DESCANSO BAY, GABRIOLA ISLAND

Terminal Development Plan

Approved March 2019

BCFerries

PUBLISHING INFORMATION

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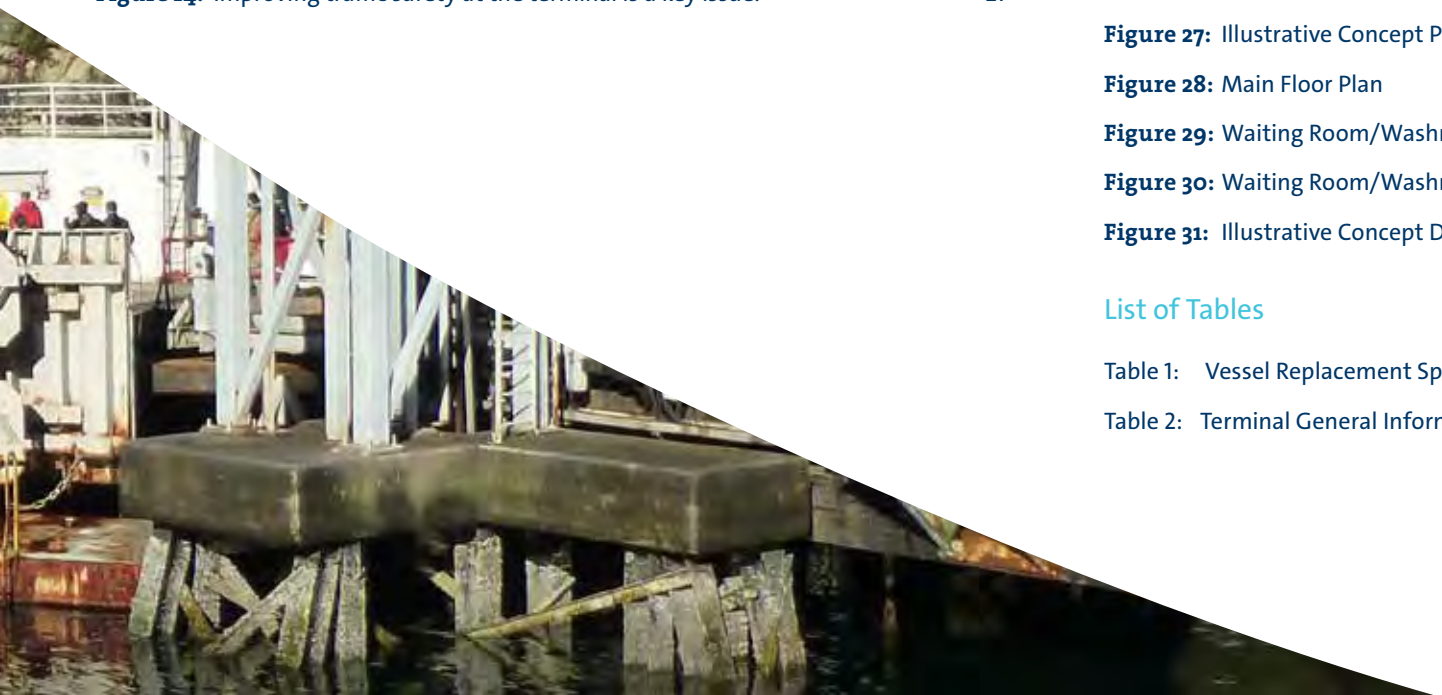
TABLE OF CONTENTS

List of Figures

List of Tables



BC Ferries Terminal Network

Alert Bay Cormorant Island
Bear Cove Port Hardy
Bella Coola Bella Coola
Blubber Bay Texada Island
Brentwood Bay Saanich Peninsula
Buckley Bay Buckley Bay
Campbell River Campbell River
Chemainus Chemainus
Crofton Crofton
Denman West Denman Island
Departure Bay Nanaimo
Descanso Bay Gabriola Island
Duke Point Nanaimo
Earls Cove Sechelt
Fulford Harbour Salt Spring Island
Alliford Bay (Gaats'iiGundaay) Haida Gwaii
Gravelly Bay Denman Island East
Skidegate Landing (GuuhlGa Llnagaay) Haida Gwaii
Heriot Bay Quadra Island
Horseshoe Bay West Vancouver
Klemtu Klemtu
Little River Comox
Langdale Sunshine Coast
Long Harbour Salt Spring Island
Lyall Harbour Saturna Island
McLoughlin Bay Bella Bella
Mill Bay Mill Bay
Nanaimo Harbour Nanaimo
Ocean Falls Ocean Falls
Otter Bay Pender Island
Penelakut Penelakut Island
Port McNeill Port McNeill
Preedy Harbour Thetis Island
Prince Rupert Prince Rupert
Quathiaski Cove Quadra Island
Saltery Bay Sunshine Coast
Shearwater Denny Island
Shingle Spit Hornby Island
Snug Cove Bowen Island
Sointula Malcolm Island
Sturdies Bay Galiano Island
Swartz Bay North Saanich
Tsawwassen Lower Mainland
Vesuvius Bay Salt Spring Island
Village Bay Mayne Island
Whaletown Cortes Island
Westview Powell River

Figure 1: Southern Gulf Islands Terminal and Route Map

Figure 2: Terminal and Route Map

Figure 3: Gabriola Terminal Aerial Photograph

Top 3 Comments

Improve
FERRY TRAFFIC
(points of entry and exit, impacts of traffic back-ups on roadways)

Improve
SAFETY
(size of holding compound, traffic overflow, separate pick-up/drop-off area)

Improve
AMENITIES
(waiting room, customer amenities)

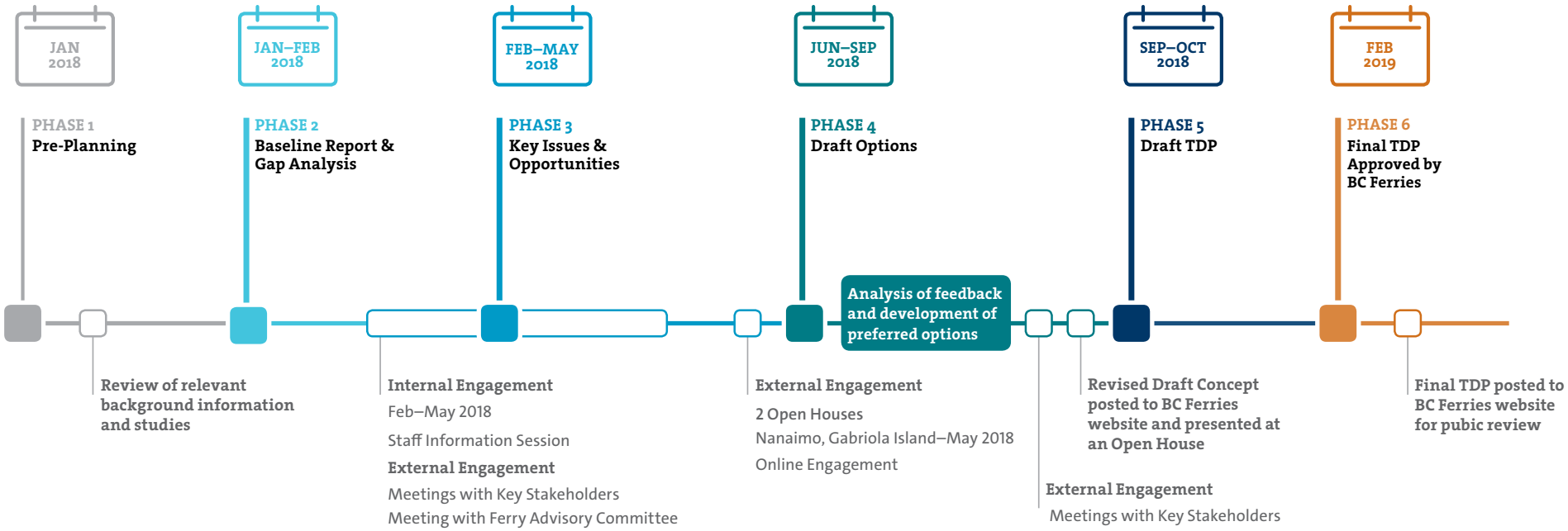


Figure 4: Gabriola Terminal Development Plan (TDP) Timeline

1 INTRODUCTION

1.1 What is a Terminal Development Plan (TDP)?

A Terminal Development Plan (TDP) is a concept plan that provides the framework for the phased implementation of strategies and actions over the next 25 years that will enable BC Ferries to develop terminals in a cost effective, organized and efficient way.

TDPs shall specify:

- Terminal classification
- Berth classification(s)
- Description of existing facility
- Existing traffic demand and growth projections
- Terminal lands and property, including stakeholder and community consultation and archaeological assessments
- Existing terminal infrastructure
- Existing safety, security and operational issues
- Existing and future vessel deployment
- Functional requirements, as drawn from Terminal Design Requirements contained in the TNMP and established in consultation with local area teams
- Future terminal development plans, including the scope, schedule and budget of all improvements to be carried out over the next 25 years

Over the next 25 years the Terminal Network will be optimized for efficient and effective operation. BC Ferries will study routes and their interactions to determine ways to reduce operating and capital costs and increase system reliability. Terminals will be examined for improvement to construction and operating efficiencies. Greater use of standard designs and components will aid these efficiencies over time.

1.2 Purpose of the Gabriola Terminal Development Plan

The purpose of the Gabriola TDP is to set out a long-term vision for the future of this important terminal which acts as the main gateway and route connection between Gabriola Island and Nanaimo Harbour terminal on Vancouver Island.

The TDP is future oriented and depicts how the Gabriola terminal is to be developed over an extended period of time through a series of initiatives.

1.3 Interpretation of the TDP

Unless otherwise specified within the TDP, the boundaries and locations of any symbols or areas shown on a Figure are approximate only and shall be interpreted as such. They are not intended to define exact locations except where they coincide with clearly recognizable physical features or fixed boundaries, such as property lines and utility rights-of-way.

Figure 5: Gabriola Location Map

1.4 Structure of the TDP

The scope of the Gabriola TDP covers planning, conceptual design and development of an implementation schedule and budget estimates for upgrading the terminal with the requirement to:

- Review existing terminal operations, infrastructure conditions and customer service issues and interface.
- Establish future functional requirements at the terminal that are consistent with future plans for vessel procurement and deployment and overarching strategic master plans.
- Review foot passenger and vehicle traffic demand projections including demand management policies and opportunities.
- Develop and find solutions to accommodate the functional requirements including evaluation of alternatives.
- Recommend a preferred plan for the terminal that is in accordance with the overarching Terminal Network Master Plan.
- Prepare conceptual designs for the recommended terminal plan including the general arrangement of the site.
- Develop an estimate of the capital cost, project phases, and schedule of work.
- Engage with various stakeholders during the course of the TDP.

The TDP represents a cooperative effort which involves a high degree of interaction with and input from a wide range of participants.

A comprehensive “baseline review” report has been completed as a separate report which details the existing situation in the TDP area as it currently stands and identifies issues affecting the production of the TDP.

1.5 Plan Area

The study area for the Terminal Development Plan encompasses the marine infrastructure, the landside infrastructure and the approach to the terminal.

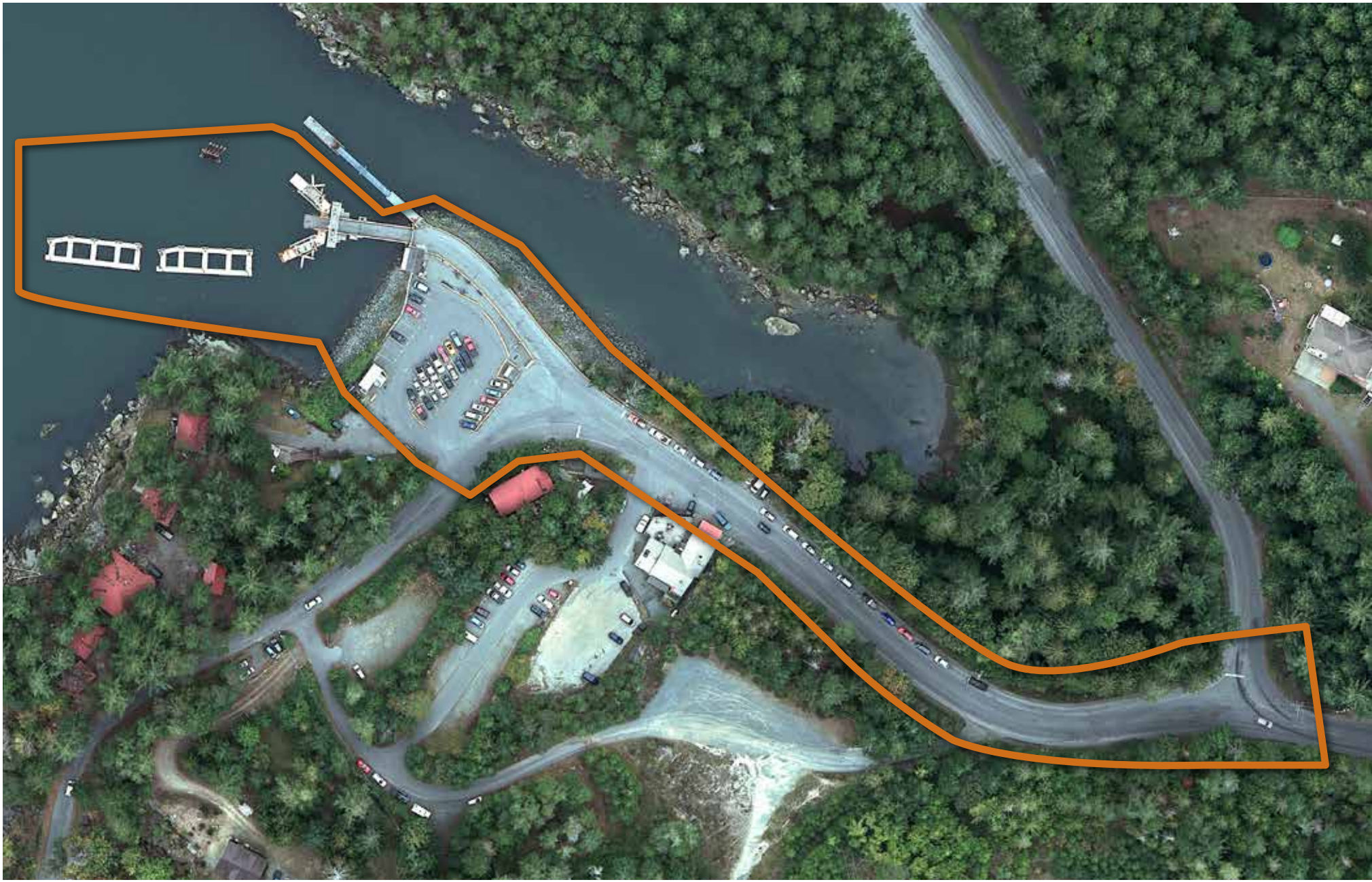


Figure 6: Gabriola TDP Study Area

1.6 How the TDP Relates to Other BC Ferries Strategic Plans

To align with BC Ferries future, long-term vision and objectives the TDP is guided by three overarching documents: the Strategic Plan, Terminal Network Master Plan and Fleet Master Plan.

1.6.1 STRATEGIC PLAN

The 2018 Strategic Plan was prepared to guide the long-term direction of BC Ferries and achieve the organization's vision. The Strategic Plan's vision is as follows:

VISION
Trusted, valued.

MISSION
We connect communities and customers to the people and places important in their lives.

OUR VALUES

Safe
Safety is our highest value.

Caring
We operate from a position of kindness and empathy for those who travel and work with us.

Honest
We conduct business with integrity, honesty and accountability.

Collaborative
We collaborate with others to enhance the customer experience.

Respectful
Respect is paramount in our interactions with others.

Sustainable
Our environmental, social and economic impact are central to business decisions.

The Strategic Plan outlines five strategic drivers that will inform strategic decision-making over the planning horizon. They are the critical success factors that must be in place to achieve our strategic goals that BC Ferries will pursue to achieve this vision:

Operational Excellence:
We strive for a superior customer experience through safe, efficient, reliable and effective service delivery.

Financial Sustainability:
We make prudent choices for the long-term growth and sustainability of our organization, which enables fare affordability, value for customers and effective asset stewardship.

Employee Engagement:
We foster growth, development and commitment in our people.

Environmental and Social Governance:
We leverage our resources, services and relationships in recognition of our responsibility to our environment, customers, employees, stakeholders and communities.

Innovation and Continuous Improvement:
We nurture continuous improvement and innovation across our organization.

All actions and strategies proposed in this TDP will align with these five strategic drivers where possible.

1.6.2 TERMINAL NETWORK MASTER PLAN

The Terminal Network Master Plan (TNMP) is a forward-looking planning and policy document with a 25 year outlook. The TNMP aligns with the Corporate Strategic Plan and forecasts all the strategic and major tactical actions governing the development of the BC Ferries terminal network. A network refers to how routes interact singularly, in conjunction, or as a system of routes.

Each terminal shall have a Terminal Development Plan (TDP) which aligns with the TNMP. Terminal Engineering is responsible for the TDP and the TDP schedule. The TDP is guided by the TNMP by aligning with its terminal classifications and design requirements.

Gabriola terminal is classified as a Minor / Intermediate (MIM) – Unstaffed terminal. As a result, the design requirements of the Gabriola terminal shall adhere to the design requirements of an MIM – Unstaffed terminal and is further elaborated upon in this TDP.

1.6.3 FLEET MASTER PLAN

The Fleet Master Plan translates the broad direction from the Strategic Plan in to specific strategies, policies and tactics that apply to the BC Ferries fleet. BC Ferries fleet will transition from a fleet of many unique vessels to a fleet of vessels that have high physical and operational commonality. The number of unique vessels in the fleet will be minimized. Common operational and maintenance procedures will be used as far as practicable. New vessel designs will emphasize safety, environmental stewardship, efficiency, standardization, class builds and customer experience.

The Fleet Master Plan identifies:

- When a vessel will retire
- When a ship will be replaced
- The class, model and characteristics of the replacement vessel
- The 25 year deployment of any vessel

The Fleet Master Plan (2018) indicates a change to vessel deployment proposed for Route 19. With the retirements of the Bowen Class vessels it has been proposed to introduce two Island Class vessels in March 2021 to better meet demand over the day through an increase in frequency and capacity. The Quinsam will redeploy to Route 6 until its scheduled retirement in April 2029.

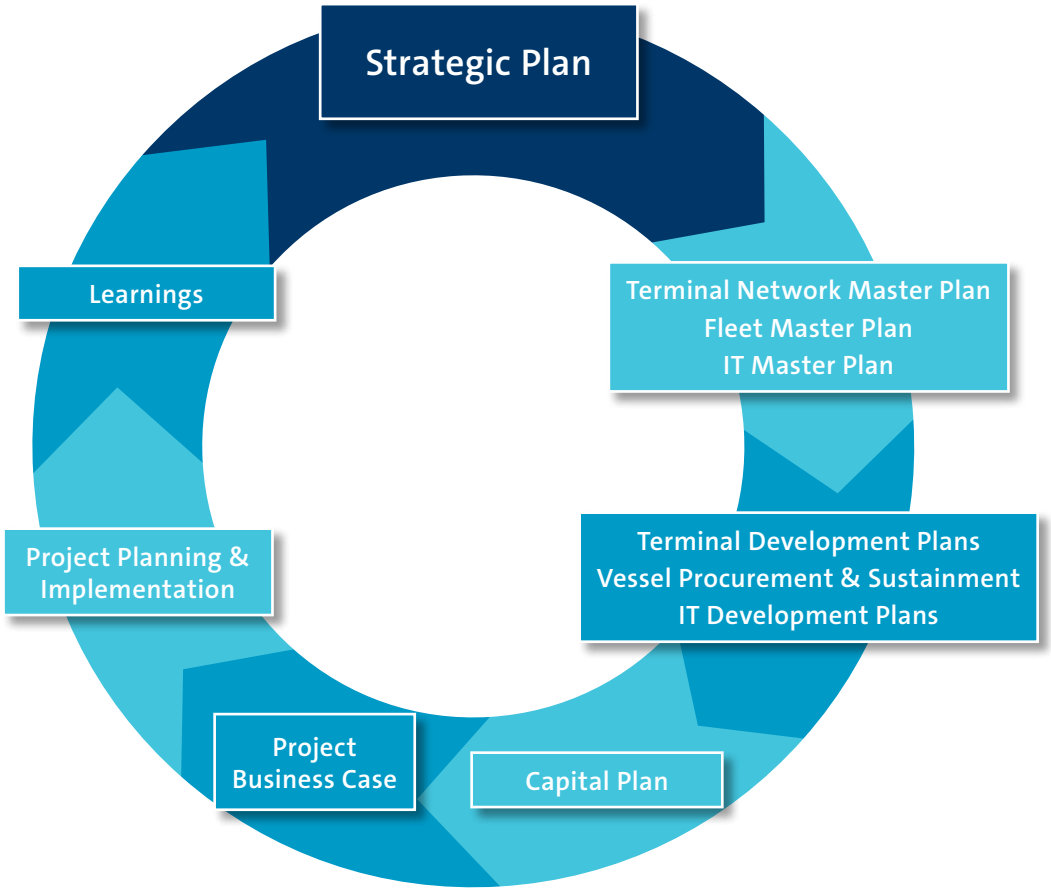


Figure 7: Relationship between Strategic Plan, Terminal Network Master Plan and Terminal Development Plans

Table 1: Vessel Replacement Specifications for Island Class Vessel

Vessel Replacement Specifications		
Vessel Description		
Class	Island Class	
Model	47	
Crew	Estimated Crew Size	6/7/8
	Live Aboard	No
Performance	Service Speed (kts)	15
Capacity	Automobile Equivalent	47
	Lane Meters	270
	Commercial Vehicle Height (maximum)	100%
	Passenger & Crew	150/300/450
Characteristics	Voyage Classification	NC2
	Double or Single Ended	Double-ended
	Berth Compatibility	Single Ramp Double Lane
	Car Deck Configuration	Open
	Passenger Boarding	Traffic segregation
	Berth Interface Type (BIT)	MIM
	Flexibility of Use on Alternative Routes	Sheltered Waters or Near Coastal Class 2 routes with BC Ferries' standardized minor/ intermediate berth configuration
Dangerous goods area integrated	Yes	
Passenger Amenities & Services	Indoor Seating	100
	Outdoor Seating	60
	Interior Design Standards	Fleet Interior Design Standard
	Passenger lounge Location	Main Deck
	Passenger Services	Accessible Car Deck
		Lounge, Work/Study stations, Vending, Accessible washrooms
Vessel server rooms		Should conform to standard BC Ferries IT operating requirements as outlined in FMP

Figure 8: Photo of the Quinsam above and Rendering of the Island Class Replacement below

2 CONTEXT

2.1 Regional Context

Gabriola Island, the most northerly of the Southern Gulf Islands, lies in the Strait of Georgia between mainland BC to the east and Vancouver Island to the west. It is an Islands Trust island and is also part of the Regional District of Nanaimo.

The Gabriola terminal is located at Descanso Bay on Gabriola Island, approximately 5 kilometers east of Nanaimo on Vancouver Island. The terminal serves Route 19, which connects Nanaimo Harbour on Vancouver Island with Gabriola Island, and is located on the traditional territory of the Snuneymux First Nation.

In 1791, Spanish explorers Narváez, Galiano and Valdés landed on Gabriola. They were followed a year later by British explorer George Vancouver. But it was the discovery of coal on nearby Vancouver Island that sparked European settlement on Gabriola in the 1850s and 60s.

By 1874, seventeen settlers, many of whom had married First Nations women, were working the land and supplying food to Nanaimo. Later settlers quarried Gabriola's abundant supplies of sandstone for use as millstones in pulp mills and for construction in cities from Vancouver to San Francisco. From the 1890s to 1952, the Gabriola Brickyard was mining shale on Gabriola and producing up to 80,000 high quality bricks a day, while the sheltered waters of Silva Bay were home to a fishing fleet, a lumber mill and a thriving shipyard that was the Island's largest employer in the 1960s. In 1950, Gabriola had fewer than 400 full-time residents.

Today the island has a full-time population of more than 4000. Farming is still an important occupation, but Gabriola is also home to many visual and performing artists, and home-based business are a vital part of the economy. Unlike some other Gulf Islands, many Gabriolans use the ferry to commute to work and school on Vancouver Island. Gabriola is a popular destination for summer residents and tourists, so the ferry is much more heavily used in summer than in winter.

Figure 9: Gabriola in 1977 and 2016

2.2 Site Context

The Gabriola terminal is located at the north western end of Gabriola Island at the end of North Road. Up the hill from the terminal is the main village centre of Gabriola with several commercial businesses. Outside of the village, the area around the terminal is generally rural with residential lots.

There is no holding compound at the terminal, instead vehicles queue along North Road and then along Taylor Bay Road.

At the terminal itself there are no pedestrian facilities, except for a barrier-separated walkway and waiting area between the parking lot and the terminal ramp. Outside of the terminal area there are generally no dedicated pedestrian or cycling facilities (or even shoulders that could be used), and thus these road users share the road with motorists.

There is no formal drop-off or pick-up location at this terminal. This activity can occur at the terminal during lower traffic queue periods, but otherwise occurs in the parking lot or in the vicinity of the terminal.

The terminal is served by a community transit bus (Gertie) with a stop at the terminal on Easthom Road. Once the bus has picked up passengers the bus will then reverse into the exit lanes and go back up North Road.

2.3 Policy Context

2.3.1 GABRIOLA ISLAND OFFICIAL COMMUNITY PLAN

The Gabriola Island (Islands Trust) Official Community Plan (OCP) was adopted on November 26, 1998. OCPs are the overarching planning documents that set out the community vision and values that guide decision making about the future direction of each municipality. They also provide clarity for residents, businesses and institutions on the primary goals objectives and supporting policies that help the municipality to meet its goals.

The OCP designates the terminal as follows:

PID 025-798-103: Split-designated Resource (R) and Small Rural Residential (SRR)

PID 025-798-090: Split-designated Resource (R) (applicable to the upland portion of the parcel) and Marine (M), applicable to the marine portion of the parcel.

There are also numerous OCP policies and advocacy policies that are relevant to the development of the Gabriola terminal as follows:

Section 6 – Environmental, Marine, and Heritage Resources

6.1 – Environmentally Sensitive Area Policies

b) With respect to an area identified as being environmentally sensitive, the registration of a natural state or environmental covenant and/or the use of a development permit shall be required as a condition of rezoning so as to ensure the long-term protection of environmental features.

c) Voluntary covenants or easements to protect natural features and donation or sale of sensitive areas to a conservation agency shall be encouraged.

e) To protect against hazardous conditions and to protect environmentally sensitive areas a setback shall apply from the high water mark of the sea. In the case where a bluff or large land ridge is the prominent upland feature adjacent the sea, a setback from the upper edge of the bluff or ridge shall be applicable.

f) The sandstone and conglomerate banks along Gabriola's shoreline shall be protected against the accelerated effects of erosion resulting from human activity by requiring the setback of buildings or structures and control of storm water runoff.

g) Trees bearing the nests of great blue heron, bald eagle, osprey and other raptors shall not be cut in accordance with provincial legislation. The zoning bylaw shall set standards and regulate the provision of screening for preserving and protecting trees bearing such nests. Such condition shall be applicable with respect to the rezoning of any site containing such a feature.

i) So as to ensure the Island's environmental resource sites are protected, owners (and potential developers) of property located within an environmental sensitive area shall be encouraged to work with recognized conservancy organizations early on in the development process to ensure steps are taken to protect the environmentally sensitive site

6.2 – Marine Resources Policies

h) In foreshore locations where commercial and industrial uses are permitted adequate provision shall be made for public access to the foreshore.

i) No building shall be permitted beyond the high water mark of the sea.

k) Natural coastal processes shall be left undisturbed to the maximum extent possible and there shall be no deposition of material below the natural boundary of the sea unless a permit is issued by Ministry of Environment and DFO authorizing a breakwater or a seawall to be constructed.

l) Any future applications to establish a new marina or expand an existing marina shall be conditional on it being demonstrated that the use can be carried out while minimizing conflict with other recreational uses and no damage will occur to nearby areas of ecological significance.

p) Harvest refugia areas shall be encouraged in the Gabriola Planning Area

Section 7 – Transportation and Servicing

7.1 – Land Transportation Policies

k) The creation of an off-road bicycle and pedestrian trail along Gabriola's busiest traffic corridor from the ferry hill to Tin Can Alley should be considered when land use decisions, rezonings, subdivisions, road resurfacing or other development occurs along this route

7.2 – Water Transportation Policies

c) A major ferry terminal on Gabriola to provide service to Vancouver Island and/ or a Lower Mainland destination shall be strongly opposed as it is inconsistent with the objectives and policies of this plan.

e) Maintenance of the present ferry terminal sites on the Gabriola and the Nanaimo sides is strongly supported.

Water Transportation Advocacy Policies

g) The BC Ferry Corporation shall be requested to ensure that changes to the ferry service involves consultation with the local community.

h) The following issues shall be discussed with the BC Ferry Corporation:

i. the scheduling of a late evening weekend ferry;

ii. the provision of parking at the Gabriola ferry terminal;

iii. safe pedestrian routes to the Gabriola ferry terminal;

iv. the scheduling of the ferry with the Nanaimo public transit service;

v. the establishment of incentives for foot-passengers.

i) The BC Ferry Corporation shall be requested to:

i. consult with the Trust Committee and public, prior to giving consideration to any major alteration to the ferry service to Gabriola;

ii. continue to provide an adequate level of service for the needs of residents;

iii. ensure all vessels and associated upland facilities meet the standards of the Ministries of Health and Environment, Lands and Parks.

2.3.2 DEVELOPMENT PERMIT AREAS

S.488 of the *Local Government Act* authorizes municipalities to designate Development Permit Areas (DPAs) and request Development Permits prior to the commencement of development for certain issues outlined in the section.

The Gabriola terminal site is not located within a Development Permit Area (DPA). However, the terminal is located adjacent to sensitive ecosystems as follows:

- Rockfish conservation area
- Two raptor nests in the vicinity of the site
- An eelgrass patch in the vicinity of the site
- Upland areas near the terminal site are part of the Mature Forest ecosystem

2.3.3 ZONING BYLAW

The Gabriola Terminal is split zoned. The water lot is zoned Water Commercial 3 – Marine Transportation (WC3), and the leased upland is zoned Large Rural Residential (LRR). Ferry terminal is listed as a permitted use in the WC3 zone.

The following are the permitted uses of the WC3 zone:

- Ferry dock
- Public moorage and dockage
- Public wharves
- Marine navigational aids

The following are the permitted uses of the LRR zone:

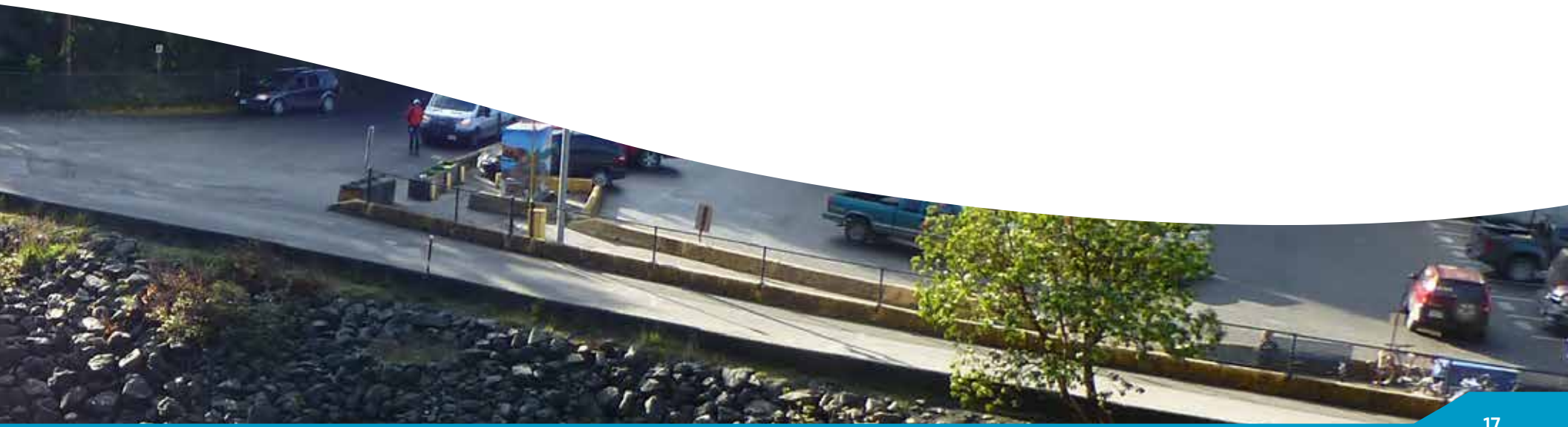
- Single family residential
- Agriculture, including the sale of agricultural products grown or raised on the lot, but excluding animal husbandry on lots less than 2.0 hectares (4.94 acres)

The following Zoning Bylaw general regulations also apply to the terminal as follows:

- No buildings are permitted in the WC3 zone.

3 KEY ISSUES & OPPORTUNITIES

Summary of Existing Terminal Conditions, Route Profile, Key Issues & Opportunities



3.1 Summary of Existing Terminal Conditions

Gabriola terminal is a Minor / Intermediate Unstaffed terminal.

Table 2: Terminal General Information

Terminal General Information	
Gabriola Terminal Summary	
Location	Gabriola Island
Municipality	Islands Trust, Regional District of Nanaimo
Holding Capacity (AEQ)	0 (73 on the road)
Max Vehicle Weight (GVW)	39,500 kg with a maximum of 5 loaded axles
Parking	Crew parking - 16 spaces
Waiting Room	Yes
Washrooms	Yes
Dock	1 berth MIM

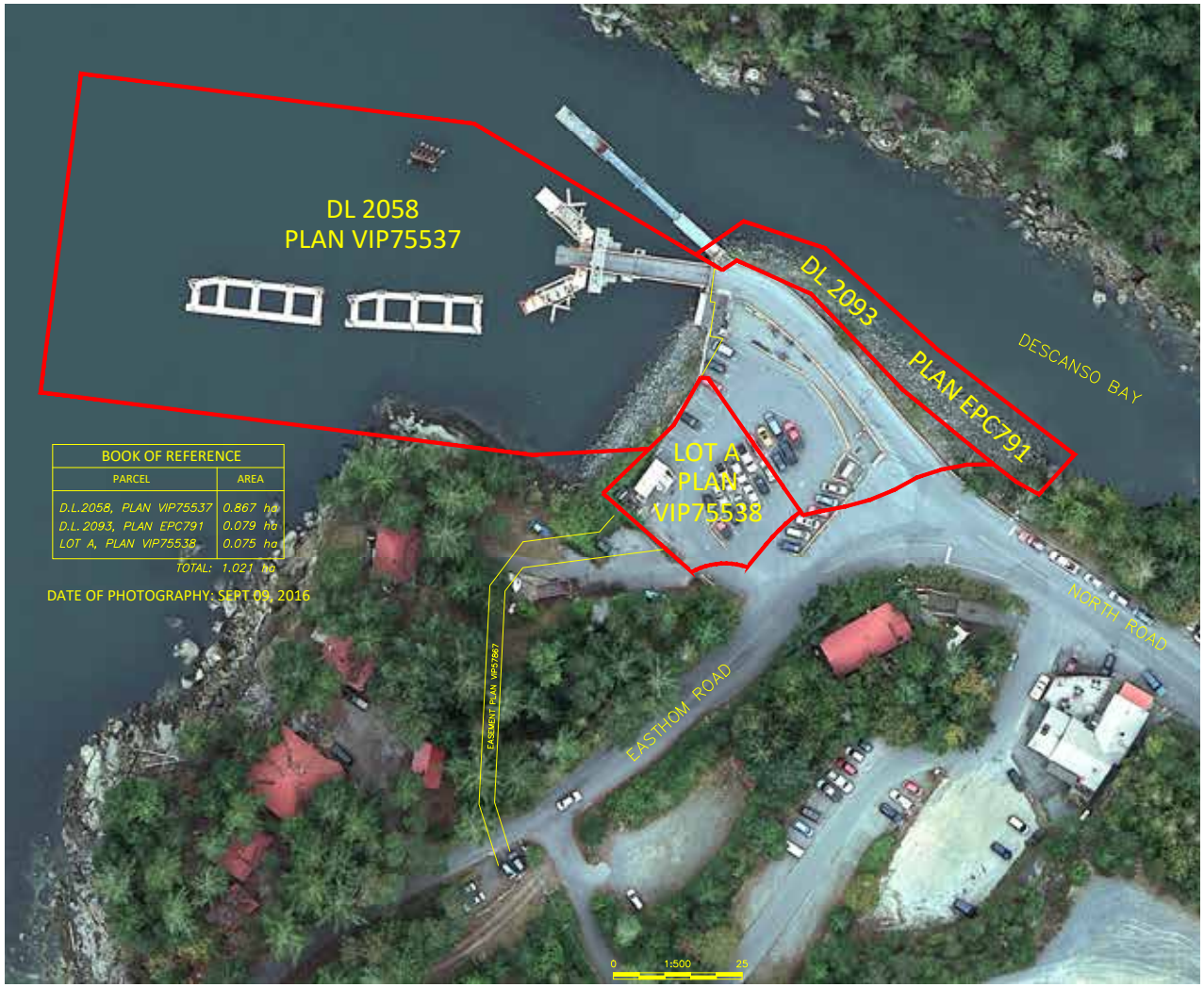


Figure 10: Gabriola Existing Site Plan

Figure 11: Photos of the Existing Terminal

3.2 Route Profile

The terminal connects Descanso Bay on Gabriola Island with Nanaimo Harbour on Vancouver Island. The vessel that services the route is the *Quinsam*, a ferry built in 1982. The *Quinsam* has a car capacity of 63 AEQ, can carry a maximum of 400 passengers and crew and is equipped with four accessible car deck lounges, vending machines and accessible washrooms.

The *Quinsam* sails between Gabriola and Nanaimo Harbour terminals with 14 departures daily carrying passengers and vehicles on the 20 minute sailing.

A total annual number of 4,955 round trips are contractually delivered. Sailings between Gabriola and Nanaimo Harbour operate year round and space on this route is on a first-come, first-served basis.

The *Quinsam* has a voyage classification of sheltered waters and a docking cycle of 1 in 4 years and is scheduled for retirement in 2029. During *Quinsam* refit periods service on route 19 is provided by the *Bowen Queen*.

Quinsam – Route Profile Summary

Core Service Levels	
Hours of Scheduled Service	06:55 to 11:00
Peak Season Service Frequency	14 sailings/daily 13 sailings Wed/Sun
Off Peak Service Frequency	14 sailings/daily (Mon-Sat) 13 sailings Wed/Sun/Sat)
Round Trips per Year	A total annual number of 4,955 round trips are to be contractually delivered
Vessel Description	
Class	Minor
Maximum Capacity	
Passenger Capacity	400 including crew
Crew Size	7 or 8
Vehicle Capacity (AEQ / tonnes)	63 AEQ
Onboard Services	Accessible Car Deck Lounge, accessible washrooms
Route and Service Description	
Distance	3 nautical miles
Crossing Time	20 minutes

3.3 Key Issues and Opportunities

The TDP has been informed by community and BC Ferries staff feedback. Figure 12 illustrates the current issues associated with the existing condition of the Gabriola terminal. The key issues and opportunities identified are as follows:

- Lack of a holding compound and vehicles queuing along the shoulder of North Road and Taylor Bay Road. Along Taylor Bay road vehicles make potentially unsafe u-turns to join the back of the ferry lineup.
- Poor customer amenities including an outdated washroom and waiting room building, resulting in a lack of 'sense of place' and no community connection or 'sense of arrival' to the island
- No formalized pick-up drop-off areas resulting in a congested and haphazard area at and near the terminal during unloading and loading periods
- Inadequate pedestrian and cyclists facilities for those customers arriving and departing the terminal
- No customer information on current service
- Forecasted growth. The projection would see future volumes dip slightly from 2017's total of 770,452 passengers to 762,000 passengers in 2027, before climbing to 775,000 passengers in 2041.

FORECASTED TOTAL PASSENGER GROWTH 2017-2041

+4,548 passengers in the next 23 years

770,452
TOTAL PASSENGERS
2017

762,000
TOTAL PASSENGERS
2027

775,000
TOTAL PASSENGERS
2041

Marine infrastructure reaching end of service life and needs to be upgraded to allow for new Island Class Vessel

Waiting Room/Customer Amenities reaching the end of their service life

Congested Terminal Parking and Pick-up/ Drop-off

Ferry Traffic – Points of Entry and Exit, and Impacts of Traffic Back-ups on Roadways Near Terminal

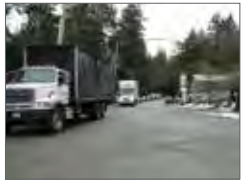


Figure 12: Key Issues identified by the Working Group

3.3.1 TRAFFIC SAFETY REVIEW

In 2017 Watt Consulting Group were appointed to undertake a traffic safety review of the terminal to help inform the TDP. The review focused on the loading and unloading areas of the terminal, as well as the terminal approach roads. The study excluded the dock and marine aspects of the terminal.

Problem #1: Unloading Vehicles Cross Centre line on North Road

During the site visit, a significant number of vehicles were observed crossing the centre line on North Road. This would be a safety issue if a vehicle was stopped at the stop bar which is a likely event.

Problem #2: Pedestrian and Cyclist Accommodation

There are no pedestrian and cycling facilities. It is expected that as traffic volumes increase to and from the Island, the level of exposure for vulnerable road users (e.g., pedestrians and cyclists) will increase. While on-street parking and ferry queues take up much of the off-road space, cyclists and pedestrians are travelling on the road and amongst traffic with uncontrolled and unpredictable movement. Observations included pedestrians crossing at multiple points along the road. Due to the terminal's proximity to downtown Nanaimo, the walking and cycling demand at this terminal is significant.

Problem #3: U-Turning along Taylor Bay Road

Much of the traffic wanting to get into the queue is from the south part of the Island, which requires traffic to complete u-turns into the queue. Taylor Bay Road is a windy road with a number of horizontal and vertical curves which restricts sight distance, making much of the u-turning very unsafe. This is exacerbated by motorist's urgency to get into the queue, particularly in the summer during peak service demand. There is a designated u-turn area at Ivory Way, which is approximately 800 meters from the terminal. Often drivers will risk the u-turn at the end of the queue as opposed to driving to Ivory Way, potentially resulting in being further back in the queue. There are signs restricting u-turning and the police patrol this regularly based on our discussion with the local RCMP detachment.

Problem #4: Sight Distance at Taylor Bay Road and North Road

Due to the queuing traffic on North Road, sight distance at the stop sign at Taylor Bay Road is restricted.

Traffic Safety Review

Issues Gabriola Island - Gabriola Terminal

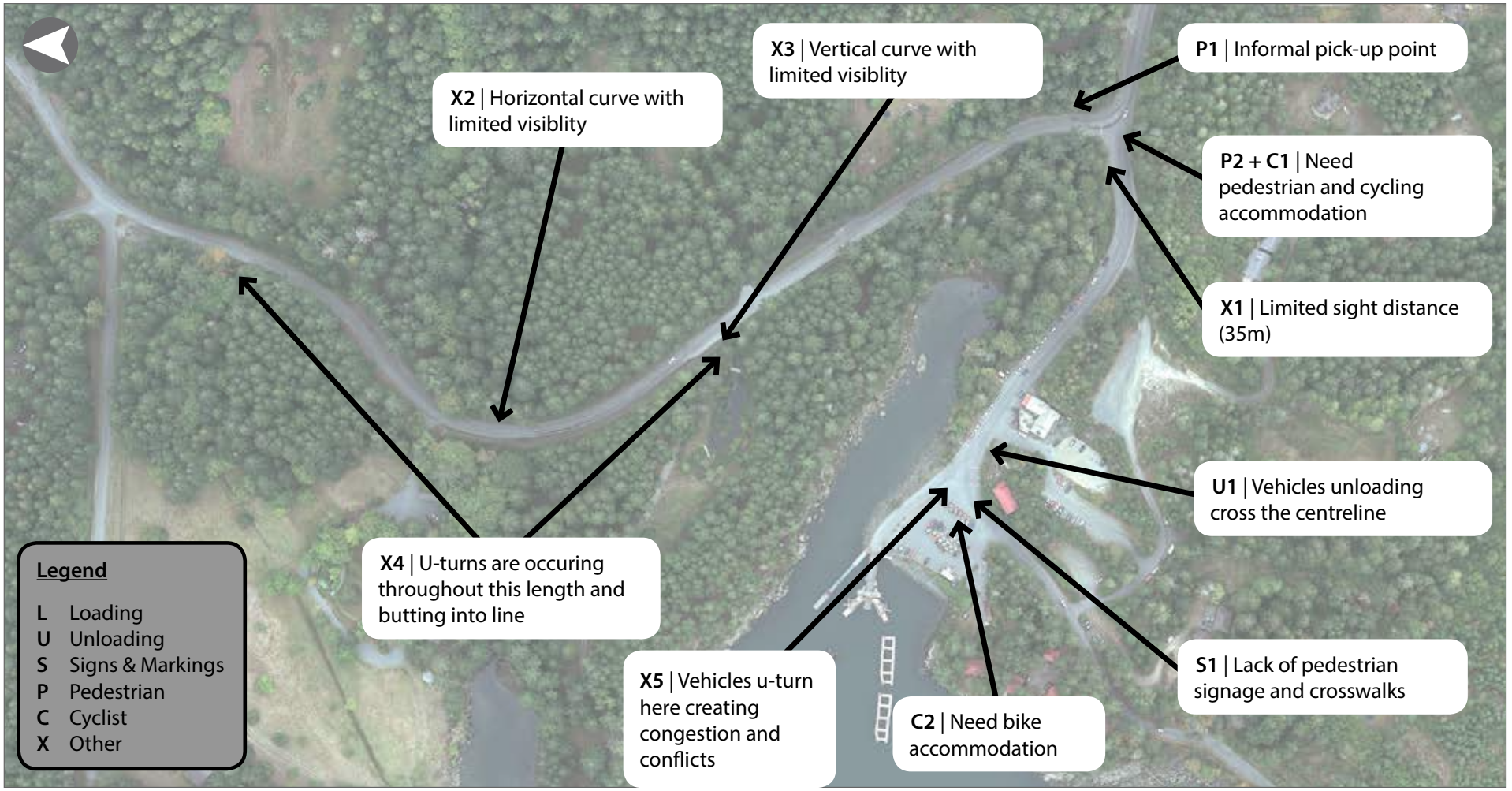


Figure 13: Traffic Safety Review Key Issues

4 FUNCTIONAL REQUIREMENTS

GABRIOLA TDP AND TERMINAL NETWORK MASTER PLAN FUNCTIONAL REQUIREMENTS

This section outlines the proposed terminal functional requirements and how these conform to the TNMP requirements for a Minor / Intermediate Unstaffed terminal. All future terminal developments at Gabriola will conform to the Design Requirements outlined in the TNMP Terminal Class Design Requirements.

In addition to the TNMP requirements, the TDP identifies Site Specific Requirements for the Gabriola terminal. These requirements were identified through discussions with internal and external stakeholders and have been proposed due to the uniqueness of the terminal infrastructure and surrounding community needs.

The functional design requirements have been established in order to ensure compliance with the Customer Experience, Fleet and Terminal Network Master Plans.

The following sections identify the functional requirements for the Gabriola terminal relating to the TNMP and FMP, and incorporate the Site Specific Requirements as either Essential – Required to meet the TNMP requirements, or Desirable – Identified through the development of the TDP.

4.1 Gabriola TDP Functional Requirements

4.1.1 SAFETY & SECURITY

Functional Requirements – Safety & Security				
Criteria	**TNMP Requirements**	**Existing Functionality**	**TDP Essential Functional Requirement**	**TDP Desirable Functional Requirement**
Integration of Safety and Security Features	Required	Comply with Transport Canada regulations	Improve traffic layout adjacent to the terminal to improve road safety at the terminal Incorporate pedestrian and cycling facilities to reduce conflicts between users at exit of terminal	

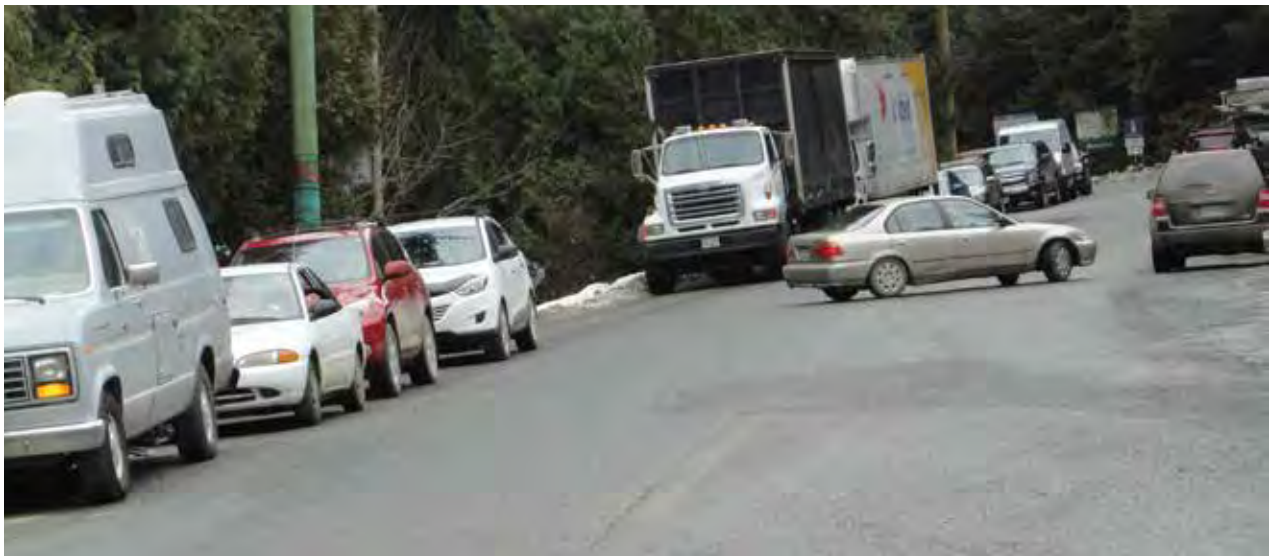


Figure 14: Traffic Queued on North Road. Improving traffic safety at the terminal is a key issue.

4.1.2 BERTHS

Site Specific Requirements:

The berth is compatible with the existing vessel (*Quinsam)* and should be compatible with a future *Island Class* vessel as set out in the 2018 Fleet Master Plan. This is essential to ensure safe, reliable and efficient operations of the terminal.

Functional Requirements – Berths				
Criteria	TNMP Requirements	Existing Functionality	TDP Essential Functional Requirement	TDP Desirable Functional Requirement
Number of Berths	1 Berth	The marine infrastructure at the Gabriola Terminal consists of a single lane ramp supported by towers with wingwalls on a C-shaped pontoon. There are 2 port side floating leads and 1 starboard side fixed dolphin.	1 Berth as per existing	
Berth Interface	Minor/ Intermediate (MIM)	Minor/Intermediate (MIM)	To be compatible with the existing vessel as well as the future replacement Island Class vessel, scheduled to be in service in F2022	

Figure 15: Gabriola Terminal Berth

4.1.3 TICKETING & PRE-TICKET AREA

Functional Requirements – Ticketing & Pre-Ticket Area				
Criteria	TNMP Requirements	Existing Functionality	TDP Essential Functional Requirement	TDP Desirable Functional Requirement
Ticketing Function	None required for a Minor/ Intermediate Unstaffed terminal	Gabriola is a non-ticketing terminal	As per existing	
Self-Ticket Kiosks	None	None	N/A	
Turnstiles at Embarkation and Fee Paid Entry Zone	None	None	N/A	

4.1.4 VEHICLE HOLDING AREAS

Site Specific Requirements:

There is currently no holding compound at Gabriola terminal. Vehicles queue on the shoulder of the approach road along North Road and Taylor Bay Road. This is an MOTI road and BC Ferries has no jurisdiction or agreements in place with MOTI for this road. A dedicated vehicle holding compound is a requirement.

Figure 16: Queuing Traffic along Taylor Bay Road

Functional Requirements – Vehicle Holding Areas

Criteria	TNMP Requirements	Existing Functionality	TDP Essential Functional Requirement	TDP Desirable Functional Requirement
Pre-ticket Area	None	None	As per existing	
Holding Capacity	The AEQ capacity requirement for Gabriola is 1 x maximum vessel AEQ capacity. This equates to 47 AEQ to ensure conformity with the future vessel requirements as outlined in the design specifications of the Fleet Master Plan	0 AEQ However, the shoulder of North Road and Taylor Bay Road provides for 73 AEQ	Accommodate a holding area of at least 47 AEQ. Signage for vehicle holding will have to be clear to ensure that self-sorting can be carried out, acknowledging that there is staff present at the terminal during the summer months to assist with vehicle staging, particularly when traffic is left over after a sailing	
Lane Widths	Lane widths are to be the same.	No holding lane	All lanes same widths (2.8 – 3.1 m) No delineation of commercial/priority and standard vehicles required	Additional vehicle staging area to improve vessel loading efficiencies

4.1.5 VEHICLE LOADING & UNLOADING

Functional Requirements – Vehicle Loading & Unloading				
Criteria	**TNMP Requirements**	**Existing Functionality**	**TDP Essential Functional Requirement**	**TDP Desirable Functional Requirement**
Control Tower	None	None	N/A	Ensure good visibility of the holding compound from the vessel
Loading & Unloading	Main Car Deck – Single Lane	Single Lane. Traffic queues on the roadway and/or shoulder of roadway, and proceeds from roadway to load. Off-loading the vessel, traffic moves directly onto the roadway.	Single lane	Desirable for design to accommodate a double lane near berth to expedite loading and unloading

4.1.6 CUSTOMER AMENITIES

Functional Requirements – Customer Amenities				
Criteria	**TNMP Requirements**	**Existing Functionality**	**TDP Essential Functional Requirement**	**TDP Desirable Functional Requirement**
Foot & Vehicle				
Waiting Room / Lounges and Washrooms	Yes	Yes – waiting room also has a small storage locker for cleaning supplies Separate building with men's and women's washrooms, and accessible washroom	One terminal building for waiting room, washrooms and terminal storage	
Satellite Washroom Building	None	None	N/A	
Covered Outdoor Waiting Space, Seating & Picnic Tables	Yes	Yes – an outdoor area with a few benches	Yes. Outdoor amenity space for customers comprising picnic benches, covered waiting area and benches	
Customer Service Counter	None	None	N/A	
Retail Facility	Yes Pad with services for 3rd party kiosk	None	Serviced retail Pad for 3rd party kiosk	
Public Notice Board	Yes	Yes – in the waiting room	Yes	

Figure 17: Gabriola Passenger Waiting and Washroom Building are in need of replacement with a new Waiting room/ Washroom Building

Figure 18: Opportunity to improve pick-up drop-off area for Gabriola Community (Gertie) bus

Figure 19: Barrier free design and removal of curbs and barriers to improve safety should be incorporated into the design

Figure 20: Pick-up and drop-off area is congested and constrained

Functional Requirements – Customer Amenities

Criteria	TNMP Requirements	Existing Functionality	TDP Essential Functional Requirement	TDP Desirable Functional Requirement
ATM	None	None	N/A	
Vending	Yes	Yes	Yes – one vending machine in existing terminal building	
Distress Phones	Yes	None	Yes – one distress phone in existing terminal building	
Water Fountains / Bottle Filling Station	Yes if potable water exists	None – provisional water service provided	Yes	
Vehicle Only				
Playground, Pet Areas	None	None	N/A	
Foot Passengers Only				
Baggage Service (drop-off, handling and transport to vessel)	None	None	None	
Escalator, Elevator	None	None	None	
Enclosed Walkway to Berths After Ticketing	None	None	None	
Pick-up / Drop-off zone	Yes	No designated pick-up/drop-off area. Limited area inside parking lot to pick-up/drop-off	Yes dedicated pick-up/drop-off area to be located near waiting room and a dedicated community bus stop adjacent to the waiting room	
Parking	Yes	No short-term parking available within the terminal. Passengers often leave their cars on adjacent side-streets which limits parking availability for customers of nearby businesses No long-term parking available within the terminal Passengers often leave their cars on adjacent side-streets which limits parking availability for customers of nearby businesses. However, there is a pay and display parking lot a short walk from the terminal.		8–10 short-term parking stalls Long-term parking if space available
Bus Bays	Yes, large school bus	There is a dedicated bus area for the Gertie Community bus and the school bus	Yes, a Gertie Community Bus bay in the compound and a School Bus bay on Easthom Road	

4.1.7 COMMUNICATIONS & IT INFRASTRUCTURE

Site Specific Requirements:

Internet bandwidth is currently very limited at the Gabriola site. It is likely that upgrades to the network will need to be provided by the service provider before Wi-Fi can be improved. It is recommended to discuss this with the service provider to understand feasibility and costs.

Functional Requirements – Communications and IT Infrastructure

Criteria	TNMP Requirements	Existing Functionality	TDP Essential Functional Requirement	TDP Desirable Functional Requirement
Wayfinding (static), reader boards	Yes	None	An electronic real time information sign	
Public Address System	None	None	Vessel equipped with IT/wireless system for announcements	
Electronic Tollbooth Signage	None	None	N/A	
Vehicle Classification System	None	None	N/A	
Standard BC Ferries IT Systems & Capacities and Server Room	Yes	Yes (IT equipment housed in electrical room)	Yes	
Customer Wi-Fi	Yes	None	Yes	Coordinate with communications provider to upgrade internet network to support improved Wi-Fi capability

Figure 21: Customer Information Reader Board Sign Example

4.1.8 ADMINISTRATION & EMPLOYEE FACILITIES

Site Specific Requirements:

Functional Requirements – Administration & Employer Facilities				
Criteria	TNMP Requirements	Existing Functionality	TDP Essential Functional Requirement	TDP Desirable Functional Requirement
Ticket Office	None	None	None – as per existing	
Admin Offices, Meeting Rooms and Crew Mess	None	Yes – located in waiting room building	None – as per existing	
Crew, Employee and Visitor Parking	Yes (except visitor parking)	There are 16 crew parking spaces in the ferry terminal parking lot	16 Parking Spaces	Allow room for expansion in case new vessel requires more staff

Figure 22: Crew parking spaces are required at the terminal

4.1.9 OTHER TERMINAL SERVICES

Site Specific Requirements:

Functional Requirements – Other Terminal Services				
Criteria	TNMP Requirements	Existing Functionality	TDP Essential Functional Requirement	TDP Desirable Functional Requirement
Fleet Support Unit	None	None	N/A	
Warehouse / Cross Docking	None	None	N/A	
Storage for Terminal Ops, Terminal Maintenance and Fleet Ops	Yes	Yes – small shed for bikes, small storage area for snow blower	One larger storage space for equipment, and a separate storage space for staff bicycles	
Drop Trailer – Holding Area, Vessel Staging Area and Office	None	None	N/A	N/A
Simulator and Training Room	None	None	N/A	N/A
Bicycle Access / Egress / Storage	Yes	Yes – 2 bicycle racks, regularly used, and possibly fail to meet existing capacity	Additional bicycle rack(s) and design for covered space for bicycles and scooters	Sufficient storage / waiting space to accommodate seasonal bike tourists Given the high number of cycle tourists and mountain bikers using the ferry a bike repair station would be useful

Figure 23: Install a covered bike stand at the terminal given the high numbers of cycle commuters using the terminal

4.1.10 UTILITIES & MISCELLANEOUS

Functional Requirements – Utilities & Miscellaneous				
Criteria	**TNMP Requirements**	**Existing Functionality**	**TDP Essential Functional Requirement**	**TDP Desirable Functional Requirement**
Compactors	Yes	None	Not required	
Environmental & Containment for Hazardous Goods	Yes	None	Not required	
Generators	One to power CCTV except where no night watch – vessel will power ramp	None. Ship powers ramp to vessel	Accommodate generator to power terminal waiting room and lights, required if night watch is removed in future	
Potable Water Supply	Yes	Yes – well water purchased from nearby property owner - pumped directly from well to the terminal	Source own water/well on nearby land	
Septic Field or Sewage Treatment System, or Conveyed to Sewer System where Possible	Yes	Yes – sewage contained in a holding tank and is pumped ashore in Nanaimo Harbour	Septic field or connect to community/ municipal sewage system if available	
Pump Ashore	Yes – where infrastructure exists	No infrastructure exists – pumped at Nanaimo Harbour	Septic field or connect to community/ municipal sewage system if available	
Shore to Ship Power	Yes – at home ports only	Yes – 600V/200A	Requires 600V/300A	
Ship to Shore Power	Yes	Yes	Yes – as per existing	

Figure 24: Implement sustainable storm water bioswales/rainwater gardens to deal with storm water run-off where possible

5 PLAN CONCEPTS

The concept plans have been prepared after careful consideration of the issues identified in the supporting baseline report and have been influenced by the functional requirements and comments received from the internal Working Group and external stakeholders. The plan concepts highlight key improvements that meet the functional requirements; it supports the goals of the Strategic Master Plans and ultimately meets the needs of terminal users.

5.1 Concept Overview

Concept plans have been prepared to show how the terminal could be improved over time as follows:

Immediate Actions

This plan includes improving signage and minor modifications to the road layout to improve traffic safety at the terminal for those exiting and arriving at the terminal.

Short Term Improvements

Create a new holding compound to provide storage for at least 47 AEQ.

Long-Term Improvements

In the long-term a new roundabout could be implemented to improve traffic flow at the terminal and allow vehicles approaching from Easthom Road to make a u-turn and join the back of the ferry queue in the holding compound.

This plan also shows a queuing lane running from the terminal approximately 200 m to provide 56 additional AEQ.

Key features:

- New sidewalks for improved foot passenger / pedestrian safety and accessibility of all ages and abilities
- Improved and expanded vehicle holding compound to reduce traffic backups and conflicts with thru traffic and neighbours and those accessing properties on Easthom Road
- Dedicated thru lane for pick-up / drop-off traffic directly to the new foot passenger terminal building
- Provisions for community bus parking and pick-up drop-off
- Dedicated parking for customers and vessel staff
- New waiting room/washroom building to enhance customer experience
- New dedicated covered bike parking

These concept plans provide improvements over the existing situation and while they address some of the key issues and functional requirements of the TNMP they do not address all the requirements due to the limited landholding currently available.

Figures 25 to 31 show the illustrative 25 year concept plans for the Gabriola Island terminal.

Traffic Safety Review

Options Gabriola Island - Gabriola Terminal

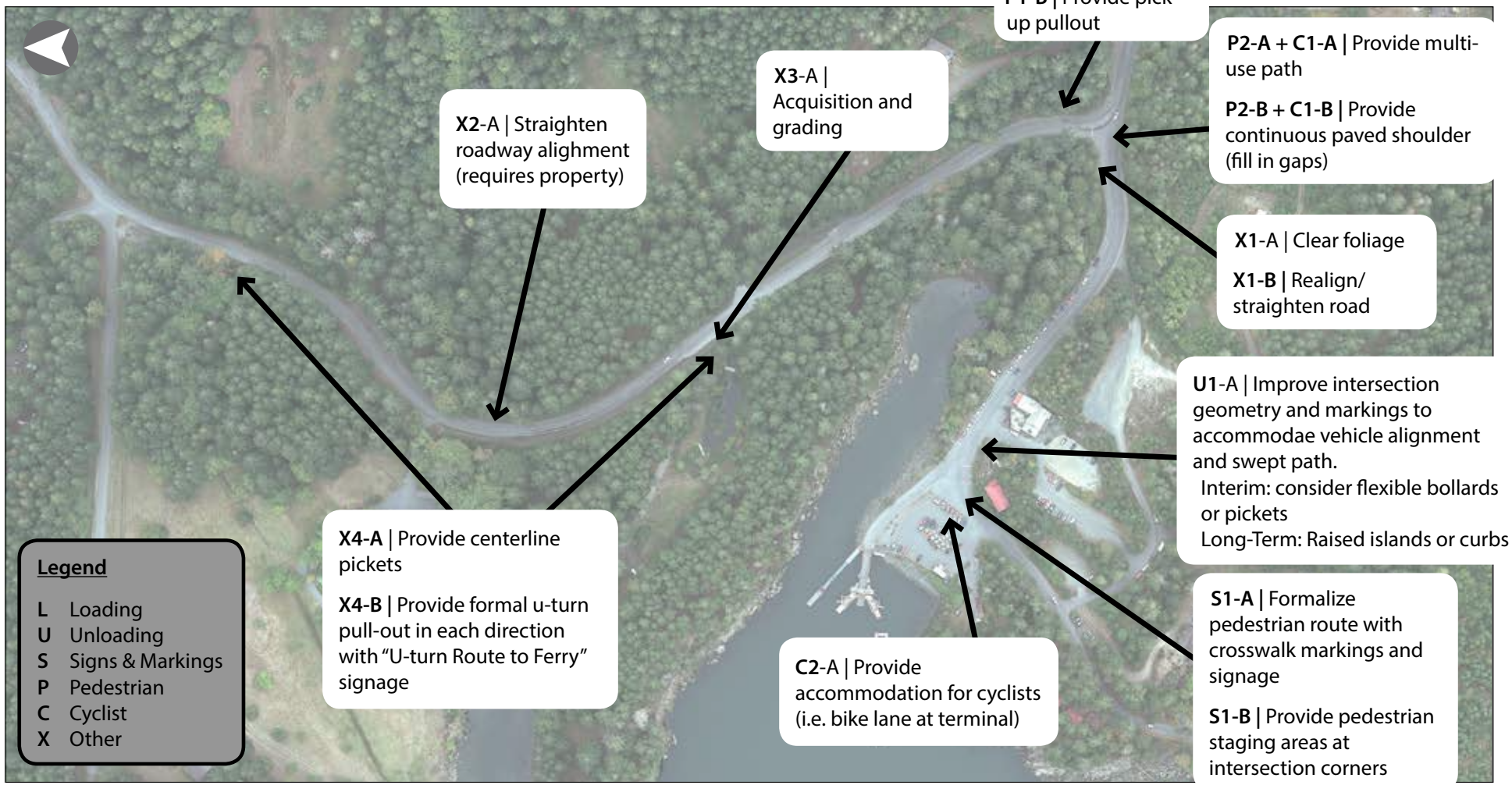


Figure 25: Traffic Safety Review Short Term Recommendations

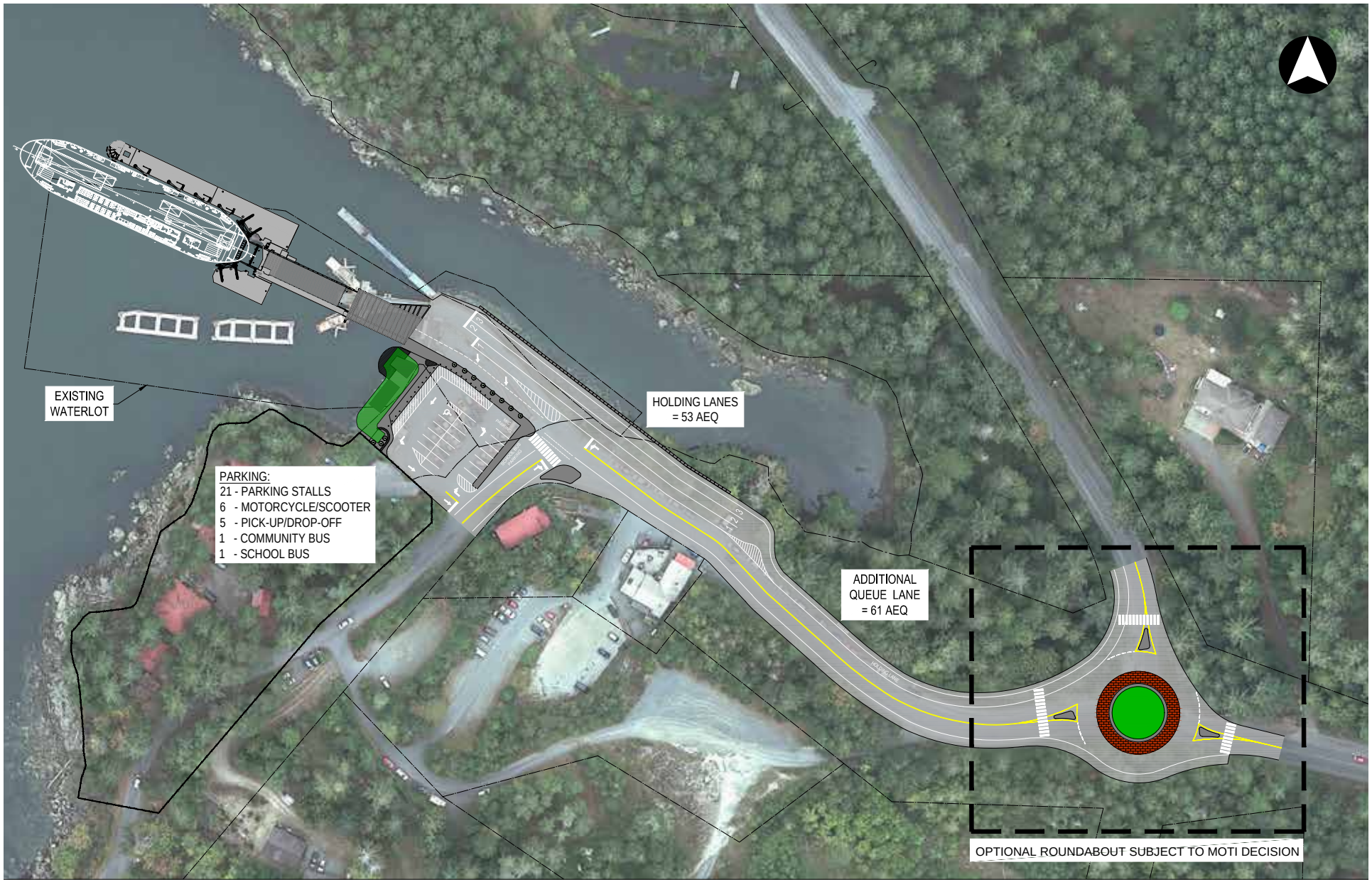


Figure 26: Illustrative Concept Plan for Gabriola Terminal

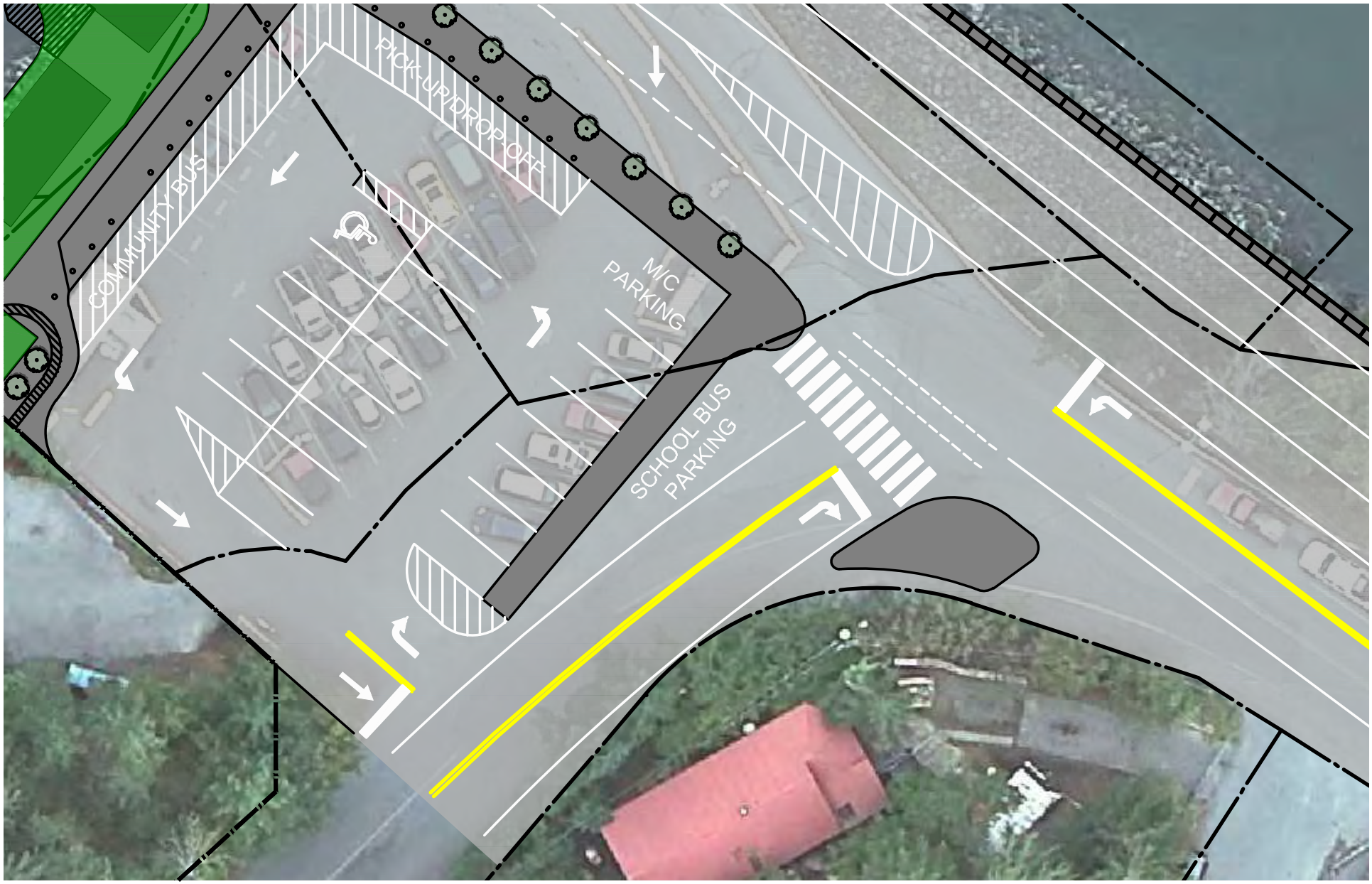


Figure 27: Illustrative Concept Plans for Pick-Up/Drop-Off Area

5.2 Illustrative Waiting Room Washroom Building Design

The proposed building design incorporates the following functional objectives:

- Building for foot-passenger use that includes waiting room and washroom facilities
- Storage area for BC Ferries equipment and supplies
- Staff area for BC Ferries employee
- Outdoor uses including drop-off, bike parking, and covered areas

5.2.1 DESIGN RATIONALE

The building, that sits gently along the shore of Descanso bay at the mouth of Fiddlehead creek, is an important structure. It forms a point of arrival and departure for the daily commuters of Gabriola heading to Nanaimo, and summertime visitors too. The building must of course support all of the functional objectives of a ferry terminal, creating efficient passenger flows, places to store maintenance supplies, good lighting etc. But the hope that this little building can be something more. We wanted to create a building that speaks to the unique qualities of the island.

- A long horizontal roof, covered in plants, creates ample covered spaces, and blends with the surroundings when viewed from above—both by vehicle approach from North Road, and on the upper deck of the ferry.
- A flat slab of local sandstone sits at the entry plaza, a homage to the local geology and the site's history as a quarry for millstones.
- An open-air portal creates a sheltered place to wait, and frames views of Descanso Bay and the incoming ferries.
- The small, but inviting waiting room has a display area for local artists, and a long wooden counter to charge your device, or have a conversation with a neighbour.
- A generous covered bike parking area is oversized to create an area for local artisan vendors.
- Signage is integrated into the building and designed to be readable from afar. In particular GABRIOLA ISLAND is visible from the ferry upon arrival, celebrating this moment, and also serving a practical function for visitors who may not be familiar with the island geography.

The materials for the building are simple and durable:

- A solid mass-timber structure is supported by bearing walls and galvanized steel columns. The exposed wood soffit creates a warm and inviting environment, while the galvanized steel columns provide a robust, durable solution.
- The exterior is wrapped in a prefinished metal cladding system providing a low-maintenance exterior skin. Facing the parking area, a 6mm metal fins project past the face of the building and create an opportunity for color and indirect lighting to illuminate the facade at night.
- A green roof is used to strengthen the natural appearance and function of the building. The green roof will also aid in managing rainwater runoff and will slope towards a bioswale that will filter site runoff before draining into the bay's marine ecosystem.

The building also provides a generous list of amenities to better serve passengers and the community:

- Covered bike parking with charging stations
- Device charging receptacles within the waiting area
- A variety of indoor and outdoor seating options
- A covered vendor space
- Real-time display of vessel status
- Barrier free washrooms that include change tables
- Fresh water bottle filing station
- Area for indoor and outdoor art display
- Community display board

The building design attempts to balance two primary objectives:

- Create a durable, efficient structure that becomes an integral component of the BC Ferries transportation infrastructure.
- Create a building for the people of Gabriola. A place for locals to meet, for tourists to arrive, and that the community can be proud of.

This conceptual design aligns with TNMP and Customer Experience Master Plan policy and serves as a conceptual basis for further design development at the next stages in the implementation of the TDP. The design has also been influenced by the following:

Commuter Ferry Considerations

An important consideration for the design of the Gabriola waiting room is the proximity to Nanaimo. In particular the following considerations:

- Daily Drop-Off and Pick-up of middle and high-school students
- Expanded bike parking to serve commuters
- Ferry usage is less seasonal, and therefore most passengers usage occurs during the rainy season.
- Rain protection is important.
- Ferry status is important to commuters. A screen providing live updates would be beneficial.
- Many commuters will arrive <15 min prior to departure meaning that time spent in the passenger waiting area will be short.
- Commuters may want areas to use and charge devices. Consider counters with charging capabilities.
- Good flow of passengers through the terminal area will create a perception of efficiency—important for commuters.
- Regular users mean that travellers will be familiar and often friends. Create places that support casual conversations and relationships.

Customer Experience

For the building and site design, several design opportunities have been included that can translate the BC ferries terminal objectives into the design of the building. These include:

- Pedestrian friendly design
- Good way finding
- Cafe-like seating
- Device Charging
- Fresh Water
- Fully Accessible
- Bicycle Parking
- Family Friendly

Sense Of Place

The building design responds to the local site and context. The building can be a unique point of departure and arrival for passengers. Design features include:

- Arrival features that highlight Gabriola Island i.e. signage
- Places for local artists to display their work
- A Form and character that is unique for Gabriola Island
- Ecological design features that support the local environment and ecosystems
- Local partnerships
- Features that highlight the local history and context of Gabriola

Sustainability

Sustainability is an important consideration for BC Ferries and has been identified as an important priority for the project. In addition to the minimum energy performance criteria, the following strategies are appropriate considerations that should be considered in the detailed design of this facility:

- Stormwater management:
  - **Site design that incorporates stormwater retention and treatment**
  - **Green roof may be appropriate choice**
  - **Use landscape elements and shoreline upgrades as opportunity to enhance local habitat, not just minimize disturbance.**
- Greenhouse Gas Reduction Strategies:
  - **Wood construction to capture GHG**
  - **Encourage pedestrian and bicycle usage with upgraded facilities to reduce auto use**
  - **Select building materials with low embodied energy in manufacturing and transport**
- Energy Use:
  - **High performance building envelope and mechanical systems**
  - **Consider photovoltaic panels to offset electricity usage**
- Life Cycle:
  - **Utilize durable materials that require little maintenance and replacement**
  - **Select materials with low-embodied energy**

- Health and Wellness:
  - Create healthy interior environment with lots of natural light and good indoor air quality
  - Provide access to clean drinking water and healthy food
  - Encourage pedestrian and bicycle use

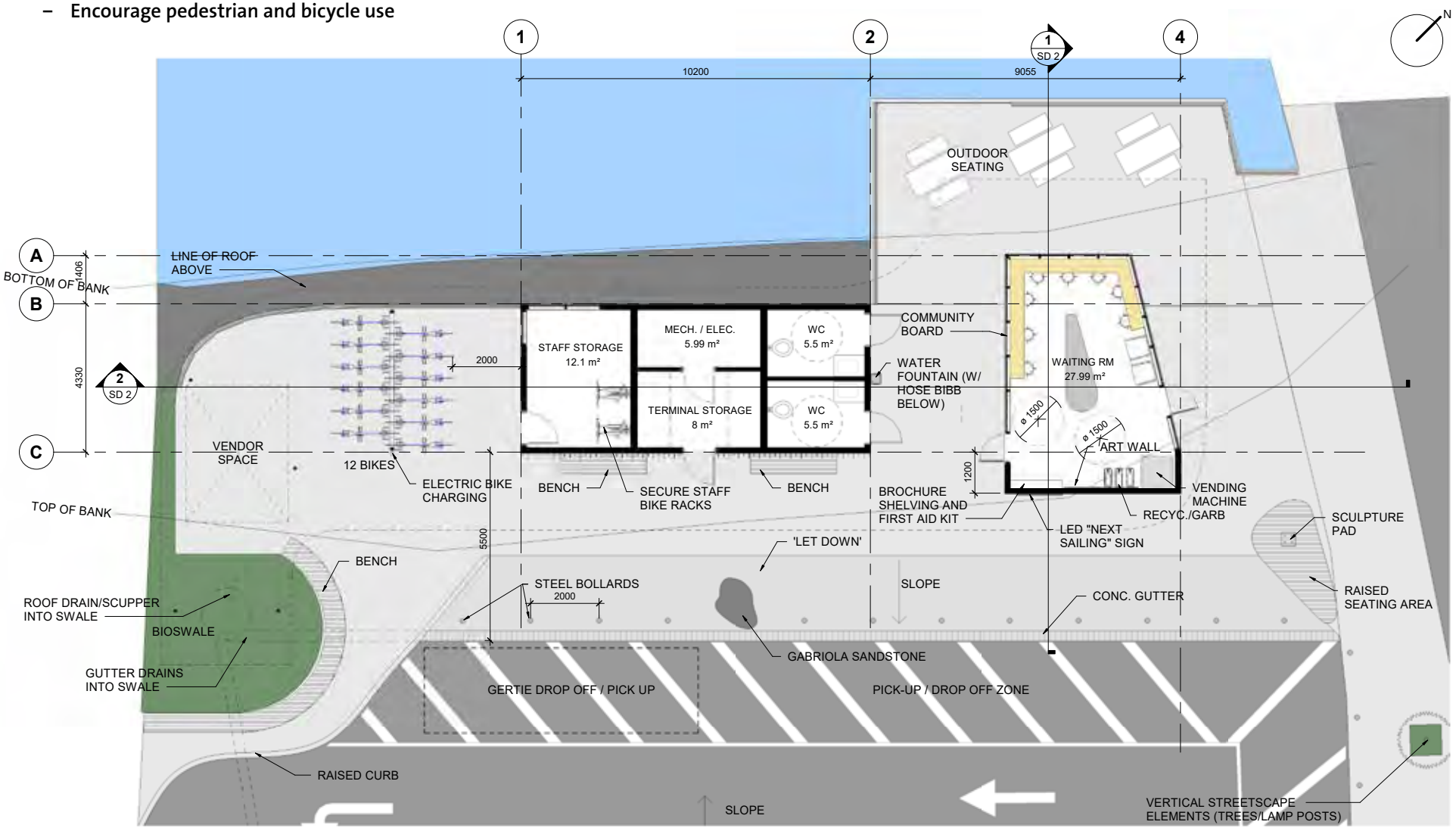


Figure 28: Main Floor Plan

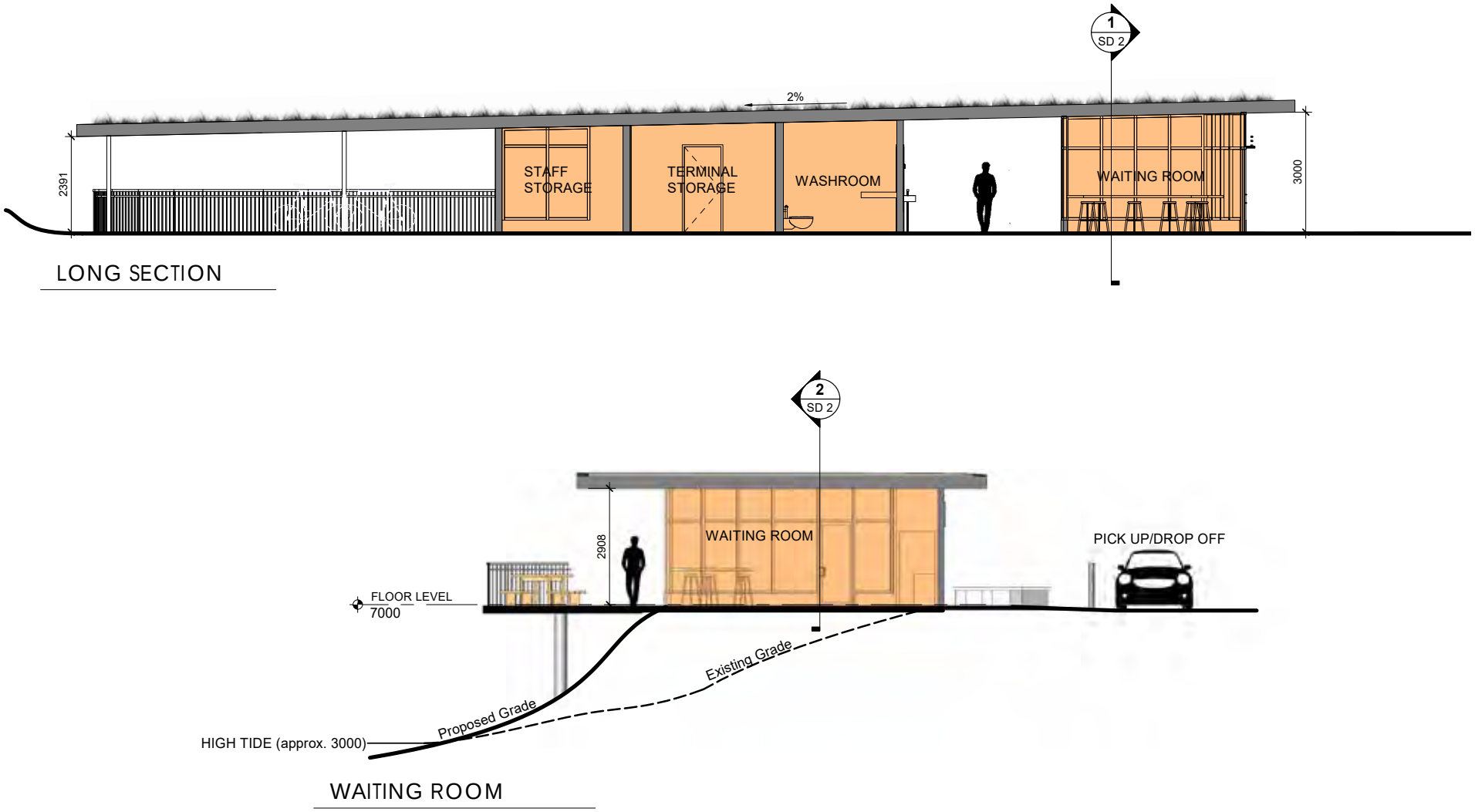
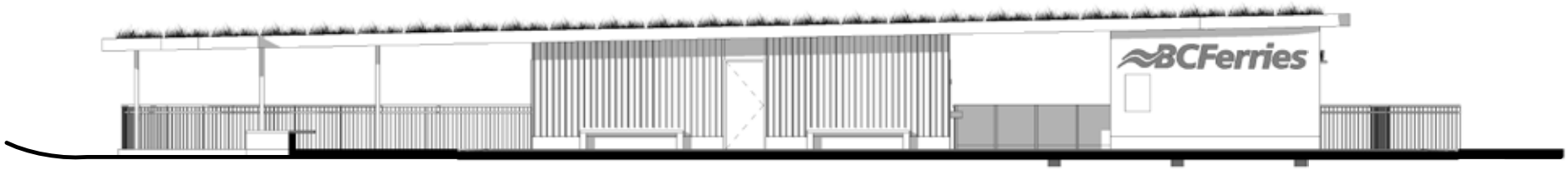
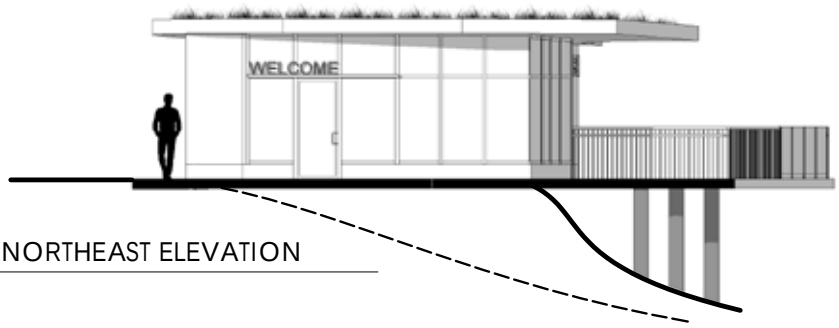


Figure 29: Waiting Room/Washroom Building – Sections

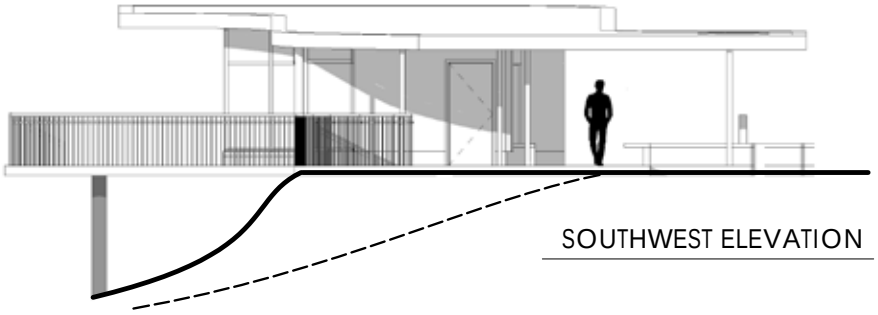
WATERFRONT ELEVATION



FRONT ELEVATION



NORTHEAST ELEVATION



SOUTHWEST ELEVATION

Figure 30: Waiting Room/Washroom Building – Elevations

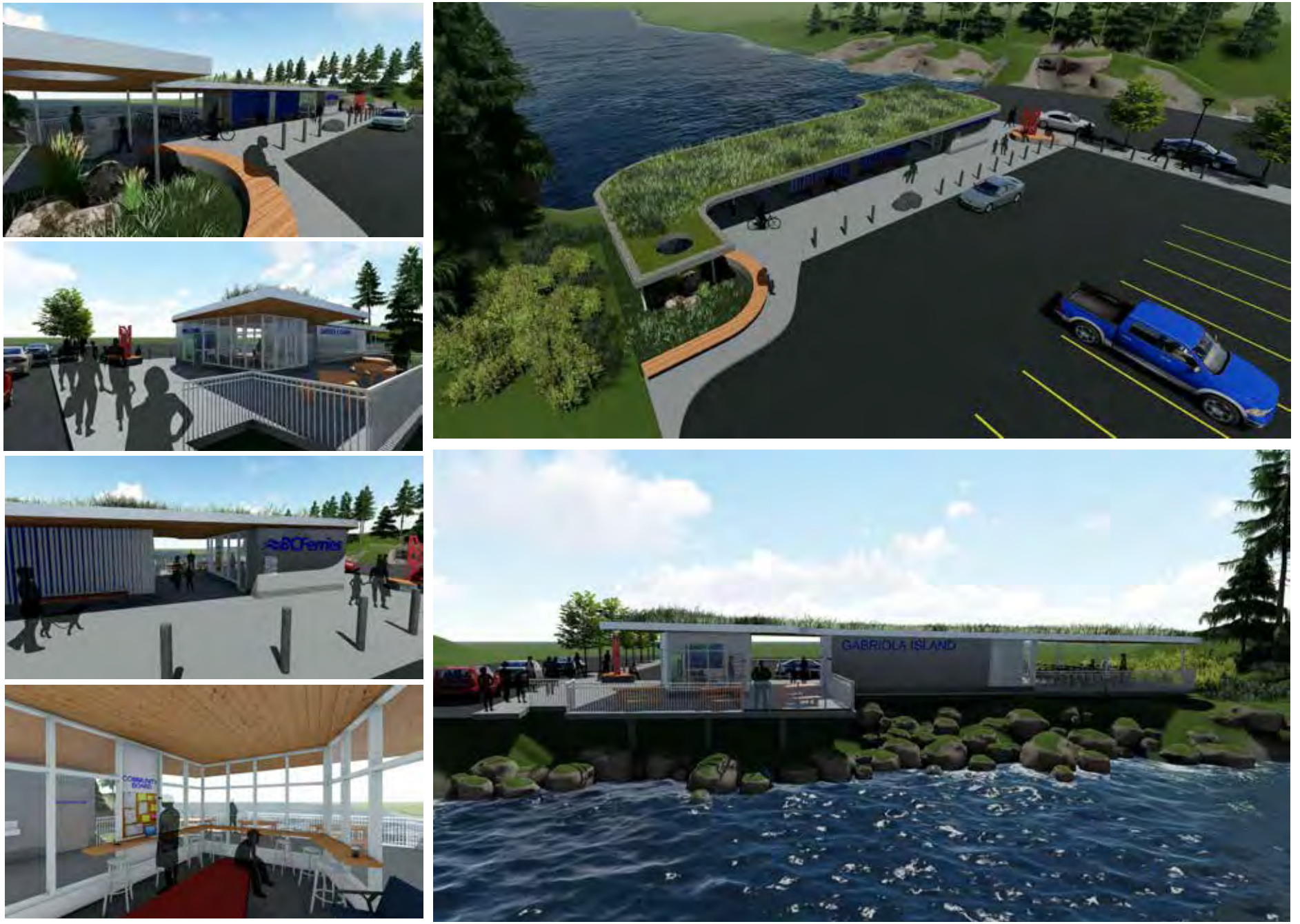


Figure 31: Illustrative Concept Design – Waiting Room/Washroom Building

5.3 Utility Requirements

5.3.1 SANITARY SEWER, STORM WATER MANAGEMENT, WATER

To support future terminal expansion the following civil infrastructure will likely be required at the terminal:

- A new storm water management system is needed due to the road widening required to meet the holding capacity needs.
- Water servicing to the terminal should be explored further given the current supply of water is from a neighbouring property.

5.3.2 ELECTRICAL

Separate metering of the ship to shore power is needed to allow monitoring of vessel consumption and comparison with other ships.

5.3.3 LIGHTING & SECURITY

Additional CCTV cameras will likely be required to monitor the terminal.

Additional lighting may be required in the future to improve safety and accessibility of the expanded terminal area in low light situations. There may be incentive programs within BC Ferries and externally to manage energy consumption more effectively and use the energy more efficiently. Such incentives that may exist as opportunities include:

- Terminal lighting upgrade incentives from BC Hydro
- Assessing the feasibility of including the terminal into BC Ferries' Solar Panel Pilot Project
- Energy efficiency benchmarking – BC Ferries is registered for an Energy Start Portfolio Manager account. Portfolio manager is a free online tool developed by the US EPA and supported by Natural Resources Canada to benchmark commercial building energy performance. If feasible, the lighting infrastructure should be metered and recorded to the benchmarking site.

6 IMPLEMENTATION

6.1 Investment and Implementation

In line with the vision outlined within this document, the Gabriola TDP sets out a comprehensive program of proposals and improvements that will transform the terminal over the next 25 years. This program organizes improvements into strategic phases that are prioritized based on functional (issue / opportunity) and social (local / community) needs. As a result, the TDP provides the long-term plan that allows BC Ferries to provide safe, cost effective ferry services and replace and upgrade capital assets in a financially responsible manner.

6.2 Recommendations for Further Studies/Detailed Design

Approval of this Plan is the first step in moving towards the objectives set out in this TDP. How objectives are implemented will be critical to the successful realisation of the TDP. A number of initiatives, studies, investments and other actions will be required as the Gabriola terminal develops.

The following table outlines recommended studies to be conducted in order to confirm the detailed design requirements of the phased work identified in this TDP. The information from these studies will be beneficial in establishing more detailed scopes, schedules and budgets.

Design Item	Further Studies Required / Recommended	Benefit of Study	Lead ES – Engineering Services TC – Terminal Construction TD – Terminal Development	Timing
General Terminal				
Engineering				
	Level II Survey (Required, ongoing)	Required every 5 years. Provide updated life expectancy of marine structures	ES	Every 5 years
	Ground Survey	Update old survey and is required for terminal expansion in un-surveyed areas	TC	Prior to detailed design (Civil)
	Geotechnical Study	Landside and marine geotechnical investigations are required to advise on ground requirements to install civil and structural infrastructure	TC	Prior to / during detailed design (Civil)
Environmental/Energy/Climate Change				
	Environmental Studies	Environmental Impact Assessments and Environmental Site Investigations should be undertaken to help inform detailed design	ES	Prior to / during detailed design (Civil)
	Archaeological Overview Assessment (AOA)	Further terrestrial and marine archaeological impact assessments (AIA) likely required to be submitted at time of rezoning application	TC	Prior to detailed design
	Energy Star Portfolio Manager Audit	Undertake baseline audit of energy, water and waste consumption to measure and track energy and water consumption, as well as greenhouse gas emissions	Energy Manager	On existing terminal buildings to establish baseline and inform detailed design of new buildings
	Stormwater Management Plan	Required to be submitted at time of rezoning application	TC	
Design – Landside				
Civil Design				
	Detailed design of new waiting/ washroom building room and consolidate Terminal Operations buildings into design	Recommended to improve customer experience and growing foot passenger numbers	TD/TC	Short Term

Design Item	Further Studies Required / Recommended	Benefit of Study	Lead ES – Engineering Services TC – Terminal Construction TD – Terminal Development	Timing
	Detailed design of new holding compound	Recommended to improve AEQ capacity and traffic flow on and off site	TC	Short Term
	Detailed design of new queuing lane	Will provide additional holding capacity at the terminal and improve safety of the terminal and access to Gabriola village	TC, MOTI	Short Term
	Shoreline Civil Design	Recommended study to inform the future design	TC	Short Term
Building Design (Structural, electrical, mechanical, etc.)				
	Sea Level Rise	Recommended study to inform the future design of marine structures	TD, TC	Prior to detailed design (Marine)
	Site Servicing Plan	Used to inform the AIA	TC	Detailed design (Civil)
	Electrical	Used to inform any future electrical upgrades requirements	TC	Prior to detailed design (Civil)
Design - Marine				
	Sea Level II Survey		ES	Every 5 years
	Phasing / Construction Sequencing Plan	Recommended to mitigate any possible operational impacts	TC, TD	Prior to detail design (Marine)
Properties				
	Continue to explore long-term property acquisition in the village	May provide long-term benefits and solutions and further compliance with TNMP	SCE, Properties, TD	Ongoing

Design Item	Further Studies Required / Recommended	Benefit of Study	Lead ES – Engineering Services TC – Terminal Construction TD – Terminal Development	Timing
Land Use Planning				
	Submit an application to the Islands Trust to amend the OCP from Resource/Small Rural Residential and rezone terminal uplands from Large Rural Residential (LRR) to allow Ferry Terminal as a permitted use	Required before any upland terminal upgrades can be implemented	TC	Short Term
Other Actions				
Community Engagement	Build relationship with the Snuneymuxw First Nations Identify public art/cultural interpretation opportunities at the terminal e.g., totem poles	Terminal is located on the traditional territory of Indigenous Peoples and opportunity to build relationships and celebrate the cultural context of the area within the terminal	SCE	Short Term
	Continue to meet on a regular basis with the Ministry of Transportation & Infrastructure (MOTI), Regional District of Nanaimo (RDN), Ferry Advisory Committee (FAC), ferry users and BC Ferries employees to build partnerships with the local government responsible for this terminal		SCE/TD	Ongoing

Appendix 1

Comparison Table of Gabriola TDP with 2018 TNMP

Category		Sub-Category	TNMP - Terminal Class Design Requirements Minor/Intermediate Unstaffed	Gabriola Existing	Gabriola Proposed	Compliance with TNMP	Reason for non-compliance with TNMP
Safety & Security		Integration of Safety and Security Features	Yes	Yes - CCTV	Same as Existing	✓	
Berths		Number of Berths and Berth Interface Type	1 MIM Type	1 MIM Type	Same as Existing	✓	
Vehicle Holding Areas		AEQ Capacity	1 x maximum vessel AEQ capacity (47 AEQ)	0 AEQ	53 AEQ Holding Compound, with Additional Roadside Queue Lane of 61 AEQ	✓	
		Lane Widths	Same widths	One lane only	Same Widths	✓	
Vehicle Loading & Unloading		Loading and Unloading	Main Car Deck (MCD) single lane	Single Lane	Two lane ramp	✗	Desirable to consider double lane loading and discharge of non-commercial vehicles to improve efficiency
Customer Amenities	Foot & Vehicle	Waiting Room/Lounges and Washrooms	Yes	Yes	Yes new washroom waiting room required	✓	
		Covered Outdoor Waiting Space, Seating and Picnic Tables	Yes	Yes	Yes	✓	
		Retail Facility	Pad with services for 3rd party kiosk	Yes (no services)	Yes with services	✓	
		Public Notice Board	Yes	TBD	Yes	✓	
		Vending	Yes	No	Yes	✓	
		Distress Phones	Yes	No	Yes	✓	
		Water Fountains/Bottle Filling Station	Yes	No (provisional service installed)	Yes if potable water supplied	✓	
	F-Only	Pick-up / Drop-off Zone	Yes	No	Yes	✓	
		Parking	Yes	Yes 5 Spaces	No short term parking available	✗	Short and long-term parking available nearby
		Bus Bays (school bus), Taxis and Car Co-Op (leased space)	Yes	No	Yes	✓	

Category	Sub-Category	TNMP - Terminal Class Design Requirements Minor/Intermediate Unstaffed	Gabriola Existing	Gabriola Proposed	Compliance with TNMP	Reason for non-compliance with TNMP
Communications & IT Infrastructure	Wayfinding (static); reader boards	Yes	Yes (2017)	Yes	✓	
	Standard BC Ferries IT systems & capacities and server room	Yes	Yes (IT equipment housed in electrical room)	Same as existing	✓	
	Customer Wi-Fi	Yes	Yes	Yes	✓	
Administration & Employee Facilities	Crew/Employee and Visitor Parking	Yes (except visitor parking)	Yes 16 Spaces	Yes 18 spaces	✓	
Other Terminal Services	Storage for Terminal Operations, Terminal Maintenance and Fleet Operations	Yes	Yes –Seacan and storage room in waiting room building	Same as existing	✓	
	Bicycle Access/Egress/Storage	Yes	TBD	Yes	✓	
Utilities & Miscellaneous	Compactors	Yes	No	No	✗	Not required at this terminal
	Environmental and Containment for Hazardous Goods	Yes	No	No	✓	
	Generators	1 – to power CCTV (vessel will power ramp) except where no Night Watch	No	Yes	✓	
	Potable Water Supply	Yes	Yes	Yes	✓	
	Septic field or sewage treatment system. Convey to municipal where possible	Yes	Yes	Same as existing	✗	No municipal infrastructure currently exists
	Pump ashore	Yes – where infrastructure exists	No	No	✗	No municipal infrastructure currently exists
	Shore to ship power at home ports only	Yes	No	Yes	✓	
	Ship to shore power	Yes	Yes	Yes	✓	

Appendix 2

Glossary of Terms

Access: The accessibility to and within the site for vehicles, cycles and pedestrians in terms of the positioning and treatment of access and circulation routes and how these fit into the surrounding access network.

Automobile Equivalents (AEQ): Terminal vehicle capacity shall be described in Automobile Equivalents (AEQ) where 1 AEQ = 6.1 meters x 2.6 meters. A BC Ferries unit of measure used to express a consistent 'as-loaded length' values across various vehicle types. A single AEQ equates to the average 'as-loaded length' of 6.1 meters of a single under-height vehicle.

Berth: A place assigned to a vessel when anchored or lying alongside a pier.

Best Management Practices for Stormwater Management: A method by which adverse stormwater impacts from development or redevelopment, including but not limited to the release of pollutants into water, are controlled through the application of schedules of activities, prohibition of practices, maintenance procedures, structural protocols, and managerial practices.

Capital Budgeting: A method for evaluating investment proposals to determine whether they are financially sound, and for allocating limited capital resources to the most desirable proposals.

Climate Change: The term used to describe changes in long-term trends in the average climate conditions, such as changes in average temperatures. According to the United Nations Framework Convention on Climate Change (UNFCCC), climate change is a change in climate that is attributable directly or indirectly to human activity that alters atmospheric composition.

Community Engagement: Timely and meaningful citizen and stakeholder involvement in civic priority setting, decision-making, program development, and service delivery. The goal is to ensure that the decision-making is well-informed and offers citizens the chance to contribute their ideas and knowledge to policy development.

Concept Plan: Illustrative drawings that are a quick and simple way to explore initial ideas and design options. Concept plans are used as a guide to develop detailed design plans.

Development permit: A document that includes approved site and building development plans illustrating land use, landscaping, built form, intensity of use, and appearance of the site and buildings, as well as conditions of development approval.

Dock: A structure extending alongshore or out from the shore into a body of water, to which boats may be moored.

Dolphin: A pile or cluster of piles to which a vessel may be moored in open water.

Fleet Master Plan: An overarching policy document directing the development of the fleet with a 25 year outlook. The Fleet Master Plan identifies (1) When a vessel will be replaced or retired, (2) the class, model and characteristics of the replacement vessel and (3) the 25 year deployment of any vessel.

Functional Requirements: The design requirements for key components of the terminal. The functional requirements are based on the design requirements identified in the Terminal Network Master Plan.

Gore: A small usually triangular piece of land. A marked area of pavement resulting from the convergence or divergence of the edge lines of roadway.

Holding Capacity: The maximum capacity of vehicles that can be held at the terminal site for loading. Holding capacity is based on Automobile Equivalents (AEQ) set at 6.1 meters x 2.6 meters.

Land Use Zoning Bylaw: A bylaw of the municipality passed by Council as a Land Use Bylaw pursuant to the provisions of the Local Government Act, and intended to control and regulate the use and development of land and buildings within the municipality.

Max Vehicle Weight: The maximum allowable vehicle weight allowed at the terminal site. Max vehicle weight is measured as gross vehicle weight (GVW), which is significant with commercial / industrial vehicles.

Minor / Intermediate Unstaffed Terminal: One of the four classes of terminals identified in the Terminal Network Master Plan.

Mission: A formal summary of the aims and values of BC Ferries. BC Ferries' mission statement is "We connect communities and customers to people and places important in their lives".

Municipality: A city or town with local council authority that provides local services, facilities, safety and infrastructure for communities. All municipalities in British Columbia must adhere to the *Local Government Act*, which is provincial legislation that provides a legal framework for the establishment of a municipality.

Natural environment: Self-sustaining areas with native vegetation, water, or natural features.

Off Peak Service: Outside of peak season when there is typically lower traffic volumes.

Official Community Plan (OCP): In British Columbia, the OCP is a comprehensive plan that can be developed by both municipalities and regional districts. The OCP provides the longer term vision for the community, organized by a statement of objectives and policies to guide decisions on planning and land use management.

Peak Season Service: Typically the busy season between June and September.

Point of Assembly (POA): The work location employees are assigned.

Policy: An official plan of action adopted by an individual or group, which for land use plans adopted by municipalities in British Columbia can be distinguished as either statutory plans (e.g. Official Community Plans, Local Area Plans) or non-statutory plans.

Potable Water: Treated water that is safe to drink or use for food preparation that must adhere to the Government of Canada's *Guidelines for Canadian Drinking Water Quality*. These guidelines are used by every jurisdiction in Canada and are the basis for establishing drinking water quality requirements for all Canadians.

Public Art: Works of art in any media that has been planned and executed with the specific intention of being sited or staged in the physical public domain, usually outside and accessible to all.

Reader Board: A visual display board that can convey real-time information.

Sanitary Sewer: An underground system that carries sewage from bathrooms, sinks, and other plumbing components to a wastewater treatment facility.

Sea Level Rise: Sea level rise is an increase in the volume of water in the world's oceans.

Sense of Place: The subjective experience of a place as having physical and social attributes that make it distinctive and memorable.

Septic Field: A subsurface sanitary sewage disposal facility used to removed contaminants from the liquid that emerges after anaerobic digestion in a septic tank. The septic field typically contains a septic tank, drain field and piping and must adhere to the current version of British Columbia Ministry of Health – Health Protection Branch's Sewage System Standard Practice Manuel (currently version 3).

Stakeholder: Individuals, organizations and/or groups that may be impacted by, perceive themselves to be impacted or could impact, projects, policy changes, or other decisions. Within the BC Ferries context, common stakeholder groups include personnel, customers, members of service-area communities, local and provincial governments, partners, industry and members of the public. The decision maker is also the stakeholder.

Stormwater Management: Surface or subsurface facilities used to manage surface runoff of rain water.

Strategic Plan: An overarching policy document that directs the Company to pursue a safe, reliable and efficient business operation by focusing on customers and motivates BC Ferries' employees.

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Terminal: A place on either side of a ferry route with facilities, both marine and landside, for the loading and unloading of ferries.

Terminal Development Plan (TDP): A concept plan that provides the framework for the phased implementation of strategies and actions over the next 25 years. The TDP provides a holistic approach to the development of the terminal, enabling BC Ferries to develop terminals in a cost effective, organized and efficient way.

Terminal Network Master Plan (TNMP): An overarching policy document that translates the broad direction of the Strategic Plan into specific strategies, policies and tactics. The TNMP forecasts all strategic and major tactical actions governing the development of BC Ferries' terminals.

Trim: In terms of ship stability, trim is defined as the difference in depth of the hull below the water between the bow and the stern of the vessel.

Utilities: Either (1) municipal and regional utilities such as water, storm drain and sanitary sewer or (2) "shallow" utilities such as gas, telephone and electric.

Wingwall: The two angled pads on either side of the shore ramps. The vessel pushes against them while in the dock.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