3b Total			142	9
4a	Audubon 100 Curbside (S/O: Adjacent)	1 Articulated (DSD)	17	1
		2 Articulated (DSD)	54	2
		3 Articulated (DSD)	25	2
		4 Articulated (DSD)	15	1
		5 Articulated (DSD)	17	1
		6 Articulated (DSD)	14	2
4a Total			142	9

*If Bays 1 and 2 combined, reduce bay capacity by 1

5

Summary of Bay Capacities (4)

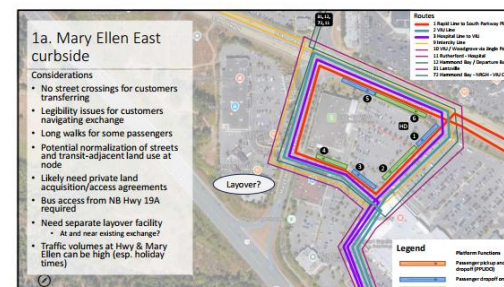
Scenario	Exchange Description	Bay Type	Bay Movements	Capacity
5a	Hammond Bay at Appleton Curbside (S/O: NW)	1 Articulated (DSD)	42	2
		2 Articulated (DSD)	38	2
		3 Articulated (DSD)	44	2
		4 Articulated (DSD)	17	1
5a Total			142	7
5b	Hammond Bay at Appleton Centre Island (S/O: NW)	1 Articulated (DSD)	61	2
		2 Standard	10	2
		3 Standard	108	1
		4 Articulated (DSD)	47	2
5b Total			142	6
6a	Metrol at Superstore Centre Island (S/O: Superstore)	1 Articulated (DSD)	17	1
		2 Articulated (DSD)	25	2
		3 Articulated (DSD)	29	2
		4 Articulated (DSD)	24	2
		5 Articulated (DSD)	30	2
		6 Articulated (DSD)	17	1
6a Total			142	11

6

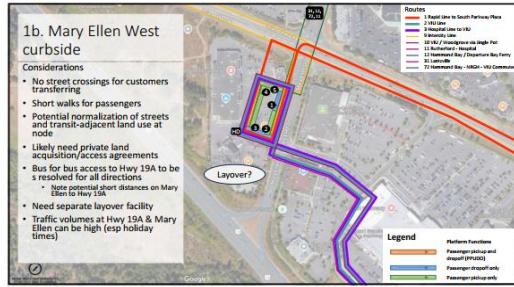
Summary of Bay Capacities (5)
Additional 2024-09-24

Scenario	Exchange Description	Bay Type	Bay Movements	Capacity
7a	Mary Ellen East Curbside (S/O: 10' of Mary Ellen)	1 Articulated (DSD)	71	3
		2 Articulated (DSD)	17	1
		3 Articulated (DSD)	33	2
		4 Articulated (DSD)	21	2
7a Total			142	8
7b	Audubon at Metrol Centre Island (S/O: Adjacent)	1 Articulated (DSD)	46	2
		2 Articulated (DSD)	21	2
		3 Articulated (DSD)	18	2
		4 Standard	7	2
7b Total			142	10
7c	Audubon at Metrol Curbside (S/O: Adjacent)	1 Articulated (DSD)	71	3
		2 Articulated (DSD)	71	3
7c Total			142	6
7d	Colville at Hammond Bay Curbside (S/O: NW)	1 Articulated (DSD)	71	2
		2 Articulated (DSD)	71	3
7d Total			142	5

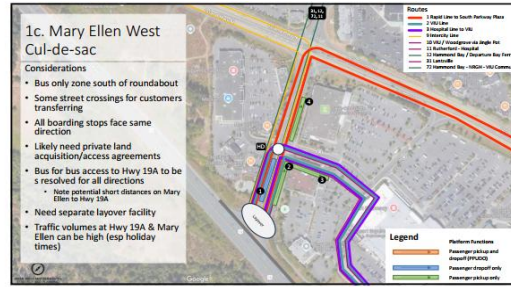
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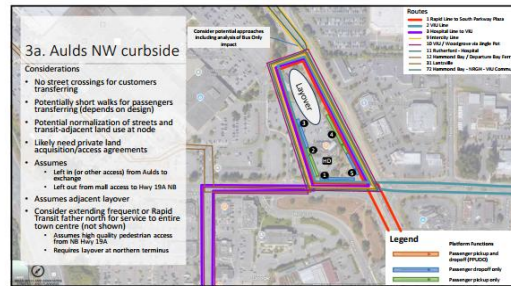
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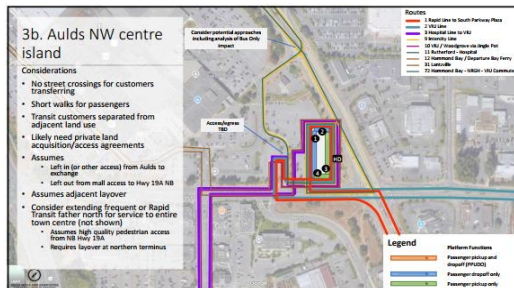
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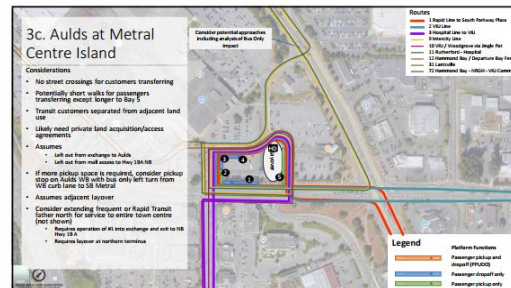
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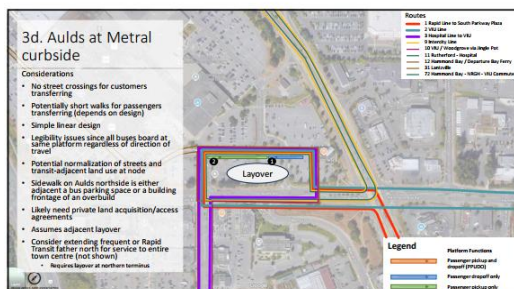
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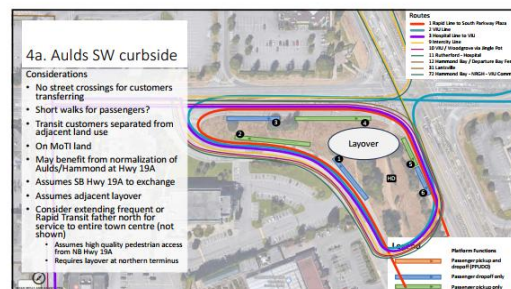
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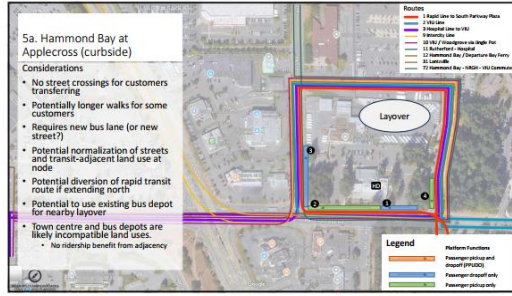
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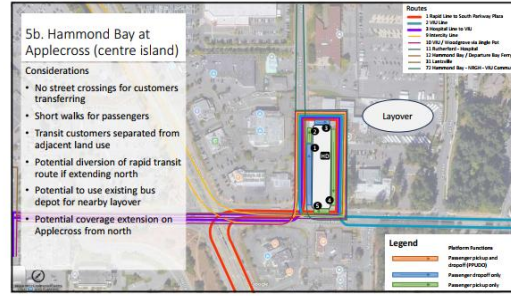
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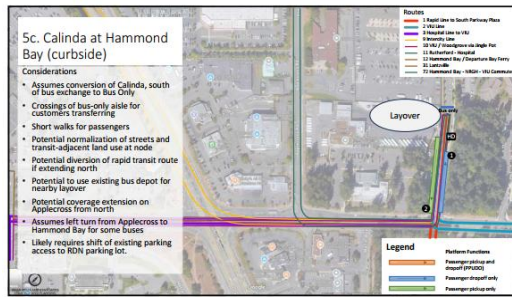
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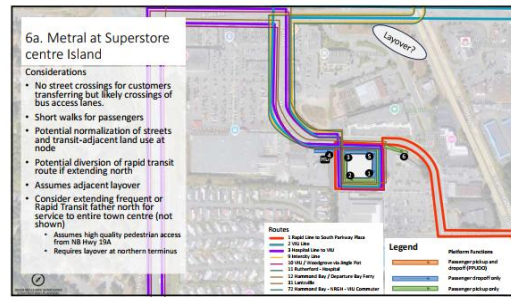
17



18



19



20

Appendix 7 | Transit Exchange Concepts and Analysis

Concept Illustrations



Note about terminus descriptions

- High level preliminary diagrams to identify broad site opportunities, access issues, footprint concepts, layover concepts and the like
- Drawings are to scale but have not been validated, refined or optimized and may not include or fully represent all elements
- Routings are initial and can be modified, refined, etc
- Potential extensions of #1 rapid bus north of any exchange concepts are not shown
- Layover locations are assumed for the purpose of understanding issues and exploring concepts. If layovers change concept revisions may be needed.
- Initial capacity requirements for each bay are based on estimates and professional judgement. Analysis would be undertaken in future stages to validate these.
- Locations for modal connections including HandyDART taxi/ridehail and micromobility, are not identified and would be determined at future levels of analysis
- Additional configurations may be possible to refine these and can be determined in discussions.



1A Mary Ellen, Curbside



1B Mary Ellen, Centre Island



3C.1 Aulds NW at Metral, Centre Island

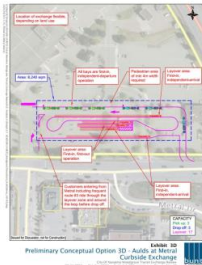
- Not included in analysis



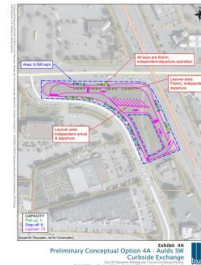
3C.2 Aulds NW at Metral, Centre Island



3D Aulds NW at Metral, Curbside



4A Aulds SW, Curbside



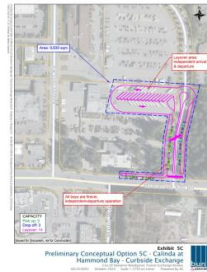
5A Hammond Bay at Applecross, Curbside



5B Hammond Bay at Applecross, Island



5C Calinda, Curbside



6A Metral at Superstore, Island



Site buffers

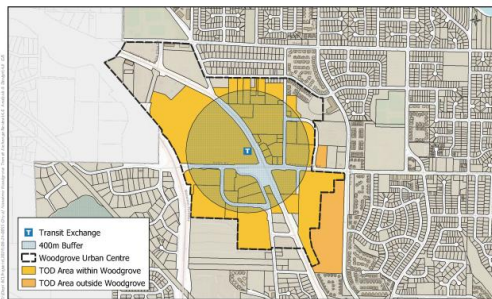


Exhibit 1.1
TOD Area - Site 3a
Woodgrove Transit Exchange
08-24-0555 October 2021
bunt & associates

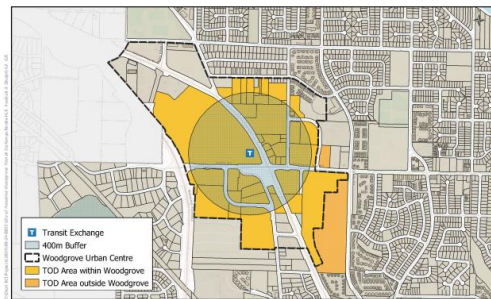


Exhibit 1.1
TOD Area - Site 3b
Woodgrove Transit Exchange
08-24-0555 October 2021
bunt & associates

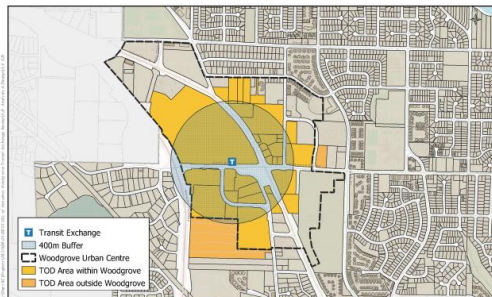


Exhibit 1.1
TOD Area - Site 3c
Woodgrove Transit Exchange
08-24-0555 October 2021
bunt & associates

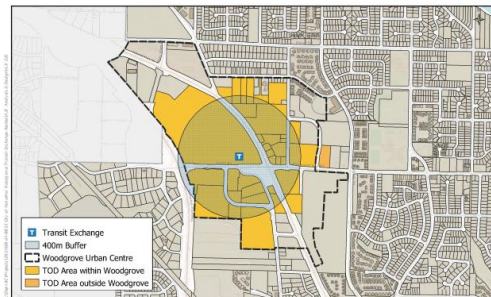
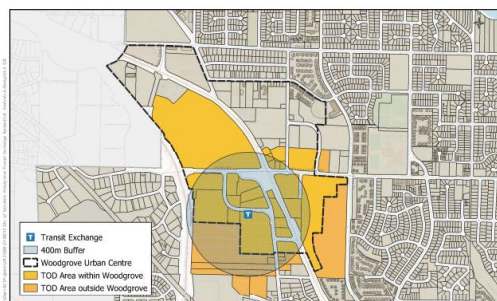
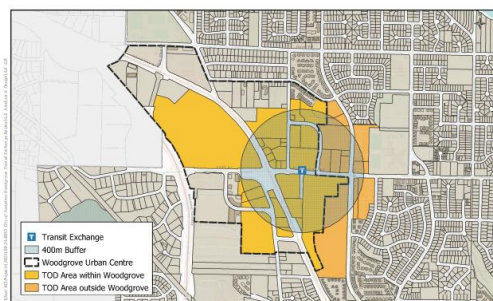
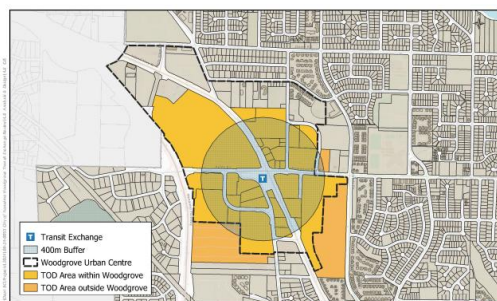


Exhibit 1.1
TOD Area - Site 3d
Woodgrove Transit Exchange
08-24-0555 October 2021
bunt & associates



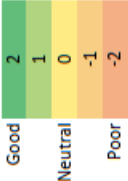
Land area analysis of concepts evaluated

Table 1: TOD Area (400m) Parcel Breakdown

Site	Name	Area of TOD Parcels (ha)			
		within WG	within CoN/outside WG	outside CoN	Total
3a	Aulds NW, Curbside	74.8	10.6	0.0	10.6
3b	Aulds NW, Centre Island	74.7	10.6	0.0	10.6
3c	Aulds NW at Metral, Centre Island	61.5	10.2	0.0	10.2
3d	Aulds NW at Metral, Curbside	63.1	1.0	0.0	1.0
4a	Aulds SW	68.8	19.8	0.0	19.8
5a	Hammond Bay/Applecross	60.8	24.5	0.0	24.5
6a	Metral at Superstore	60.7	28.5	0.0	28.5

Table 2: TOD Area outside Woodgrove Urban Area

Site	Name	Area (ha)
1	Mary Ellen	21.9
2	Existing	18.6
3a	Aulds NW, Curbside	0.0
3b	Aulds NW, Centre Island	0.0
3c	Aulds NW at Metral, Centre Island	2.7
3d	Aulds NW at Metral, Curbside	1.0
4a	Aulds SW	1.3
5a	Hammond Bay/Applecross	13.8
6a	Metral at Superstore	13.3



Appendix 8 | Full Evaluation Matrix

Note that some concepts were screened out of the analysis prior to this stage.

Format		Curbside	Centre Island	Centre Island	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbside	Curbsid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Appendix 9 | Final Shortlist Evaluation

Woodgrove Transit Exchange – Evaluation
2024-10-30

Good	2			
	1			
Neutral	0			
	-1			
Poor	-2			
Rank: City	3	1	2	
RDN	1	2		3
Scenario	1	2	3	4
	Woodgrove Mall	Boomerang	RDN Office/ Transit Yard	Superstore
Format	Centre Island	Curbside	Curbside	Centre Island
Layover	Adjacent	Adjacent	RDN	RDN

Theme	Evaluation Criteria	Units				
Exchange						
Land use considerations	400 m TOA radius outside Woodgrove SUC Boundary	Yes or No	Yes	Yes	Yes	Yes
	Parcels located outside of Woodgrove SUC Boundary	Number of parcels	4	5	11	13
	400 m TOA radius intersects parcels west of parkway	Yes or No	No	No	No	No
	Exchange sited on private land	Yes or No	Yes	No	No	Yes
	Property leases in effect	Yes or No	Yes	No	No	Yes
	Building demolition required	Yes or No	No	No	No	No
	Exchange not centrally located in Woodgrove SUC	Yes or No	Yes	Yes	Yes	No
Transit passenger experience	Frequent and rapid route directness	Incremental km travelled	32,000	0	24,000	8,000
		Number of turns from common segments	6	7	10	10
	Walk distance to connect between buses	Longest walk between buses (m)	135	195	250	215
	Vehicle lanes crossed by passengers connecting	Max lanes crossed to exchange between buses (including within exchange)	0	1	0	0
	Legibility	Customer ease of navigating exchange between buses	1	0	1	2
	Customer waiting experience: traffic noise	Use scale	0	-1	1	2
		Notes for above	Parts adjacent to Aulds	Parts adjacent to both How 19A and Aulds	Parts adjacent to Hammod Bay Rd	No major road nearby
	Near-term customer waiting experience: street animatic	Use scale	-2	-1	0	-1
		Notes for above	Island isolated from development	Curbside but limited potential for development	Curbside but no development	Island isolated from development, and some curbside
	Potential customer waiting experience: street animation	Use scale	-2	-1	2	-1
		Notes for above	Island isolated from development	Curbside but limited potential for development	Assumes streetscape adjacent platforms	Island isolated from development
Pedestrian experience	Vehicle lanes crossed by non-transit pedestrians and cyc	Max lanes crossed to pass through/around exchange	2	2	0	8
Space required	Area required for exchange	M² of purchase/dedication required for exchange	10,920	9,590	2,340	14,550
	Number of parking spaces converted	Near term change in number of parking spaces	175	30	0	125
Transit operating cost	Annual distance in service	Incremental annual kms, from lowest concept	20,000	0	0	45,000
	Annual cost of in service	Incremental annual hours, from lowest concept	2,100	0	6,800	1,500
		Incremental annual \$, from lowest concept	\$319,000	\$0	\$1,021,000	\$225,000
	Service recovery travel minutes	Minutes for bus to circulate from drop off to pickup for recovery/breaks	0	0	2	8
	Weekday daily minutes for service recovery circulation	Total estimated annual hours for recovery/break circulation (calculated)	0	0	1,000	6,000
	Annual cost for service recovery circulation	Total estimated annual cost in dollars for recovery/break circulation (calculated)	\$0	\$0	\$186,000	\$929,000
Community/street impact	Service recovery trips	Total weekday trips travelling on streets to layover	0	0	139	139
Interface with other agencies	Curbside stops on Provincial Highway	None, Bus Lane, Bus Bay, Moving Lane	None	Bus Bay	None	None
Layover/Break Facility						
Land siting/availability	Satellite layover required	Public, Private	No	No	Yes	Yes
	Ease of securing and establishing site for layover/breaks	Use scale	-2	2	2	2
		Notes for above	Existing parking	Willing public agency (MoTI)	Curbside land with public owners	Assumes use of RDN depot facility.
Change in hours	Induced bus operating hours	Sum of annual induced/saved hours, from lowest cost concept	2,100	0	7,800	7,500
Change in buses	Induced/saved buses in service	Sum of induced buses, from lowest cost concept	1	0	3	3
Operating cost	Estimated annual operating cost	Estimated total operating cost in \$2024, from lowest cost concept	\$319,000	\$0	\$1,207,000	\$1,154,000
Capital cost	Total capital cost for construction	Use scale	0	2	1	0

Notes:
Use only for comparison of alternatives not absolute costs; costs may not be fully inclusive of project costs, especially where alternatives are similar.
Does not include a lifecycle cost or NPV calculation